



TESORO

Tesoro Companies, Inc.
3450 South 344th Way, Suite 201
Auburn, WA 98001
253 896 8700

September 19, 2014

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

**Subject: Second Quarter 2014 Status Report
1619 1st Street, Livermore, California
Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0434**

Dear Mr. Wickham:

Enclosed please find a copy of the *Second Quarter 2014 Status Report* for the subject site, dated 25 September 2014. This report is submitted by Arctos Environmental on behalf of Tesoro Environmental Resources Company.

Based on my inquiry of the person or persons directly responsible for gathering the information contained in this report, I believe the information was prepared by qualified personnel who properly gathered and evaluated the information, and that the information submitted is, to the best of my knowledge and belief, true, correct, and complete. Please feel free to call me at 253/896-8700 or Scott Stromberg of Arctos Environmental at 510/525-2180 with questions.

Sincerely,

Jeffrey M. Baker, P.E.
Supervisor, Environmental
Compliance & Remediation
Tesoro Companies Inc.

Attachments

CC: Arctos – Scott Stromberg



Arctos Environmental
✓ 2332 5th Street, Suite A 510 525-2180 PHONE
Berkeley, CA 94710 510 525-2392 FAX

Main Office
○ 2955 Redondo Avenue 562 988-2755 PHONE
Long Beach, CA 90806 562 988-2759 FAX

25 September 2014
Project No. 01LV

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

**Subject: Second Quarter 2014 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 Environmental Resources Company (Tesoro), has prepared this letter report summarizing project tasks completed during the second quarter 2014 at the subject site (Figure 1).

Executive Summary

A quarterly groundwater monitoring event was conducted from 10 through 11 June 2014. On average, there was an approximately 8-foot decrease in water levels since the first quarter 2014. Water levels are at their lowest elevations since 2009. The highest onsite petroleum hydrocarbon concentrations were detected in wells IP-8, DW-8, and MW-2, located in the northwest corner of the site. The highest offsite petroleum hydrocarbon concentrations were detected in wells MW-6, DW-2, and DW-5, located northwest of the intersection of 1st Street and South P Street. The soil vapor extraction (SVE) system and oxygen injection system remained shut off during the second quarter 2014.

The expanded onsite and offsite in situ chemical oxidation (ISCO) pilot test was conducted during the second quarter 2013. A description of the expanded ISCO pilot test and results of the pilot test will be included in a separate report.

During the third quarter 2014, Tesoro will continue groundwater monitoring and ISCO monitoring activities to evaluate groundwater concentrations trends. Tesoro will also restart the SVE system to remove subsurface hydrocarbon mass while water levels remain low.

Site Background

The site description and background are included in Arctos's "In Situ Chemical Oxidation (ISCO) Pilot Test Report" dated 16 March 2012 (Arctos, 2012).

Groundwater Monitoring

Arctos's subcontractor, Confluence Environmental, of Sacramento, California, performed a quarterly groundwater monitoring event from 10 through 11 June 2014. Samples were collected from wells MW-1 through MW-12, DW-1 through DW-9, and IP-1 through IP-10 (Figure 2) in accordance with the site monitoring plan (Attachment A) and the expanded ISCO pilot test work plan (Arctos, 2013). 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.

Analytical Program

Groundwater samples collected from wells MW-1, MW-3 through MW-5, DW-4, IP-2 through IP-4, and IP-6 through IP-9 were analyzed in accordance with the analytical plan in Attachment A. Groundwater samples collected from the remaining wells were tested for additional analytes in accordance with the expanded ISCO pilot test work plan (Arctos, 2013).

Groundwater Results

Groundwater elevations were approximately 424 to 438 feet above mean sea level (MSL; 35 to 47 feet below ground surface [bgs]). Water levels decreased an average of 7.7 feet compared to the previous quarter and were an average of 7.5 feet lower than water levels in the second quarter 2013 (Table 1). The water level data indicate that the general direction of water flow is toward the northwest with an estimated gradient of 0.01 (1 foot/70 feet; Figure 2). The gradient is consistent with historical data collected since 1993 (Attachment C).

During the second quarter 2014, the highest onsite concentration of total petroleum hydrocarbons as gasoline (TPHg) of 52,000 micrograms per liter ($\mu\text{g/l}$) was detected at wells IP-8 and DW-8, located in the western portion of the site adjacent to the USTs. The highest onsite benzene concentration of 2,400 $\mu\text{g/l}$ was detected at well DW-8. Methyl tert-butyl ether (MTBE) and tert-butyl alcohol (TBA) were detected onsite at maximum concentrations of 120 and 100 $\mu\text{g/l}$, respectively, at well MW-2 in the northwest corner of the site.

Historically, a direct relationship between dissolved-phase hydrocarbons and water levels has been observed at shallow source area wells and an indirect relationship has historically been observed at deep source area wells. Compared to when water levels were at the same elevation, dissolved-phase hydrocarbon concentrations in source area wells MW-2 and MW-11 have decreased. Concentrations at source area well DW-1 have increased compared to when water levels were at the same elevation, but are within historical range. Concentrations at well DW-1 increased during ISCO injections as a result of desorption of hydrocarbon mass. The table below summarizes reductions in hydrocarbon concentrations for source area wells.

Well ID	Date	Groundwater Elevation (ft. MSL)	Petroleum Hydrocarbon Concentration ^(a) (µg/l)			Percent Reduction ^(b)
			TPHg	Benzene	MTBE	
MW-2	8/2/07	431.75	37,000	4,200	1,300	82%
	6/10/14	431.33	6,900	520	120	
MW-11	12/8/09	433.01	100,000	6,100	3.3	99%
	6/10/14	434.34	660	3.7	ND<0.5 ^(c)	
TP-1	12/8/09	431.43	10,000	690	1,000	NA ^(e)
	6/10/14	431.84	NS ^(d)	NS	NS	
TP-2	12/8/09	432.85	7,200	950	13,000	NA
	6/10/14	433.05	NS	NS	NS	
VW-2	2/14/08	437.73	5,700	180	530	NA
	6/10/14	437.60	NS	NS	NS	
DW-1	4/27/09	431.11	2,700	250	86	NA
	6/10/14	431.14	3,600	56	18	

- (a) Dissolved-phase petroleum hydrocarbons as analyzed by EPA Method 8260B and reported in micrograms per liter (µg/l).
- (b) Half the detection limit was used for non-detect concentrations in calculating percent reduction.
- (c) ND – Not detected at the reporting limit listed.
- (d) NS – Not sampled.
- (e) NA – Not applicable.

During the second quarter 2014, the highest offsite TPHg concentration of 18,000 µg/l was detected at well DW-5, located west of the intersection of 1st Street and P Street. Benzene and MTBE were detected offsite at maximum concentrations of 860 and 120 µg/l, respectively, at well MW-6, located west of the intersection of 1st Street and P Street. The highest offsite TBA concentration of 390 µg/l was detected at well DW-2, located northwest of the intersection of 1st Street and P Street. Wells MW-12 and DW-9 are the farthest downgradient shallow and deep well cluster. TPHg, benzene, MTBE, and TBA were detected in deep well DW-9 at concentrations of 13,000, 380, 41, and 100 µg/l, respectively. TPHg and benzene were detected in shallow well MW-12 at concentrations of 4,500 and 10 µg/l, respectively. MTBE and TBA were not detected in

well MW-12. All offsite benzene concentrations were below the Environmental Screening Level (ESL) of 1,800 µg/l established by the San Francisco Regional Water Quality Control Board for evaluation of potential vapor intrusion concerns. Offsite hydrocarbon concentrations increased during the 2013 expanded ISCO pilot test. However, based on results of second quarter monitoring, concentrations appear to be stabilizing or decreasing at most offsite wells.

Groundwater analytical results are summarized in Tables 2 and 3. Figures 3, 4, and 5 show isoconcentration contours for TPHg, benzene, and MTBE, respectively. Historical analytical results are in Attachment D, and the laboratory reports and the chain-of-custody forms are in Attachment E.

Expanded ISCO Pilot Test

Arctos conducted an ISCO pilot test at well IP-9 in the fourth quarter 2011. Monitoring results for the first quarter 2013 showed that TPHg and benzene concentrations decreased by over 68 percent at injection well IP-9. As described in the 16 March 2012 pilot test report, changes in groundwater chemistry and hydrocarbon concentrations indicated that the RegenOx™ chemical oxidant was effective at desorbing petroleum hydrocarbons from soil and destroying hydrocarbons in groundwater.

On 25 March 2013, Arctos obtained approval from ACEH for an expanded ISCO pilot test to occur on and off site. The objective of the expanded pilot test was to further assess the effectiveness of the RegenOx™ chemical oxidant at remediating hydrocarbons in soil and groundwater. Arctos installed seven offsite injection wells in April 2013. Arctos's subcontractor, Confluence Environmental of Sacramento, California, conducted the expanded ISCO pilot test from May to August 2013. Changes in groundwater chemistry and hydrocarbon concentrations indicated that RegenOx™ chemical oxidant was effective at desorbing petroleum hydrocarbons from soil and destroying hydrocarbons in groundwater. Based on concentrations trends following the expanded pilot test, Arctos recommends evaluating the feasibility of conducting additional applications of RegenOx™ at the site. Additional information regarding the expanded ISCO pilot test and results of the pilot test will be included in a separate report.

The RegenOx™ oxidant complex can cause an increase in hexavalent chromium concentrations. Since the expanded ISCO pilot test, hexavalent chromium has been detected in onsite monitoring wells IP-1 and MW-11 and offsite monitoring wells MW-8 and MW-10. During the second quarter 2014, hexavalent chromium was not detected in wells IP-1 and MW-11 and concentrations decreased from 15 to 5.4 milligrams per liter (mg/l) in well MW-10 since last quarter. Well MW-8 dewatered during sampling and hexavalent chromium was not analyzed. ISCO pilot test groundwater monitoring results

for petroleum hydrocarbons and general chemistry are summarized in Tables 4 and 5, respectively.

Source Area Remediation

Soil Vapor Extraction (SVE) System

The SVE system operated from June 2010 to November 2012. The system was shut down in November 2012 and remained off during the second quarter 2014. During operation, the total hydrocarbon mass removed by the SVE system is estimated to be 38,250 pounds or approximately 5,890 gallons (at a density of 6.5 pounds per gallon).

During the second quarter 2014, water levels on site decreased to the lowest levels since 2009. The SVE system will be restarted during the third quarter 2014 to remediate hydrocarbon-impacted, vadose-zone soil that was not exposed during previous SVE system operation.

Oxygen Injection System

The oxygen injection system operated from October 2010 to March 2013. The system was shut down on 28 March 2013 in preparation for the expanded ISCO pilot test and remained shut off during the second quarter 2014.

Source Area Reduction

Concentrations in groundwater have decreased by up to 99 percent in source area wells MW-2 and MW-11 compared to before the SVE and oxygen injection systems were started in June and October 2010. Concentrations in source area well DW-1 have increased compared to before the remediation systems were started. Concentrations at well DW-1 increased during the 2013 ISCO injections as a result of desorption of hydrocarbon mass. Concentrations at well DW-1 have displayed a decreasing trend since the fourth quarter 2014 and are expected to continue to decrease. The plume has also decreased in area compared to before the SVE and oxygen injection systems were started. The reductions in hydrocarbon concentrations for shallow and deep source area wells are summarized in the following table:

Well ID	Date	Groundwater Elevation (ft. MSL)	Petroleum Hydrocarbon Concentration ^(a) (µg/l)			Percent Reduction ^(b)
			TPHg	Benzene	MTBE	
MW-2	5/3/10	440.54	26,000	3,100	530	75%
	6/11/14	431.33	6,900	520	120	
MW-11	5/3/10	441.90	62,000	3,600	ND<15 ^(c)	99%
	6/11/14	434.34	660	3.7	ND<0.5	
TP-1	5/3/10	440.50	15,000	2,100	3,400	NA ^(e)
	6/11/14	431.84	NS ^(d)	NS	NS	
TP-2	5/3/10	441.08	6,400	740	14,000	NA
	6/11/14	433.05	NS	NS	NS	
VW-2	5/3/10	441.44	2,800	130	1,300	NA
	6/11/14	437.60	NS	NS	NS	
DW-1	5/3/10	441.15	1,800	160	21	NA
	6/11/14	431.14	3,600	56	18	

- (a) Dissolved-phase petroleum hydrocarbons as analyzed by EPA Method 8260B and reported in micrograms per liter (µg/l).
- (b) Half the detection limit was used for non-detect concentrations in calculating percent reduction.
- (c) ND – Not detected at the reporting limit listed.
- (d) NS – Not sampled.
- (e) NA – Not applicable.

Figures 6A through 6C show onsite concentration contour maps for TPHg, benzene, and MTBE in May 2010, prior to startup of the SVE and oxygen injection systems, and in the second quarter 2014.

Conclusions

Results of groundwater sampling indicate the following conclusions:

1. Onsite dissolved-phase hydrocarbon concentrations and the hydrocarbon plume area have decreased following SVE and oxygen injection.
2. Historically, hydrocarbon concentrations at shallow and deep source area wells have decreased compared to concentrations at similar water levels. Hydrocarbon concentrations at source area wells MW-2 and MW-11 have decreased up to 99 percent. However, hydrocarbon concentrations at source area well DW-1 have increased compared to concentrations at similar water levels. Concentrations at well DW-1 increased during ISCO injections due to desorption of hydrocarbon mass. However, second quarter 2014 concentrations at well DW-1 are within historical range, and recent groundwater monitoring results indicate a decreasing trend.

3. Downgradient groundwater concentrations increased during the ISCO injections, but are stabilizing or decreasing during the second quarter 2014. Downgradient concentrations are generally within historical range, and all offsite benzene concentrations are below the ESL for potential vapor intrusion concerns.

Recommendations

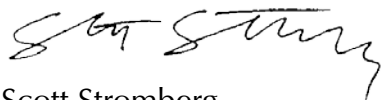
Based on the activities completed during this quarter, Arctos recommends the following tasks during the third quarter 2014 and beyond:

- Restart the SVE system
- Continue groundwater monitoring and ISCO monitoring activities and evaluate groundwater concentration trends.

If you have questions or comments, please call Scott Stromberg or Mike Purchase at 510/525-2180.

Very truly yours,

ARCTOS ENVIRONMENTAL



Scott Stromberg
Project Geologist



Michael P. Purchase, P.E.
Principal Engineer



Copy: Jeffrey M. Baker, P.E. – Tesoro Refining & Marketing Company LLC
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
Table 4 – Expanded ISCO Pilot Test VOC Concentrations
Table 5 – Expanded ISCO Pilot Test General Chemistry Concentrations
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
Figure 6A – Onsite TPHg Concentration Contours

Figure 6B – Onsite Benzene Concentration Contours
Figure 6C – Onsite 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 – Waste Manifests

References

Arctos Environmental, 2012. *In Situ Chemical Oxidation (ISCO) Pilot Test Report, Tesoro Site No. 67076 (Former Beacon 3604), 1619 1st Street, Livermore, California, 16 March.*

Arctos Environmental, 2013. *Work Plan for Expanded ISCO Pilot Test, 1619 1st Street, Livermore, California, Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0434, 28 February.*

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	4/22/13	33.11	474.21 ^(c)	441.10
	8/21/13	35.40		438.81
	11/7/13	34.36		439.85
	1/21/14	33.23		440.98
	6/10/14	41.40		432.81
MW-2	4/22/13	34.15	472.98	438.83
	8/21/13	36.05		436.93
	11/7/13	35.09		437.89
	1/21/14	33.81		439.17
	6/10/14	41.65		431.33
MW-3	4/22/13	33.51	473.37	439.86
	8/21/13	35.71		437.66
	11/7/13	34.60		438.77
	1/21/14	33.49		439.88
	6/10/14	41.62		431.75
MW-4	4/22/13	33.80	473.64	439.84
	8/21/13	36.10		437.54
	11/7/13	35.18		438.46
	1/21/14	34.07		439.57
	6/10/14	42.10		431.54
MW-5	4/22/13	35.09	472.67	437.58
	8/21/13	37.00		435.67
	11/7/13	35.94		436.73
	1/21/14	34.65		438.02
	6/10/14	42.40		430.27
MW-6	4/22/13	36.78	471.93	435.15
	6/25/13	37.15		434.78
	8/21/13	37.98		433.95
	11/7/13	39.82		432.11
	1/21/14	35.42		436.51
	6/10/14	42.36		429.57
MW-7	4/22/13	33.19	472.33	439.14
	8/21/13	36.90		435.43

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-7 (cont.)	11/7/13	34.06	472.33	438.27
	1/21/14	33.11		439.22
	6/10/14	40.50		431.83
MW-8	4/22/13	35.00	471.18	436.18
	6/25/13	36.40		434.78
	8/21/13	37.20		433.98
	11/7/13	35.95		435.23
	1/21/14	34.63		436.55
	6/10/14	43.17		428.01
MW-9	4/22/13	37.01	470.78	433.77
	6/25/13	37.82		432.96
	8/21/13	39.02		431.76
	11/7/13	37.87		432.91
	1/21/14	36.31		434.47
	6/10/14	43.15		427.63
MW-10	4/22/13	34.99	471.63	436.64
	6/25/13	36.25		435.38
	8/21/13	37.11		434.52
	11/7/13	36.05		435.58
	1/21/14	34.55		437.08
	6/10/14	40.18		431.45
MW-11	4/22/13	32.74	472.96 ^(c)	440.22
	8/21/13	34.74		438.22
	11/7/13	33.75		439.21
	1/21/14	32.43		440.53
	6/10/14	38.62		434.34
MW-12	4/22/13	36.18	469.77	433.59
	6/25/13	37.80		431.97
	8/21/13	38.80		430.97
	11/7/13	37.40		432.37
	1/21/14	35.94		433.83
	6/10/14	42.76		427.01

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)
VW-2	4/22/13	33.51	472.57 ^(c)	439.06
	8/21/13	DRY ^(d)		--
	11/7/13	DRY		--
	1/21/14	33.16		439.41
	6/10/14	DRY		437.60
VW-3	4/22/13	33.49	474.38	440.89
	8/21/13	35.46		438.92
	11/7/13	35.07		439.31
	1/21/14	33.80		440.58
	6/10/14	DRY		437.64
TP-1	4/22/13	33.71	472.64 ^(c)	438.93
	8/21/13	35.86		436.78
	11/7/13	34.65		437.99
	1/21/14	33.38		439.26
	6/10/14	DRY		431.84
TP-2	4/22/13	33.70	472.78 ^(c)	439.08
	8/21/13	35.43		437.35
	11/7/13	34.50		438.28
	1/21/14	33.25		439.53
	6/10/14	DRY		433.05
DW-1	4/22/13	33.72	472.85	439.13
	8/21/13	35.90		436.95
	11/7/13	34.79		438.06
	1/21/14	33.57		439.28
	6/10/14	41.71		431.14
DW-2	4/22/13	36.70	471.61	434.91
	6/25/13	36.94		434.67
	8/21/13	37.85		433.76
	11/7/13	36.94		434.67
	1/21/14	35.59		436.02
	6/10/14	43.35		428.26
DW-3	4/22/13	36.10	470.33	434.23
	6/25/13	37.39		432.94

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 (cont.)	8/21/13	38.38	470.33	431.95
	11/7/13	36.85		433.48
	1/21/14	35.32		435.01
	6/10/14	44.03		426.30
DW-4	4/22/13	35.90	468.48	432.58
	8/21/13	38.30		430.18
	11/7/13	36.45		432.03
	1/21/14	35.99		432.49
	6/10/14	44.63		423.85
DW-5	4/22/13	36.52	471.86	435.34
	6/25/13	37.42		434.44
	8/21/13	38.35		433.51
	11/7/13	36.97		434.89
	1/21/14	34.45		437.41
	6/10/14	43.51		428.35
DW-6	4/22/13	37.29	471.77	434.48
	6/25/13	38.55		433.22
	8/21/13	39.55		432.22
	11/7/13	38.24		433.53
	1/21/14	37.03		434.74
	6/10/14	44.40		427.37
DW-7	4/22/13	36.80	470.07	433.27
	6/25/13	38.44		431.63
	8/21/13	39.91		430.16
	11/7/13	38.25		431.82
	1/21/14	36.70		433.37
	6/10/14	44.67		425.40
DW-8	4/22/13	32.66	472.31	439.65
	8/21/13	34.43		437.88
	11/7/13	33.54		438.77
	1/21/14	33.03		439.28
	6/10/14	40.60		431.71

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-9	4/22/13	36.39	469.80	433.41
	6/25/13	38.46		431.34
	8/21/13	39.32		430.48
	11/7/13	37.76		432.04
	1/21/14	36.26		433.54
	6/10/14	44.05		425.75

- (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) Water Table Elevation = (Casing Elevation - Depth to Water).
- (c) Wells were resurveyed by Cross Land Surveying, Inc., per AB 2886 requirements, on 19 October 2010 after remediation system construction. Benchmark K2-741, elevation is 467.835 feet above MSL.
- (d) 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) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
MW-1	4/22/13	240	ND<50 ^(b)	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
	8/21/13	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
	11/7/13	4,300	0.82	2.9	76	160	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/21/14	9,600	2.5	5.2	130	250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<15	ND<0.5	ND<0.5
	6/11/14	2,500	ND<0.5	1.6	27	58	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	4/23/13	430	10	2.2	3.8	8.5	13	ND<0.5	ND<0.5	ND<0.5	6.6	ND<50	ND<8	ND<0.5	ND<0.5
	6/24/13	1,700	7.2	0.91	12	16	9.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	11,000	560	30	430	440	88	ND<0.5	ND<0.5	1.0	48	ND<50	ND<8	ND<0.5	ND<0.5
	11/7/13	4,700	140	7.5	160	170	28	ND<0.9	ND<0.9	ND<0.9	22	ND<90	ND<9	ND<0.9	ND<0.9
	1/22/14	3,000	140	9.0	68	92	43	ND<0.5	ND<0.5	ND<0.5	36	ND<50	ND<5	ND<0.5	ND<0.5
	6/11/14	6,900	520	40	300	320	120	ND<0.5	ND<0.5	1.4	100	ND<80	ND<25	ND<0.5	ND<0.5
MW-3	4/22/13	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
	8/22/13	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
	11/7/13	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
	1/22/14	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
	6/11/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-4	4/22/13	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
	8/21/13	NS ^(c)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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
	1/21/14	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
	6/11/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-5	4/22/13	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
	8/21/13	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) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
MW-5 (cont.)	11/7/13	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
	1/21/14	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
	6/11/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-6	4/24/13	8,600	880	22	89	25	190	ND<1.5	ND<1.5	2.7	700	ND<400	ND<15	ND<1.5	ND<1.5
	6/25/13	6,800	350	7.0	26	9.3	81	ND<0.9	ND<0.9	1.0	280	ND<800	ND<9	ND<0.9	ND<0.9
	8/22/13	14,000	1,500	59	290	150	110	ND<1.5	ND<1.5	ND<1.5	93	ND<400	ND<15	ND<1.5	ND<1.5
	11/7/13	12,000	1,200	62	190	81	100	ND<2.5	ND<2.5	ND<2.5	66	ND<250	ND<25	ND<2.5	ND<2.5
	1/22/14	15,000	1,100	37	120	52	110	ND<2.5	ND<2.5	ND<2.5	190	ND<250	ND<25	ND<2.5	ND<2.5
	6/10/14	11,000	860	20	50	20	120	ND<1.5	ND<1.5	ND<1.5	280	ND<150	ND<15	ND<1.5	ND<1.5
MW-7	4/23/13	720	0.65	0.61	1.0	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
	6/24/13	1,700	1.3	ND<0.5	2.7	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	880	0.54	ND<0.5	1.7	0.82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	330	ND<0.5	ND<0.5	0.51	0.73	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	1,000	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
	6/10/14	1,000	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<80	ND<5	ND<0.5	ND<0.5
MW-8	4/23/13	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
	6/25/13	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
	8/22/13	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
	11/7/13	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
	1/22/14	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
	6/11/14	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	80	ND<5	ND<0.5	ND<0.5
MW-9	4/23/13	1,900	4.5	0.75	1.7	1.0	3.4	ND<0.5	ND<0.5	ND<0.5	5.0	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	2,800	20	0.91	3.8	2.7	6.0	ND<0.5	ND<0.5	ND<0.5	29	ND<50	ND<5	ND<0.5	ND<0.5

TABLE 2

**GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
MW-9 (cont.)	8/22/13	1,500	20	0.70	1.7	0.84	9.0	ND<0.5	ND<0.5	ND<0.5	40	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	1,400	3.1	ND<0.5	0.70	0.58	4.2	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	2,000	2.4	ND<0.5	0.81	0.79	2.7	ND<0.5	ND<0.5	ND<0.5	7.6	ND<50	ND<5	ND<0.5	ND<0.5
	6/11/14	780	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	ND<0.5	ND<0.5	5.4	ND<50	ND<5	ND<0.5	ND<0.5
MW-10	4/22/13	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
	6/25/13	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
	8/21/13	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
	11/7/13	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
	1/21/14	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
	6/10/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-11	4/24/13	5,800	16	18	140	640	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	6/24/13	8,000	24	34	190	830	ND<0.9	ND<0.9	ND<0.9	ND<0.9	5.8	ND<90	ND<9	ND<0.9	ND<0.9
	8/22/13	9,600	26	32	260	940	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.6	ND<200	ND<20	ND<0.9	ND<0.9
	11/7/13	8,800	50	54	380	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	12	ND<150	ND<15	ND<1.5	ND<1.5
	1/22/14	15,000	44	45	390	910	ND<1.5	ND<1.5	ND<1.5	ND<1.5	7.7	ND<150	ND<15	ND<1.5	ND<1.5
	6/10/14	660	3.7	1.2	7.0	5.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-12	4/24/13	1,400	2.2	0.78	7.7	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<100	ND<20	ND<0.5	ND<0.5
	6/25/13	4,400	8.8	5.2	26	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	4,500	15	2.4	33	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	4,600	15	2.4	47	13	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	3,400	4.3	1.5	12	2.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/10/14	4,500	10	2.9	67	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
VW-2	4/24/13	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
	8/21/13	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) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
VW-2 (cont.)	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/22/14	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
	6/10/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VW-3	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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
	1/22/14	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
	6/10/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-1	4/24/13	2,000	35	21	22	180	76	ND<0.5	ND<0.5	0.70	33	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	3,500	28	3.8	35	11	100	ND<0.5	ND<0.5	0.98	42	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	2,800	14	1.8	19	7.3	43	ND<0.5	ND<0.5	ND<0.5	25	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	3,400	11	1.4	16	5.2	41	ND<0.5	ND<0.5	ND<0.5	22	ND<50	ND<5	ND<0.5	ND<0.5
	6/10/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TP-2	4/24/13	100	1.2	0.88	1.6	7.4	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.89	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	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
	1/21/14	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
	6/10/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DW-1	4/22/13	ND<50	ND<0.5	ND<0.5	ND<0.5	0.78	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/24/13	12,000	110	66	280	860	13	ND<0.5	ND<0.5	ND<0.5	11	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	1,100	18	5.8	34	82	5.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	5,200	69	13	130	200	18	ND<0.5	ND<0.5	ND<0.5	15	ND<50	ND<8	ND<0.5	ND<0.5

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
DW-1 (cont.)	1/22/14	5,000	51	13	98	110	12	ND<0.5	ND<0.5	ND<0.5	11	ND<50	ND<5	ND<0.5	ND<0.5
	6/11/14	3,600	56	9.4	130	220	18	ND<0.5	ND<0.5	ND<0.5	14	ND<50	ND<5	ND<0.5	ND<0.5
DW-2	4/24/13	4,500	320	7.2	26	9.5	100	ND<0.5	ND<0.5	1.3	370	ND<80	ND<5	ND<0.5	ND<0.5
	6/25/13	4,900	250	6.2	58	26	100	ND<0.5	ND<0.5	1.2	400	ND<50	ND<8	ND<0.5	ND<0.5
	8/22/13	8,300	600	23	96	42	240	ND<0.5	ND<0.5	2.5	500	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	6,500	520	18	57	17	150	ND<0.9	ND<0.9	2.2	310	ND<90	ND<9	ND<0.9	ND<0.9
	1/22/14	8,500	490	14	55	15	150	ND<0.9	ND<0.9	1.9	380	ND<300	ND<9	ND<0.9	ND<0.9
	6/11/14	4,400	330	6.5	26	7.3	100	ND<0.5	ND<0.5	1.3	390	ND<200	ND<5	ND<0.5	ND<0.5
DW-3	4/23/13	66	ND<0.5	2.3	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
	6/25/13	5,600	1.1	1.1	120	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	840	1.4	ND<0.5	3.2	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	960	ND<0.5	ND<0.5	5.1	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	860	ND<0.5	ND<0.5	3.0	1.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/11/14	1,900	0.64	ND<0.50	23	9.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
DW-4	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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
	1/21/14	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
	6/11/14	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	53	ND<5	ND<0.5	ND<0.5
DW-5	4/24/13	3,000	32	2.5	38	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	6/25/13	120,000	120	ND<4	1,400	2,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<200	ND<4	ND<4
	8/22/13	22,000	58	11	770	1,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
	11/7/13	26,000	62	12	1,000	1,400	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4

TABLE 2

**GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
DW-5 (cont.)	1/22/14	17,000	66	6.1	440	470	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<400	ND<40	ND<2.5	ND<2.5
	6/11/14	18,000	53	4.3	340	410	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
DW-6	4/24/13	1,000	2.9	1.1	2.1	0.98	1.8	ND<0.5	ND<0.5	ND<0.5	6.2	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	7,000	23	3.0	80	13	9.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	5,700	28	3.4	80	11	12	ND<0.5	ND<0.5	ND<0.5	37	ND<90	ND<8	ND<0.5	ND<0.5
	11/7/13	2,400	14	1.7	5.6	3.1	10	ND<0.5	ND<0.5	ND<0.5	35	ND<80	ND<5	ND<0.5	ND<0.5
	1/22/14	3,000	6.8	0.98	3.6	2.9	10	ND<0.5	ND<0.5	ND<0.5	36	ND<50	ND<5	ND<0.5	ND<0.5
	6/11/14	5,400	19	3.0	39	5.6	9.2	ND<0.5	ND<0.5	ND<0.5	35	ND<50	ND<8	ND<0.5	ND<0.5
DW-7	4/23/13	3,300	230	9.2	22	10	50	ND<0.5	ND<0.5	0.55	160	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	27,000	590	32	960	640	100	ND<0.5	ND<0.5	0.95	330	ND<80	ND<20	ND<4	ND<0.5
	8/22/13	15,000	420	18	520	320	96	ND<2.5	ND<2.5	ND<2.5	310	ND<250	ND<25	ND<2.5	ND<2.5
	11/7/13	9,700	260	8.4	200	63	52	ND<1.5	ND<1.5	ND<1.5	170	ND<150	ND<15	ND<1.5	ND<1.5
	1/22/14	15,000	380	15	430	200	77	ND<1.5	ND<1.5	ND<1.5	230	ND<150	ND<15	ND<1.5	ND<1.5
	6/11/14	12,000	380	13	370	190	79	ND<1.5	ND<1.5	ND<1.5	240	ND<150	ND<15	ND<1.5	ND<1.5
DW-8	4/24/13	5,900	350	370	140	790	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.0	ND<200	ND<80	ND<0.9	ND<0.9
	6/24/13	55,000	2,200	3,200	2,100	7,400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	56	ND<90	ND<50	ND<0.9	ND<0.9
	8/22/13	16,000	380	240	500	1,400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	11/7/13	56,000	1,800	2,800	2,100	7,900	ND<2.5	ND<2.5	ND<2.5	ND<2.5	37	ND<250	ND<25	ND<2.5	ND<2.5
	1/22/14	40,000	1,100	1,200	1,200	4,300	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
	6/11/14	52,000	2,400	2,100	1,700	6,400	ND<7	ND<7	ND<7	ND<7	67	ND<700	ND<70	ND<7	ND<7
DW-9	4/24/13	3,200	18	1.7	7.8	7.2	21	ND<0.5	ND<0.5	ND<0.5	67	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	27,000	490	17	1,100	430	30	ND<4	ND<4	ND<4	62	ND<400	ND<40	ND<4	ND<4
	8/22/13	19,000	320	13	690	240	28	ND<4	ND<4	ND<4	87	ND<2,000	ND<40	ND<4	ND<4
	11/7/13	8,000	120	5.9	100	38	25	ND<1.5	ND<1.5	ND<1.5	73	ND<150	ND<15	ND<1.5	ND<1.5

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
DW-9	1/22/14	14,000	180	6.7	200	65	27	ND<1.5	ND<1.5	ND<1.5	77	ND<150	ND<15	ND<1.5	ND<1.5
(cont.)	6/11/14	13,000	380	11	300	81	41	ND<2.5	ND<2.5	ND<2.5	100	ND<250	ND<25	ND<2.5	ND<2.5

- (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), methanol, ethanol, 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) NS - Not sampled.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-1	7/23/08	62,000	2,100	6,800	2,700	11,000	16	ND<15 ^(b)	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
	5/5/10 ^(c)	33,000	900	1,500	1,400	5,000	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
	4/27/11	24,000	750	2,200	420	4,800	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
	2/1/12	15,000	370	350	600	1,300	ND<2	ND<2	ND<2	ND<2	16	ND<200	ND<20	NS ^(d)	NS
	5/9/12	16,000	580	850	800	2,100	ND<2	ND<2	ND<2	ND<2	12	ND<200	ND<20	ND<2	ND<2
	8/8/12	12,000	260	190	470	860	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2
	11/13/12	9,000	170	74	280	540	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2
	2/13/13	17,000	480	480	690	2,000	ND<2	ND<2	ND<2	ND<2	20	ND<200	ND<20	ND<2	ND<2
	4/24/13	9,700	230	160	370	1,200	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2
	8/22/13	23,000	360	430	740	2,300	ND<2	ND<2	ND<2	ND<2	25	ND<200	ND<20	ND<2	ND<2
	11/7/13	7,400	70	94	200	400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	14	ND<90	ND<9	ND<0.9	ND<0.9
	1/22/14	16,000	190	280	460	1,600	ND<0.9	ND<0.9	ND<0.9	ND<0.9	20	ND<90	ND<10	ND<0.9	ND<0.9
6/10/14	50,000	1,600	4,000	1,200	5,700	ND<9	ND<9	ND<9	ND<9	110	ND<900	ND<90	ND<9	ND<9	
IP-2	7/23/08	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
	5/5/10 ^(c)	2,700	66	220	61	240	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/26/11	350	8.9	1.7	4.7	5.7	0.90	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	340	10	4.8	6.3	13	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	160	5.6	3.7	1.3	3.6	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

TABLE 3

GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-2 (cont.)	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/11/14	350	2.4	2.4	2.2	5.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.4	ND<50	ND<5	ND<0.5	ND<0.5
IP-3	7/23/08	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
	5/5/10 ^(c)	430 ^(e)	6.4	22	4.9	21	3.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	4/26/11	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
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	ND<50	0.51	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/11/14	580	2.6	1.0	7.2	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	
IP-4	7/23/08	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
	5/6/10 ^(c)	190	5.4	25	6.9	29	3.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/26/11	ND<50	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
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 3

GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-4 (cont.)	5/8/12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	5.3	ND<0.5	ND<0.5
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	140	ND<0.5	43	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/11/14	70	ND<0.5	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
IP-5	7/23/08	2,000 ^(e)	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
	5/6/10 ^(c)	270	5.7	25	5.9	29	20	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	4/26/11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.72	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	ND<50	ND<0.5	4.1	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	180	ND<0.5	ND<0.5	3.0	6.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/21/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.60	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
6/10/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE 3

**GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-6	7/23/08	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
	5/5/10 ^(c)	8,000 ^(e)	24	100	18	98	0.51	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	4/27/11	ND<50	1.1	0.66	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	57	ND<0.5	11	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/11/14	70	8.6	ND<0.5	ND<0.5	ND<0.5	3.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
IP-7	7/23/08	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
	5/5/10 ^(c)	33,000	49	62	38	69	14	ND<0.9	ND<0.9	ND<0.9	20	ND<90	ND<9	ND<0.9	ND<0.9
	4/27/11	220	8.1	0.69	3.4	1.50	0.95	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE 3

GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-7 (cont.)	4/23/13	ND<50	ND<0.5	5.1	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/11/14	2,100	18	0.77	7.5	2.0	12	ND<0.5	ND<0.5	ND<0.5	82	ND<50	ND<5	ND<0.5	ND<0.5
IP-8	12/16/08	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
	5/5/10 ^(c)	83,000	3,900	13,000	2,400	14,000	ND<25	ND<25	ND<25	ND<25	ND<150	ND<2,500	ND<250	ND<25	ND<25
	4/28/11	13,000	620	2,000	240	2,200	ND<3	ND<3	ND<3	ND<3	27	ND<300	ND<30	ND<3	ND<3
	2/1/12	67,000	2,900	7,300	1,400	11,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	NS	NS
	5/9/12	50,000	2,400	4,900	790	8,600	ND<9	ND<9	ND<9	ND<9	ND<50	ND<900	ND<90	ND<9	ND<9
	8/8/12	63,000	3,500	6,700	980	7,400	ND<9	ND<9	ND<9	ND<9	65	ND<900	ND<90	ND<9	ND<9
	11/14/12	33,000	1,000	2,300	260	4,300	ND<7	ND<7	ND<7	ND<7	47	ND<700	ND<70	ND<7	ND<7
	2/14/13	65,000	3,300	7,100	1,600	9,200	ND<7	ND<7	ND<7	ND<7	110	ND<700	ND<150	ND<7	ND<7
	4/24/13	33,000	1,700	4,200	430	5,600	ND<6	ND<6	ND<6	ND<6	ND<30	ND<600	ND<60	ND<6	ND<6
	8/22/13	19,000	130	440	260	1,900	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<80	ND<4	ND<4
	11/7/13	18,000	400	520	170	1,700	ND<4	ND<4	ND<4	ND<4	23	ND<400	ND<40	ND<4	ND<4
	1/22/14	41,000	550	1,600	560	4,200	ND<4	ND<4	ND<4	ND<4	22	ND<400	ND<40	ND<4	ND<4
6/11/14	52,000	1,200	3,300	940	6,400	ND<5	ND<5	ND<5	ND<5	28	ND<500	ND<50	ND<5	ND<5	
IP-9	12/16/08	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
	5/5/10 ^(c)	92,000	6,000	19,000	2,500	14,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
	4/28/11	38,000	1,400	4,300	860	6,000	ND<6	ND<6	ND<6	ND<6	38	ND<600	ND<60	ND<6	ND<6
	2/1/12	19,000	180	1,200	640	3,100	ND<3	ND<3	ND<3	ND<3	ND<15	ND<300	ND<30	NS	NS
	5/9/12	10,000	14	180	270	780	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5

TABLE 3

**GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-9 (cont.)	8/7/12	11,000	22	240	210	880	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	11/13/12	9,800	22	200	150	690	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	12,000	68	560	280	1,300	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	4/24/13	8,800	42	480	210	1,100	ND<1.5	ND<1.5	ND<1.5	ND<1.5	11	ND<150	ND<15	ND<1.5	ND<1.5
	8/22/13	7,500	14	250	190	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<400	ND<15	ND<1.5	ND<1.5
	11/7/13	1,100	4.9	30	14	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	1/22/14	1,600	1.9	9.7	8.6	16	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/11/14	2,000	ND<0.5	ND<0.5	1.5	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-10	2/11/09	8,100	29	58	170	1,200	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<20	ND<1.5	ND<1.5
	5/3/10 ^(c)	3,600	73	80	140	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	4/26/11	4,300	28	140	110	330	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<8	ND<0.5	ND<0.5
	2/1/12	3,200	8.2	4.6	93	2.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	NS	NS
	5/9/12	3,900	24	38	110	58	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	8/7/12	2,700	15	5.8	31	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/13/12	2,600	12	7.6	4.7	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	2/12/13	6,500	26	270	180	590	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	4/24/13	1,800	12	11	24	81	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	8/22/13	1,100	2.2	ND<0.5	ND<0.5	2.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	810	2.6	1.7	1.5	7.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5

TABLE 3

**GROUNDWATER ANALYTICAL RESULTS - INJECTION WELLS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-10	1/22/14	2,100	7.2	2.7	1.8	7.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
(cont.)	6/10/14	2,600	10	1.8	3.4	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	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), methanol, ethanol, 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) Baseline remediation system values.
- (d) NS - Not sampled.
- (e) Primarily compounds not found in typical Gasoline.

TABLE 4

**EXPANDED ISCO PILOT TEST VOC CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Event	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
MW-2	Baseline	4/23/13	430	10	2.2	3.8	8.5	13	ND<0.5 ^(b)	ND<0.5	ND<0.5	6.6	ND<50	ND<8	ND<0.5	ND<0.5
	Post-Inj #1	6/24/13	1,700	7.2	0.91	12	16	9.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #2	8/21/13	11,000	560	30	430	440	88	ND<0.5	ND<0.5	1.0	48	ND<50	ND<8	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	4,700	140	7.5	160	170	28	ND<0.9	ND<0.9	ND<0.9	22	ND<90	ND<9	ND<0.9	ND<0.9
	1Q14	1/22/14	3,000	140	9.0	68	92	43	ND<0.5	ND<0.5	ND<0.5	36	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/11/14	6,900	520	40	300	320	120	ND<0.5	ND<0.5	1.4	100	ND<80	ND<25	ND<0.5	ND<0.5
MW-6	Baseline	4/24/13	8,600	880	22	89	25	190	ND<1.5	ND<1.5	2.7	700	ND<400	ND<15	ND<1.5	ND<1.5
	Post-Inj #1	6/25/13	6,800	350	7.0	26	9.3	81	ND<0.9	ND<0.9	1.0	280	ND<800	ND<9	ND<0.9	ND<0.9
	Post-Inj #2	8/22/13	14,000	1,500	59	290	150	110	ND<1.5	ND<1.5	ND<1.5	93	ND<400	ND<15	ND<1.5	ND<1.5
	Post-Inj #3	11/7/13	12,000	1,200	62	190	81	100	ND<2.5	ND<2.5	ND<2.5	66	ND<250	ND<25	ND<2.5	ND<2.5
	1Q14	1/22/14	15,000	1,100	37	120	52	110	ND<2.5	ND<2.5	ND<2.5	190	ND<250	ND<25	ND<2.5	ND<2.5
	2Q14	6/10/14	11,000	860	20	50	20	120	ND<1.5	ND<1.5	ND<1.5	280	ND<150	ND<15	ND<1.5	ND<1.5
MW-7	Baseline	4/23/13	720	0.65	0.61	1.0	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
	Post-Inj #1	6/24/13	1,700	1.3	ND<0.5	2.7	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #2	8/21/13	880	0.54	ND<0.5	1.7	0.82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	330	ND<0.5	ND<0.5	0.51	0.73	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1Q14	1/22/14	1,000	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
	2Q14	6/10/14	1,000	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<80	ND<5	ND<0.5	ND<0.5
MW-8	Baseline	4/23/13	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
	Post-Inj #1	6/25/13	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
	Post-Inj #2	8/22/13	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
	Post-Inj #3	11/7/13	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
	1Q14	1/22/14	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
	2Q14	6/11/14	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	80	ND<5	ND<0.5	ND<0.5
MW-9	Baseline	4/23/13	1,900	4.5	0.75	1.7	1.0	3.4	ND<0.5	ND<0.5	ND<0.5	5.0	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #1	6/25/13	2,800	20	0.91	3.8	2.7	6.0	ND<0.5	ND<0.5	ND<0.5	29	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #2	8/22/13	1,500	20	0.70	1.7	0.84	9.0	ND<0.5	ND<0.5	ND<0.5	40	ND<50	ND<5	ND<0.5	ND<0.5

TABLE 4

**EXPANDED ISCO PILOT TEST VOC CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Event	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
MW-9 (cont.)	Post-Inj #3	11/7/13	1,400	3.1	ND<0.5	0.70	0.58	4.2	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<5	ND<0.5	ND<0.5
	1Q14	1/22/14	2,000	2.4	ND<0.5	0.81	0.79	2.7	ND<0.5	ND<0.5	ND<0.5	7.6	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/11/14	780	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	ND<0.5	ND<0.5	5.4	ND<50	ND<5	ND<0.5	ND<0.5
MW-10	Baseline	4/22/13	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
	Post-Inj #1	6/25/13	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
	Post-Inj #2	8/21/13	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
	Post-Inj #3	11/7/13	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
	1Q14	1/21/14	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
	2Q14	6/10/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-11	Baseline	4/24/13	5,800	16	18	140	640	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	Post-Inj #1	6/24/13	8,000	24	34	190	830	ND<0.9	ND<0.9	ND<0.9	ND<0.9	5.8	ND<90	ND<9	ND<0.9	ND<0.9
	Post-Inj #2	8/22/13	9,600	26	32	260	940	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.6	ND<200	ND<20	ND<0.9	ND<0.9
	Post-Inj #3	11/7/13	8,800	50	54	380	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	12	ND<150	ND<15	ND<1.5	ND<1.5
	1Q14	1/22/14	15,000	44	45	390	910	ND<1.5	ND<1.5	ND<1.5	ND<1.5	7.7	ND<150	ND<15	ND<1.5	ND<1.5
	2Q14	6/10/14	660	3.7	1.2	7.0	5.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-12	Baseline	4/24/13	1,400	2.2	0.78	7.7	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<100	ND<20	ND<0.5	ND<0.5
	Post-Inj #1	6/25/13	4,400	8.8	5.2	26	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #2	8/22/13	4,500	15	2.4	33	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	4,600	15	2.4	47	13	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1Q14	1/22/14	3,400	4.3	1.5	12	2.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/10/14	4,500	10	2.9	67	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-1	Baseline	4/24/13	9,700	230	160	370	1,200	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2
	Post-Inj #2	8/22/13	23,000	360	430	740	2,300	ND<2	ND<2	ND<2	ND<2	25	ND<200	ND<20	ND<2	ND<2
	Post-Inj #3	11/7/13	7,400	70	94	200	400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	14	ND<90	ND<9	ND<0.9	ND<0.9
	1Q14	1/22/14	16,000	190	280	460	1,600	ND<0.9	ND<0.9	ND<0.9	ND<0.9	20	ND<90	ND<10	ND<0.9	ND<0.9
	2Q14	6/10/14	50,000	1,600	4,000	1,200	5,700	ND<9	ND<9	ND<9	ND<9	110	ND<900	ND<90	ND<9	ND<9

TABLE 4

**EXPANDED ISCO PILOT TEST VOC CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Event	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
IP-5	Baseline	4/23/13	ND<50	ND<0.5	4.1	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
	Post-Inj #2	8/21/13	NS ^(c)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Post-Inj #3	11/7/13	180	ND<0.5	ND<0.5	3.0	6.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1Q14	1/21/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.60	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/10/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-8	Baseline	4/24/13	33,000	1,700	4,200	430	5,600	ND<6	ND<6	ND<6	ND<6	ND<30	ND<600	ND<60	ND<6	ND<6
	Post-Inj #2	8/22/13	19,000	130	440	260	1,900	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<80	ND<4	ND<4
	Post-Inj #3	11/7/13	18,000	400	520	170	1,700	ND<4	ND<4	ND<4	ND<4	23	ND<400	ND<40	ND<4	ND<4
	1Q14	1/22/14	41,000	550	1,600	560	4,200	ND<4	ND<4	ND<4	ND<4	22	ND<400	ND<40	ND<4	ND<4
	2Q14	6/11/14	52,000	1,200	3,300	940	6,400	ND<5	ND<5	ND<5	ND<5	28	ND<500	ND<50	ND<5	ND<5
IP-9	Baseline	4/24/13	8,800	42	480	210	1,100	ND<1.5	ND<1.5	ND<1.5	ND<1.5	11	ND<150	ND<15	ND<1.5	ND<1.5
	Post-Inj #2	8/22/13	7,500	14	250	190	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<400	ND<15	ND<1.5	ND<1.5
	Post-Inj #3	11/7/13	1,100	4.9	30	14	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	1Q14	1/22/14	1,600	1.9	9.7	8.6	16	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/11/14	2,000	ND<0.5	ND<0.5	1.5	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-10	Baseline	4/24/13	1,800	12	11	24	81	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	Post-Inj #2	8/22/13	1,100	2.2	ND<0.5	ND<0.5	2.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	810	2.6	1.7	1.5	7.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1Q14	1/22/14	2,100	7.2	2.7	1.8	7.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	2Q14	6/10/14	2,600	10	1.8	3.4	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
DW-1	Baseline	4/22/13	ND<50	ND<0.5	ND<0.5	ND<0.5	0.78	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #1	6/24/13	12,000	110	66	280	860	13	ND<0.5	ND<0.5	ND<0.5	11	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #2	8/21/13	1,100	18	5.8	34	82	5.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	5,200	69	13	130	200	18	ND<0.5	ND<0.5	ND<0.5	15	ND<50	ND<8	ND<0.5	ND<0.5
	1Q14	1/22/14	5,000	51	13	98	110	12	ND<0.5	ND<0.5	ND<0.5	11	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/11/14	3,600	56	9.4	130	220	18	ND<0.5	ND<0.5	ND<0.5	14	ND<50	ND<5	ND<0.5	ND<0.5

TABLE 4

**EXPANDED ISCO PILOT TEST VOC CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Event	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl- benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
DW-2	Baseline	4/24/13	4,500	320	7.2	26	9.5	100	ND<0.5	ND<0.5	1.3	370	ND<80	ND<5	ND<0.5	ND<0.5
	Post-Inj #1	6/25/13	4,900	250	6.2	58	26	100	ND<0.5	ND<0.5	1.2	400	ND<50	ND<8	ND<0.5	ND<0.5
	Post-Inj #2	8/22/13	8,300	600	23	96	42	240	ND<0.5	ND<0.5	2.5	500	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	6,500	520	18	57	17	150	ND<0.9	ND<0.9	2.2	310	ND<90	ND<9	ND<0.9	ND<0.9
	1Q14	1/22/14	8,500	490	14	55	15	150	ND<0.9	ND<0.9	1.9	380	ND<300	ND<9	ND<0.9	ND<0.9
	2Q14	6/11/14	4,400	330	6.5	26	7.3	100	ND<0.5	ND<0.5	1.3	390	ND<200	ND<5	ND<0.5	ND<0.5
DW-3	Baseline	4/23/13	66	ND<0.5	2.3	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
	Post-Inj #1	6/25/13	5,600	1.1	1.1	120	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #2	8/21/13	840	1.4	ND<0.5	3.2	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	960	ND<0.5	ND<0.5	5.1	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1Q14	1/22/14	860	ND<0.5	ND<0.5	3.0	1.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/11/14	1,900	0.64	ND<0.50	23	9.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
DW-5	Baseline	4/24/13	3,000	32	2.5	38	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	Post-Inj #1	6/25/13	120,000	120	ND<4	1,400	2,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<200	ND<4	ND<4
	Post-Inj #2	8/22/13	22,000	58	11	770	1,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
	Post-Inj #3	11/7/13	26,000	62	12	1,000	1,400	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
	1Q14	1/22/14	17,000	66	6.1	440	470	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<400	ND<40	ND<2.5	ND<2.5
	2Q14	6/11/14	18,000	53	4.3	340	410	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
DW-6	Baseline	4/24/13	1,000	2.9	1.1	2.1	0.98	1.8	ND<0.5	ND<0.5	ND<0.5	6.2	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #1	6/25/13	7,000	23	3.0	80	13	9.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #2	8/22/13	5,700	28	3.4	80	11	12	ND<0.5	ND<0.5	ND<0.5	37	ND<90	ND<8	ND<0.5	ND<0.5
	Post-Inj #3	11/7/13	2,400	14	1.7	5.6	3.1	10	ND<0.5	ND<0.5	ND<0.5	35	ND<80	ND<5	ND<0.5	ND<0.5
	1Q14	1/22/14	3,000	6.8	0.98	3.6	2.9	10	ND<0.5	ND<0.5	ND<0.5	36	ND<50	ND<5	ND<0.5	ND<0.5
	2Q14	6/11/14	5,400	19	3.0	39	5.6	9.2	ND<0.5	ND<0.5	ND<0.5	35	ND<50	ND<8	ND<0.5	ND<0.5
DW-7	Baseline	4/23/13	3,300	230	9.2	22	10	50	ND<0.5	ND<0.5	0.55	160	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #1	6/25/13	27,000	590	32	960	640	100	ND<0.5	ND<0.5	0.95	330	ND<80	ND<20	ND<4	ND<0.5
	Post-Inj #2	8/22/13	15,000	420	18	520	320	96	ND<2.5	ND<2.5	ND<2.5	310	ND<250	ND<25	ND<2.5	ND<2.5

TABLE 4

EXPANDED ISCO PILOT TEST VOC CONCENTRATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Event	Sample Date	TPHg ^(a) (µg/l)	Benzene ^(a) (µg/l)	Toluene ^(a) (µg/l)	Ethyl-benzene ^(a) (µg/l)	Total Xylenes ^(a) (µg/l)	MTBE ^(a) (µg/l)	DIPE ^(a) (µg/l)	ETBE ^(a) (µg/l)	TAME ^(a) (µg/l)	TBA ^(a) (µg/l)	Methanol ^(a) (µg/l)	Ethanol ^(a) (µg/l)	1,2-DCA ^(a) (µg/l)	EDB ^(a) (µg/l)
DW-7 (cont.)	Post-Inj #3	11/7/13	9,700	260	8.4	200	63	52	ND<1.5	ND<1.5	ND<1.5	170	ND<150	ND<15	ND<1.5	ND<1.5
	1Q14	1/22/14	15,000	380	15	430	200	77	ND<1.5	ND<1.5	ND<1.5	230	ND<150	ND<15	ND<1.5	ND<1.5
	2Q14	6/11/14	12,000	380	13	370	190	79	ND<1.5	ND<1.5	ND<1.5	240	ND<150	ND<15	ND<1.5	ND<1.5
DW-8	Baseline	4/24/13	5,900	350	370	140	790	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.0	ND<200	ND<80	ND<0.9	ND<0.9
	Post-Inj #1	6/24/13	55,000	2,200	3,200	2,100	7,400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	56	ND<90	ND<50	ND<0.9	ND<0.9
	Post-Inj #2	8/22/13	16,000	380	240	500	1,400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	Post-Inj #3	11/7/13	56,000	1,800	2,800	2,100	7,900	ND<2.5	ND<2.5	ND<2.5	ND<2.5	37	ND<250	ND<25	ND<2.5	ND<2.5
	1Q14	1/22/14	40,000	1,100	1,200	1,200	4,300	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
	2Q14	6/11/14	52,000	2,400	2,100	1,700	6,400	ND<7	ND<7	ND<7	ND<7	67	ND<700	ND<70	ND<7	ND<7
DW-9	Baseline	4/24/13	3,200	18	1.7	7.8	7.2	21	ND<0.5	ND<0.5	ND<0.5	67	ND<50	ND<5	ND<0.5	ND<0.5
	Post-Inj #1	6/25/13	27,000	490	17	1,100	430	30	ND<4	ND<4	ND<4	62	ND<400	ND<40	ND<4	ND<4
	Post-Inj #2	8/22/13	19,000	320	13	690	240	28	ND<4	ND<4	ND<4	87	ND<2,000	ND<40	ND<4	ND<4
	Post-Inj #3	11/7/13	8,000	120	5.9	100	38	25	ND<1.5	ND<1.5	ND<1.5	73	ND<150	ND<15	ND<1.5	ND<1.5
	1Q14	1/22/14	14,000	180	6.7	200	65	27	ND<1.5	ND<1.5	ND<1.5	77	ND<150	ND<15	ND<1.5	ND<1.5
	2Q14	6/11/14	13,000	380	11	300	81	41	ND<2.5	ND<2.5	ND<2.5	100	ND<250	ND<25	ND<2.5	ND<2.5

- (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), methanol, ethanol, 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) NS - Not sampled.

TABLE 5

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
MW-2	4/23/13	1.7	92	ND<0.015 ^(h)	ND<0.005	ND<0.1	0.12	54	ND<1	ND<0.1	57,800	439	643	925
	6/24/13	0.83	88	ND<0.015	ND<0.005	1.8	0.61	54	ND<1	ND<0.1	73,100	798	602	875
	8/21/13	ND<1	39	ND<0.015	ND<0.005	0.71	2.3	65	ND<1	0.33	58,600	2,020	637	780
	11/7/13	ND<1	72	ND<0.015	ND<0.005	1.0	2.5	60	ND<1	ND<0.1	35,600	1,150	586	980
	1/22/14	ND<0.5	61	ND<0.015	ND<0.005	1.2	2.9	54	ND<1	0.59	69,700	2,130	640	760
	6/11/14	ND<0.1	2.7	ND<0.015	ND<0.005	2.6	2.8	74	ND<1	0.51	64,800	4,260	676	790
MW-6	6/25/13	ND<1	120	0.048	0.017	5.8	1.4	240	ND<1	0.37	27,900	1,390	847	1,360
	8/22/13	ND<0.5	2.6	ND<0.015	ND<0.005	0.90	1.9	87	ND<1	0.40	53,400	5,370	586	745
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	1.0	2.1	75	ND<1	0.61	30,300	4,210	497	955
	1/22/14	ND<1	ND<5	ND<0.015	ND<0.005	1.2	2.1	68	ND<1	0.82	47,200	7,210	539	695
	6/10/14	ND<0.1	ND<0.5	ND<0.015	ND<0.005	1.4	2.2	78	ND<1	0.60	17,000	2,980	604	730
MW-7	4/23/13	ND<0.1	21	ND<0.015	ND<0.005	ND<0.1	1.9	58	ND<1	ND<0.1	21,500	1,190	418	615
	6/24/13	0.13	27	ND<0.015	0.18	53	5.2	68	ND<1	0.12	24,900	1,300	437	670
	8/21/13	ND<1	34	ND<0.015	ND<0.005	0.36	1.7	110	ND<1	0.11	21,400	2,770	598	790
	11/7/13	ND<0.5	27	ND<0.015	ND<0.005	0.21	1.5	74	ND<1	ND<0.1	21,100	358	418	605
	1/22/14	ND<0.1	23	ND<0.015	ND<0.005	0.42	1.6	71	ND<1	ND<0.1	25,100	1,330	448	600
	6/10/14	ND<0.1	15	ND<0.015	ND<0.005	0.75	1.9	88	ND<1	0.17	33,600	281	574	700
MW-8	6/25/13	1.5	64	ND<0.015	0.042	12	2.0	54	ND<1	ND<0.1	17,700	3.8	370	730
	8/22/13	1.3	63	ND<0.015	ND<0.005	ND<0.1	0.90	50	ND<1	ND<0.1	21,500	4.4	378	680
	11/7/13	5.1	60	ND<0.015	ND<0.005	ND<0.1	0.51	55	2.4	ND<0.1	12,300	1.2	373	870
	1/22/14	1.3	64	ND<0.015	ND<0.005	ND<0.1	0.55	52	ND<1	ND<0.1	17,500	7.6	380	605
	6/10/14	NS ⁽ⁱ⁾	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	6/25/13	ND<0.5	10	ND<0.015	0.029	9.0	2.3	71	ND<1	0.44	25,400	385	510	705
	8/22/13	ND<0.5	4.1	ND<0.015	ND<0.005	1.9	1.8	95	ND<1	0.29	35,200	381	583	760
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	1.9	1.8	69	ND<1	0.57	21,200	280	485	900
	1/22/14	ND<0.5	ND<2.5	ND<0.015	ND<0.005	1.8	1.7	57	ND<1	0.62	32,200	426	473	600
	6/10/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 5

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
MW-10	6/25/13	1.2	80	ND<0.015	0.066	18	0.57	54	9.6	ND<0.1	13,100	ND<1	552	840
	8/21/13	1.1	83	ND<0.015	0.0091	ND<0.1	0.058	56	9.6	ND<0.1	16,700	ND<1	561	900
	11/7/13	1.2	89	ND<0.015	0.015	ND<0.1	0.022	61	14	ND<0.1	11,500	20	556	1,080
	1/21/14	1.4	82	ND<0.015	0.014	ND<0.1	0.040	55	15	ND<0.1	19,200	14.7	557	795
	6/10/14	1.1	80	ND<0.015	ND<0.005	ND<0.1	0.34	52	5.4	ND<0.1	6,210	1.4	562	805
MW-11	4/24/13	0.32	80	0.020	ND<0.005	ND<0.1	1.3	670	ND<1	ND<0.1	75,400	65	2,020	2,260
	6/24/13	ND<0.5	190	0.056	0.021	10	2.0	1,600	1.4	ND<0.1	4,560	325	3,100	4,210
	8/22/13	ND<0.5	260	0.048	ND<0.005	0.12	0.25	1,200	ND<1	ND<0.1	612	133	2,610	3,510
	11/7/13	ND<1	190	0.049	ND<0.005	0.13	0.45	1,300	ND<1	ND<0.1	21,400	185	556	3,950
	1/22/14	ND<1	100	0.029	ND<0.005	0.12	0.54	850	ND<1	0.11	48,500	165	2,250	2,720
	6/10/14	ND<0.1	7.2	ND<0.015	0.0052	1.7	0.073	78	ND<1	0.36	1,910	16.8	626	770
MW-12	6/25/13	1.3	23	ND<0.015	0.045	14	1.7	80	ND<1	ND<0.1	9,940	2,410	450	675
	8/22/13	0.92	15	ND<0.015	ND<0.005	0.14	1.6	64	ND<1	ND<0.1	24,600	2,800	420	640
	11/7/13	ND<0.5	14	ND<0.015	ND<0.005	0.37	1.7	66	ND<1	0.20	18,000	1,980	421	850
	1/22/14	1.8	33	ND<0.015	ND<0.005	ND<0.1	1.1	62	ND<1	ND<0.1	24,300	2,250	402	610
	6/10/14	ND<0.1	38	0.016	ND<0.005	2.6	1.0	58	ND<1	0.45	10,000	1,780	425	600
IP-1	4/24/13	ND<0.1	0.54	ND<0.015	ND<0.005	ND<0.1	2.9	68	ND<1	ND<0.1	19,200	1,400	408	525
	6/24/13	0.61	620	0.37	0.043	26	0.95	4,400	36	ND<0.1	596	317	9,160	11,100
	8/22/13	ND<1	730	0.13	0.012	ND<0.1	0.021	2,800	13	ND<0.1	702	1,040	5,340	7,740
	11/7/13	ND<1	1,100	0.35	0.066	0.11	0.011	8,900	92	ND<0.1	ND<1.7	136	20,700	27,700
	1/22/14	ND<1	680	0.20	0.0065	0.27	0.031	2,600	1.1	ND<0.1	352	842	6,570	9,800
	6/10/14	ND<0.1	180	0.14	ND<0.005	0.60	0.079	1,700	ND<1	ND<0.1	598	2,650	3,060	3,960
IP-5	6/24/13	0.14	32	0.017	0.23	74	4.6	43	ND<1	ND<0.1	14,900	271	334	545
	11/7/13	ND<0.5	41	ND<0.015	ND<0.005	ND<0.1	0.17	38	ND<1	ND<0.1	4,280	22	311	510
	1/21/14	0.39	38	ND<0.015	ND<0.005	ND<0.1	0.41	40	ND<1	ND<0.1	11,400	334	313	470
	6/10/14	ND<0.1	27	ND<0.015	ND<0.005	ND<0.1	1.8	42	ND<1	ND<0.1	4,900	202	343	550

TABLE 5

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
IP-8	2/14/13	0.11	14	ND<0.015	ND<0.005	0.46	3.2	100	ND<1	ND<0.1	30,700	1,550	659	810
	8/22/13	1.5	1,200	0.24	0.044	ND<0.1	0.0056	13,000	49	ND<0.1	338	17	28,200	34,900
	11/7/13	ND<1	750	0.14	0.026	ND<0.1	0.017	5,800	13	ND<0.1	221	122	8,900	10,800
	1/22/14	ND<1	840	0.21	0.010	ND<0.1	0.043	3,600	9.7	ND<0.1	632	216	7,080	11,800
	6/11/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IP-9	2/13/13	ND<0.5	440	0.57	0.039	2.2	0.16	3,000	30	ND>0.1	5,990	112	6,100	7,920
	8/22/13	1.4	880	0.24	0.099	0.14	0.0067	10,000	110	ND<0.1	266	1.5	25,200	38,800
	11/7/13	ND<0.5	260	0.019	0.0067	ND<0.1	ND<0.005	2,500	7.1	ND<0.1	294	3.2	5,600	654
	1/22/14	ND<0.5	320	0.10	0.022	ND<0.1	0.014	3,500	16	ND<0.1	505	11	6,280	6,750
	6/10/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IP-10	4/24/13	ND<0.1	1.4	ND<0.015	ND<0.005	0.12	2.8	52	ND<1	0.11	10,300	597	296	420
	6/24/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.83	2.7	57	ND<1	0.19	5,050	795	290	505
	8/22/13	ND<0.5	2.7	ND<0.015	ND<0.005	0.60	2.6	55	ND<1	0.14	12,800	480	285	480
	11/7/13	ND<0.5	3.8	ND<0.015	ND<0.005	0.63	2.7	56	ND<1	ND<0.1	4,960	577	294	495
	1/22/14	ND<0.1	1.4	ND<0.015	ND<0.005	1.1	2.8	58	ND<1	0.30	18,100	1,150	306	455
	6/10/14	ND<0.1	1.7	ND<0.015	ND<0.005	0.86	2.7	64	ND<1	0.16	4,850	1,160	339	500
DW-1	6/24/13	ND<0.1	45	ND<0.015	0.0096	3.0	1.2	200	ND<1	ND<0.1	36,000	817	744	1,030
	11/7/13	ND<0.5	27	ND<0.015	ND<0.005	ND<0.1	4.5	180	ND<1	ND<0.1	29,700	1,000	820	1,300
	1/22/14	ND<1	13	ND<0.015	ND<0.005	0.91	4.1	140	ND<1	0.14	57,100	2,030	715	865
	6/11/14	ND<0.1	27	ND<0.015	ND<0.005	ND<0.1	3.1	140	ND<1	ND<0.1	46,500	1,270	690	815
DW-2	6/25/13	ND<1	79	0.021	0.032	11	1.5	210	ND<1	ND<0.25	13,700	1,420	715	1,100
	8/22/13	ND<0.5	12	ND<0.015	ND<0.005	0.39	2.2	100	ND<1	ND<0.1	64,300	2,580	638	800
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.81	2.6	77	ND<1	ND<0.1	19,900	2,620	572	1,030
	1/22/14	ND<1	ND<5	ND<0.015	ND<0.005	0.99	2.4	75	ND<1	0.47	50,100	3,260	572	705
	6/11/14	ND<0.1	16	ND<0.015	ND<0.005	1.0	2.4	120	ND<1	0.30	10,100	1,780	664	820
DW-3	6/25/13	1.2	51	ND<0.015	0.030	8.6	2.1	51	ND<1	ND<0.1	12,900	666	379	645
	8/21/13	2.4	53	ND<0.015	ND<0.005	ND<0.1	1.0	53	ND<1	ND<0.1	14,600	1,390	380	595

TABLE 5

**EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076**

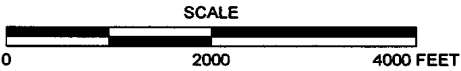
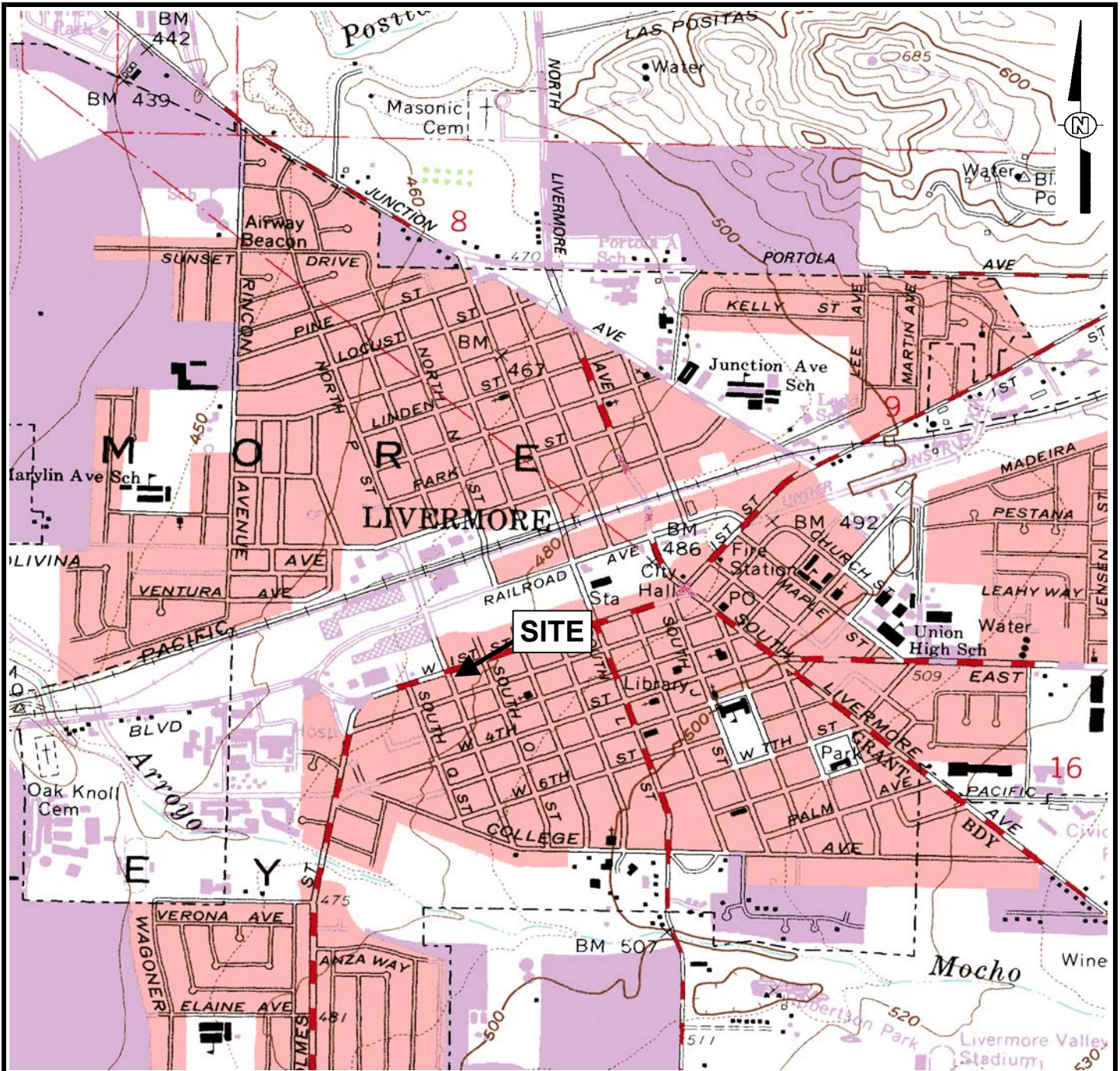
Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
DW-3 (cont.)	11/7/13	1.5	50	ND<0.015	ND<0.005	ND<0.1	1.1	54	ND<1	ND<0.1	11,200	359	373	795
	1/22/14	3.0	59	ND<0.015	ND<0.005	ND<0.1	0.63	52	ND<1	ND<0.1	15,500	450	364	575
	6/11/14	1.1	56	ND<0.015	ND<0.005	ND<0.1	0.87	54	ND<1	ND<0.1	10,200	426	401	170
DW-5	6/25/13	ND<1	140	0.041	0.20	73	3.0	470	ND<1	ND<0.25	1,560	1,500	1,040	1,600
	8/22/13	ND<2	290	0.025	ND<0.005	ND<0.1	0.41	620	ND<1	ND<0.1	3,510	1,620	1,220	2,020
	11/7/13	ND<1	120	ND<0.015	ND<0.005	ND<0.1	0.91	370	ND<1	ND<0.1	12,100	1,400	219	1,520
	1/22/14	ND<2	60	ND<0.015	ND<0.005	ND<0.1	1.2	250	ND<1	ND<0.1	16,600	1,940	804	1,080
	6/11/14	ND<1	26	ND<0.015	ND<0.005	0.14	1.0	290	ND<1	ND<0.1	22,800	3,080	788	1,040
DW-6	6/25/13	ND<0.5	12	0.028	0.32	96	4.4	79	ND<1	0.14	20,400	2,670	460	655
	8/22/13	ND<0.5	7.8	ND<0.015	ND<0.005	0.83	2.2	57	ND<1	0.59	27,700	2,070	430	600
	11/7/13	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.73	2.2	52	ND<1	0.21	9,950	890	419	880
	1/22/14	ND<0.5	ND<2.5	ND<0.015	ND<0.005	0.69	2.2	50	ND<1	0.32	27,500	1,890	432	560
	6/11/14	ND<0.1	4.1	ND<0.015	ND<0.005	1.0	2.2	54	ND<1	0.42	18,300	3,210	431	575
DW-7	6/25/13	ND<0.5	76	0.033	0.28	93	4.1	260	ND<1	ND<0.25	12,100	4,540	760	1,200
	8/22/13	ND<1	50	ND<0.015	ND<0.005	0.12	1.2	170	ND<1	ND<0.1	20,100	3,720	680	955
	11/7/13	ND<1	35	ND<0.015	ND<0.005	0.45	2.2	100	ND<1	0.24	13,000	4,690	523	710
	1/22/14	ND<1	20	ND<0.015	ND<0.005	0.61	2.4	100	ND<1	0.23	40,400	6,940	572	755
	6/11/14	ND<0.1	10	ND<0.015	ND<0.005	0.63	2.4	120	ND<1	0.13	39,200	4,850	638	800
DW-8	4/24/13	ND<0.1	5.1	ND<0.015	ND<0.005	ND<0.1	ND<0.005	41	2.2	ND<0.1	13.9	470	232	310
	6/24/13	ND<0.5	10	ND<0.015	0.013	8.8	4.1	140	ND<1	ND<0.1	22,500	1,710	750	1,020
	8/22/13	ND<1	ND<5	ND<0.015	ND<0.005	0.13	2.5	74	ND<1	0.10	22,900	1,230	398	570
	11/7/13	ND<1	ND<5	ND<0.015	ND<0.005	2.0	4.0	160	ND<1	ND<0.1	24,300	511	778	1,120
	1/22/14	ND<2	ND<10	ND<0.015	ND<0.005	1.8	3.0	110	ND<1	0.11	19,100	2,580	527	625
	6/11/14	ND<0.1	1.1	ND<0.015	ND<0.005	2.8	3.3	170	ND<1	0.67	55,300	3,430	790	970
DW-9	6/25/13	ND<1	6.6	0.020	0.34	110	4.8	69	ND<1	0.40	30,300	4,070	460	660
	8/22/13	ND<1	ND<5	ND<0.015	ND<0.005	1.0	2.3	68	ND<1	0.17	29,600	3,000	470	610
	11/7/13	ND<1	ND<5	ND<0.015	ND<0.005	0.82	2.3	73	ND<1	ND<0.1	9,660	3,330	461	625

TABLE 5

EXPANDED ISCO PILOT TEST GENERAL CHEMISTRY CONCENTRATIONS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date	Nitrate ^(a) (mg/l)	Sulfate ^(a) (mg/l)	Arsenic ^(b) (mg/l)	Chromium ^(b) (mg/l)	Iron ^(b) (mg/l)	Manganese ^(b) (mg/l)	Sodium ^(b) (mg/l)	Hex Chrome ^(c) (µg/l)	Fe(2+) ^(d) (mg/l)	CO ₂ ^(e) (µg/l)	CH ₄ ^(e) (µg/l)	Alk ^(f) (mg/l)	TDS ^(g) (mg/l)
DW-9	1/22/14	ND<1	ND<5	ND<0.015	ND<0.005	0.84	2.3	64	ND<1	ND<0.1	24,800	4,940	469	630
(cont.)	6/11/14	ND<0.1	ND<0.5	ND<0.015	ND<0.005	1.3	2.2	69	ND<1	0.42	33,100	5,910	488	625

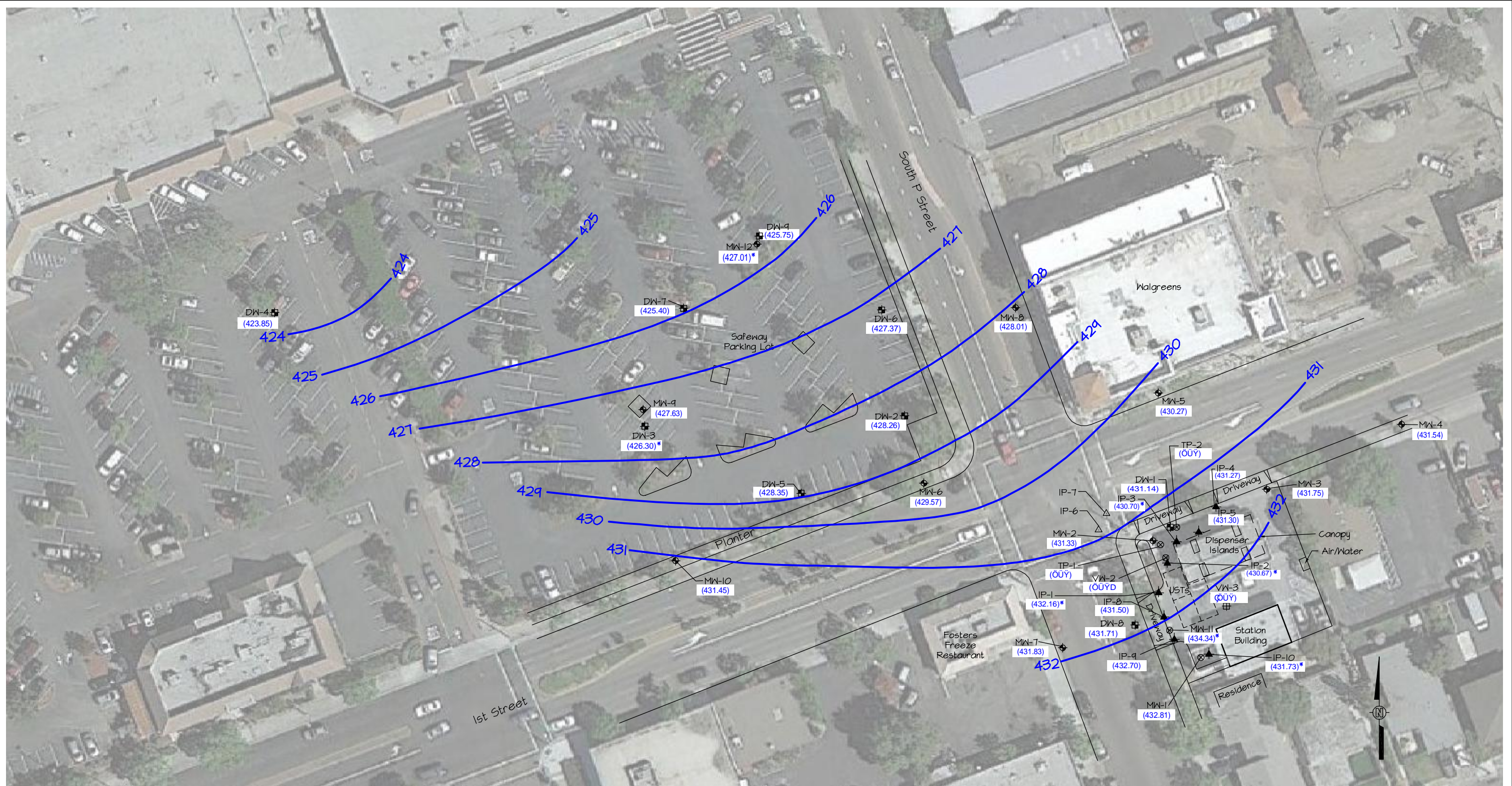
- (a) Nitrate and sulfate analyzed by EPA Method 300.0; reported in milligrams per liter (mg/l).
- (b) Arsenic, chromium, iron, manganese, and sodium analyzed by EPA Method 6010B; reported in milligrams per liter (mg/l).
- (c) Hexavalent chromium (Hex Chrome) analyzed by EPA Method 7199; reported in micrograms per liter (µg/l).
- (d) Ferrous Iron (Fe (2+)) analyzed by Standard Method 3500-Fe D; reported in milligrams per liter (mg/l).
- (e) Carbon dioxide (CO₂) and methane (CH₄) analyzed by EPA Method RSK-175M; reported in micrograms per liter (µg/l).
- (f) Total alkalinity as CaCO₃ analyzed by Standard Method 2320B; reported in milligrams per liter (mg/l).
- (g) Total dissolved solids (TDS) analyzed by Standard Method 2540 C; reported in milligrams per liter (mg/l).
- (h) ND - Not detected at the reporting limit listed.
- (i) NS - Not sampled.



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

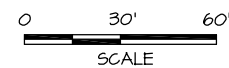
ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
SITE LOCATION MAP			
PROJECT NO. 01LV	DRAWN BY MP	CHECKED BY MP	APPROVED BY JG
FILE NO. Site Map.xls		FIGURE 1	

01LV11B-20425.dwg
7/3/2014 5:59PM



Legend

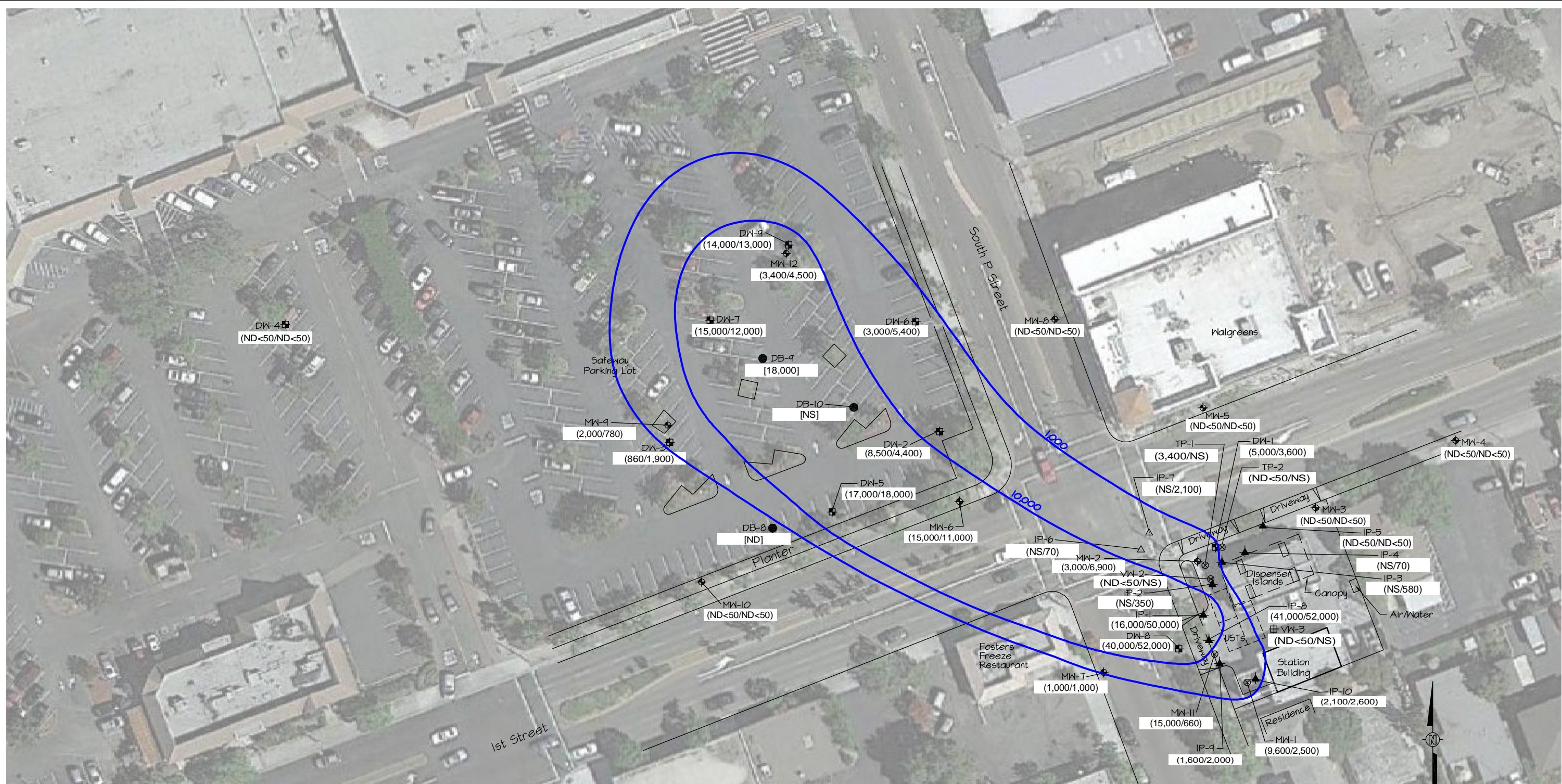
- MW-7 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VN-2 Vapor Extraction Well
- TP-1 Monitoring Well/Vapor Extraction Well
- (431.45) Groundwater Elevation (Feet Above MSL) Measured 10 June 2014
- 432 Groundwater Contour
- * Groundwater Elevation Not Used for Contours



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
25	20	MY	8/15/13	Second Quarter 2013 Monitoring Report
	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
	23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report
	24	MY	5/15/14	First Quarter 2014 Monitoring Report
25	MY	7/15/14	Second Quarter 2014 Monitoring Report	

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
GROUNDWATER ELEVATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20425.DWG		FIGURE 2	

7/3/2014 5:15PM 01LV11B-20525.dwg



Legend

- MW-7 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VW-3 Vapor Extraction Well
- TP-1 Monitoring Well/Vapor Extraction Well

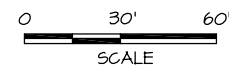
(ND<0.5/ND<0.5) Previous Quarter/Current Quarter Total Petroleum Hydrocarbons as Gasoline (TPHg) Results in µg/L

1000 TPHg Concentration Contour (µg/L), Queried Where Uncertain

ND Not Detected at Laboratory Reporting Limit

NS Not Sampled

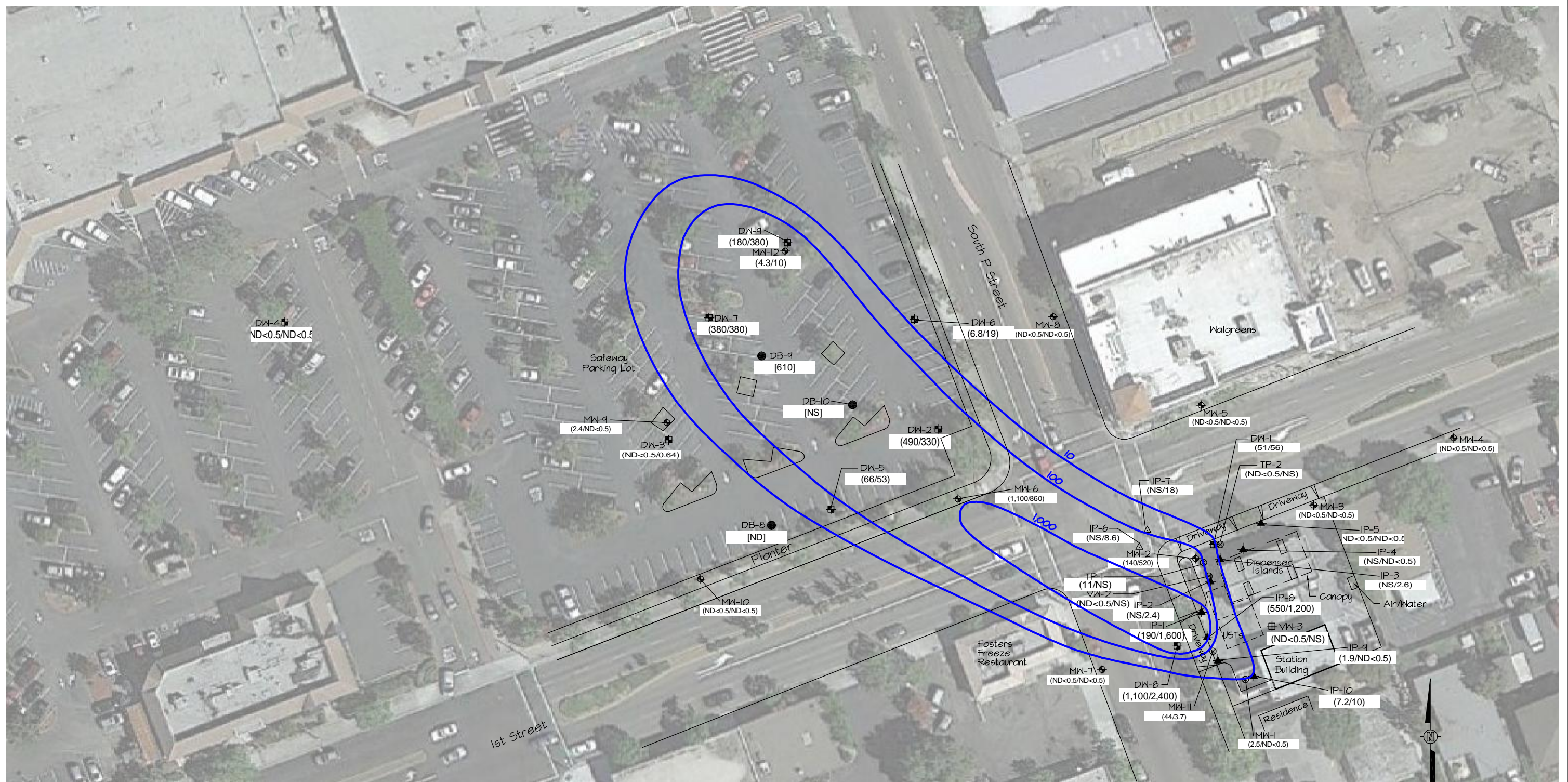
DB-8 June 2012 Soil Boring with 55-Foot Grab Groundwater Sample Benzene Results in µg/L
[ND]



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
25	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
	23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report
	24	MY	5/15/14	First Quarter 2014 Monitoring Report
	25	MY	7/15/14	Second Quarter 2014 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
TPHg CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20525.DWG		FIGURE 3	

7/3/2014 5:00PM 01LV11B-20625.dwg



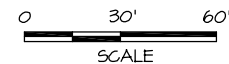
Legend

- MW-7 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VW-3 Vapor Extraction Well
- TP-1 Monitoring Well/Vapor Extraction Well

(ND<0.5/ND<0.5) Previous Quarter/Current Quarter Benzene Results in µg/L

1,000 Benzene Concentration Contour (µg/L), Queried Where Uncertain

- ND Not Detected at Laboratory Reporting Limit
- NS Not Sampled
- DB-8 June 2012 Soil Boring with 55-Foot Grab Groundwater Sample Benzene Results in µg/L
- [ND] [ND]



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
25	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
	23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report
	24	MY	5/15/14	First Quarter 2014 Monitoring Report
	25	MY	7/15/14	Second Quarter 2014 Monitoring Report

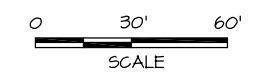
ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
BENZENE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20625.DWG		FIGURE 4	



01LV11B-20725.dwg
7/3/2014 4:47PM

- Legend**
- MW-7 Groundwater Monitoring Well
 - DW-1 Deep Groundwater Monitoring Well
 - IP-1 Injection Well
 - IP-6 Angled Injection Well Screen
 - VW-3 Vapor Extraction Well
 - TP-1 Monitoring Well/Vapor Extraction Well

- (ND<0.5/ND<0.5) Previous Quarter/Current Quarter Methyl Tert-Butyl Ether (MTBE) Results in µg/L
- 100 MTBE Concentration Contour (µg/L), Queried Where Uncertain
- ND Not Detected at Laboratory Reporting Limit
- NS Not Sampled
- DB-8 June 2012 Soil Boring with 55-Foot Grab Groundwater Sample MTBE Results in µg/L
- [ND]



REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
	21	MY	11/15/13	Third Quarter 2013 Monitoring Report
	22	MY	2/15/14	Fourth Quarter 2013 Monitoring Report
	23	MY	3/15/14	Fourth Quarter 2013 Monitoring Report
	24	MY	5/15/14	First Quarter 2014 Monitoring Report
	25	MY	7/15/14	Second Quarter 2014 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
MTBE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MP	APPROVED BY JPG
FILE NO. OILV11B-20725.DWG		FIGURE 5	



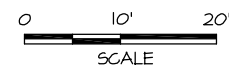
May 2010



June 2014

Legend

- MW-1 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VW-3 Vapor Extraction Well (Not Connected to System)
- TP-1 Monitoring Well/Vapor Extraction Well
- MIP-1 January 2011 Membrane Interface Probe (MIP) Boring
- 1000 TPHg Concentration Contour (µg/L), Queried Where Uncertain

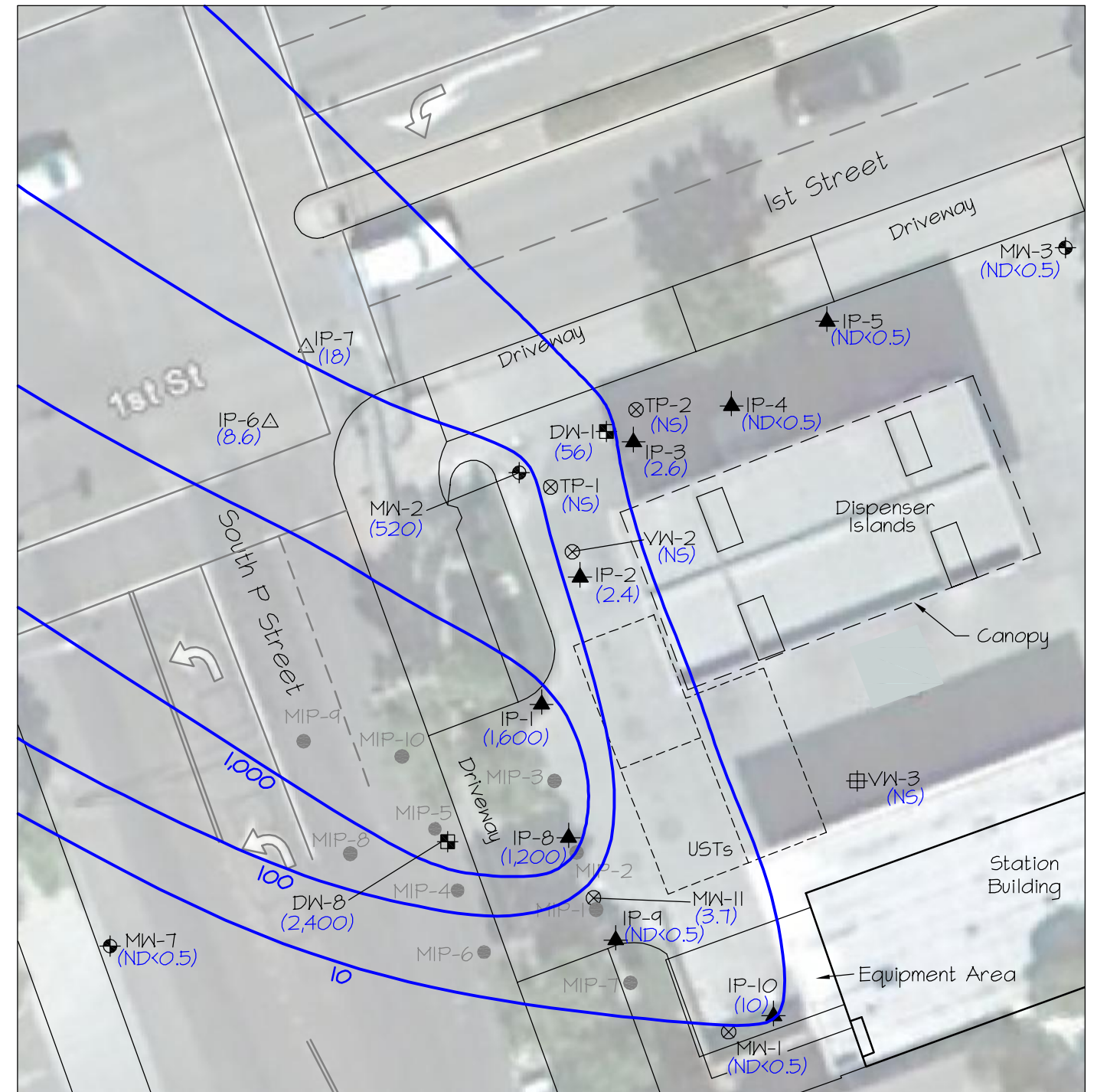


REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
5	1	MY	10/15/13	Second Quarter 2013 Monitoring Report
	2	MY	12/28/13	Third Quarter 2013 Monitoring Report
	3	MY	3/15/14	Fourth Quarter 2013 Monitoring Report
	4	MY	5/15/14	First Quarter 2014 Monitoring Report
	5	MY	7/15/14	Second Quarter 2014 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
ONSITE TPHg CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MN	APPROVED BY JPG
FILE NO. OILVIB2305.DWG		FIGURE 6A	



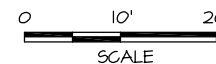
May 2010



June 2014

Legend

- MW-1 Groundwater Monitoring Well
- DW-1 Deep Groundwater Monitoring Well
- IP-1 Injection Well
- IP-6 Angled Injection Well Screen
- VW-3 Vapor Extraction Well (Not Connected to System)
- TP-1 Monitoring Well/Vapor Extraction Well
- MIP-1 January 2011 Membrane Interface Probe (MIP) Boring
- Benzene Concentration Contour (µg/L), Queried Where Uncertain

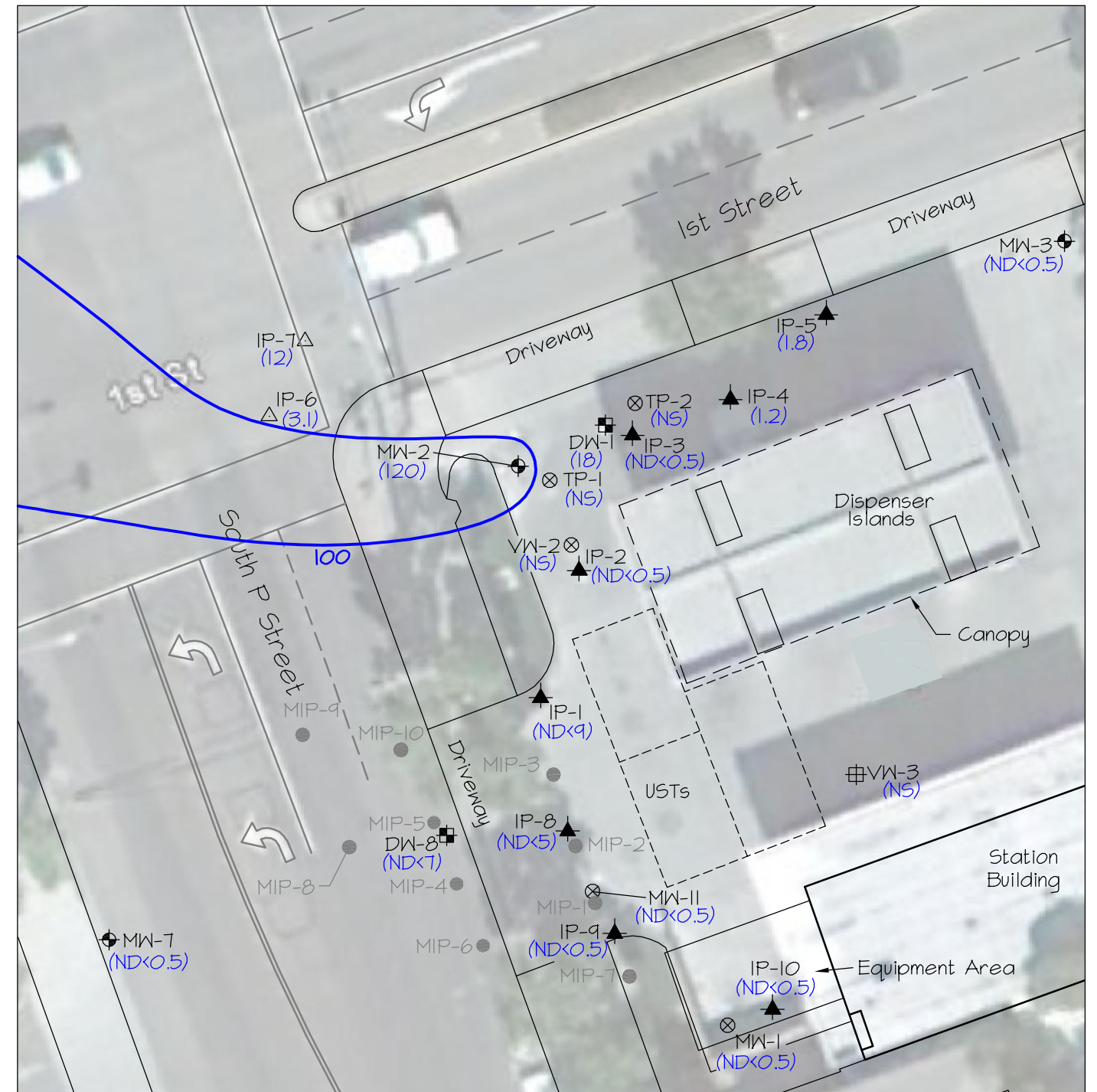


REVISION	REVISIONS			DESCRIPTION
	NO.	BY	DATE	
5	1	MY	10/15/13	Second Quarter 2013 Monitoring Report
	2	MY	12/26/13	Third Quarter 2013 Monitoring Report
	3	MY	3/15/14	Fourth Quarter 2013 Monitoring Report
	4	MY	5/15/14	First Quarter 2014 Monitoring Report
	5	MY	7/15/14	Second Quarter 2014 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
ONSITE BENZENE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MN	APPROVED BY JPG
FILE NO. OILV11B2405.DWG		FIGURE 6B	

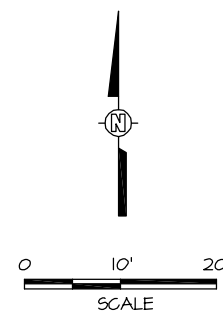


May 2010



June 2014

- Legend
- MW-1 Groundwater Monitoring Well
 - DW-1 Deep Groundwater Monitoring Well
 - IP-1 Injection Well
 - IP-6 Angled Injection Well Screen
 - VW-3 Vapor Extraction Well (Not Connected to System)
 - TP-1 Monitoring Well/Vapor Extraction Well
 - MIP-1 January 2011 Membrane Interface Probe (MIP) Boring
 - MTBE Concentration Contour (µg/L), Queried Where Uncertain



REVISION	NO.	BY	DATE	DESCRIPTION
5	1	MY	10/15/13	Second Quarter 2013 Monitoring Report
	2	MY	12/26/13	Third Quarter 2013 Monitoring Report
	3	MY	3/15/14	Fourth Quarter 2013 Monitoring Report
	4	MY	5/15/14	First Quarter 2014 Monitoring Report
	5	MY	7/15/14	Second Quarter 2014 Monitoring Report

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
ONSITE MTBE CONCENTRATION CONTOURS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MN	APPROVED BY JPG
FILE NO. OILV11B2505.DWG		FIGURE 6C	

ATTACHMENT A
GROUNDWATER SAMPLING QA/QC PROCEDURES

ATTACHMENT A
GROUNDWATER SAMPLING QA/QC PROCEDURES

Monitoring Plan

In accordance with the California State Water Resources Control Board's (SWRCB) Resolution No. 2009-0042, referenced in Alameda County Environmental Health's 23 July 2009 letter to Tesoro Environmental Resources Company (Tesoro), Arctos Environmental (Arctos) proposed to reduce the monitoring and sampling frequency to semiannually in the second quarter 2009 status report. Select wells will continue to be monitored quarterly to assess the effectiveness of the groundwater remediation system according to the following groundwater monitoring plan:

Well Designation	Location	Sampling Frequency
MW-1 and MW-3	Upgradient	Quarterly
MW-2, MW-11, and DW-1	Source area	
MW-6, MW-12, DW-2, DW-3, DW-5, DW-6, DW-7, DW-8, and DW-9	Downgradient	
MW-4 and VW-3	Upgradient	Semiannually (2nd and 4th quarters)
TP-1, TP-2, and VW-2	Source area	
MW-5 and MW-7	Cross gradient	
MW-8, MW-9, MW-10, and DW-4	Downgradient	

Analytical Plan

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

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

Purge-and-Bail Sampling Procedures

The depth to groundwater and total well depth were measured before sampling using an electronic water well sounder. The sequence of well sampling depended on the level of contamination in each well, if known, and was determined before sampling. Sampling occurred beginning at the well with the lowest contaminant concentration and ending at the well with the highest contaminant concentration. Before sampling, at least 3 casing volumes were purged from each monitoring well using a submersible pump. Throughout

purging, pH, conductivity, turbidity, and temperature were measured and recorded for the evacuated groundwater. These measurements were used to confirm that the well was purged sufficiently. Water samples were generally collected after the measurements of pH, conductivity, and temperature had stabilized to within 10 percent of the previous readings. Copies of the well purging and sampling logs are in Attachment B.

Sampling was performed with a new 1-1/2-inch-diameter disposable polyethylene bailer suspended from new nylon line. The bailer was equipped with a bottom-release device. Groundwater was collected with the bailer from just below the water surface in each monitoring well. Water samples were collected from the bailers in new 40-milliliter glass bottles provided by the analytical laboratory. The samples were collected so that no headspace was present in each bottle. The preservatives necessary for the analyses performed were provided in the glass bottles by the analytical laboratory.

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

General Field QA/QC Procedures

Chain-of-Custody Records

Chain-of-custody records were completed before samples were packaged for shipment. One copy of these records was placed in the project file. A second copy accompanied samples during transportation to the laboratory. The individual in the analytical laboratory who accepted responsibility for samples signed and dated the chain-of-custody record.

Equipment Decontamination Procedures

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

1. Rinsed with water using a brush to remove soil and mud.
2. Washed with non-phosphate detergent and water using a brush.
3. Rinsed with deionized or distilled water.
4. Rinsed again with deionized or distilled water.
5. Air dried.

Personal Decontamination Procedures

At a minimum, field personnel followed the following decontamination procedures:

1. Wore appropriate gloves.
2. Washed hands thoroughly with soap and water.
3. Avoided unnecessary contact with groundwater.

The site health and safety plan (HSP) was reviewed for site-specific personal decontamination procedures.

Wastewater and Solid Waste Storage and Disposal

Small volumes of used wash and rinse solutions were collected during field work and transported to a central decontamination area. This wastewater was stored in a holding tank. The Project Manager determined the appropriate disposal method for this wastewater. Waste manifests this quarter are in Attachment I.

Solid wastes such as used personal protective equipment, paper towels, trash bags, and any other solid debris were collected for disposal. Because the sampled groundwater was not a hazardous waste, the solid wastes were disposed with the onsite trash.

Field Investigation Documentation Procedures

Field personnel followed documentation procedures developed for site investigation work. The procedures served to (1) provide a record of the activities performed in the field and (2) permit identification of samples and tracking of their status in the field, during shipment, and at the laboratory. All documentation was recorded with waterproof ink. Groundwater sampling activities were documented on daily field reports and on well purge and sample logs.

Health and Safety

Arctos used a site-specific HSP with procedures that were followed by field personnel for equipment safety, medical surveillance, personal protection, air quality monitoring, exposure control, emergency response, and general work practices during field activities. Before beginning work at the site, a site safety meeting was conducted. Field personnel reviewed the HSP and signed the accompanying acknowledgment form before initiating field activities. Field personnel were required to comply with the HSP throughout performance of site assessment activities.

Analytical QA/QC Procedures

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

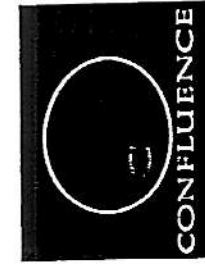
The laboratory results were reviewed in general accordance with EPA guidelines for data validation. The data validation process included reviewing laboratory results for the following parameters:

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

ATTACHMENT B
FIELD DATA SHEETS

88381

Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 #148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com



Chain of Custody

Project Name: Tesoro - Livermore #67076

Job Number: P1-124610

TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Kiff
 Address: 2795 2nd St, Suite 300, Davis CA 95616
 Contact: Troy Turpen
 Phone/ Fax: 530-297-4800 x.111

Site Address: 1619 1st St, Livermore
 California Global ID No.: TO600101410
 Include EDF w/ Report: Yes No
 Consultant / PM: Orion / Mike Purchase
 Phone / Fax: 510-525-2180 / 510-525-2392

Confluence PM: Jason Brown
 Phone / Fax: 916-760-7641 / 916-473-8617
 Confluence Log Code: CESC
 Report to: Mike Purchase
 Invoice to: Mike Purchase

Sample ID	Time	Date	Matrix		Laboratory No.	Preservative					Requested Analysis								Notes and Comments								
			Soil/Solid	Water/Liquid		Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (826)	Oxygenates (7) & Lead	Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*		Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)					
MW-6	1150	6/10/14		X		6	1	5				X	X	X	X	X	X	X	X	X	X	X	X	X			
MW-7	1435																										
MW-10	1115																										
MW-11	1630																										
1P-1	1535																										
1P-5	1305																										
1P-10	1345																										
MW-12	1645	6/10/14		X		6	1	5				X	X	X	X	X	X	X	X	X	X	X	X	X	X		

Relinquished By / Affiliation: *Matt Pestoni*

Accepted By / Affiliation: *Jay & Fran / L&H*

Sampler's Name: *Matt Pestoni*

Sampler's Company: Confluence Environmental

Shipment Date:

Shipment Method:

Special Instructions: * Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field

Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 #148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com



Chain of Custody

Project Name: Tesoro - Livermore #67076
 Job Number: P1-140610
 TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

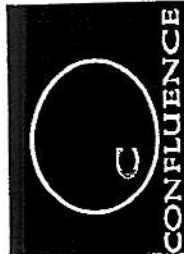
88388

Page 1 of 2

Lab: Kiff Address: 2795 2nd St, Suite 300, Davis CA 95616 Contact: Troy Turpen Phone/ Fax: 530-297-4800 x.111			Site Address: 1619 1st St, Livermore California Global ID No.: TO600101410 Include EDF w/ Report: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Consultant / PM: Orion / Mike Purchase Phone / Fax: 510-525-2180 / 510-525-2392			Confluence PM: Jason Brown Phone / Fax: 916-760-7641 / 916-473-8617 Confluence Log Code: CESC Report to: Mike Purchase Invoice to: Mike Purchase																															
Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative						Requested Analysis							Notes and Comments																
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	Oxygenates (7) & Lead	Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*		Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)													
MW-3	0815	6/11/14		X		3																															
MW-4	0725					3																															
MW-5	0840					3																															
MW-8	1000					3																															
MW-9	0845					3																															
DW-2	1030					12	6																														
DW-3	0945					12	6																														
DW-4	0640					3																															
DW-6	0940					12	6																														
Sampler's Name: <u>Matt Restani</u>			Relinquished By / Affiliation: <u>[Signature]</u>													Date: <u>6/11/14</u>		Time: <u>1124</u>		Accepted By / Affiliation: <u>Mike Purchase</u>		Date: <u>06/11/14</u>		Time: <u>1124</u>													
Sampler's Company: <u>Confluence Environmental</u>																																					
Shipment Date:																																					
Shipment Method:																																					
Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field																																					

88388

Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 # 148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com



Chain of Custody

Project Name: Tesoro - Livermore #67076
 Job Number: P1-140610
 TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: **Kiff**
 Address: 2795 2nd St, Suite 300, Davis CA 95616
 Contact: Troy Turpen
 Phone/ Fax: 530-297-4800 x.111
 Site Address: 1619 1st St, Livermore
 California Global ID No.: TQ600101410
 Include EDF w/ Report: Yes No
 Consultant / PM: Orion / Mike Purchase
 Phone / Fax: 510-525-2180 / 510-525-2392
 Confluence PM: Jason Brown
 Phone / Fax: 916-760-7641 / 916-473-8617
 Confluence Log Code: **CESC**
 Report to: Mike Purchase
 Invoice to: Mike Purchase

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis						Notes and Comments														
			Soil/Solid	Water/Liquid	Air			Unpreserved	H2SO4	HNO3	HCl	NaOH	TPH-G, BTEX (8260)	Oxygenates (7) & Lead	Scaengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)		Total Alkalinity (SM2320B)	Metals by ICP (6010B)*	Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)									
IP-6	0755	6/11/14	X	X		WWW	WWW							X	X	X																	
IP-4	0830		X	X		WWW	WWW							X	X	X																	
IP-9	0900		X	X		WWW	WWW							X	X	X																	
IP-7	1035		X	X		WWW	WWW							X	X	X																	
IP-3	1050		X	X		WWW	WWW							X	X	X																	
Sampler's Name: <u>A. Feeney</u>											Relinquished By / Affiliation <u>ADW / Confluence</u>											Accepted By / Affiliation <u>Ron Mitchell</u>		Date <u>6/11/14</u>	Time <u>12H</u>								
Sampler's Company: <u>Confluence Environmental</u>																						Date <u>6/11/14</u>		Time <u>12H</u>									
Shipment Date:																						Date <u>6/11/14</u>		Time <u>12H</u>									
Shipment Method:																						Date <u>6/11/14</u>		Time <u>12H</u>									
Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field																																	

10
11
12
13
14

Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 # 148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

Page 1 of 2

Project Name: Tesoro - Livermore #67076

Job Number: PI-148610

TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Lab: Kiff	Site Address: 1619 1st St, Livermore	Confluence PM: Jason Brown
Address: 2795 2nd St, Suite 300, Davis CA 95616	California Global ID No.: TO600101410	Phone / Fax: 916-760-7641 / 916-473-8617
Contact: Troy Turpen	Include EDF w/ Report: <u>Yes</u> No	Confluence Log Code: CESC
Phone/ Fax: 530-297-4800 x.111	Consultant / PM: Orion / Mike Purchase	Report to: Mike Purchase
	Phone / Fax: 510-525-2180 / 510-525-2392	Invoice to: Mike Purchase

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative						Requested Analysis									Notes and Comments				
			Soil/Solid	Water/Liquid	Air			Unpreserved	H2SO4	HNO3	HCl	NaOH	TPH-G, BTEX (8260)	Oxygens(7) & Lead Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*	Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)					
IP-7	1125	6/11/14	X	X	X	3						3					X	X	X	X	X	X	X	X	X		01
MW-2	1135	6/11/14	X	X	X	12	6					12					X	X	X	X	X	X	X	X	X		02
DW-1	1150	6/11/14	X	X	X	12	6					12					X	X	X	X	X	X	X	X	X		03
MW-1	1210	6/11/14	X	X	X	3						3					X	X	X	X	X	X	X	X	X		04
DW-8	1320	6/11/14	X	X	X	12	6					12					X	X	X	X	X	X	X	X	X		05
IP-8	1235	6/11/14	X	X	X	3						3					X	X	X	X	X	X	X	X	X		06
DW-3		6/11/14	X	X	X	12	6					12					X	X	X	X	X	X	X	X	X		07
DW-7	1350	6/11/14	X	X	X	12	6					12					X	X	X	X	X	X	X	X	X		08
DW-9	1400	6/11/14	X	X	X	12	6					12					X	X	X	X	X	X	X	X	X		09
DW-5	1410	6/11/14	X	X	X	12	6					12					X	X	X	X	X	X	X	X	X		09

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
A. Feeney / Confluence	6/16/14	1625			

Relinquished By: A. Feeney
 Relinquished Date: 6/16/14 1625
 Relinquished Time: 1625
 Accepted By: EA
 Accepted Date: 6/19/14 1623
 Accepted Time: 1623

Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field



Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 # 148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

Project Name: Tesoro - Livermore #67076

Job Number: 17-1105610

TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

Site Address: 1619 1st St, Livermore
 California Global ID No.: TO600101410
 Include EDF w/ Report: Yes No
 Consultant / PM: Orion / Mike Purchase
 Phone / Fax: 510-525-2180 / 510-525-2392
 Confluence PM: Jason Brown
 Phone / Fax: 916-760-7641 / 916-473-8617
 Confluence Log Code: CESC
 Report to: Mike Purchase
 Invoice to: Mike Purchase

Sample ID	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis							Notes and Comments																	
			Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	Oxygenates (7) & Lead	Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)		Metals by ICP (6010B)*	Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)													
M6-6	11/15	6/1/11	X	X		1	1	1																													
M6-10	12/25	6/1/12	X	X		1	1	1																													

Relinquished By / Affiliation: [Signature]
 Date: 6/1/11 Time: 1625
 Accepted By / Affiliation: [Signature]
 Date: 6/1/12 Time: 1623

Relinquished By / Affiliation: [Signature]
 Date: 6/1/11 Time: 1625
 Accepted By / Affiliation: [Signature]
 Date: 6/1/12 Time: 1623

Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field
 Impiler's Name: [Signature]
 Impiler's Company: Confluence Environmental
 Impiment Date:
 Impiment Method:

Equipment Calibration Log

Equipment make/model	Equipment ID/serial number	Date	Time	Calibration Standards	Equipment Reading	Equipment Calibrated	Temp (°F)	Tech init.	Comments
Ultrameter	6216871	6/10/14	0630	pk 7 4 10 and 1413	7.0, 4.0, 10.0 1413.0	Yes	18.9	[Signature]	
Ultrameter	6223276	6/11/14	0700	pk 4, 3, 10 and 1417	4.0, 3.0, 10.0 1417	✓	17.5	Amz	
Ultrameter	6216871	6/11/14	0615	pk 7 4 10 and 1413	7.0, 4.0, 10.0 1413	Yes	17.3	up	

Water Level Measurements

Job Number: P1-140610
~~140609~~ Date: 6/10/14 Client: Orion

Site: 169 1st Livermore

Well I.D.	Time	Dia	Depth to NAPL	Thickness of NAPL	Depth to water (DTW)	Total Depth (measured)	Total Depth (historical)	Ref Point TOG/TOB		
DW-1	0934	4			41.71		61.80	}		
DW-2	0913	4			43.35		59.80			
DW-3	0851	4			24.03		59.72			
DW-4	0837	4			24.63		70.06			
DW-5	0810	4			43.51		59.80			I.P. ✓
DW-6	0910	4			44.40		60.15			
DW-7	0857	4			24.67		65.18			
DW-8	0953	4			210.60		64.68			
DW-9	0906	4			44.05		59.65			
IP-1	1016	2			40.90		64.52			
IP-2	1008	2			42.39		64.45			
IP-3	0948	2			42.35		64.74			
IP-4	0910	2			21.83		64.80			
IP-5	0912	2			21.75		64.25			
IP-6	0927	2			25.71		71.60			
IP-7	0929	2			26.70		70.40			
IP-8	1036	2			41.72		64.52			
IP-9	1019	2			40.65		64.75			
IP-10	1039	2			42.15		63.05			
MW-1	1041	4			41.40		54.26			

Water Level Measurements

Job Number: P1-140610 Date: 6/10/14 Client: Orion

Site: 1619 1st Livermore

Well I.D.	Time	Dia	Depth to NAPL	Thickness of NAPL	Depth to water (DTW)	Total Depth (measured)	Total Depth (historical)	Ref Point TOC/TOB			
MW-2	0930	4			41.65		54.05	TOC			
MW-3	0950	4			41.62		52.85	}			
MW-4	0920	2			42.10		46.69				
MW-5	0916	2			42.40		46.27				
MW-6	0914	2			42.36		47.55				
MW-7	0924	2			40.50		46.15				
MW-8	0945	2			43.17		44.50		TC.		
MW-9	0848	2			43.15		44.50				
MW-10	0845	2			40.18		44.98				
MW-11	1030	4			38.62		40.25				
MW-12	0903	4			42.76		44.56				
TP-1	1004	2			40.80 Dry		41.06				
TP-2	1000	2			39.73 Dry		40.11				
VW-2	1010	2			32.97		35.02				
VW-3	1014	2			36.24		36.30				

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni (A Feeny)	Client: Orion
Well ID: MW-1	Date: 6/11/14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4</u> 6" Other:	DTW: 41.40	Total Depth: 54.28
Purge equip: <u>ES - diam:</u> Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:	Tubing: OD: New Dedicated NA	
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 8.4 X 3 = 25.1 (Total Purge) 80% = 43.97

Time	Temp (°C / °F)	pH	Cond (mS / µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
0953	19.9	7.7	1048	>1,000	43	3	8.5	odor
								well decont @ 10 gal
1210	22.2	8.0	1003	6	601	-	-	

Did well dewater? (YES) NO Total volume removed: 10 (gal / L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 6/11/14 Sample time: 1210 DTW at sample: 42.78

Sample ID: MW-1 Lab: Kiff Number of bottles: 3

Analysis: See COC (ISCO)

Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>MW-2</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: <u>41.65</u>	Total Depth: <u>54.05</u>
Purge equip: <u>ES - diam</u> Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 8 X 3 = 24.2 (Total Purge) 80% = 44.13

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
0913	20.2	7.7	1768	>1000	-105	3	8	Grey water
0915	21.0	7.1	1592	41	-84	1	16	
								well dewatered @ 18 gal
1135	21.6	7.5	2139	90	-24	-	-	

Did well dewater? YES NO Total volume removed: 18 (gal / L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 6/11/14 Sample time: 1135 DTW at sample: 42.97

Sample ID: MW-2 Lab: Kiff Number of bottles: 12

Analysis: See COC (ISCO)

Equipment blank ID @ Field blank ID @

Duplicate ID: Pre-purge DO: Post purge DO:

Fe²⁺: Pre-purge ORP: Post purge ORP:

NAPL depth: Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610		Sampler: M Pestoni A Feeney		Client: Orion	
Well ID: MW-3		Date: 6-11-14		Site: Livermore Tesoro #67076	
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:				DTW: 41.62 Total Depth: 52.85	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA					
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:					
Pump depth/ intake:			Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume)			80% Recovery (TD - DTW X 0.20 + DTW)		

1 Volume = 7.3 X 3 = 21.9 (Total Purge) 80% = 43.86

Time	Temp (°C / °F)	pH	Cond (mS / μ S)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
0805	19.4	7.3	1054	12	166	<u>4</u>	7.5	
0807	19.5	7.2	1050	9	165	↓	15	
0809	19.6	7.2	1047	9	165	↓	22	
						waited	For	80%

Did well dewater? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>			Total volume removed: <u>22</u> (gal / L)		
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:					
Sample date: <u>6-11-14</u>		Sample time: <u>0815</u>		DTW at sample: <u>43.50</u>	
Sample ID: <u>MW-3</u>		Lab: Kiff		Number of bottles: <u>3</u>	
Analysis: See COC (ISCO)					
Equipment blank ID @			Field blank ID @		
Duplicate ID:		Pre-purge DO:		Post purge DO:	
Fe ²⁺ :		Pre-purge ORP:		Post purge ORP:	
NAPL depth:		Volume of NAPL:		Volume removed: ml	

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: <u>M Pestoni A Feeney</u>	Client: Orion
Well ID: <u>MW-4</u>	Date: ⁶⁻¹¹⁻¹⁴ <u>4-2-10</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>42.10</u>	Total Depth: <u>46.69</u>
Purge equip: <u>ES</u> diam: Bladder Peri Waterra Positive Air Displacement Ext. System	Tubing: OD: New Dedicated NA	
<u>disp bailer</u> teflon bailer other:	Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:	
Pump depth/ intake:	Multipliers: 1"= 0.04 <u>2"= 0.16</u> 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 0.74 X 3 = 2.3 (Total Purge) 80% = 43.01

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
0715	19.6	7.3	1151	>1000	169	-	1	
0718	19.8	7.2	11218	>1000	172	-	2	
0721	19.9	7.2	1145	>1000	175	-	3	

Did well dewater? YES <input type="radio"/> NO <input checked="" type="radio"/>	Total volume removed: <u>3</u> (gal) / L
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6-11-14</u>	Sample time: <u>0725</u> DTW at sample: <u>42.89</u>
Sample ID: <u>MW-4</u>	Lab: Kiff Number of bottles: <u>3</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: MW-5	Date: 6.11.14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" 4" 6" Other:	DTW: 42.40 Total Depth: 46.27	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = $0.62 \times 3 = 1.9$ (Total Purge) 80% = 43.17

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	Notes
0827	70.4	7.3	1277	>1000	-30	-	1	
0831	70.5	7.0	1264	>1000	-34	-	1.5	
0833	70.4	7.0	1261	>1000	-35	-	2	

Did well dewater? YES <input type="radio"/> NO <input checked="" type="radio"/>		Total volume removed: 2 gal/L	
Sample method: Disp Bailor <input checked="" type="radio"/> Ded. Tubing <input type="radio"/> New Tubing <input type="radio"/> Ext. Port <input type="radio"/> Other: <input type="radio"/>			
Sample date: 6.11.14	Sample time: 0840	DTW at sample: 42.80	
Sample ID: MW-5	Lab: Kiff	Number of bottles: 3	
Analysis: See COC (ISCO)			
Equipment blank ID @	Field blank ID @		
Duplicate ID:	Pre-purge DO:	Post purge DO:	
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M. Pestoni A Feeney	Client: Orion
Well ID: MW-6	Date: 6-10-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" 4" 6" Other:	DTW: 42.36	Total Depth: 47.55
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 0.9 X 3 = 2.5 (Total Purge) 80% = 43.39

Time	Temp (°F)	pH	Cond (ms/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
1130	21.6	7.2	1282	>1000	-56	-	1	
1132	21.4	7.1	1276	>1000	-56	-	2	
1134	21.2	7.1	1270	>1000	-54	-	3	
1415	22.4	6.9	1289	19	28	-	-	Hex Cr Sample @ 1415

Did well dewater? YES <input checked="" type="radio"/> NO	Total volume removed: 3 (gal/L)
Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:	
Sample date:	Sample time: 1150 / 1415 DTW at sample: 42.80
Sample ID: MW-6	Lab: Kiff Number of bottles: 12
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: MW-7	Date: 6-10-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" (2") 3" 4" 6" Other:	DTW: 40.50	Total Depth: 46.15
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 1 X 3 = 3 (Total Purge) 80% = 21.65

Time	Temp (°C / °F)	pH	Cond (mS / µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
12/15	22.1	7.3	1250	>1000	-3	-	1	
1418	21.8	7.2	1246	>1000	-13	-	2	
1421	21.5	7.2	1243	>1000	-15	-	3	

Did well dewater? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Total volume removed: <u>3</u> (gal / L)
Sample method: Disp Bailer <input checked="" type="checkbox"/> Ded. Tubing <input type="checkbox"/> New Tubing <input type="checkbox"/> Ext. Port <input type="checkbox"/> Other: <input type="checkbox"/>		
Sample date: 6-10-14	Sample time: 1435	DTW at sample: 41.40
Sample ID: MW-7	Lab: Kiff	Number of bottles: 12
Analysis: See COC (ISCO)		
Equipment blank ID @	Field blank ID @	
Duplicate ID:	Pre-purge DO:	Post purge DO:
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:
NAPL depth:	Volume of NAPL:	Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: MW-8	Date: 6-11-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>43.17</u> Total Depth: <u>44.50</u>	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 <u>2"= 0.16</u> 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 0.23 X 3 = 0.69 (Total Purge) 80% = 42.63

Time	Temp (°F)	pH	Cond (mS / FS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
0650	19.4	7.3	1133	>1000	199	-	.3	
								- Well DewTered @ .3
								< Well
1000	20.0	7.4	1090	>1000	163	-	-	
								- Well DewTered During sample collection
								only 3 HCL WAS collected

Did well dewater? YES NO Total volume removed: .3 (gal / L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 6-11-14 Sample time: 1000 DTW at sample: 43.90 (3+ Hr)

Sample ID: MW-8 Lab: Kiff Number of bottles: 123

Analysis: See COC (ISCO)

Equipment blank ID @ Field blank ID @

Duplicate ID: Pre-purge DO: Post purge DO:

Fe²⁺: Pre-purge ORP: Post purge ORP:

NAPL depth: Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: MW-9	Date: 6.10.14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: 23.15	Total Depth: 44.55
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 0.23 X 3 = 0.7 (Total Purge) 80% = 43.43

Time	Temp (°F)	pH	Cond (mS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
1215	23.3	7.3	1099	71000	-144	-	.25	
	- well	dewatered		@ .25 gal.				
0845	20.5	7.5	1101	71000	-60	-	-	- well dewatered during sample collection (collected 3 HCVAs) 1 soil 250 up purg and 1/2 soil 250 up purg @ 5 total bottles

Did well dewater? <u>YES</u> NO	Total volume removed: <u>.25</u> (gal/L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6.11.14</u> Sample time: <u>0845</u>	DTW at sample: <u>43.89</u> (22 + Hrs)
Sample ID: <u>MW-9</u> Lab: Kiff	Number of bottles: <u>123</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: MW-10	Date: 6/10/14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: 40.18	Total Depth: 77.98
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
(disp bailer) teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 0.8 X 3 = 2.4 (Total Purge) 80% = 41.14

Time	Temp (°C/°F)	pH	Cond (mS/µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	Notes
1100	22.1	7.2	1394	71000	101	-	1	
1103	21.9	7.2	1398	71000	95	-	2	
1106	21.8	7.1	1395	71000	92	-	3	
1425	26.9	7.5	1382	25	70	-	-	Hex Cr Sample @ 1425

Did well dewater? YES NO Total volume removed: 3 (gal/L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 6-10-14 Sample time: 1115 / 1425 DTW at sample: 41.00

Sample ID: MW-10 Lab: Kiff Number of bottles: 12

Analysis: See COC (ISCO)

Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610		Sampler: M Pestoni A Feeney		Client: Orion	
Well ID: MW-11		Date: 5-10-14		Site: Livermore Tesoro #67076	
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:			DTW: 38.62 Total Depth: 40.25		
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp/bailer teflon bailer other: Tubing: OD: New Dedicated NA					
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:					
Pump depth/ intake:		Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 <u>4"= 0.65</u> 5"=1.02 6"= 1.47 Radius ² X 0.163			
(TD - DTW X Multiplier = 1 Volume)			80% Recovery (TD - DTW X 0.20 + DTW)		

1 Volume = $\frac{1.1 \text{ gal}}{1.0 \text{ gal}} \times 3 = 3.2$ (Total Purge) 80% = 38.94

Time	Temp (°F)	pH	Cond (mS / μ S)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
1220	21.2	8.5	1047	>1000	-90	-	1.	
								- well dewatered @ 1 gal
1630	20.5	8.1	1095	>1000	-118	-	-	

Did well dewater? <input checked="" type="checkbox"/> YES NO		Total volume removed: 1 (gal / L)	
Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:			
Sample date: 6-10-14		Sample time: 1630	DTW at sample: 39.25 (2+ Hr)
Sample ID: MW-11		Lab: Kiff	Number of bottles: 12
Analysis: See COC (ISCO)			
Equipment blank ID @		Field blank ID @	
Duplicate ID:		Pre-purge DO:	Post purge DO:
Fe2 ⁺ :		Pre-purge ORP:	Post purge ORP:
NAPL depth:		Volume of NAPL:	Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: MW-12	Date: 6-10-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: 42.76 Total Depth: 44.56	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 1.2 X 3 = 3.6 (Total Purge) 80% = 43.12

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/ min)	Volume Removed (gal/L)	Notes
1205	22.5	7.7	1210	>1000	-40	-	1.5	
								well Decontam @ 2 gal
1645	23.0	7.2	1113	>1000	-87	-	-	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>2</u> (gal/L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date:	Sample time: <u>1645</u> DTW at sample: <u>42.90</u>
Sample ID: <u>MW-12</u>	Lab: Kiff Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: 1P-1	Date: 6-10-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2</u> 3" 4" 6" Other:	DTW: 40.90 Total Depth: 62.52	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 <u>2"= 0.16</u> 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 3.8 X 3 = 11.4 (Total Purge) 80% = 45.62

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal/min)	Volume Removed (gal / L)	Notes
1510	21.1	8.5	5024	23	27	-	21	
1518	20.9	8.4	4989	25	30	-	8	
1524	20.5	8.4	4978	28	32	-	12	

Did well dewater? YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>		Total volume removed: 12 (gal / L)	
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:			
Sample date: 6-10-14		Sample time: 1535	DTW at sample: 212.10
Sample ID: 1P-1	Lab: Kiff	Number of bottles: 12	
Analysis: See COC (ISCO)			
Equipment blank ID @		Field blank ID @	
Duplicate ID:		Pre-purge DO:	Post purge DO:
Fe2 ⁺ :		Pre-purge ORP:	Post purge ORP:
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>IP-2</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>42.39</u> Total Depth: <u>64.45</u>	
Purge equip: <u>ES - diam.</u> Bladder Peri Waterra Positive Air Displacement Ext. System	Tubing: OD: New Dedicated NA	
disp bailer teflon bailer other:	Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:	
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 3.5 X 10.6 = _____ (Total Purge) 80% = 46.80

Time	Temp (°C/°F)	pH	Cond (ms/µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	Notes
0840	19.7	11.2	38.94	6	41	2	3.5	
								well de-watered @ 5 gal not @ 80% , waited 2+ hours
1125	20.9	11.1	31.53	15	12	-	-	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>5</u> (gal/L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6/11/14</u> Sample time: <u>1125</u>	DTW at sample: <u>55.31</u>
Sample ID: <u>IP-2</u> Lab: Kiff	Number of bottles: <u>3</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>IP-3</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>42.35</u> Total Depth: <u>64.74</u>	
Purge equip: <u>ES - diam:</u> Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"=0.04 2"=0.16 3"=0.37 4"=0.65 5"=1.02 6"=1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume) 80% Recovery (TD - DTW X 0.20 + DTW)		

1 Volume = 3.6 X 3 = 10.7 (Total Purge) 80% = 22.39 46.83

Time	Temp (°S/°F)	pH	Cond (mS/µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
0814	20.0	11.1	35.65	> 1000	80	3	4	
								well dewatered @ 5 gal
1050	20.8	10.9	28.09	90	32	+	-	

Did well dewater? <u>YES</u> NO		Total volume removed: <u>5</u> (gal / L)	
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:			
Sample date: <u>6/11/14</u>	Sample time: <u>1050</u>	DTW at sample: <u>46.38</u>	
Sample ID: <u>IP-3</u>	Lab: Kiff	Number of bottles: <u>3</u>	
Analysis: See COC (ISCO)			
Equipment blank ID @	Field blank ID @		
Duplicate ID:	Pre-purge DO:	Post purge DO:	
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>IP-4</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2</u> 3" 4" 6" Other:	DTW: <u>41.83</u> Total Depth: <u>64.80</u>	
Purge equip: ES - diam: Bladder Peri Wattera Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume) 80% Recovery (TD - DTW X 0.20 + DTW)		

1 Volume = 3.7 X 3 = 11.1 (Total Purge) 80% = 46.42

Time	Temp (°C/°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	Notes
<u>0823</u>	<u>19.7</u>	<u>8.9</u>	<u>1663</u>	<u>6</u>	<u>28</u>	<u>2</u>	<u>4</u>	
<u>0825</u>	<u>20.2</u>	<u>8.4</u>	<u>967</u>	<u>5</u>	<u>39</u>	<u>1</u>	<u>8</u>	
<u>0827</u>	<u>20.3</u>	<u>8.3</u>	<u>959</u>	<u>5</u>	<u>41</u>	<u>1</u>	<u>12</u>	

Did well dewater? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Total volume removed: <u>12</u> (gal/L)	
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:			
Sample date: <u>6/11/14</u>	Sample time: <u>0830</u>	DTW at sample: <u>44.78</u>	
Sample ID: <u>IP-4</u>	Lab: <u>Kiff</u>	Number of bottles: <u>3</u>	
Analysis: See COC (ISCO)			
Equipment blank ID @	Field blank ID @		
Duplicate ID:	Pre-purge DO:	Post purge DO:	
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: IP-5	Date: 6.10.14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: 41.75	Total Depth: 64.25
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 <u>2"= 0.16</u> 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume) 80% Recovery (TD - DTW X 0.20 + DTW)		

1 Volume = 3.6 X 3 = 10.8 (Total Purge) 80% = 46.25

Time	Temp (°F)	pH	Cond (ms/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	Notes
1245	21.6	7.3	948	9	116	-	21	
1251	21.2	7.2	952	12	106	-	8	
1258	21.0	7.2	963	19	102	-	11	

Did well dewater? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Total volume removed: <u>11</u> (gal/L)	
Sample method: Disp <u>Bailer</u> Ded. Tubing New Tubing Ext. Port Other:			
Sample date: <u>6.10.14</u> Sample time: <u>1305</u>		DTW at sample: <u>272.63</u>	
Sample ID: <u>IP-5</u> Lab: Kiff		Number of bottles: <u>12</u>	
Analysis: See COC (ISCO)			
Equipment blank ID @		Field blank ID @	
Duplicate ID:		Pre-purge DO:	Post purge DO:
Fe ²⁺ :		Pre-purge ORP:	Post purge ORP:
NAPL depth:	Volume of NAPL:		Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>IP-6</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>45.71</u> Total Depth: <u>71.60</u>	
Purge equip: <u>ES - diam</u> Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 4.1 X 3 = 12.4 (Total Purge) 80% = 50.89

Time	Temp (° / °F)	pH	Cond (mS / S)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
0750	20.6	7.7	968.5	>1,000	25	2	4.5	
0752	20.8	7.6	946.7	>1,000	12	1	9	
0754	20.8	7.6	948.5	>1,000	14	1	13	

Did well dewater? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	Total volume removed: <u>13</u> (gal / L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6/11/14</u> Sample time: <u>0755</u>	DTW at sample: <u>49.65</u>
Sample ID: <u>IP-6</u> Lab: Kiff	Number of bottles: <u>3</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>IP-7</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>46.70</u>	Total Depth: <u>70.40</u>
Purge equip: <u>ES - diam:</u> Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 3.8 X 3 = 11.4 (Total Purge) 80% = 51.44

Time	Temp (°C/°F)	pH	Cond (mS / μ S)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal/hr mL/min)	Volume Removed (gal / L)	Notes
0741	20.3	7.8	1076	21,000	27	~2	4	
								Well de-watered @ 5 gal
1035	22.1	8.2	1793	7	39	-	-	

Did well dewater? <u>(YES)</u> NO	Total volume removed: <u>5</u> (gal/L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6/11/14</u> Sample time: <u>1035</u>	DTW at sample: <u>47.50</u>
Sample ID: <u>IP-7</u> Lab: Kiff	Number of bottles: <u>3</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>IP-8</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2"</u> 3" 4" 6" Other:	DTW: <u>41.77</u> Total Depth: <u>64.52</u>	
Purge equip: <u>ES - diam:</u> Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:	Tubing: OD: New Dedicated NA	
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 3.6 X 3 = 10.9 (Total Purge) 80% = 46.28

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal/min)	Volume Removed (gal)	Notes
<u>1024</u>	<u>20.5</u>	<u>10.0</u>	<u>9555</u>	<u>10</u>	<u>56</u>	<u>2</u>	<u>4</u>	
		<u>well</u>	<u>dewatered</u>			<u>@ 4 gal</u>		
<u>1235</u>	<u>21.6</u>	<u>10.2</u>	<u>10.63 mg</u>	<u>23</u>	<u>50</u>	<u>4</u>	<u>-</u>	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>4</u> (gal/L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6/11/14</u> Sample time: <u>1235</u>	DTW at sample: <u>43.91</u>
Sample ID: <u>IP-8</u> Lab: Kiff	Number of bottles: <u>3</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610		Sampler: M Pestoni A Feeneey		Client: Orion	
Well ID: IP9		Date: 6/11/14		Site: Livermore Tesoro #67076	
Well diam: 1/4" 1" 2" 3" 4" 6" Other:			DTW: 40.65 Total Depth: 64.75		
Purge equip: ES - diam:		Bladder Peri Waterfra		Positive Air Displacement Ext. System	
disp bailer teflon bailer other:		Tubing: OD:		New Dedicated NA	
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:					
Pump depth/ intake:		Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163			
(TD - DTW X Multiplier = 1 Volume			80% Recovery (TD - DTW X 0.20 + DTW)		

1 Volume = 3.9 X 3 = 11.6 (Total Purge) 80% = 45.47

Time	Temp (°/°F)	pH	Cond (mS)/ (µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
0851	14.5	10.75	17.36	4	12	2	4	odor
0853	20.0	10.7	15.89	6	25	1	8	
0855	20.2	10.6	15.70	6	27	1	12	

Did well dewater? YES NO

Total volume removed: 12 (gal/L)

Sample method: **Disp Bailer** Ded. Tubing New Tubing Ext. Port Other:

Sample date: **6/11/14** Sample time: **0900** DTW at sample: **45.40**

Sample ID: **IP-9** Lab: Kiff Number of bottles: **3**

Analysis: See COC (ISCO)

Equipment blank ID @		Field blank ID @	
Duplicate ID:		Pre-purge DO:	
Post-purge DO:		Pre-purge ORP:	
Fe2 ⁺ :		Post-purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M. Pestoni A Feeney	Client: Orion
Well ID: <u>IP-10</u>	Date: <u>6-10-14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" <u>2</u> 3" 4" 6" Other:	DTW: <u>42.15</u>	Total Depth: <u>63.05</u>
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
Disp bailer teflon bailer other: <u>Disp bailer</u> Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 <u>2" = 0.16</u> 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 3.4 X 3 = 10.1 (Total Purge) 80% = 46.33

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal/min) or (L/min)	Volume Removed (gal) or (L)	Notes
<u>1325</u>	<u>19.8</u>	<u>7.2</u>	<u>873</u>	<u>15</u>	<u>-59</u>	<u>4</u>	<u>4</u>	
<u>1332</u>	<u>20.0</u>	<u>7.1</u>	<u>895</u>	<u>18</u>	<u>-65</u>	<u>4</u>	<u>8</u>	
<u>1339</u>	<u>20.1</u>	<u>7.1</u>	<u>898</u>	<u>21</u>	<u>-70</u>	<u>10.5</u>	<u>10.5</u>	

Did well dewater? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Total volume removed: <u>10.5</u> (gal/L)
Sample method: Disp Bailer <input checked="" type="checkbox"/> Ded. Tubing <input type="checkbox"/> New Tubing <input type="checkbox"/> Ext. Port <input type="checkbox"/> Other: <input type="checkbox"/>	
Sample date: <u>6-10-14</u>	Sample time: <u>1345</u> DTW at sample: <u>42.20</u>
Sample ID: <u>IP-10</u>	Lab: Kiff Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feenev</u>	Client: Orion
Well ID: <u>DW-1</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: <u>21.71</u>	Total Depth: <u>64.80</u>
Purge equip: <u>ES - diam:</u> Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:	Tubing: OD: New Dedicated NA	
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 15 X 3 = 45 (Total Purge) 80% = 46.33

Time	Temp (°C / °F)	pH	Cond (mS / µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
0932	20.5	7.5	1386	4	-72	3	15	Strong odor
0937	20.4	7.1	1598	4	-51		30	
		well	dewatered		@	40	gal	
1150	20.6	7.4	1576	5	94	-	-	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>40</u> (gal / L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6/11/14</u>	Sample time: <u>1150</u> DTW at sample: <u>42.35</u>
Sample ID: <u>DW-1</u>	Lab: Kiff Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe2 ⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: DW-2	Date: 6.11.14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: 43.35 Total Depth: 59.80	
Purge equip: <u>ES</u> - diam: <u>3</u> Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: <u>3</u> Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 <u>4"= 0.63</u> 5"=1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 10.7 X 3 = 33 (Total Purge) 80% = 216.64

Time	Temp (°C/°F)	pH	Cond (ms/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal / L)	Notes
1015	21.2	7.6	1355	8	-58	6	11	Strong odor
1017	21.3	7.5	1402	5	-64	2	22	
1019	21.3	7.5	1410	5	-62	2	33	
								Wasted Brievely For 80%

Did well dewater? YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>		Total volume removed: <u>33</u> (gal) L	
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:			
Sample date: <u>6.11.14</u>	Sample time: <u>1030</u>	DTW at sample: <u>216.50</u>	
Sample ID: <u>DW-2</u>	Lab: Kiff	Number of bottles: <u>12</u>	
Analysis: See COC (ISCO)			
Equipment blank ID @	Field blank ID @		
Duplicate ID:	Pre-purge DO:	Post purge DO:	
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610 **Sampler:** M Pestoni A Feeney **Client:** Orion

Well ID: DW-3 **Date:** 6-11-14 **Site:** Livermore Tesoro #67076

Well diam: 1/4" 1" 2" 3" 4" 6" Other: **DTW:** 44.03 **Total Depth:** 59.72

Purge equip: ES - diam 2" Bladder Peri Waterra Positive Air Displacement Ext. System
disp bailer teflon bailer other: **Tubing:** OD: New Dedicated NA

Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:

Pump depth/ intake: **Multipliers:** 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius² X 0.163

(TD - DTW X Multiplier = 1 Volume) 80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 10.2 X 3 = 30.6 (Total Purge) 80% = 47.16

Time	Temp (°F)	pH	Cond (mS / S)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
0905	21.2	7.6	1001	8	27	10	10.5	
							15 gal	- Well Dewatered @
0945	21.0	7.4	1000	5	2	-	-	

Did well dewater? YES NO Total volume removed: 15 gal/L

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 6-11-14 Sample time: 0945 DTW at sample: 47.10

Sample ID: DW-3 Lab: Kiff Number of bottles: 12

Analysis: See COC (ISCO)

Equipment blank ID @ Field blank ID @

Duplicate ID: Pre-purge DO: Post purge DO:

Fe²⁺: Pre-purge ORP: Post purge ORP:

NAPL depth: Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: DW-4	Date: 6.11.14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: 44.63 Total Depth: 70.06	
Purge equip: <u>ES</u> - diam: <u>2</u> Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: _____		
Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 <u>4"= 0.65</u> 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 16.6 X 3 = 50 (Total Purge) 80% = 49.71

Time	Temp (<u>99</u> / °F)	pH	Cond (ms / <u>ns</u>)	Turbidity (NTU)	ORP (mv)	Purge Rate (<u>gal</u> or ml / min)	Volume Removed (<u>gal</u> / L)	Notes
0627	21.2	7.0	830	19	219	6	17	
0630	20.9	6.9	821	15	180	2	34	
0633	20.8	6.9	815	14	165	2	50	
				waited		Briefly Sur	80%	

Did well dewater? YES NO Total volume removed: 50 (gal / L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 6.11.14 Sample time: 0640 DTW at sample: 49.50

Sample ID: DW-4 Lab: Kiff Number of bottles: 3

Analysis: See COC (ISCO)

Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe2 ⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: <u>M Pestoni</u> A Feeney	Client: Orion
Well ID: <u>DW-5</u>	Date: <u>6.11.14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: <u>43.51</u> Total Depth: <u>59.80</u>	
Purge equip: <u>ES</u> diam: <u>3"</u> Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 <u>4"= 0.65</u> 5"=1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume)		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 10.6 x 3 = 31.8 (Total Purge) 80% = 216.76

Time	Temp (°F)	pH	Cond (ms / ft)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
1300	22.0	8.0	1537	15	-3	10	11	
							12 gal	- Well Dewatered @
1410	22.7	7.2	1662	9	87	-	-	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>12</u> (gal / L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6.11.14</u>	Sample time: <u>1410</u> DTW at sample: <u>44.65</u>
Sample ID: <u>DW-5</u>	Lab: Kiff Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: DW-6	Date: 6-11-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" ④ 6" Other:	DTW: 24.40 Total Depth: 60.15	
Purge equip: <input checked="" type="checkbox"/> ES diam ⁺ Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:		
Tubing: OD: New Dedicated NA		
Purge method: <input checked="" type="checkbox"/> 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 ④= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 10.3 X 3 = 31 (Total Purge) 80% = 47.55

Time	Temp (°C/°F)	pH	Cond (mS/m)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL/min)	Volume Removed (gal/L)	Notes
0920	21.3	7.4	10412	>1000	-54	10	10.5	
0921	21.3	7.3	1033	>1000	-58	↓	21	
0922	21.3	7.3	1028	>1000	-60	↓	31	
				waited for 80%				

Did well dewater? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Total volume removed: 31 (gal/L)	
Sample method: <input checked="" type="checkbox"/> Disp Bailer <input type="checkbox"/> Ded. Tubing <input type="checkbox"/> New Tubing <input type="checkbox"/> Ext. Port <input type="checkbox"/> Other:			
Sample date: 6-11-14	Sample time: 0940	DTW at sample: 47.50	
Sample ID: DW-6	Lab: Kiff	Number of bottles: 12	
Analysis: See COC (ISCO)			
Equipment blank ID @	Field blank ID @		
Duplicate ID:	Pre-purge DO:	Post purge DO:	
Fe ²⁺ :	Pre-purge ORP:	Post purge ORP:	
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: DW-7	Date: 6-11-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4</u> 6" Other:	DTW: 44.67 Total Depth: 65.18	
Purge equip: <u>ES</u> - diam: Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake: Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163		
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 13.4 X 3 = 40 (Total Purge) 80% = 48.7

Time	Temp (°F)	pH	Cond (mS/cm)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or ml/min)	Volume Removed (gal / L)	Notes
1205	22.2	7.3	1183	71000	35	10	121	
1207	21.6	7.2	1163	874	18	10	28	
	- well		Dewatered @			30 gal		
#								
1350	20.9	7.4	1150	132	-3	—	—	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>30</u> (gal / L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6-11-14</u> Sample time: <u>1350</u>	DTW at sample: <u>45.05</u>
Sample ID: <u>DW-7</u> Lab: Kiff	Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni <u>A Feeney</u>	Client: Orion
Well ID: <u>DW-8</u>	Date: <u>6/11/14</u>	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: <u>40.60</u>	Total Depth: <u>64.68</u>
Purge equip: <u>ES - diam</u> : Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"= 1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 15.7 X 3 = 46.9 (Total Purge) 80% = 45.42

Time	Temp (°F)	pH	Cond (mS / µS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
1011	20.8	7.6	1053	5	-60	3	16	odor
1220	22.9	7.2	1613	21	-67	-	-	

Did well dewater? <u>YES</u> NO	Total volume removed: <u>30</u> (gal) (L)
Sample method: <u>Disp Bailer</u> Ded. Tubing New Tubing Ext. Port Other:	
Sample date: <u>6/11/14</u>	Sample time: <u>1220</u> DTW at sample: <u>42.54</u>
Sample ID: <u>DW-8</u>	Lab: Kiff Number of bottles: <u>12</u>
Analysis: See COC (ISCO)	
Equipment blank ID @	Field blank ID @
Duplicate ID:	Pre-purge DO: Post purge DO:
Fe ²⁺ :	Pre-purge ORP: Post purge ORP:
NAPL depth:	Volume of NAPL: Volume removed: ml

111 111

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: DW-9	Date: 6.11.14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" <u>4"</u> 6" Other:	DTW: 44.05 Total Depth: 59.65	
Purge equip: <u>ES</u> diam: <u>3</u> Bladder Peri Waterra Positive Air Displacement Ext. System		
disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: <u>3-5 Case Volume</u> Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 <u>4"= 0.85</u> 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = 10.2 X 3 = 30.5 (Total Purge) 80% = 24.717

Time	Temp (°C/°F)	pH	Cond (mS / (S))	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
1130	22.0	7.8	1124	>1000	-25	10	10.5	
1130								- Well Dewatered @ 70 gal
1400	21.5	7.9	1090	132	-60	-	-	

Did well dewater? YES NO Total volume removed: 20 (gal / L)

Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:

Sample date: 6.11.14 Sample time: 12:00 DTW at sample: 215.60

Sample ID: DW-9 Lab: Kiff Number of bottles: 12

Analysis: See COC (ISCO)

Equipment blank ID @ Field blank ID @

Duplicate ID: Pre-purge DO: Post purge DO:

Fe2+: Pre-purge ORP: Post purge ORP:

NAPL depth: Volume of NAPL: Volume removed: ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M. Pestoni A. Feeney	Client: Orion
Well ID: TP-1	Date: 6-10-14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" 4" 6" Other:	DTW: 40.80 Total Depth: 41.06	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other: Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = _____ X _____ = _____ (Total Purge) 80%= _____

Time	Temp (°C / °F)	pH	Cond (mS / μS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
								insufficient water to sample

Did well dewater? YES NO		Total volume removed: _____ (gal / L)	
Sample method: Disp. Bailer Ded. Tubing New Tubing Ext. Port Other:			
Sample date:	Sample time:	DTW at sample:	
Sample ID:	Lab: Kiff	Number of bottles:	
Analysis: See COC (ISGO)			
Equipment blank ID @		Field blank ID @	
Duplicate ID:		Pre-purge DO:	Post purge DO:
Fe ²⁺ :		Pre-purge ORP:	Post purge ORP:
NAPL depth:	Volume of NAPL:	Volume removed:	ml

Purging And Sampling Data Sheet

Job#: P1-140610	Sampler: M Pestoni A Feeney	Client: Orion
Well ID: TP-2	Date: 6.10.14	Site: Livermore Tesoro #67076
Well diam: 1/4" 1" 2" 3" 4" 6" Other:	DTW: 39.73 Total Depth: 40.11	
Purge equip: ES - diam: Bladder Peri Waterra Positive Air Displacement Ext. System disp bailer teflon bailer other:		
Tubing: OD: New Dedicated NA		
Purge method: 3-5 Case Volume Micro/Low-Flow Extraction Other:		
Pump depth/ intake:	Multipliers: 1"= 0.04 2"= 0.16 3"= 0.37 4"= 0.65 5"=1.02 6"= 1.47 Radius ² X 0.163	
(TD - DTW X Multiplier = 1 Volume		80% Recovery (TD - DTW X 0.20 + DTW)

1 Volume = _____ X _____ = _____ (Total Purge) 80%= _____

Time	Temp (°C / °F)	pH	Cond (mS / μS)	Turbidity (NTU)	ORP (mv)	Purge Rate (gal or mL / min)	Volume Removed (gal / L)	Notes
								insufficient water to sample

Did well dewater? YES NO			Total volume removed: _____ (gal / L)		
Sample method: Disp Bailer Ded. Tubing New Tubing Ext. Port Other:					
Sample date:		Sample time:		DTW at sample:	
Sample ID:		Lab: Kiff		Number of bottles:	
Analysis: See COC (ISCO)					
Equipment blank ID @		Field blank ID @			
Duplicate ID:		Pre-purge DO:		Post purge DO:	
Fe ²⁺ :		Rre-purge ORP:		Post purge ORP:	
NAPL depth:		Volume of NAPL:		Volume removed: _____ ml	

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		
12/31/00	31.71	442.58		
3/27/01	30.43	443.86		

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	6/30/01	36.61	474.29	437.68
(cont.)	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		436.05
	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		439.55
	5/8/08	36.15		438.14
	7/23/08	45.76	428.53	
	10/13/08	51.00	423.29	
	2/11/09	48.69	425.60	
	4/27/09	41.90	432.39	
	8/4/09	51.44	422.85	

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.)	12/8/09	39.87	474.29	434.42
	2/11/10	35.20		439.09
	5/3/10	31.23		443.06
	8/2/10	34.56	474.21 ^(c)	439.65
	11/2/10	37.04		437.17
	2/1/11	32.51		441.70
	4/25/11	27.73		446.48
	8/3/11	31.57		442.64
	10/10/11	33.12		441.09
	1/31/12	36.11		438.10
	5/7/12	36.14		438.07
	8/6/12	37.40		436.81
	11/12/12	37.10		437.11
	2/12/13	30.98		443.23
	4/22/13	33.11		441.10
	8/21/13	35.40		438.81
	11/7/13	34.36		439.85
	1/21/14	33.23		440.98
6/10/14	41.40	432.81		
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

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	9/16/96	31.24	472.98	441.74
(cont.)	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
	11/10/00	31.31		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	

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	11/4/04	34.92	472.98	438.06
(cont.)	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
	5/8/08	36.70		436.28
	7/23/08	45.78		427.20
	10/13/08	51.30		421.68
	2/11/09	48.90		424.08
	4/27/09	42.62		430.36
	8/4/09	51.83		421.15
	12/8/09	40.82		432.16
	2/11/10	36.54		436.44
	5/3/10	32.44		440.54
	8/2/10	35.34		437.64
	11/2/10	38.15		434.83
	2/1/11	33.40		439.58
	4/25/11	28.49		444.49
	8/3/11	32.40		440.58
	10/10/11	33.51		439.47
	1/31/12	39.52		433.46
	5/7/12	36.89	436.09	
	8/6/12	40.95	432.03	
	11/12/12	39.03	433.95	

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.)	2/12/13	32.13	472.98	440.85
	4/22/13	34.15		438.83
	6/24/13	35.05		437.93
	8/21/13	36.05		436.93
	11/7/13	35.09		437.89
	1/21/14	33.81		439.17
	6/10/14	41.65		431.33
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		

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	9/7/99	30.38	473.37	442.99
(cont.)	12/13/99	31.46		441.91
	3/13/00	24.28		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
	2/11/09	47.81		425.56
	4/27/09	41.18		432.19
	8/4/09	51.89		421.48
	12/8/09	39.50		433.87
	2/11/10	35.19		438.18
	5/3/10	31.39		441.98
	8/2/10	34.61		438.76
	11/2/10	37.20		436.17
	2/1/11	32.59		440.78
	4/25/11	27.60		445.77
	8/3/11	31.69		441.68
	10/10/11	33.96		439.41
	1/31/12	39.05		434.32
	5/7/12	36.03		437.34
	8/6/12	40.52		432.85
11/12/12	39.24	434.13		
2/12/13	31.34	442.03		
4/22/13	33.51	439.86		
8/21/13	35.71	437.66		
11/7/13	34.60	438.77		
1/21/14	33.49	439.88		
6/10/14	41.62	431.75		
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

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.)	9/26/95	29.70	473.64	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
	11/10/00	29.71		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		

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.)	12/23/03	31.30	473.64	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 ^(d)		--
	2/14/08	34.53		439.11
	5/8/08	35.55		438.09
	7/23/08	43.87		429.77
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	40.64		433.00
	8/4/09	DRY		--
	12/8/09	39.46		434.18
	2/11/10	35.31		438.33
	5/3/10	31.55		442.09
8/2/10	35.15	438.49		
11/2/10	37.55	436.09		
2/1/11	32.86	440.78		
4/25/11	28.69	444.95		
8/3/11	32.01	441.63		
10/10/11	34.49	439.15		

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.)	1/31/12	38.91	473.64	434.73
	5/7/12	36.24		437.40
	8/6/12	40.69		432.95
	11/12/12	39.65		433.99
	2/12/13	31.56		442.08
	4/22/13	33.80		439.84
	8/21/13	36.10		437.54
	11/7/13	35.18		438.46
	1/21/14	34.07		439.57
	6/10/14	42.10		431.54
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		

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.)	3/13/00	25.87	472.67	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
	6/30/01	37.24		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		

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.)	5/8/08	36.60	472.67	436.07
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	42.50		430.17
	8/4/09	DRY		--
	12/8/09	39.92		432.75
	2/11/10	36.62		436.05
	5/3/10	32.89		439.78
	8/2/10	36.16		436.51
	11/2/10	38.75		433.92
	2/1/11	32.77		439.90
	4/25/11	29.03		443.64
	8/3/11	33.18		439.49
	10/10/11	35.58		437.09
	1/31/12	39.80		432.87
	5/7/12	37.29		435.38
	8/6/12	NM ^(e)		--
	11/12/12	40.72		431.95
	2/12/13	32.68		439.99
4/22/13	35.09	437.58		
8/21/13	37.00	435.67		
11/7/13	35.94	436.73		
1/21/14	34.65	438.02		
6/10/14	42.40	430.27		
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

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.)	3/21/96	18.89	471.93	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		--
	12/18/01	43.36		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		

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.)	5/10/04	32.98	471.93	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		--
	2/11/09	DRY		--
	4/27/09	44.87		427.06
	8/4/09	DRY		--
	12/8/09	43.02		428.91
	2/11/10	38.89		433.04
	5/3/10	34.56		437.37
	8/2/10	37.87		434.06
	11/2/10	40.45		431.48
	2/1/11	35.73		436.20
	4/25/11	30.72		441.21
	8/3/11	34.95		436.98
10/10/11	37.45	434.48		
1/31/12	42.15	429.78		
5/7/12	39.11	432.82		

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.)	8/6/12	43.66	471.93	428.27
	11/12/12	42.20		429.73
	2/12/13	34.24		437.69
	4/22/13	36.78		435.15
	6/25/13	37.15		434.78
	8/21/13	37.98		433.95
	11/7/13	39.82		432.11
	1/21/14	35.42		436.51
	6/10/14	42.36		429.57
MW-7	3/30/94	31.98	472.33	440.35
	4/25/94	33.56		438.77
	8/12/94	43.35		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		

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.)	3/13/00	27.09	472.33	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
	6/5/02	36.55		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		

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.)	5/8/08	36.00	472.33	436.33
	7/23/08	44.42		427.91
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	41.80		430.53
	8/4/09	DRY		--
	12/17/09	39.26		433.07
	2/11/10	36.18		436.15
	5/3/10	31.80		440.53
	8/2/10	34.31		438.02
	11/2/10	36.68		435.65
	2/1/11	32.66		439.67
	4/25/11	27.75		444.58
	8/3/11	31.36		440.97
	10/10/11	33.63		438.70
	1/31/12	38.74		433.59
	5/7/12	35.97		436.36
	8/6/12	39.85		432.48
	11/12/12	38.73		433.60
	2/12/13	31.46		440.87
4/22/13	33.19	439.14		
6/24/13	34.10	438.23		
8/21/13	36.90	435.43		
11/7/13	34.06	438.27		
1/21/14	33.11	439.22		
6/10/14	40.50	431.83		
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
	11/4/04	34.77		436.41
	1/12/05	29.66		441.52
	5/2/05	25.91		445.27

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.)	7/19/05	30.56	471.18	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		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/17/09	39.92		431.26
	2/11/10	36.72		434.46
	5/3/10	32.81		438.37
	8/2/10	36.08		435.10
	11/2/10	38.44		432.74
	2/1/11	34.11		437.07
	4/25/11	28.72		442.46
	8/3/11	33.09		438.09
	10/10/11	35.69		435.49
	1/31/12	40.08		431.10
	5/7/12	37.38		433.80
8/6/12	41.94	429.24		
11/12/12	40.87	430.31		
2/12/13	32.81	438.37		
4/22/13	35.00	436.18		
6/25/13	36.40	434.78		

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.)	8/21/13	37.20	471.18	433.98
	11/7/13	35.95		435.23
	1/21/14	34.63		436.55
	6/10/14	43.17		428.01
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
	8/2/07	44.11		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		--
	2/11/09	DRY		--
	4/27/09	43.79		426.99
	8/4/09	DRY		--
	12/8/09	43.61		427.17
2/11/10	39.48	431.30		
5/3/10	34.96	435.82		
8/2/10	38.00	432.78		
11/2/10	40.30	430.48		
2/1/11	35.97	434.81		

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.)	4/25/11	30.64	470.78	440.14
	8/3/11	35.17		435.61
	10/10/11	37.64		433.14
	1/31/12	42.06		428.72
	5/7/12	39.43		431.35
	8/6/12	43.51		427.27
	11/12/12	42.66		428.12
	2/12/13	34.70		436.08
	4/22/13	37.01		433.77
	6/25/13	37.82		432.96
	8/21/13	39.02		431.76
	11/7/13	37.87		432.91
	1/21/14	36.31		434.47
	6/10/14	43.15		427.63
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		

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-10 (cont.)	7/23/08	DRY	471.63	--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	45.10		426.53
	8/4/09	44.52		427.11
	12/8/09	42.80		428.83
	2/11/10	39.74		431.89
	5/3/10	33.97		437.66
	8/2/10	36.12		435.51
	11/2/10	38.30		433.33
	2/1/11	34.63		437.00
	4/25/11	29.63		442.00
	8/3/11	33.26		438.37
	10/10/11	35.62		436.01
	1/31/12	39.67		431.96
	5/7/12	38.14		433.49
	8/6/12	40.65		430.98
	11/12/12	40.53		431.10
	2/12/13	33.19		438.44
	4/22/13	34.99		436.64
6/25/13	36.25	435.38		
8/21/13	37.11	434.52		
11/7/13	36.05	435.58		
1/21/14	34.55	437.08		
6/10/14	40.18	431.45		
MW-11	12/16/08	DRY	473.26	--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	40.25		433.01
	2/11/10	NM		--
	5/3/10	31.36		441.90
	8/2/10	31.94	472.96 ^(c)	441.02

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-11 (cont.)	11/2/10	36.98	472.96	435.98
	2/1/11	32.30		440.66
	4/25/11	27.31		445.65
	8/3/11	31.11		441.85
	10/10/11	33.27		439.69
	1/31/12	34.36		438.60
	5/7/12	31.61		441.35
	8/6/12	35.20		437.76
	11/12/12	35.34		437.62
	2/12/13	30.64		442.32
	4/22/13	32.74		440.22
	6/24/13	33.62		439.34
	8/21/13	34.74		438.22
	11/7/13	33.75		439.21
	1/21/14	32.43		440.53
6/10/14	38.62	434.34		
MW-12	6/14/12	40.62	469.77	429.15
	8/6/12	43.22		426.55
	11/12/12	41.85		427.92
	2/12/13	34.10		435.67
	4/22/13	36.18		433.59
	6/25/13	37.80		431.97
	8/21/13	38.80		430.97
	11/7/13	37.40		432.37
	1/21/14	35.94		433.83
	6/10/14	42.76		427.01
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
	7/19/05	29.76		443.52
	11/21/05	31.81		441.47
	2/9/06	27.21		446.07

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)	
VW-2 (cont.)	5/17/06	25.26	473.28	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		--	
	2/11/09	DRY		--	
	4/27/09	DRY		--	
	8/4/09	DRY		--	
	12/8/09	DRY		--	
	2/11/10	NM		--	
	5/3/10	31.84		441.44	
	8/2/10	33.15		472.57 ^(c)	439.42
	11/2/10	DRY			--
	2/1/11	32.80			439.77
	4/25/11	25.43	447.14		
	8/3/11	26.82	445.75		
	10/10/11	33.29	439.28		
	1/31/12	32.19	440.38		
	5/7/12	31.50	441.07		
	8/6/12	32.64	439.93		
	11/12/12	33.90	438.67		
	2/12/13	31.60	440.97		
	4/22/13	33.51	439.06		
	8/21/13	DRY	--		
	11/7/13	DRY	--		
	1/21/14	33.16	439.41		
6/10/14	34.97	437.60			

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	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
	7/23/08	DRY		--
	10/13/08	DRY		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	DRY		--
	2/11/10	DRY		--
	5/3/10	31.85		442.53
	8/2/10	34.72		439.66
	11/2/10	DRY		--
	2/1/11	32.56		441.82
	4/25/11	27.81		446.57
	8/3/11	28.93		445.45
	10/10/11	33.66		440.72
1/31/12	DRY	--		
5/7/12	DRY	--		
8/6/12	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)
VW-3 (cont.)	11/12/12	DRY	474.38	--
	2/12/13	31.70		442.68
	4/22/13	33.49		440.89
	8/21/13	35.46		438.92
	11/7/13	35.07		439.31
	1/21/14	33.80		440.58
	6/10/14	36.74		437.64
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		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	41.39		431.43
	2/11/10	NM		--
	5/3/10	32.32	440.50	
	8/2/10	33.96	472.64 ^(c)	438.68
	11/2/10	37.46		435.18
2/1/11	33.01	439.63		
4/25/11	28.23	444.41		
8/3/11	31.85	440.79		
10/10/11	31.60	441.04		

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)
TP-1 (cont.)	1/31/12	35.43	472.64	437.21
	5/7/12	34.70		437.94
	8/6/12	36.59		436.05
	11/12/12	37.00		435.64
	2/12/13	31.96		440.68
	4/22/13	33.71		438.93
	8/21/13	35.86		436.78
	11/7/13	34.65		437.99
	1/21/14	33.38		439.26
6/10/14	40.80	431.84		
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		--
	2/11/09	DRY		--
	4/27/09	DRY		--
	8/4/09	DRY		--
	12/8/09	40.08		432.85
	2/11/10	NM		--
	5/3/10	31.85	441.08	
8/2/10	33.57	472.78 ^(c)	439.21	
11/2/10	37.35		435.43	
2/1/11	32.79		439.99	

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)
TP-2 (cont.)	4/25/11	28.30	472.78	444.48
	8/3/11	31.59		441.19
	10/10/11	32.14		440.64
	1/31/12	34.32		438.46
	5/7/12	34.41		438.37
	8/6/12	36.00		436.78
	11/12/12	36.25		436.53
	2/12/13	31.81		440.97
	4/22/13	33.70		439.08
	8/21/13	35.43		437.35
	11/7/13	34.50		438.28
	1/21/14	33.25		439.53
	6/10/14	39.73		433.05
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
	2/11/09	48.28		424.57
	4/27/09	41.74		431.11
	8/4/09	52.22		420.63
	12/8/09	39.79		433.06
	2/11/10	35.57		437.28
	5/3/10	31.70		441.15
	8/2/10	34.76		438.09
	11/2/10	37.49		435.36
	2/1/11	32.83		440.02
	4/25/11	27.96		444.89
	8/3/11	31.96		440.89
	10/10/11	34.40		438.45
	1/31/12	39.39		433.46
	5/7/12	36.35		436.50
	8/6/12	40.60		432.25
	11/12/12	39.29		433.56
2/12/13	31.63	441.22		

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 (cont.)	4/22/13	33.72	472.85	439.13
	6/24/13	35.08		437.77
	8/21/13	35.90		436.95
	11/7/13	34.79		438.06
	1/21/14	33.57		439.28
	6/10/14	41.71		431.14
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
	2/11/09	51.50		420.11
	4/27/09	44.71		426.90
	8/4/09	54.67		416.94
	12/8/09	42.88		428.73
	2/11/10	38.63		432.98
	5/3/10	34.46		437.15
	8/2/10	37.72		433.89
	11/2/10	40.50		431.11
	2/1/11	35.66		435.95
	4/25/11	30.69		440.92
	8/3/11	35.00		436.61
	10/10/11	37.44		434.17
	1/31/12	42.19		429.42
	5/7/12	39.10		432.51
	8/6/12	43.90		427.71
	11/12/12	42.25		429.36
	2/12/13	34.35		437.26
	4/22/13	36.70		434.91
	6/25/13	36.94		434.67
8/21/13	37.85	433.76		
11/7/13	36.94	434.67		
1/21/14	35.59	436.02		
6/10/14	43.35	428.26		

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-3	5/22/08	40.20	470.33	430.13
	7/23/08	49.09		421.24
	10/13/08	54.62		415.71
	2/11/09	51.96		418.37
	4/27/09	45.17		425.16
	8/4/09	56.32		414.01
	12/8/09	42.92		427.41
	2/11/10	38.75		431.58
	5/3/10	34.51		435.82
	8/2/10	35.59		434.74
	11/2/10	40.00		430.33
	2/1/11	35.50		434.83
	4/25/11	30.45		439.88
	8/3/11	34.71		435.62
	10/10/11	37.00		433.33
	1/31/12	42.10		428.23
	5/7/12	38.70		431.63
	8/6/12	43.26		427.07
	11/12/12	41.48		428.85
	2/12/13	33.87		436.46
4/22/13	36.10	434.23		
6/25/13	37.39	432.94		
8/21/13	38.38	431.95		
11/7/13	36.85	433.48		
1/21/14	35.32	435.01		
6/10/14	44.03	426.30		
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
	2/11/09	51.71		416.77
	4/27/09	45.10		423.38
	8/4/09	56.46		412.02
	12/8/09	42.26		426.22

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-4 (cont.)	2/11/10	37.98	468.48	430.50
	5/3/10	34.04		434.44
	8/2/10	36.94		431.54
	11/2/10	39.50		428.98
	2/1/11	35.11		433.37
	4/25/11	30.12		438.36
	8/3/11	34.54		433.94
	10/10/11	36.60		431.88
	1/31/12	42.10		426.38
	5/7/12	38.26		430.22
	8/6/12	42.80		425.68
	11/12/12	40.86		427.62
	2/12/13	33.29		435.19
	4/22/13	35.90		432.58
	8/21/13	38.30		430.18
	11/7/13	36.45		432.03
	1/21/14	35.99		432.49
6/10/14	44.63	423.85		
DW-5	12/8/09	43.05	471.86	428.81
	2/11/10	38.93		432.93
	5/3/10	34.55		437.31
	8/2/10	37.56		434.30
	11/2/10	40.00		431.86
	2/1/11	35.57		436.29
	4/25/11	30.59		441.27
	8/3/11	34.64		437.22
	10/10/11	37.00		434.86
	1/31/12	42.31		429.55
	5/7/12	38.98		432.88
	8/6/12	46.32		425.54
	11/12/12	41.65		430.21
	2/12/13	34.10		437.76
4/22/13	36.52	435.34		

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-5 (cont.)	6/25/13	37.42	471.86	434.44
	8/21/13	38.35		433.51
	11/7/13	36.97		434.89
	1/21/14	34.45		437.41
	6/10/14	43.51		428.35
DW-6	12/8/09	43.50	471.77	428.27
	2/11/10	39.22		432.55
	5/3/10	35.15		436.62
	8/2/10	38.35		433.42
	11/2/10	40.09		431.68
	2/1/11	36.35		435.42
	4/25/11	31.32		440.45
	8/3/11	35.63		436.14
	10/10/11	38.09		433.68
	1/31/12	42.69		429.08
	5/7/12	39.82		431.95
	8/6/12	44.50		427.27
	11/12/12	42.95		428.82
	2/12/13	34.96		436.81
	4/22/13	37.29		434.48
	6/25/13	38.55		433.22
	8/21/13	39.55		432.22
	11/7/13	38.24		433.53
1/21/14	37.03	434.74		
6/10/14	44.40	427.37		
DW-7	12/8/09	43.01	470.07	427.06
	2/11/10	38.70		431.37
	5/3/10	34.64		435.43
	8/2/10	37.82		432.25
	11/2/10	40.42		429.65
	2/1/11	35.76		434.31
	4/25/11	30.82		439.25
	8/3/11	35.19		434.88

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-7 (cont.)	10/10/11	37.55	470.07	432.52
	1/31/12	42.35		427.72
	5/7/12	39.30		430.77
	8/6/12	44.02		426.05
	11/12/12	42.43		427.64
	2/12/13	34.54		435.53
	4/22/13	36.80		433.27
	6/25/13	38.44		431.63
	8/21/13	39.91		430.16
	11/7/13	38.25		431.82
	1/21/14	36.70		433.37
6/10/14	44.67	425.40		
DW-8	4/25/11	27.23	472.31	445.08
	8/3/11	31.14		441.17
	10/10/11	33.41		438.90
	1/31/12	38.69		433.62
	5/7/12	35.52		436.79
	8/6/12	39.61		432.70
	11/12/12	38.00		434.31
	2/12/13	30.46		441.85
	4/22/13	32.66		439.65
	6/24/13	33.87		438.44
	8/21/13	34.43		437.88
	11/7/13	33.54		438.77
	1/21/14	33.03		439.28
	6/10/14	40.60		431.71
DW-9	6/14/12	40.85	469.80	428.95
	8/6/12	43.65		426.15
	11/12/12	42.05		427.75
	2/12/13	34.25		435.55
	4/22/13	36.39		433.41
	6/25/13	38.46		431.34
	8/21/13	39.32		430.48

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-9 (cont.)	11/7/13	37.76	469.80	432.04
	1/21/14	36.26		433.54
	6/10/14	44.05		425.75
MW-A	1/17/99	30.13	NM	--
MW-B	1/17/99	30.29	NM	--
MW-C	1/17/99	30.60	NM	--
MW-D	1/17/99	31.32	NM	--
MW-E	1/17/99	31.36	NM	--
MW-W	1/17/99	30.91	NM	--
IP-1	7/23/08	45.49	473.16	427.67
	10/13/08	51.30		421.86
	5/3/10 ^(f)	33.80		439.36
	4/25/11	27.97	473.06 ^(c)	445.09
	1/31/12	39.26		433.80
	5/7/12	36.18		436.88
	8/6/12	40.23		432.83
	11/12/12	38.76		434.30
	2/12/13	31.25		441.81
	4/22/13	33.28		439.78
	6/24/13	34.85		438.21
	8/21/13	36.10		436.96
	11/7/13	35.07		437.99
	1/21/14	33.57		439.49
6/10/14	40.90	432.16		
IP-2	7/23/08	46.83	473.21	426.38
	10/13/08	51.40		421.81
	5/3/10 ^(f)	32.00		441.21
	4/25/11	28.04	473.06 ^(c)	445.02
	5/7/12	37.21		435.85
	8/6/12	40.78		432.28
	11/12/12	39.79		433.27
	2/12/13	NM		--
	4/22/13	33.86		439.20

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)
IP-2 (cont.)	8/21/13	NM	473.06	--
	11/7/13	NM		--
	1/21/14	NM		--
	6/10/14	42.39		430.67
IP-3	7/23/08	45.47	472.97	427.50
	10/13/08	51.11		421.86
	5/3/10 ^(f)	31.68		441.29
	4/25/11	28.07		473.05 ^(c)
	5/7/12	36.41	436.64	
	8/6/12	40.70	432.35	
	11/12/12	39.41	433.64	
	2/12/13	NM	--	
	4/22/13	34.12	438.93	
	8/21/13	NM	--	
	11/7/13	NM	--	
	1/21/14	NM	--	
	6/10/14	42.35	430.70	
IP-4	7/23/08	44.55	473.02	428.47
	10/13/08	50.89		422.13
	5/3/10 ^(f)	31.61		441.41
	4/25/11	27.93		473.10 ^(c)
	5/7/12	36.30	436.80	
	8/6/12	40.67	432.43	
	11/12/12	39.15	433.95	
	2/12/13	NM	--	
	4/22/13	33.76	439.34	
	8/21/13	NM	--	
	11/7/13	NM	--	
	1/21/14	NM	--	
	6/10/14	41.83	431.27	
IP-5	7/23/08	44.70	473.06	428.36
	10/13/08	51.06		422.00
	5/3/10 ^(f)	31.60		441.46

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)
IP-5 (cont.)	4/25/11	27.80	473.05 ^(c)	445.25
	5/7/12	36.90		436.15
	8/6/12	40.65		432.40
	11/12/12	39.16		433.89
	2/12/13	NM		--
	4/22/13	33.78		439.27
	6/24/13	35.08		437.97
	8/21/13	NM		--
	11/7/13	34.68		438.37
	1/21/14	33.14		439.91
	6/10/14	41.75		431.30
IP-6	7/23/08	49.91	472.73	422.82
	10/13/08	55.63		417.10
	5/3/10 ^(f)	34.98		437.75
	4/25/11	30.60	472.43 ^(c)	441.83
	5/7/12	39.70		432.73
	8/6/12	44.44		427.99
	11/12/12	42.67		429.76
	2/12/13	NM		--
	4/22/13	37.05		435.38
	8/21/13	NM		--
	11/7/13	NM		--
	1/21/14	NM		--
	6/10/14	45.71		426.72
IP-7	7/23/08	51.45	472.86	421.41
	10/13/08	57.23		415.63
	5/3/10 ^(f)	35.75		437.11
	4/25/11	31.51	472.43 ^(c)	440.92
	5/7/12	41.87		430.56
	8/6/12	45.63		426.80
	11/12/12	43.87		428.56
	2/12/13	NM		--
	4/22/13	38.34		434.09

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)
IP-7 (cont.)	8/21/13	NM	472.43	--
	11/7/13	NM		--
	1/21/14	NM		--
	6/10/14	46.70		425.73
IP-8	12/16/08	50.48	473.13	422.65
	5/3/10 ^(f)	33.34		439.79
	4/25/11	28.07	473.22 ^(c)	445.15
	1/31/12	39.45		433.77
	5/7/12	36.25		436.97
	8/6/12	40.32		432.90
	11/12/12	39.10		434.12
	2/12/13	31.59		441.63
	4/22/13	33.75		439.47
	8/21/13	36.69		436.53
	11/7/13	34.58		438.64
	1/21/14	33.42		439.80
	6/10/14	41.72		431.50
IP-9	12/16/08	52.51	473.47	420.96
	5/3/10 ^(f)	31.79		441.68
	4/25/11	27.84	473.35 ^(c)	445.51
	1/31/12	39.37		433.98
	5/7/12	37.03		436.32
	8/6/12	40.30		433.05
	11/12/12	38.77		434.58
	2/12/13	31.25		442.10
	4/22/13	33.85		439.50
	8/21/13	35.50		437.85
	11/7/13	33.96		439.39
	1/21/14	32.78		440.57
	6/10/14	40.65		432.70
IP-10	2/11/09	48.77	473.78	425.01
	5/3/10 ^(f)	32.23		441.55
	4/25/11	27.79	473.88 ^(c)	446.09

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)
IP-10 (cont.)	1/31/12	39.24	473.88	434.64
	5/7/12	36.24		437.64
	8/6/12	40.36		433.52
	11/12/12	38.99		434.89
	2/12/13	31.18		442.70
	4/22/13	33.40		440.48
	6/24/13	34.87		439.01
	8/21/13	35.55		438.33
	11/7/13	34.41		439.47
	1/21/14	33.11		440.77
	6/10/14	42.15		431.73

- (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) Water Table Elevation = (Casing Elevation - Depth to Water).
- (c) Wells were resurveyed by Cross Land Surveying, Inc., per AB 2886 requirements, on 19 October 2010 after remediation system construction. Benchmark K2-741, elevation is 467.835 feet above MSL.
- (d) Depth of groundwater assumed to be below screened interval; well had 6 inches or less of water.
- (e) NM - Not measured.
- (f) Baseline remediation system values.

ATTACHMENT D
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-1	6/1/93	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	NS ^(e)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	--	--	--	--	--	--	--	--	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-1 (cont.)	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	--	--	--	--	--	--	--	--
	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	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-1 (cont.)	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
	2/11/09	2,100	4.1	8.1	18	36	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<50	ND<0.5	ND<0.5
	4/27/09	2,800	9.9	34	94	170	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	8/4/09	890	ND<0.5	ND<0.5	1.7	1.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	12/8/09	3,200	16	18	81	110	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<20	ND<0.5	ND<0.5
	2/11/10	1,300	3.7	1.7	13	6.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	5/5/10	710	2.2	0.92	5.9	2.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	1,200	2.4	3.7	22	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
	11/3/10	1,100	7.3	34	18	67	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/11	200	ND<0.5	ND<0.5	0.81	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
	4/25/11	130	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
	8/3/11	1,500	2.0	15	44	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
	10/11/11	2,300	6.0	30	15	64	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<8	ND<0.5	ND<0.5
	1/31/12	1,700	1.6	11	26	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<100	ND<0.5	ND<0.5
	5/9/12	3,300	2.2	5.5	52	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<100	ND<5	ND<0.5	ND<0.5
	8/8/12	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
11/12/12	110	ND<0.5	ND<0.5	1.1	3.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
2/12/13	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	
4/22/13	240	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	
8/21/13	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<5.0	ND<50	ND<5.0	ND<0.5	ND<0.5	

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-1 (cont.)	11/7/13	4,300	0.82	2.9	76	160	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/21/14	9,600	2.5	5.2	130	250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<15	ND<0.5	ND<0.5
	6/11/14	2,500	ND<0.5	1.6	27	58	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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	--	--	--	--	--	--	--	--	
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	--	--	--	--	--	--	--	--	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-2 (cont.)	5/29/98	68,000	5,600	4,700	2,400	11,000	ND<250	--	--	--	--	--	--	--	--
	9/15/98	36,000	3900	1200	1400	7800	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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-2 (cont.)	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 ^(f)	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 ^(f)	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
	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
2/11/09	22,000	4,400	120	1,500	430	650	ND<9	ND<9	12	330	ND<3,000	ND<90	ND<9	ND<9	
4/28/09	28,000	3,400	600	1,500	1,700	380	ND<8	ND<8	8.1	150	ND<1,000	ND<80	ND<8	ND<8	
8/4/09	30,000	5,800	170	1,500	370	1,400	ND<9	ND<9	18	670	ND<3,000	ND<90	ND<9	ND<9	
12/8/09	24,000	3,100	200	1,200	830	520	ND<7	ND<7	8.0	250	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-2 (cont.)	2/12/10	19,000	2,900	440	940	1,300	820	ND<7	ND<7	9.5	400	ND<700	ND<70	ND<7	ND<7
	5/3/10	26,000	3,100	870	1,100	2,200	530	ND<7	ND<7	8.0	370	ND<700	ND<70	ND<7	ND<7
	8/3/10	19,000	2,000	150	840	730	280	ND<4	ND<4	4.4	200	ND<400	ND<40	ND<4	ND<4
	11/4/10	13,000	2,000	160	420	390	540	ND<4	ND<4	5.7	510	ND<400	ND<40	ND<4	ND<4
	2/2/11	10,000	1,600	130	320	410	410	ND<4	ND<4	4.2	410	ND<400	ND<40	ND<4	ND<4
	4/28/11	13,000	1,400	100	470	670	450	ND<2.5	ND<2.5	4.6	200	ND<250	ND<50	ND<2.5	ND<2.5
	8/4/11	16,000	1,900	200	430	820	660	ND<3	ND<3	5.7	420	ND<1,500	ND<30	ND<3	ND<3
	10/11/11	7,000	810	110	200	430	370	ND<1.5	ND<1.5	3.3	170	ND<250	ND<15	ND<1.5	ND<1.5
	2/1/12	14,000	1,200	130	440	650	340	ND<2.5	ND<2.5	5.4	170	ND<800	ND<25	ND<2.5	ND<2.5
	5/11/12	14,000	1,200	140	490	1,000	220	ND<2.5	ND<2.5	2.7	120	ND<250	ND<25	ND<2.5	ND<2.5
	8/8/12	15,000	720	120	460	580	140	ND<2.5	ND<2.5	2.6	70	ND<250	ND<25	ND<2.5	ND<2.5
	11/14/12	5,700	480	30	96	300	200	ND<0.9	ND<0.9	1.8	110	ND<200	ND<9	ND<0.9	ND<0.9
	2/13/13	270	29	4.4	8.9	19	7.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/23/13	430	10	2.2	3.8	8.5	13	ND<0.5	ND<0.5	ND<0.5	6.6	ND<50	ND<8	ND<0.5	ND<0.5
	6/24/13	1,700	7.2	0.91	12	16	9.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	11,000	560	30	430	440	88	ND<0.5	ND<0.5	1.0	48	ND<50	ND<8	ND<0.5	ND<0.5
	11/7/13	4,700	140	7.5	160	170	28	ND<0.9	ND<0.9	ND<0.9	22	ND<90	ND<9	ND<0.9	ND<0.9
1/22/14	3,000	140	9.0	68	92	43	ND<0.5	ND<0.5	ND<0.5	36	ND<50	ND<5	ND<0.5	ND<0.5	
6/11/14	6,900	520	40	300	320	120	ND<0.5	ND<0.5	1.4	100	ND<80	ND<25	ND<0.5	ND<0.5	
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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-3 (cont.)	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	
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	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-3 (cont.)	2/11/09	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
	4/27/09	ND<50	ND<0.5	ND<0.5	ND<0.5	0.64	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/09	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
	12/8/09	150	3.6	1.1	2.4	2.6	0.82	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<50	ND<0.5	ND<0.5
	2/11/10	61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5	53	ND<5	ND<0.5	ND<0.5
	5/6/10	ND<50	ND<0.5	1.0	ND<0.5	0.95	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	74	2.4	5.5	0.96	8.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/3/10	ND<50	ND<0.5	2.5	ND<0.5	3.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/11	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
	4/25/11	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
	8/4/11	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
	10/10/11	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
	1/31/12	ND<50	ND<0.5	0.67	7.1	3.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/7/12	74	ND<0.5	0.56	1.9	7.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	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
	11/12/12	170	ND<0.5	0.83	4.1	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	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
	4/22/13	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
	8/22/13	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
11/7/13	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	
1/22/14	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	
6/11/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
MW-4	3/30/94	120	4.2	15	2.5	26	--	--	--	--	--	--	--	--	--
	4/25/94	65	ND<0.5	1.8	ND<0.5	2.1	--	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-4 (cont.)	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	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	
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-4 (cont.)	4/27/09	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
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/09	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
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/10	ND<50	2.4	1.8	2.3	4.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	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
	2/1/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/11	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	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
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	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	
1/21/14	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	
6/11/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
MW-5	3/30/94	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	--	--	--	--	--	--	--	--	--

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-5 (cont.)	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	--	--	--	--	--	--	--	--	--
	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	--	--	--	--	--	--	--	--	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-5 (cont.)	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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/18/02	890	0.65	ND<0.5	ND<0.5	ND<0.5	3.1	--	--	--	--	--	--	--	--	
	6/5/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/21/02	2,100	20	ND<0.5	63	4.0	7.0	--	--	--	--	--	--	--	--	
	12/3/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	
	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		

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-5 (cont.)	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	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	
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	4/27/09	250	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	
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	12/9/09	140	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	
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	5/6/10	220	ND<0.5	ND<0.5	2.2	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	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	11/3/10	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	
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	4/25/11	190	ND<0.5	ND<0.5	0.80	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	
8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
10/10/11	160	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		
1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
5/8/12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-5 (cont.)	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	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
	1/21/14	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
	6/11/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
MW-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	--	--	--	--	--	--	--	--	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-6 (cont.)	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	--	--	--	--	--	--	--	--
	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	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/18/01	43,000	3,800	350	1,900	3,000	900	--	--	--	--	--	--	--	--
	1/22/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-6 (cont.)	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	1,800	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	--	--
	8/2/07	15,000	1,800	120	980	510	310	ND<2.5	ND<2.5	3.0	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	
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4/28/09	16,000	2,200	160	860	230	320	ND<2.5	ND<2.5	3.8	580	ND<1,000	ND<25	ND<2.5	ND<2.5	
8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-6 (cont.)	12/9/09	15,000	2,100	96	800	160	340	ND<5	ND<5	ND<5	460	ND<2,000	ND<50	ND<5	ND<5
	2/12/10	21,000	2,500	140	1,000	240	540	ND<5	ND<5	6.0	460	ND<500	ND<50	ND<5	ND<5
	5/4/10	17,000	2,100	120	780	260	820	ND<5	ND<5	8.6	450	ND<500	ND<50	ND<5	ND<5
	8/3/10	21,000	2,700	120	690	250	730	ND<5	ND<5	7.4	480	ND<500	ND<50	ND<5	ND<5
	11/2/10	12,000	1,600	57	410	120	240	ND<2.5	ND<2.5	2.7	160	ND<250	ND<25	ND<2.5	ND<2.5
	2/2/11	15,000	1,600	89	460	150	350	ND<2.5	ND<2.5	3.7	310	ND<250	ND<25	ND<2.5	ND<2.5
	4/27/11	8,500	870	28	180	67	1,200	ND<2.5	ND<2.5	10	1,100	ND<250	ND<25	ND<2.5	ND<2.5
	8/4/11	6,300	600	17	58	16	650	ND<1.5	ND<1.5	7.8	1,000	ND<600	ND<15	ND<1.5	ND<1.5
	10/11/11	10,000	1,000	60	160	66	370	ND<2.5	ND<2.5	3.1	860	ND<250	ND<25	ND<2.5	ND<2.5
	1/31/12	5,200	370	6.7	5.1	12	84	ND<0.9	ND<0.9	ND<0.9	1,500	ND<90	ND<10	ND<0.9	ND<0.9
	5/10/12	11,000	1,200	60	140	69	150	ND<0.9	ND<0.9	ND<2	290	ND<250	ND<9	ND<0.9	ND<0.9
	8/8/12	12,000	1,200	31	69	47	170	ND<2.5	ND<2.5	ND<2.5	440	ND<250	ND<25	ND<2.5	ND<2.5
	11/14/12	17,000	1,600	68	120	96	190	ND<2.5	ND<2.5	ND<2.5	86	ND<500	ND<25	ND<2.5	ND<2.5
	2/14/13	12,000	1,400	42	230	56	200	ND<2.5	ND<2.5	2.5	100	ND<250	ND<25	ND<2.5	ND<2.5
	4/24/13	8,600	880	22	89	25	190	ND<1.5	ND<1.5	2.7	700	ND<400	ND<15	ND<1.5	ND<1.5
	6/25/13	6,800	350	7.0	26	9.3	81	ND<0.9	ND<0.9	1.0	280	ND<800	ND<9	ND<0.9	ND<0.9
	8/22/13	14,000	1,500	59	290	150	110	ND<1.5	ND<1.5	ND<1.5	93	ND<400	ND<15	ND<1.5	ND<1.5
	11/7/13	12,000	1,200	62	190	81	100	ND<2.5	ND<2.5	ND<2.5	66	ND<250	ND<25	ND<2.5	ND<2.5
1/22/14	15,000	1,100	37	120	52	110	ND<2.5	ND<2.5	ND<2.5	190	ND<250	ND<25	ND<2.5	ND<2.5	
6/10/14	11,000	860	20	50	20	120	ND<1.5	ND<1.5	ND<1.5	280	ND<150	ND<15	ND<1.5	ND<1.5	
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	--	--	--	--	--	--	--	--	--

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-7 (cont.)	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	--	--	--	--	--	--	--	--	--	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-7 (cont.)	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	--	--	--	--	--	--	--	--
	9/26/01	1,900	16	0.89	2.3	25	ND<0.5	--	--	--	--	--	--	--	--
	12/18/01	3,000	13	0.88	3.4	3.4	ND<0.5	--	--	--	--	--	--	--	--
	1/22/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	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	2.0	ND<0.5	16	16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/12/05	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	0.56	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	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-7 (cont.)	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
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/09	4,500	7.4	3.8	33	7.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	4,500	6.7	3.4	27	8.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<8	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	3,600	7.9	3.6	14	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	2,100	4.6	1.3	16	3.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/11	1,200	3.3	0.59	1.6	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/10/11	1,900	3.5	1.2	0.79	1.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
1/31/12	1,700	1.5	0.55	6.0	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
5/9/12	1,600	1.4	0.79	1.4	0.95	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
8/7/12	1,500	1.0	ND<0.5	0.51	0.65	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-7 (cont.)	11/13/12	690	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
	2/12/13	860	1.0	ND<0.5	2.3	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
	4/23/13	720	0.65	0.61	1.0	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
	6/24/13	1,700	1.3	ND<0.5	2.7	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	880	0.54	ND<0.5	1.7	0.82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	330	ND<0.5	ND<0.5	0.51	0.73	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	1,000	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
	6/10/14	1,000	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<80	ND<5	ND<0.5	ND<0.5
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
	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	--	--	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-8 (cont.)	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	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	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	
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	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	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	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	
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/11	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	
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	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	
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	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	
8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/12/12	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		
2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
4/23/13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-8 (cont.)	6/25/13	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
	8/22/13	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
	11/7/13	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
	1/22/14	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
	6/11/14	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	80	ND<5	ND<0.5	ND<0.5
MW-9	9/5/03	3,400	23	1.5	110	10	10	ND<0.5	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	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	2.0	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	1.0	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	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	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-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
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	1,200	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
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/10	2,700	120	7.0	35	14	44	ND<0.5	ND<0.5	0.52	31	ND<200	ND<5	ND<0.5	ND<0.5
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	430	1.1	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
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/11	1,300	14	ND<0.5	2.8	0.71	23	ND<0.5	ND<0.5	ND<0.5	26	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/11	470	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.0	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/8/12	2,500	12	1.1	9.0	3.0	7.4	ND<0.5	ND<0.5	ND<0.5	8.8	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/12	740	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.2	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4/23/13	1,900	4.5	0.75	1.7	1.0	3.4	ND<0.5	ND<0.5	ND<0.5	5.0	ND<50	ND<5	ND<0.5	ND<0.5	
6/25/13	2,800	20	0.91	3.8	2.7	6.0	ND<0.5	ND<0.5	ND<0.5	29	ND<50	ND<5	ND<0.5	ND<0.5	
8/22/13	1,500	20	0.70	1.7	0.84	9.0	ND<0.5	ND<0.5	ND<0.5	40	ND<50	ND<5	ND<0.5	ND<0.5	
11/7/13	1,400	3.1	ND<0.5	0.70	0.58	4.2	ND<0.5	ND<0.5	ND<0.5	12	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
MW-9	1/22/14	2,000	2.4	ND<0.5	0.81	0.79	2.7	ND<0.5	ND<0.5	ND<0.5	7.6	ND<50	ND<5	ND<0.5	ND<0.5	
(cont.)	6/11/14	780	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	ND<0.5	ND<0.5	5.4	ND<50	ND<5	ND<0.5	ND<0.5	
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	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<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<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	NS	
10/13/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-10 (cont.)	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	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
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	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
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/2/10	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
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	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
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	6/25/13	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
	8/21/13	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
11/7/13	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	
1/21/14	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	
6/10/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-11	12/16/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/09	100,000	6,100	9,000	3,100	20,000	3.3	ND<0.5	ND<0.5	ND<0.5	25	ND<200	ND<20	ND<0.5	ND<0.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/3/10	62,000	3,600	5,900	2,600	12,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	8/3/10	53,000	2,800	3,800	2,100	10,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	11/4/10	59,000	2,100	5,400	1,400	12,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	ND<15	ND<15
	2/2/11	20,000	210	610	560	3,600	ND<5	ND<5	ND<5	ND<5	38	ND<500	ND<50	ND<5	ND<5
	4/28/11	20,000	300	920	450	4,300	ND<5	ND<5	ND<5	ND<5	ND<25	ND<500	ND<50	ND<5	ND<5
	8/4/11	15,000	96	370	240	2,800	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
	10/25/11	18,000	130	500	319	2,900	ND<0.5	ND<0.5	ND<0.5	ND<0.5	18	ND<50	ND<10	ND<0.5	ND<0.5
	2/1/12	13,000	380	710	83	2,400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<50	ND<2.5	ND<2.5
	5/11/12	1,100	3.8	15	6.7	150	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	8/7/12	10,000	54	83	270	1,400	2.3	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<5	ND<0.5	ND<0.5
	11/13/12	1,100	5.7	4.1	15	86	1.6	ND<0.5	ND<0.5	ND<0.5	6.1	ND<50	ND<5	ND<0.5	ND<0.5
	2/13/13	6,400	28	72	160	860	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	4/24/13	5,800	16	18	140	640	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	6/24/13	8,000	24	34	190	830	ND<0.9	ND<0.9	ND<0.9	ND<0.9	5.8	ND<90	ND<9	ND<0.9	ND<0.9
8/22/13	9,600	26	32	260	940	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.6	ND<200	ND<20	ND<0.9	ND<0.9	
11/7/13	8,800	50	54	380	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	12	ND<150	ND<15	ND<1.5	ND<1.5	
1/22/14	15,000	44	45	390	910	ND<1.5	ND<1.5	ND<1.5	ND<1.5	7.7	ND<150	ND<15	ND<1.5	ND<1.5	
6/10/14	660	3.7	1.2	7.0	5.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
MW-12	6/14/12	6,900	8.5	2.2	96	22	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	8/8/12	6,000	10	2.2	100	12	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	11/14/12	5,500	6.8	2.0	67	13	ND<0.9	ND<0.9	ND<0.9	ND<0.9	ND<5	ND<90	ND<9	ND<0.9	ND<0.9
	2/13/13	2,500	7.6	1.3	26	3.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/24/13	1,400	2.2	0.78	7.7	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<100	ND<20	ND<0.5	ND<0.5
	6/25/13	4,400	8.8	5.2	26	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	4,500	15	2.4	33	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	4,600	15	2.4	47	13	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	3,400	4.3	1.5	12	2.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
6/10/14	4,500	10	2.9	67	13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
VW-2	8/4/04	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 ^(f)	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 ^(f)	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 ^(f)	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
	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	7.0	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	

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
VW-2 (cont.)	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	
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/9/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/5/10	2,800	130	6.1	170	130	1,300	ND<2.5	ND<2.5	12	1,700	ND<250	ND<25	ND<2.5	ND<2.5	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/4/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/11	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	ND<50	ND<0.5	ND<0.5	ND<0.5	0.51	0.79	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.83	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
2/12/13	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
4/24/13	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<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
VW-2	1/22/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
(cont.)	6/10/14	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<5	ND<50	ND<5	ND<0.5	ND<0.5	1,100	
	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<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	
2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
12/9/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
VW-3 (cont.)	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	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
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/4/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/11	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
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	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
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	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	
1/22/14	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	
6/10/14	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	6,800	ND<15	ND<15	47	4,400	ND<8,000	ND<150	ND<15	ND<15

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
TP-1 (cont.)	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	--	--
	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
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/09	10,000	690	19	700	45	1,000	ND<2.5	ND<2.5	8.8	2,900	ND<250	ND<25	ND<2.5	ND<2.5
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/5/10	15,000	2,100	360	1,100	620	3,400	ND<8	ND<8	27	4,500	ND<800	ND<80	ND<8	ND<8
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	14,000	1,000	270	280	1,600	4,500	ND<8	ND<8	28	4,800	ND<800	ND<80	ND<8	ND<8
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/11	6,600	350	64	170	730	2,600	ND<5	ND<5	15	1,400	ND<500	ND<50	ND<5	ND<5
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/11	2,000	32	4.3	49	220	1,500	ND<3	ND<3	9.7	1,000	ND<800	ND<30	ND<3	ND<3
1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
5/8/12	590	1.6	ND<0.5	7.1	22	28	ND<0.5	ND<0.5	ND<0.5	27	ND<80	ND<5	ND<0.5	ND<0.5	
8/7/12	2,800	24	3.7	74	68	110	ND<0.5	ND<0.5	0.94	62	ND<400	ND<5	ND<0.5	ND<0.5	
11/13/12	180	2.3	0.63	4.7	2.3	17	ND<0.5	ND<0.5	ND<0.5	9.6	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
TP-1 (cont.)	2/12/13	160	ND<0.5	ND<0.5	3.6	6.0	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/24/13	2,000	35	21	22	180	76	ND<0.5	ND<0.5	0.70	33	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	3,500	28	3.8	35	11	100	ND<0.5	ND<0.5	0.98	42	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	2,800	14	1.8	19	7.3	43	ND<0.5	ND<0.5	ND<0.5	25	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	3,400	11	1.4	16	5.2	41	ND<0.5	ND<0.5	ND<0.5	22	ND<50	ND<5	ND<0.5	ND<0.5
	6/10/14	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	28	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
	2/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
8/4/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12/17/09	7,200	950	ND<25	77	ND<25	13,000	ND<25	ND<25	130	20,000	ND<2,500	ND<250	ND<25	ND<25	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
TP-2 (cont.)	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	6,400	740	ND<25	450	130	14,000	ND<25	ND<25	130	9,900	ND<2,500	ND<250	ND<25	ND<25
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/4/10	4,900	230	82	150	630	980	ND<5	ND<5	6.3	14,000	ND<500	ND<50	ND<5	ND<5
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/11	130	1.6	ND<0.5	1.5	5.2	350	ND<0.5	ND<0.5	1.3	630	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/11/11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	120	ND<0.5	ND<0.5	ND<0.5	380	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	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
	8/7/12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	8.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/12	59	ND<0.5	ND<0.5	0.59	0.54	2.8	ND<0.5	ND<0.5	ND<0.5	13	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	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
	4/24/13	100	1.2	0.88	1.6	7.4	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.89	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
11/7/13	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	
1/21/14	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	
6/10/14	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
	2/11/09	520	45	5.3	32	31	42	ND<0.5	ND<0.5	ND<0.5	43	ND<100	ND<8	ND<0.5	ND<0.5
	4/28/09	2,700	250	36	160	190	86	ND<0.5	ND<0.5	0.84	120	ND<50	ND<5	ND<0.5	ND<0.5
	8/5/09	2,100	330	17	87	53	220	ND<0.5	ND<0.5	2.0	310	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-1 (cont.)	12/8/09	6,200	560	63	400	490	140	ND<0.5	ND<0.5	1.1	200	ND<200	ND<8	ND<0.5	ND<0.5
	2/12/10	2,000	200	36	130	150	49	ND<0.5	ND<0.5	ND<0.5	58	ND<200	ND<5	ND<0.5	ND<0.5
	5/4/10	1,800	160	27	110	140	21	ND<0.5	ND<0.5	ND<0.5	41	ND<100	ND<5	ND<0.5	ND<0.5
	8/2/10	1,400	53	11	67	78	8.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/10	ND<50	0.90	ND<0.5	0.70	1.3	0.54	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/2/11	58	1.9	ND<0.5	2.0	2.5	0.52	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/28/11	72	2.2	5.7	2.0	9.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	55	0.57	ND<0.5	0.92	1.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	10/11/11	180	3.0	1.0	5.1	10	0.77	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/12	2,500	23	6.4	85	190	3.6	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/9/12	2,000	24	5.6	75	160	2.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	140	1.7	1.0	3.2	7.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/12/12	250	ND<0.5	ND<0.5	2.7	5.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	ND<50	ND<0.5	ND<0.5	0.54	0.68	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/22/13	ND<50	ND<0.5	ND<0.5	ND<0.5	0.78	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/24/13	12,000	110	66	280	860	13	ND<0.5	ND<0.5	ND<0.5	11	ND<50	ND<5	ND<0.5	ND<0.5
	8/21/13	1,100	18	5.8	34	82	5.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
11/7/13	5,200	69	13	130	200	18	ND<0.5	ND<0.5	ND<0.5	15	ND<50	ND<8	ND<0.5	ND<0.5	
1/22/14	5,000	51	13	98	110	12	ND<0.5	ND<0.5	ND<0.5	11	ND<50	ND<5	ND<0.5	ND<0.5	
6/11/14	3,600	56	9.4	130	220	18	ND<0.5	ND<0.5	ND<0.5	14	ND<50	ND<5	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
	2/11/09	8,000	1,100	31	230	46	290	ND<2.5	ND<2.5	3.9	600	ND<800	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-2 (cont.)	4/28/09	5,800	500	27	110	55	330	ND<1	ND<1	4.4	600	ND<400	ND<10	ND<1	ND<1
	8/4/09	6,800	910	19	37	27	200	ND<1	ND<1	2.7	530	ND<200	ND<10	ND<1	ND<1
	12/9/09	6,600	450	14	55	34	210	ND<0.9	ND<0.9	2.6	410	ND<200	ND<9	ND<0.9	ND<0.9
	2/11/10	4,500	340	14	44	25	320	ND<0.9	ND<0.9	3.9	520	ND<300	ND<9	ND<0.9	ND<0.9
	5/4/10	2,300	110	7.1	17	16	350	ND<0.9	ND<0.9	4.1	550	ND<200	ND<9	ND<0.9	ND<0.9
	8/2/10	3,800	420	22	21	28	300	ND<0.9	ND<0.9	3.5	600	ND<300	ND<20	ND<0.9	ND<0.9
	11/2/10	2,600	230	7.0	11	4.0	300	ND<0.5	ND<0.5	3.3	660	ND<300	ND<8	ND<0.5	ND<0.5
	2/1/11	3,300	220	6.8	18	10	210	ND<0.5	ND<0.5	2.7	620	ND<300	ND<5	ND<0.5	ND<0.5
	4/27/11	1,900	78	2.6	2.6	5.6	200	ND<0.5	ND<0.5	2.2	590	ND<300	ND<5	ND<0.5	ND<0.5
	8/4/11	4,400	420	10	24	13	160	ND<0.5	ND<0.5	2.1	500	ND<100	ND<10	ND<0.5	ND<0.5
	10/11/11	2,700	110	5.0	4.0	11	170	ND<0.5	ND<0.5	1.9	440	ND<100	ND<5	ND<0.5	ND<0.5
	1/31/12	4,400	220	7.0	15	8.9	130	ND<0.5	ND<0.5	1.2	400	ND<50	ND<5	ND<0.5	ND<0.5
	5/10/12	2,200	140	8.6	0.63	15	98	ND<0.5	ND<0.5	1.1	430	ND<200	ND<8	ND<0.5	ND<0.5
	8/7/12	4,000	360	8.9	14	15	110	ND<0.5	ND<0.5	1.2	380	ND<400	ND<5	ND<0.5	ND<0.5
	11/14/12	4,000	190	7.8	13	13	120	ND<0.5	ND<0.5	1.3	390	ND<200	ND<5	ND<0.5	ND<0.5
	2/13/13	6,400	500	18	60	19	140	ND<0.5	ND<0.5	1.6	510	ND<400	ND<8	ND<0.5	ND<0.5
	4/24/13	4,500	320	7.2	26	9.5	100	ND<0.5	ND<0.5	1.3	370	ND<80	ND<5	ND<0.5	ND<0.5
	6/25/13	4,900	250	6.2	58	26	100	ND<0.5	ND<0.5	1.2	400	ND<50	ND<8	ND<0.5	ND<0.5
8/22/13	8,300	600	23	96	42	240	ND<0.5	ND<0.5	2.5	500	ND<50	ND<5	ND<0.5	ND<0.5	
11/7/13	6,500	520	18	57	17	150	ND<0.9	ND<0.9	2.2	310	ND<90	ND<9	ND<0.9	ND<0.9	
1/22/14	8,500	490	14	55	15	150	ND<0.9	ND<0.9	1.9	380	ND<300	ND<9	ND<0.9	ND<0.9	
6/11/14	4,400	330	6.5	26	7.3	100	ND<0.5	ND<0.5	1.3	390	ND<200	ND<5	ND<0.5	ND<0.5	
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

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-3 (cont.)	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
	2/11/09	1,700	21	1.7	35	21	9.8	ND<0.5	ND<0.5	ND<0.5	16	ND<50	ND<10	ND<0.5	ND<0.5
	4/27/09	1,800	16	2.3	26	10	3.0	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/09	1,200	6.8	0.99	4.3	3.4	18	ND<0.5	ND<0.5	ND<0.5	35	ND<50	ND<5	ND<0.5	ND<0.5
	12/9/09	2,200	24	5.9	56	29	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.2	ND<300	ND<20	ND<0.5	ND<0.5
	2/11/10	700	9.5	2.0	18	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<8	ND<0.5	ND<0.5
	5/4/10	420	5.5	0.93	8.8	3.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	8/2/10	640	4.0	ND<0.5	5.3	3.9	0.59	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/3/10	170	0.85	ND<0.5	ND<0.5	0.59	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/1/11	60	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
	4/27/11	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
	8/4/11	310	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
	10/10/11	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
	1/31/12	1,300	1.0	ND<0.5	19	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/12	750	1.2	ND<0.5	5.4	4.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	8/6/12	900	0.56	ND<0.5	7.0	4.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/13/12	410	ND<0.5	ND<0.5	1.7	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	120	ND<0.5	ND<0.5	1.2	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
	4/23/13	66	ND<0.5	2.3	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
	6/25/13	5,600	1.1	1.1	120	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
8/21/13	840	1.4	ND<0.5	3.2	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
11/7/13	960	ND<0.5	ND<0.5	5.1	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
1/22/14	860	ND<0.5	ND<0.5	3.0	1.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
6/11/14	1,900	0.64	ND<0.50	23	9.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
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	
	2/11/09	ND<50	0.68	ND<0.5	1.4	1.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	4/27/09	ND<50	0.50	ND<0.5	1.1	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	
	8/5/09	52	1.7	ND<0.5	1.4	0.83	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	12/9/09	ND<50	3.0	ND<0.5	2.0	1.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/11/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/10	180	3.3	3.7	13	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/3/10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/10	ND<50	0.70	4.0	0.59	5.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/2/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/11	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	
	8/4/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/10/11	ND<50	ND<0.5	0.67	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	
	1/31/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/12	ND<50	ND<0.5	ND<0.5	ND<0.5	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	
	8/6/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	ND<50	ND<0.5	ND<0.5	0.70	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4/22/13	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		
8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/7/13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-4	1/21/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
(cont.)	6/11/14	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	53	ND<5	ND<0.5	ND<0.5
DW-5	12/9/09	15,000	140	25	200	960	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	2/11/10	1,600	37	2.5	36	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5
	5/4/10	2,100	69	2.9	41	18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<8	ND<0.5	ND<0.5
	8/2/10	12,000	240	9.4	350	280	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
	11/2/10	5,000	120	3.6	68	35	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	2/1/11	3,800	70	2.5	37	18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	4/27/11	710	8.0	ND<0.5	4.3	2.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/4/11	6,100	76	3.7	110	97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	10/10/11	6,800	59	4.7	140	150	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	1/31/12	8,200	130	5.9	170	180	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<200	ND<1.5	ND<1.5
	5/10/12	11,000	100	6.8	320	380	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<20	ND<1.5	ND<1.5
	8/8/12	14,000	84	11	480	590	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	11/14/12	8,800	24	2.5	110	140	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	4,400	65	5.4	110	110	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<10	ND<0.5	ND<0.5
	4/24/13	3,000	32	2.5	38	31	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	6/25/13	120,000	120	ND<4	1,400	2,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<200	ND<4	ND<4
	8/22/13	22,000	58	11	770	1,200	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4
11/7/13	26,000	62	12	1,000	1,400	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4	
1/22/14	17,000	66	6.1	440	470	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<400	ND<40	ND<2.5	ND<2.5	
6/11/14	18,000	53	4.3	340	410	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<40	ND<4	ND<4	
DW-6	12/9/09	6,200	33	4.3	100	43	9.7	ND<1	ND<1	ND<1	10	ND<100	ND<10	ND<1	ND<1
	2/11/10	4,800	18	3.0	44	15	14	ND<0.5	ND<0.5	ND<0.5	9.2	ND<80	ND<10	ND<0.5	ND<0.5

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-6 (cont.)	5/4/10	4,600	13	3.5	29	17	5.6	ND<0.5	ND<0.5	ND<0.5	7.2	ND<80	ND<8	ND<0.5	ND<0.5
	8/2/10	4,500	13	4.4	54	14	5.9	ND<0.5	ND<0.5	ND<0.5	12	ND<50	ND<8	ND<0.5	ND<0.5
	11/2/10	5,200	20	4.2	47	13	8.9	ND<0.9	ND<0.9	ND<0.9	26	ND<90	ND<9	ND<0.9	ND<0.9
	2/1/11	4,000	11	2.9	32	11	6.0	ND<0.5	ND<0.5	ND<0.5	16	ND<50	ND<5	ND<0.5	ND<0.5
	4/27/11	3,100	8.8	2.4	12	8.2	6.2	ND<0.5	ND<0.5	ND<0.5	19	ND<50	ND<8	ND<0.5	ND<0.5
	8/4/11	2,900	4.2	0.95	6.0	4.9	6.5	ND<0.5	ND<0.5	ND<0.5	24	ND<50	ND<8	ND<0.5	ND<0.5
	10/10/11	1,500	4.1	3.3	3.0	3.3	4.9	ND<0.5	ND<0.5	ND<0.5	20	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	4,700	13	2.4	51	12	8.1	ND<0.5	ND<0.5	ND<0.5	28	ND<50	ND<80	ND<0.5	ND<0.5
	5/10/12	2,600	7.8	1.6	12	5.2	4.6	ND<0.5	ND<0.5	ND<0.5	17	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	4,500	15	3.2	41	8.3	6.2	ND<0.5	ND<0.5	ND<0.5	20	ND<50	ND<8	ND<0.5	ND<0.5
	11/14/12	3,000	5.4	1.8	11	4.7	2.1	ND<0.5	ND<0.5	ND<0.5	6.8	ND<50	ND<5	ND<0.5	ND<0.5
	2/12/13	4,600	25	4.0	53	8.7	10	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<9	ND<0.5	ND<0.5
	4/24/13	1,000	2.9	1.1	2.1	0.98	1.8	ND<0.5	ND<0.5	ND<0.5	6.2	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	7,000	23	3.0	80	13	9.0	ND<0.5	ND<0.5	ND<0.5	34	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	5,700	28	3.4	80	11	12	ND<0.5	ND<0.5	ND<0.5	37	ND<90	ND<8	ND<0.5	ND<0.5
11/7/13	2,400	14	1.7	5.6	3.1	10	ND<0.5	ND<0.5	ND<0.5	35	ND<80	ND<5	ND<0.5	ND<0.5	
1/22/14	3,000	6.8	0.98	3.6	2.9	10	ND<0.5	ND<0.5	ND<0.5	36	ND<50	ND<5	ND<0.5	ND<0.5	
6/11/14	5,400	19	3.0	39	5.6	9.2	ND<0.5	ND<0.5	ND<0.5	35	ND<50	ND<8	ND<0.5	ND<0.5	
DW-7	12/9/09	10,000	500	20	310	110	160	ND<2	ND<2	ND<2	270	ND<200	ND<20	ND<2	ND<2
	2/12/10	12,000	590	23	440	120	190	ND<2	ND<2	2.4	290	ND<200	ND<20	ND<2	ND<2
	5/4/10	4,100	250	15	89	32	97	ND<0.5	ND<0.5	1.0	160	ND<80	ND<5	ND<0.5	ND<0.5
	8/3/10	3,500	280	13	49	30	130	ND<0.5	ND<0.5	1.3	220	ND<50	ND<5	ND<0.5	ND<0.5
	11/4/10	660	30	1.2	5.0	3.3	130	ND<0.5	ND<0.5	1.2	220	ND<50	ND<5	ND<0.5	ND<0.5
	2/2/11	760	43	1.8	9.4	4.0	91	ND<0.5	ND<0.5	0.76	160	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) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-7 (cont.)	4/27/11	1,600	120	4.6	4.2	6.7	95	ND<0.5	ND<0.5	1.0	170	ND<200	ND<5	ND<0.5	ND<0.5
	8/4/11	1,400	83	2.5	4.4	5.2	97	ND<0.5	ND<0.5	0.96	160	ND<80	ND<5	ND<0.5	ND<0.5
	10/11/11	400	45	1.1	0.80	1.6	90	ND<0.5	ND<0.5	0.89	180	ND<50	ND<5	ND<0.5	ND<0.5
	1/31/12	7,800	380	14	170	59	120	ND<0.5	ND<0.5	1.3	300	ND<150	ND<50	ND<0.5	ND<0.5
	5/10/12	940	47	1.6	6.1	5.2	120	ND<0.5	ND<0.5	1.1	280	ND<50	ND<5	ND<0.5	ND<0.5
	8/6/12	1,200	33	2.5	8.0	8.4	80	ND<0.5	ND<0.5	0.83	250	ND<300	ND<5	ND<0.5	ND<0.5
	11/13/12	6,500	340	11	45	22	51	ND<0.5	ND<0.5	0.56	160	ND<80	ND<8	ND<0.5	ND<0.5
	2/13/13	970	78	3.0	10	2.7	18	ND<0.5	ND<0.5	ND<0.5	56	ND<50	ND<5	ND<0.5	ND<0.5
	4/23/13	3,300	230	9.2	22	10	50	ND<0.5	ND<0.5	0.55	160	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	27,000	590	32	960	640	100	ND<0.5	ND<0.5	0.95	330	ND<80	ND<20	ND<4	ND<0.5
	8/22/13	15,000	420	18	520	320	96	ND<2.5	ND<2.5	ND<2.5	310	ND<250	ND<25	ND<2.5	ND<2.5
	11/7/13	9,700	260	8.4	200	63	52	ND<1.5	ND<1.5	ND<1.5	170	ND<150	ND<15	ND<1.5	ND<1.5
	1/22/14	15,000	380	15	430	200	77	ND<1.5	ND<1.5	ND<1.5	230	ND<150	ND<15	ND<1.5	ND<1.5
6/11/14	12,000	380	13	370	190	79	ND<1.5	ND<1.5	ND<1.5	240	ND<150	ND<15	ND<1.5	ND<1.5	
DW-8	4/28/11	72,000	5,200	10,000	1,900	12,000	ND<10	ND<10	ND<10	ND<10	56	ND<1,000	ND<100	ND<10	ND<10
	8/4/11	65,000	2,900	8,100	650	10,000	ND<20	ND<20	ND<20	ND<20	ND<90	ND<2,000	ND<200	ND<20	ND<20
	10/25/11	82,000	4,300	10,000	1,900	12,000	ND<4	ND<4	ND<4	ND<4	58	ND<400	ND<40	ND<4	ND<4
	2/1/12	52,000	2,500	5,200	1,900	8,200	ND<9	ND<9	ND<9	ND<9	ND<50	ND<900	ND<90	ND<9	ND<9
	5/11/12	11,000	500	1,000	300	1,200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	25	ND<250	ND<25	ND<2.5	ND<2.5
	8/8/12	52,000	1,900	4,500	1,500	5,900	ND<2.5	ND<2.5	ND<2.5	ND<2.5	58	ND<250	ND<25	ND<2.5	ND<2.5
	11/14/12	27,000	580	870	510	3,400	ND<5	ND<5	ND<5	ND<5	ND<25	ND<500	ND<50	ND<5	ND<5
	2/14/13	63,000	3,000	5,400	2,000	8,700	ND<5	ND<5	ND<5	ND<5	110	ND<500	ND<150	ND<5	ND<5
	4/24/13	5,900	350	370	140	790	ND<0.9	ND<0.9	ND<0.9	ND<0.9	8.0	ND<200	ND<80	ND<0.9	ND<0.9
6/24/13	55,000	2,200	3,200	2,100	7,400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	56	ND<90	ND<50	ND<0.9	ND<0.9	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
DW-8 (cont.)	8/22/13	16,000	380	240	500	1,400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<15	ND<250	ND<25	ND<2.5	ND<2.5
	11/7/13	56,000	1,800	2,800	2,100	7,900	ND<2.5	ND<2.5	ND<2.5	ND<2.5	37	ND<250	ND<25	ND<2.5	ND<2.5
	1/22/14	40,000	1,100	1,200	1,200	4,300	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7
	6/11/14	52,000	2,400	2,100	1,700	6,400	ND<7	ND<7	ND<7	ND<7	67	ND<700	ND<70	ND<7	ND<7
DW-9	6/14/12	8,300	89	2.4	21	96	36	ND<1.5	ND<1.5	ND<1.5	80	ND<150	ND<15	ND<1.5	ND<1.5
	8/8/12	12,000	310	11	400	110	35	ND<1.5	ND<1.5	ND<1.5	96	ND<150	ND<15	ND<1.5	ND<1.5
	11/14/12	10,000	210	7.5	230	65	28	ND<1.5	ND<1.5	ND<1.5	94	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	7,800	150	9.4	160	28	45	ND<1.5	ND<1.5	ND<1.5	110	ND<150	ND<15	ND<1.5	ND<1.5
	4/24/13	3,200	18	1.7	7.8	7.2	21	ND<0.5	ND<0.5	ND<0.5	67	ND<50	ND<5	ND<0.5	ND<0.5
	6/25/13	27,000	490	17	1,100	430	30	ND<4	ND<4	ND<4	62	ND<400	ND<40	ND<4	ND<4
	8/22/13	19,000	320	13	690	240	28	ND<4	ND<4	ND<4	87	ND<2,000	ND<40	ND<4	ND<4
	11/7/13	8,000	120	5.9	100	38	25	ND<1.5	ND<1.5	ND<1.5	73	ND<150	ND<15	ND<1.5	ND<1.5
	1/22/14	14,000	180	6.7	200	65	27	ND<1.5	ND<1.5	ND<1.5	77	ND<150	ND<15	ND<1.5	ND<1.5
6/11/14	13,000	380	11	300	81	41	ND<2.5	ND<2.5	ND<2.5	100	ND<250	ND<25	ND<2.5	ND<2.5	
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
IP-1	7/23/08	62,000	2,100	6,800	2,700	11,000	16	ND<15	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

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
IP-1 (cont.)	5/5/10 ^(g)	33,000	900	1,500	1,400	5,000	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7	
	4/27/11	24,000	750	2,200	420	4,800	ND<7	ND<7	ND<7	ND<7	ND<40	ND<700	ND<70	ND<7	ND<7	
	2/1/12	15,000	370	350	600	1,300	ND<2	ND<2	ND<2	ND<2	16	ND<200	ND<20	NS	NS	
	5/9/12	16,000	580	850	800	2,100	ND<2	ND<2	ND<2	ND<2	12	ND<200	ND<20	ND<2	ND<2	
	8/8/12	12,000	260	190	470	860	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2	
	11/13/12	9,000	170	74	280	540	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2	
	2/13/13	17,000	480	480	690	2,000	ND<2	ND<2	ND<2	ND<2	20	ND<200	ND<20	ND<2	ND<2	
	4/24/13	9,700	230	160	370	1,200	ND<2	ND<2	ND<2	ND<2	ND<9	ND<200	ND<20	ND<2	ND<2	
	6/24/13	14,000	130	260	280	1000	ND<2	ND<2	ND<2	ND<2	10	ND<200	ND<20	ND<2	ND<2	
	8/22/13	23,000	360	430	740	2,300	ND<2	ND<2	ND<2	ND<2	25	ND<200	ND<20	ND<2	ND<2	
	11/7/13	7,400	70	94	200	400	ND<0.9	ND<0.9	ND<0.9	ND<0.9	14	ND<90	ND<9	ND<0.9	ND<0.9	
	1/22/14	16,000	190	280	460	1,600	ND<0.9	ND<0.9	ND<0.9	ND<0.9	20	ND<90	ND<10	ND<0.9	ND<0.9	
6/10/14	50,000	1,600	4,000	1,200	5,700	ND<9	ND<9	ND<9	ND<9	110	ND<900	ND<90	ND<9	ND<9		
IP-2	7/23/08	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	
	5/5/10 ^(g)	2,700	66	220	61	240	3.3	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	4/26/11	350	8.9	1.7	4.7	5.7	0.90	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/8/12	340	10	4.8	6.3	13	2.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	160	5.6	3.7	1.3	3.6	1.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
IP-2 (cont.)	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	6/11/14	350	2.4	2.4	2.2	5.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.4	ND<50	ND<5	ND<0.5	ND<0.5	
IP-3	7/23/08	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	
	5/5/10 ^(g)	430 ^(h)	6.4	22	4.9	21	3.9	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5	
	4/26/11	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	
	5/8/12	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	
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/13	ND<50	0.51	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	
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/11/14	580	2.6	1.0	7.2	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		
IP-4	7/23/08	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	
	5/6/10 ^(g)	190	5.4	25	6.9	29	3.4	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	4/26/11	ND<50	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	
	5/8/12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	5.3	ND<0.5	ND<0.5	
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4/23/13	140	ND<0.5	43	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl- benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)	
IP-4 (cont.)	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	6/11/14	70	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	
IP-5	7/23/08	2,000 ^(h)	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	
	5/6/10 ^(g)	270	5.7	25	5.9	29	20	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5	
	4/26/11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.72	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/8/12	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	
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	ND<50	ND<0.5	4.1	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	
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	180	ND<0.5	ND<0.5	3.0	6.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	1/21/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.60	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
6/10/14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.8	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5		
IP-6	7/23/08	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	
	5/5/10 ^(g)	8,000 ^(h)	24	100	18	98	0.51	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<80	ND<5	ND<0.5	ND<0.5	
	4/27/11	ND<50	1.1	0.66	ND<0.5	0.71	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5	
	5/8/12	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	
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
IP-6 (cont.)	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	57	ND<0.5	11	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/11/14	70	8.6	ND<0.5	ND<0.5	ND<0.5	3.1	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-7	7/23/08	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
	5/5/10 ^(g)	33,000	49	62	38	69	14	ND<0.9	ND<0.9	ND<0.9	20	ND<90	ND<9	ND<0.9	ND<0.9
	4/27/11	220	8.1	0.69	3.4	1.5	0.95	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	5/8/12	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
	8/7/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/23/13	ND<50	ND<0.5	5.1	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
	8/21/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/7/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/21/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/11/14	2,100	18	0.77	7.5	2.0	12	ND<0.5	ND<0.5	ND<0.5	82	ND<50	ND<5	ND<0.5	ND<0.5	
IP-8	12/16/08	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
	5/5/10 ^(g)	83,000	3,900	13,000	2,400	14,000	ND<25	ND<25	ND<25	ND<25	ND<150	ND<2,500	ND<250	ND<25	ND<25
	4/28/11	13,000	620	2,000	240	2,200	ND<3	ND<3	ND<3	ND<3	27	ND<300	ND<30	ND<3	ND<3
	2/1/12	67,000	2,900	7,300	1400	11,000	ND<15	ND<15	ND<15	ND<15	ND<70	ND<1,500	ND<150	NS	NS
	5/9/12	50,000	2,400	4,900	790	8,600	ND<9	ND<9	ND<9	ND<9	ND<50	ND<900	ND<90	ND<9	ND<9

TABLE D-1

HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
IP-8 (cont.)	8/8/12	63,000	3,500	6,700	980	7,400	ND<9	ND<9	ND<9	ND<9	65	ND<900	ND<90	ND<9	ND<9
	11/14/12	33,000	1,000	2,300	260	4,300	ND<7	ND<7	ND<7	ND<7	47	ND<700	ND<70	ND<7	ND<7
	2/14/13	65,000	3,300	7,100	1,600	9,200	ND<7	ND<7	ND<7	ND<7	110	ND<700	ND<150	ND<7	ND<7
	4/24/13	33,000	1,700	4,200	430	5,600	ND<6	ND<6	ND<6	ND<6	ND<30	ND<600	ND<60	ND<6	ND<6
	8/22/13	19,000	130	440	260	1,900	ND<4	ND<4	ND<4	ND<4	ND<20	ND<400	ND<80	ND<4	ND<4
	11/7/13	18,000	400	520	170	1,700	ND<4	ND<4	ND<4	ND<4	23	ND<400	ND<40	ND<4	ND<4
	1/22/14	41,000	550	1,600	560	4,200	ND<4	ND<4	ND<4	ND<4	22	ND<400	ND<40	ND<4	ND<4
	6/11/14	52,000	1,200	3,300	940	6,400	ND<5	ND<5	ND<5	ND<5	28	ND<500	ND<50	ND<5	ND<5
IP-9	12/16/08	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
	5/5/10 ^(g)	92,000	6,000	19,000	2,500	14,000	ND<40	ND<40	ND<40	ND<40	ND<200	ND<4,000	ND<400	ND<40	ND<40
	4/28/11	38,000	1,400	4,300	860	6,000	ND<6	ND<6	ND<6	ND<6	38	ND<600	ND<60	ND<6	ND<6
	2/1/12	19,000	180	1,200	640	3,100	ND<3	ND<3	ND<3	ND<3	ND<15	ND<300	ND<30	NS	NS
	5/9/12	10,000	14	180	270	780	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	8/7/12	11,000	22	240	210	880	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	11/13/12	9,800	22	200	150	690	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	2/13/13	12,000	68	560	280	1,300	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<15	ND<1.5	ND<1.5
	4/24/13	8,800	42	480	210	1,100	ND<1.5	ND<1.5	ND<1.5	ND<1.5	11	ND<150	ND<15	ND<1.5	ND<1.5
	8/22/13	7,500	14	250	190	1,000	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<400	ND<15	ND<1.5	ND<1.5
	11/7/13	1,100	4.9	30	14	89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	1/22/14	1,600	1.9	9.7	8.6	16	0.50	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	6/11/14	2,000	ND<0.5	ND<0.5	1.5	2.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
IP-10	2/11/09	8,100	29	58	170	1,200	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<7	ND<150	ND<20	ND<1.5	ND<1.5
	5/3/10 ^(g)	3,600	73	80	140	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	4/26/11	4,300	28	140	110	330	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10	ND<50	ND<8	ND<0.5	ND<0.5

TABLE D-1

**HISTORICAL GROUNDWATER ANALYTICAL RESULTS
TESORO - LIVERMORE, 67076**

Monitoring Well	Sample Date ^(a)	TPHg ^(b) (µg/l)	Benzene ^(b) (µg/l)	Toluene ^(b) (µg/l)	Ethyl-benzene ^(b) (µg/l)	Total Xylenes ^(b) (µg/l)	MTBE ^(b) (µg/l)	DIPE ^(b) (µg/l)	ETBE ^(b) (µg/l)	TAME ^(b) (µg/l)	TBA ^(b) (µg/l)	Methanol ^(b) (µg/l)	Ethanol ^(b) (µg/l)	1,2-DCA ^(b) (µg/l)	EDB ^(b) (µg/l)
IP-10 (cont.)	2/1/12	3,200	8.2	4.6	93	2.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	NS	NS
	5/9/12	3,900	24	38	110	58.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	8/7/12	2,700	15	5.8	31	6.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/13/12	2,600	12	7.6	4.7	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	2/12/13	6,500	26	270	180	590	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5
	4/24/13	1,800	12	11	24	81	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
	6/24/13	1,500	5.4	1.1	0.76	6.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	8/22/13	1,100	2.2	ND<0.5	ND<0.5	2.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	11/7/13	810	2.6	1.7	1.5	7.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<5	ND<0.5	ND<0.5
	1/22/14	2,100	7.2	2.7	1.8	7.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<8	ND<0.5	ND<0.5
6/10/14	2,600	10	1.8	3.4	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5	ND<50	ND<20	ND<0.5	ND<0.5	

(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), methanol, ethanol, 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) NS - Not sampled.

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

(g) Baseline remediation system values.

(h) Primarily compounds not found in typical Gasoline.

ATTACHMENT E

**LABORATORY ANALYTICAL REPORTS AND
CHAIN-OF-CUSTODY FORMS**



Laboratory Results

Mike Purchase
Arctos Environmental
2332 5th St., Suite A
Berkeley, CA 94610

Subject : 8 Water Samples
Project Name : Tesoro - Livermore #67076
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. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC.

Kiff Analytical, LLC is certified by the State of California under the Environmental Laboratory Accreditation Program (ELAP), lab number 08263CA.

If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy Turpen

Subject : 8 Water Samples
Project Name : Tesoro - Livermore #67076
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for sample MW-7.

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for sample IP-10.

Recoveries for some Matrix Spike/Matrix Spike Duplicate analytes were outside of control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

Hexavalent Chromium results for samples MW-6 and MW-10 are not included in this report. These samples expired before analysis could be completed.

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

Project Number : **01LV**

Sample : **MW-6**

Matrix : Water

Lab Number : 88381-01

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 15:29
Sulfate	< 0.50	0.50	mg/L	EPA 300.0	06/11/14 15:29
Ferrous Iron	0.60	0.10	mg/L	SM 3500-Fe D	06/11/14 10:55
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/14 13:32
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/14 13:32
Iron, Dissolved	1.4	0.10	mg/L	EPA 6010B	06/17/14 13:32
Manganese, Dissolved	2.2	0.0050	mg/L	EPA 6010B	06/17/14 13:32
Sodium, Dissolved	78	0.50	mg/L	EPA 6010B	06/17/14 13:32
Benzene	860	1.5	ug/L	EPA 8260B	06/17/14 03:10
Toluene	20	1.5	ug/L	EPA 8260B	06/17/14 03:10
Ethylbenzene	50	1.5	ug/L	EPA 8260B	06/17/14 03:10
Total Xylenes	20	1.5	ug/L	EPA 8260B	06/17/14 03:10
Methyl-t-butyl ether (MTBE)	120	1.5	ug/L	EPA 8260B	06/17/14 03:10
Diisopropyl ether (DIPE)	< 1.5	1.5	ug/L	EPA 8260B	06/17/14 03:10
Ethyl-t-butyl ether (ETBE)	< 1.5	1.5	ug/L	EPA 8260B	06/17/14 03:10
Tert-amyl methyl ether (TAME)	< 1.5	1.5	ug/L	EPA 8260B	06/17/14 03:10
Tert-Butanol	280	7.0	ug/L	EPA 8260B	06/17/14 03:10
Methanol	< 150	150	ug/L	EPA 8260B	06/17/14 03:10
Ethanol	< 15	15	ug/L	EPA 8260B	06/17/14 03:10
TPH as Gasoline	11000	150	ug/L	EPA 8260B	06/17/14 03:10
1,2-Dichloroethane	< 1.5	1.5	ug/L	EPA 8260B	06/17/14 03:10
1,2-Dibromoethane	< 1.5	1.5	ug/L	EPA 8260B	06/17/14 03:10
1,2-Dichloroethane-d4 (Surr)	96.4		% Recovery	EPA 8260B	06/17/14 03:10
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	06/17/14 03:10

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

Project Number : **01LV**

Sample : **MW-7**

Matrix : Water

Lab Number : 88381-02

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 15:40
Sulfate	15	0.50	mg/L	EPA 300.0	06/11/14 15:40
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 13:16
Ferrous Iron	0.17	0.10	mg/L	SM 3500-Fe D	06/11/14 10:56
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/14 13:53
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/14 13:53
Iron, Dissolved	0.75	0.10	mg/L	EPA 6010B	06/17/14 13:53
Manganese, Dissolved	1.9	0.0050	mg/L	EPA 6010B	06/17/14 13:53
Sodium, Dissolved	88	0.50	mg/L	EPA 6010B	06/17/14 13:53
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 21:08
Methanol	< 80	80	ug/L	EPA 8260B	06/13/14 21:08
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 21:08
TPH as Gasoline	1000	50	ug/L	EPA 8260B	06/13/14 21:08
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:08
1,2-Dichloroethane-d4 (Surr)	97.3		% Recovery	EPA 8260B	06/13/14 21:08
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	06/13/14 21:08

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

Project Number : **01LV**

Sample : **MW-10**

Matrix : Water

Lab Number : 88381-03

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	1.1	0.10	mg/L	EPA 300.0	06/12/14 10:58
Sulfate	80	5.0	mg/L	EPA 300.0	06/17/14 11:08
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	06/11/14 10:56
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/14 13:58
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/14 13:58
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	06/17/14 13:58
Manganese, Dissolved	0.34	0.0050	mg/L	EPA 6010B	06/17/14 13:58
Sodium, Dissolved	52	0.50	mg/L	EPA 6010B	06/17/14 13:58
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 21:42
Methanol	< 50	50	ug/L	EPA 8260B	06/16/14 14:26
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 21:42
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/13/14 21:42
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 21:42
1,2-Dichloroethane-d4 (Surr)	97.5		% Recovery	EPA 8260B	06/13/14 21:42
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	06/13/14 21:42

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

Project Number : **01LV**

Sample : **MW-11**

Matrix : Water

Lab Number : 88381-04

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 15:52
Sulfate	7.2	0.50	mg/L	EPA 300.0	06/11/14 15:52
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 13:29
Ferrous Iron	0.36	0.10	mg/L	SM 3500-Fe D	06/11/14 10:56
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/14 14:02
Chromium, Dissolved	0.0052	0.0050	mg/L	EPA 6010B	06/17/14 14:02
Iron, Dissolved	1.7	0.10	mg/L	EPA 6010B	06/17/14 14:02
Manganese, Dissolved	0.073	0.0050	mg/L	EPA 6010B	06/17/14 14:02
Sodium, Dissolved	78	0.50	mg/L	EPA 6010B	06/17/14 14:02
Benzene	3.7	0.50	ug/L	EPA 8260B	06/17/14 00:59
Toluene	1.2	0.50	ug/L	EPA 8260B	06/17/14 00:59
Ethylbenzene	7.0	0.50	ug/L	EPA 8260B	06/17/14 00:59
Total Xylenes	5.6	0.50	ug/L	EPA 8260B	06/17/14 00:59
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 00:59
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 00:59
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 00:59
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 00:59
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 00:59
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 00:59
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 00:59
TPH as Gasoline	660	50	ug/L	EPA 8260B	06/17/14 00:59
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 00:59
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 00:59
1,2-Dichloroethane-d4 (Surr)	99.1		% Recovery	EPA 8260B	06/17/14 00:59
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	06/17/14 00:59

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

Project Number : **01LV**

Sample : **IP-1**

Matrix : Water

Lab Number : 88381-05

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 16:03
Sulfate	180	50	mg/L	EPA 300.0	06/17/14 11:20
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 13:22
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	06/11/14 10:57
Arsenic, Dissolved	0.14	0.015	mg/L	EPA 6010B	06/17/14 14:06
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/14 14:06
Iron, Dissolved	0.60	0.10	mg/L	EPA 6010B	06/17/14 14:06
Manganese, Dissolved	0.079	0.0050	mg/L	EPA 6010B	06/17/14 14:06
Sodium, Dissolved	1700	10	mg/L	EPA 6010B	06/17/14 14:59
Benzene	1600	9.0	ug/L	EPA 8260B	06/17/14 03:43
Toluene	4000	9.0	ug/L	EPA 8260B	06/17/14 03:43
Ethylbenzene	1200	9.0	ug/L	EPA 8260B	06/17/14 03:43
Total Xylenes	5700	9.0	ug/L	EPA 8260B	06/17/14 03:43
Methyl-t-butyl ether (MTBE)	< 9.0	9.0	ug/L	EPA 8260B	06/17/14 03:43
Diisopropyl ether (DIPE)	< 9.0	9.0	ug/L	EPA 8260B	06/17/14 03:43
Ethyl-t-butyl ether (ETBE)	< 9.0	9.0	ug/L	EPA 8260B	06/17/14 03:43
Tert-amyl methyl ether (TAME)	< 9.0	9.0	ug/L	EPA 8260B	06/17/14 03:43
Tert-Butanol	110	50	ug/L	EPA 8260B	06/17/14 03:43
Methanol	< 900	900	ug/L	EPA 8260B	06/17/14 03:43
Ethanol	< 90	90	ug/L	EPA 8260B	06/17/14 03:43
TPH as Gasoline	50000	900	ug/L	EPA 8260B	06/17/14 03:43
1,2-Dichloroethane	< 9.0	9.0	ug/L	EPA 8260B	06/17/14 03:43
1,2-Dibromoethane	< 9.0	9.0	ug/L	EPA 8260B	06/17/14 03:43
1,2-Dichloroethane-d4 (Surr)	99.0		% Recovery	EPA 8260B	06/17/14 03:43
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	06/17/14 03:43

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

Project Number : **01LV**

Sample : **IP-5**

Matrix : Water

Lab Number : 88381-06

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 17:34
Sulfate	27	0.50	mg/L	EPA 300.0	06/11/14 17:34
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 13:02
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	06/11/14 10:57
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/14 14:12
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/14 14:12
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	06/17/14 14:12
Manganese, Dissolved	1.8	0.0050	mg/L	EPA 6010B	06/17/14 14:12
Sodium, Dissolved	42	0.50	mg/L	EPA 6010B	06/17/14 14:12
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
Methyl-t-butyl ether (MTBE)	1.8	0.50	ug/L	EPA 8260B	06/13/14 22:17
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 22:17
Methanol	< 50	50	ug/L	EPA 8260B	06/13/14 22:17
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 22:17
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/13/14 22:17
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:17
1,2-Dichloroethane-d4 (Surr)	98.8		% Recovery	EPA 8260B	06/13/14 22:17
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	06/13/14 22:17

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

Project Number : **01LV**

Sample : **IP-10**

Matrix : Water

Lab Number : 88381-07

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 16:14
Sulfate	1.7	0.50	mg/L	EPA 300.0	06/11/14 16:14
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 13:09
Ferrous Iron	0.16	0.10	mg/L	SM 3500-Fe D	06/11/14 10:57
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/14 15:03
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/14 15:03
Iron, Dissolved	0.86	0.10	mg/L	EPA 6010B	06/17/14 15:03
Manganese, Dissolved	2.7	0.0050	mg/L	EPA 6010B	06/17/14 15:03
Sodium, Dissolved	64	0.50	mg/L	EPA 6010B	06/17/14 15:03
Benzene	10	0.50	ug/L	EPA 8260B	06/13/14 22:51
Toluene	1.8	0.50	ug/L	EPA 8260B	06/13/14 22:51
Ethylbenzene	3.4	0.50	ug/L	EPA 8260B	06/13/14 22:51
Total Xylenes	6.2	0.50	ug/L	EPA 8260B	06/13/14 22:51
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:51
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:51
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:51
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:51
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 22:51
Methanol	< 50	50	ug/L	EPA 8260B	06/13/14 22:51
Ethanol	< 20	20	ug/L	EPA 8260B	06/13/14 22:51
TPH as Gasoline	2600	50	ug/L	EPA 8260B	06/13/14 22:51
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:51
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 22:51
1,2-Dichloroethane-d4 (Surr)	95.9		% Recovery	EPA 8260B	06/13/14 22:51
Toluene - d8 (Surr)	98.2		% Recovery	EPA 8260B	06/13/14 22:51

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

Project Number : **01LV**

Sample : **MW-12**

Matrix : Water

Lab Number : 88381-08

Sample Date :06/10/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 16:26
Sulfate	38	0.50	mg/L	EPA 300.0	06/11/14 16:26
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 13:36
Ferrous Iron	0.45	0.10	mg/L	SM 3500-Fe D	06/11/14 10:58
Arsenic, Dissolved	0.016	0.015	mg/L	EPA 6010B	06/17/14 14:20
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/14 14:20
Iron, Dissolved	2.6	0.10	mg/L	EPA 6010B	06/17/14 14:20
Manganese, Dissolved	1.0	0.0050	mg/L	EPA 6010B	06/17/14 14:20
Sodium, Dissolved	58	0.50	mg/L	EPA 6010B	06/17/14 14:20
Benzene	10	0.50	ug/L	EPA 8260B	06/13/14 23:26
Toluene	2.9	0.50	ug/L	EPA 8260B	06/13/14 23:26
Ethylbenzene	67	0.50	ug/L	EPA 8260B	06/13/14 23:26
Total Xylenes	13	0.50	ug/L	EPA 8260B	06/13/14 23:26
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 23:26
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 23:26
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 23:26
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 23:26
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 23:26
Methanol	< 50	50	ug/L	EPA 8260B	06/13/14 23:26
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/14 23:26
TPH as Gasoline	4500	50	ug/L	EPA 8260B	06/13/14 23:26
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 23:26
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/14 23:26
1,2-Dichloroethane-d4 (Surr)	94.1		% Recovery	EPA 8260B	06/13/14 23:26
Toluene - d8 (Surr)	95.6		% Recovery	EPA 8260B	06/13/14 23:26

Report Number : 88381

Date : 06/17/2014

QC Report : Method Blank Data

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

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/2014	Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/2014	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	06/17/2014	Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/2014	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	06/17/2014	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Methanol	< 50	50	ug/L	EPA 8260B	06/16/2014	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Methanol	< 50	50	ug/L	EPA 8260B	06/16/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/2014	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/16/2014
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Methanol	< 50	50	ug/L	EPA 8260B	06/13/2014	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	1,2-Dichloroethane-d4 (Surr)	99.8		%	EPA 8260B	06/16/2014
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/2014	Toluene - d8 (Surr)	101		%	EPA 8260B	06/16/2014
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Hexavalent Chromium	<1.0	1.0	ug/L	EPA 7199	06/11/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/13/2014	Ferrous Iron	<0.10	0.10	mg/L	SM 3500-Fe D	06/11/2014
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	06/11/2014
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Sulfate	<0.50	0.50	mg/L	EPA 300.0	06/11/2014
1,2-Dichloroethane-d4 (Surr)	98.8		%	EPA 8260B	06/13/2014						
Toluene - d8 (Surr)	101		%	EPA 8260B	06/13/2014						

Report Number : 88381

Date : 06/17/2014

QC Report : Method Blank Data

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

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	06/11/2014						
Sulfate	<0.50	0.50	mg/L	EPA 300.0	06/11/2014						
Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	06/12/2014						
Sulfate	<0.50	0.50	mg/L	EPA 300.0	06/17/2014						

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

Project Number : **01LV**

Parameter	Spiked Sample Value	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
Hexavalent Chromium														
	88381-01	< 1.0	5.00	5.00	5.29	4.85	ug/L	EPA 7199	6/11/14	106	97.0	8.76	90.0-110	10
	88381-01	0.60	0.251	0.251	0.862	0.863	mg/L	SM 3500-Fe D	6/11/14	105	106	0.116	70.0-130	25
Ferrous Iron														
	88381-03	0.87	5.00	5.00	5.68	5.59	mg/L	EPA 300.0	6/11/14	96.0	94.3	1.51	90.0-110	10
	88381-03	77	25.0	25.0	92.9	92.6	mg/L	EPA 300.0	6/11/14	63.3	62.4	0.245	90.0-110	10
Nitrate as N														
	88381-02	< 0.10	0.500	0.500	0.343	0.351	mg/L	EPA 300.0	6/11/14	68.6	70.1	2.23	90.0-110	10
	88381-02	15	2.50	2.50	17.6	17.7	mg/L	EPA 300.0	6/11/14	104	107	0.490	90.0-110	10
Methanol														
	88411-02	<50	1000	1000	988	988	ug/L	EPA 8260B	6/16/14	98.8	98.8	0.0296	65.0-150	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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-Dibromoethane	88384-02	<0.50	40.3	40.3	45.8	45.6	ug/L	EPA 8260B	6/13/14	114	113	0.381	70.0-130	25
1,2-Dichloroethane	88384-02	<0.50	40.0	40.0	50.4	50.0	ug/L	EPA 8260B	6/13/14	126	125	0.933	70.0-130	25
Benzene	88384-02	<0.50	40.0	40.0	45.2	44.7	ug/L	EPA 8260B	6/13/14	113	112	1.21	70.0-130	25
Diisopropyl ether	88384-02	<0.50	40.0	40.0	45.9	45.3	ug/L	EPA 8260B	6/13/14	115	113	1.31	70.0-130	25
Ethanol	88384-02	<5.0	100	100	90.4	97.5	ug/L	EPA 8260B	6/13/14	90.4	97.5	7.48	55.0-150	25
Ethyl-tert-butyl ether	88384-02	<0.50	40.0	40.0	48.6	47.8	ug/L	EPA 8260B	6/13/14	122	120	1.64	70.0-130	25
Ethylbenzene	88384-02	<0.50	40.0	40.0	43.6	43.2	ug/L	EPA 8260B	6/13/14	109	108	1.06	70.0-130	25
Methanol	88384-02	<50	1000	1000	1360	1380	ug/L	EPA 8260B	6/13/14	136	138	1.65	65.0-150	25
Methyl-t-butyl ether	88384-02	<0.50	40.1	40.1	48.4	50.2	ug/L	EPA 8260B	6/13/14	121	125	3.65	70.0-130	25
P + M Xylene	88384-02	<0.50	40.0	40.0	44.3	43.6	ug/L	EPA 8260B	6/13/14	111	109	1.46	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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	88384-02	1800	200	200	2050	2100	ug/L	EPA 8260B	6/13/14	121	148	19.8	70.0-130	25
Tert-amyl-methyl ether	88384-02	<0.50	40.0	40.0	48.0	48.0	ug/L	EPA 8260B	6/13/14	120	120	0.194	70.0-130	25
Toluene	88384-02	<0.50	40.0	40.0	45.2	44.9	ug/L	EPA 8260B	6/13/14	113	112	0.683	70.0-130	25
1,2-Dibromoethane	88406-03	<0.50	40.3	40.3	42.8	45.2	ug/L	EPA 8260B	6/16/14	106	112	5.27	70.0-130	25
1,2-Dichloroethane	88406-03	<0.50	40.0	40.0	42.2	45.0	ug/L	EPA 8260B	6/16/14	105	112	6.60	70.0-130	25
Benzene	88406-03	10	40.0	40.0	50.9	53.5	ug/L	EPA 8260B	6/16/14	102	108	6.15	70.0-130	25
Diisopropyl ether	88406-03	<0.50	40.0	40.0	37.6	40.4	ug/L	EPA 8260B	6/16/14	94.1	101	7.04	70.0-130	25
Ethanol	88406-03	<5.0	100	100	91.6	99.1	ug/L	EPA 8260B	6/16/14	91.6	99.1	7.84	55.0-150	25
Ethyl-tert-butyl ether	88406-03	<0.50	40.0	40.0	39.8	43.0	ug/L	EPA 8260B	6/16/14	99.4	108	7.96	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Ethylbenzene	88406-03	<0.50	40.0	40.0	42.1	44.4	ug/L	EPA 8260B	6/16/14	105	111	5.26	70.0-130	25
Methanol	88406-03	<50	1000	1000	828	861	ug/L	EPA 8260B	6/16/14	82.8	86.1	3.86	65.0-150	25
Methyl-t-butyl ether	88406-03	2.1	40.1	40.1	43.8	47.4	ug/L	EPA 8260B	6/16/14	104	113	8.34	70.0-130	25
P + M Xylene	88406-03	<0.50	40.0	40.0	40.0	42.1	ug/L	EPA 8260B	6/16/14	100	105	5.09	70.0-130	25
Tert-Butanol	88406-03	580	200	200	762	776	ug/L	EPA 8260B	6/16/14	89.4	96.2	7.36	70.0-130	25
Tert-amyl-methyl ether	88406-03	<0.50	40.0	40.0	42.3	45.4	ug/L	EPA 8260B	6/16/14	106	114	7.18	70.0-130	25
Toluene	88406-03	<0.50	40.0	40.0	42.0	44.2	ug/L	EPA 8260B	6/16/14	105	111	5.31	70.0-130	25
Nitrate as N	88392-02	< 0.10	5.00	5.00	4.89	5.00	mg/L	EPA 300.0	6/12/14	97.8	99.9	2.16	90.0-110	10
Sulfate	88381-03	8.0	25.0	25.0	33.8	33.9	mg/L	EPA 300.0	6/17/14	103	103	0.191	90.0-110	10

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Arsenic, (Dis)	88381-01	< 0.015	0.400	0.400	0.429	0.446	mg/L	EPA 6010B	6/17/14	106	110	3.86	75-125	20
Chromium, (Dis)	88381-01	< 0.0050	0.400	0.400	0.393	0.408	mg/L	EPA 6010B	6/17/14	98.3	102	3.74	75-125	20
Iron, (Dis)	88381-01	1.4	0.400	0.400	1.80	1.85	mg/L	EPA 6010B	6/17/14	86.0	99.5	2.96	75-125	20
Manganese, (Dis)	88381-01	2.2	0.400	0.400	2.46	2.52	mg/L	EPA 6010B	6/17/14	68.2	83.8	2.49	75-125	20
Sodium, (Dis)	88381-01	78	0.400	0.400	77.3	81.7	mg/L	EPA 6010B	6/17/14	0.00	872	5.51	75-125	20

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	108	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	102	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	104	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	96.4	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	105	85-115
Methanol	1000	ug/L	EPA 8260B	6/16/14	114	65.0-150
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	6/13/14	110	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	6/13/14	118	70.0-130
Benzene	40.1	ug/L	EPA 8260B	6/13/14	110	70.0-130
Diisopropyl ether	40.1	ug/L	EPA 8260B	6/13/14	111	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/13/14	95.5	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	6/13/14	117	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	6/13/14	108	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/13/14	138	65.0-150
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	6/13/14	114	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	6/13/14	108	70.0-130
TPH as Gasoline	484	ug/L	EPA 8260B	6/13/14	102	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/13/14	113	70.0-130
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	6/13/14	115	70.0-130
Toluene	40.1	ug/L	EPA 8260B	6/13/14	109	70.0-130

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	40.2	ug/L	EPA 8260B	6/16/14	107	70.0-130
1,2-Dichloroethane	39.9	ug/L	EPA 8260B	6/16/14	107	70.0-130
Benzene	39.9	ug/L	EPA 8260B	6/16/14	104	70.0-130
Diisopropyl ether	39.9	ug/L	EPA 8260B	6/16/14	96.1	70.0-130
Ethanol	99.8	ug/L	EPA 8260B	6/16/14	90.9	55.0-150
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	6/16/14	102	70.0-130
Ethylbenzene	39.9	ug/L	EPA 8260B	6/16/14	108	70.0-130
Methanol	998	ug/L	EPA 8260B	6/16/14	85.6	65.0-150
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	6/16/14	107	70.0-130
P + M Xylene	39.9	ug/L	EPA 8260B	6/16/14	103	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	6/16/14	101	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/16/14	102	70.0-130
Tert-amyl-methyl ether	39.9	ug/L	EPA 8260B	6/16/14	108	70.0-130
Toluene	39.9	ug/L	EPA 8260B	6/16/14	106	70.0-130
Hexavalent Chromium	5.00	ug/L	EPA 7199	6/11/14	98.8	90.0-110
Ferrous Iron	0.251	mg/L	SM 3500-Fe D	6/11/14	98.1	70.0-130
Nitrate as N	5.00	mg/L	EPA 300.0	6/11/14	99.4	90.0-110
Sulfate	25.0	mg/L	EPA 300.0	6/11/14	99.4	90.0-110

Report Number : 88381

Date : 06/17/2014

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Nitrate as N	5.00	mg/L	EPA 300.0	6/11/14	94.6	90.0-110
Sulfate	25.0	mg/L	EPA 300.0	6/11/14	94.8	90.0-110
Nitrate as N	5.00	mg/L	EPA 300.0	6/12/14	104	90.0-110
Sulfate	25.0	mg/L	EPA 300.0	6/17/14	101	90.0-110

Confluence Environmental, Inc.
 3308 El Camino Ave, Suite 300 # 148
 Sacramento, CA 95821
 916-760-7641 - main
 916-473-8617 - fax
 www.confluence-env.com

Chain of Custody

Project Name: Tesoro - Livermore #67076

Job Number: 91-146610

TAT: STANDARD 5 DAY 2 DAY 24 HOUR OTHER:

88381

Sample ID	Time	Date	Matrix		Laboratory No.	No. of Containers	Preservative					Requested Analysis								Notes and Comments						
			Soil/Solid	Water/Liquid			Air	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	TPH-G, BTEX (8260)	Oxygenates (7) & Lead Scavengers (8260)	Ferrous Iron (SM 3500-Fe-D)	Hexavalent Chromium (7199)	Nitrate & Sulfate (300)	Total Alkalinity (SM2320B)	Metals by ICP (6010B)*		Methane (RSK 175M)	Carbon Dioxide (RSK 175M)	TDS (2540C)			
MW-6	1150	6/10/14		X		12	6	1	5						X	X	X	X	X	X	X	X	X	X		
MW-7	1435					1	1	1	1						X	X	X	X	X	X	X	X	X	X		
MW-10	1115					1	1	1	1						X	X	X	X	X	X	X	X	X	X		
MW-11	1630					1	1	1	1						X	X	X	X	X	X	X	X	X	X		
IP-1	1535					1	1	1	1						X	X	X	X	X	X	X	X	X	X		
IP-5	1305					1	1	1	1						X	X	X	X	X	X	X	X	X	X		
IP-10	1345					1	1	1	1						X	X	X	X	X	X	X	X	X	X		
MW-12	1645	6-10-14		X		12	6	1	5						X	X	X	X	X	X	X	X	X	X		
Sampler's Name: <u>Matt Pestoni</u>			Relinquished By / Affiliation: <u>Matt Pestoni</u>		Date: <u>6/10/14</u>		Time: <u>1650</u>		Accepted By / Affiliation: <u>Smyth, Frank / Liff</u>		Date: <u>6/10/14</u>		Time: <u>1650</u>		Notes and Comments: <u>146610</u>											
Sampler's Company: <u>Confluence Environmental</u>																										
Shipment Date: <u>6/10/14</u>																										
Shipment Method: <u>Truck</u>																										
Special Instructions: *Metals list to include: Fe, Cr, Na, As & Mn; Metals samples have been filtered in the field																										



SAMPLE RECEIPT CHECKLIST

SRG #: 88381

Sample Receipt Initials/Date: TW / 061014 Storage Time: 1928 Sample Login Initials/Date: MAS 06/11/14
 TAT: Standard Rush Split None Method of Receipt: Courier Over-the-counter Shipped
 Temp °C 0.8, 1.6 N/A Therm ID IR-1 Time 1415 Coolant present Yes No Water Temp Excursion

For Shipments Only: Cooler Receipt Initials/Date/Time: Custody Seals N/A Intact Broken

Chain-of-Custody:	Yes	No
Is COC present?	X	
Is COC signed by relinquisher?	X	
Is COC dated by relinquisher?	X	
Is the sampler's name on the COC?	X	
Are there analyses or hold for all samples?	X	

Documented on	COC	Labels	Discrepancies:
Sample ID	X	X	
Project ID	X	X	
Sample Date	X	X	
Sample Time	X	X	
Does COC match project history? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Samples:	N/A	Yes	No
Are sample custody seals intact?	X		
Are sample containers intact?		X	
Is preservation documented?		X	
In-house Analysis:	N/A	Yes	No
Are preservatives acceptable?		X	
Are samples within holding time?		X	
Are sample container types correct?		X	
Is there adequate sample volume?			X

Comments: 7 VOAs per sample received, 2 with white caps and 5 with grey caps. The white capped VOAs have "NP" indicated on the labels. The grey capped VOAs do not have any indication of preservation. Per COC, 5 HCl preserved containers were provided for each sample. SR will treat all grey capped VOAs as HCl preserved. MAS 06/11/14 1413

Receipt Details:	Matrix	Container Type	# of Containers
	Water	40mL VOA w/HCl	40
	Water	40mL VOA non	16
	Water	1 L HDPE non	8
	Water	250mL HDPE non	24
	Water	250mL HDPE w/HCl	8

CS Required:

Proceed With Analysis: YES NO Init/Date:

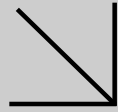
Client Communication:



Subcontract Laboratory Report Attachments



Calscience



WORK ORDER NUMBER: 14-06-0914

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Kiff Analytical

Client Project Name: Tesoro - Livermore #67076

Attention: Joel Kiff
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Amanda Porter

Approved for release on 06/19/2014 by:
Amanda Porter
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: Tesoro - Livermore #67076
Work Order Number: 14-06-0914

1	Work Order Narrative.	3
2	Client Sample Data.	4
	2.1 RSK-175M Carbon Dioxide (Aqueous).	4
	2.2 RSK-175M Methane (Aqueous).	6
	2.3 Combined Inorganic Tests.	8
3	Quality Control Sample Data.	10
	3.1 Sample Duplicate.	10
	3.2 LCS/LCSD.	12
4	Sample Analysis Summary.	17
5	Glossary of Terms and Qualifiers.	18
6	Chain-of-Custody/Sample Receipt Form.	19

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/12/14. They were assigned to Work Order 14-06-0914.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	14-06-0914-1-C	06/10/14 11:50	Aqueous	GC 14	N/A	06/13/14 13:03	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		17000	17.0		10.0		
MW-7	14-06-0914-2-C	06/10/14 14:35	Aqueous	GC 14	N/A	06/13/14 13:23	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		33600	17.0		10.0		
MW-10	14-06-0914-3-C	06/10/14 11:15	Aqueous	GC 14	N/A	06/13/14 14:23	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		6210	1.70		1.00		
MW-11	14-06-0914-4-C	06/10/14 16:30	Aqueous	GC 14	N/A	06/13/14 14:45	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		1910	1.70		1.00		
IP-1	14-06-0914-5-C	06/10/14 15:35	Aqueous	GC 14	N/A	06/13/14 15:04	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		598	1.70		1.00		
IP-5	14-06-0914-6-C	06/10/14 13:05	Aqueous	GC 14	N/A	06/13/14 15:24	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		4900	1.70		1.00		
IP-10	14-06-0914-7-C	06/10/14 13:45	Aqueous	GC 14	N/A	06/13/14 16:03	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		4850	3.40		2.00		
MW-12	14-06-0914-8-C	06/10/14 16:45	Aqueous	GC 14	N/A	06/13/14 17:06	140613L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		10000	17.0		10.0		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-659-710	N/A	Aqueous	GC 14	N/A	06/13/14 10:19	140613L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Carbon Dioxide	ND	1.70	1.00	



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	14-06-0914-1-B	06/10/14 11:50	Aqueous	GC 61	N/A	06/17/14 12:53	140617L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		2980	20.0		20.0		
MW-7	14-06-0914-2-A	06/10/14 14:35	Aqueous	GC 61	N/A	06/16/14 14:14	140616L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		281	1.00		1.00		
MW-10	14-06-0914-3-A	06/10/14 11:15	Aqueous	GC 61	N/A	06/16/14 14:38	140616L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1.41	1.00		1.00		
MW-11	14-06-0914-4-A	06/10/14 16:30	Aqueous	GC 61	N/A	06/16/14 17:47	140616L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		16.8	1.00		1.00		
IP-1	14-06-0914-5-A	06/10/14 15:35	Aqueous	GC 61	N/A	06/16/14 18:37	140616L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		2650	8.00		8.00		
IP-5	14-06-0914-6-A	06/10/14 13:05	Aqueous	GC 61	N/A	06/17/14 13:20	140617L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		202	1.00		1.00		
IP-10	14-06-0914-7-A	06/10/14 13:45	Aqueous	GC 61	N/A	06/17/14 14:13	140617L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1160	4.00		4.00		
MW-12	14-06-0914-8-A	06/10/14 16:45	Aqueous	GC 61	N/A	06/17/14 15:04	140617L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1780	8.00		8.00		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-663-2184	N/A	Aqueous	GC 61	N/A	06/16/14 12:38	140616L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methane	ND	1.00	1.00	

Method Blank	099-12-663-2185	N/A	Aqueous	GC 61	N/A	06/17/14 12:30	140617L02
---------------------	------------------------	------------	----------------	--------------	------------	-----------------------	------------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methane	ND	1.00	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received:
Work Order:

06/12/14
14-06-0914

Project: Tesoro - Livermore #67076

Page 1 of 2

Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
MW-6	14-06-0914-1				06/10/14 11:50		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	604	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	730	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
MW-7	14-06-0914-2				06/10/14 14:35		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	574	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	700	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
MW-10	14-06-0914-3				06/10/14 11:15		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	562	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	805	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
MW-11	14-06-0914-4				06/10/14 16:30		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	626	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	770	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
IP-1	14-06-0914-5				06/10/14 15:35		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	3060	10.0	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	3960	10.0	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
IP-5	14-06-0914-6				06/10/14 13:05		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	343	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	550	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
IP-10	14-06-0914-7				06/10/14 13:45		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	339	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	500	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received:
Work Order:

06/12/14
14-06-0914

Project: Tesoro - Livermore #67076

Page 2 of 2

Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
MW-12	14-06-0914-8				06/10/14 16:45		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	425	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	600	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
Method Blank						N/A		Aqueous
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	ND	1.0	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	ND	1.0	1.00		mg/L	06/17/14	06/17/14	SM 2540 C

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Sample Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
MW-6	Sample	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKD2
MW-6	Sample Duplicate	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKD2
<u>Parameter</u>		<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO ₃)		604.0	608.0	1	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
MW-6	Sample	Aqueous	SC 5	06/17/14 00:00	06/17/14 15:30	E0617TDSD1
MW-6	Sample Duplicate	Aqueous	SC 5	06/17/14 00:00	06/17/14 15:30	E0617TDSD1

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	730.0	710.0	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-659-710	LCS	Aqueous	GC 14	N/A	06/13/14 09:38	140613L01			
099-12-659-710	LCSD	Aqueous	GC 14	N/A	06/13/14 09:57	140613L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	104.0	93.79	90	93.96	90	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-663-2184	LCS	Aqueous	GC 61	N/A	06/16/14 11:53	140616L01			
099-12-663-2184	LCSD	Aqueous	GC 61	N/A	06/16/14 12:16	140616L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Methane	102.0	93.99	92	94.26	92	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-663-2185	LCS	Aqueous	GC 61	N/A	06/17/14 11:44	140617L02			
099-12-663-2185	LCSD	Aqueous	GC 61	N/A	06/17/14 12:07	140617L02			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Methane	102.0	93.78	92	93.76	92	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-859-385	LCS	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKB2			
099-15-859-385	LCSD	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKB2			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO ₃)	100.0	98.00	98	98.00	98	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0914
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-180-4112	LCS	Aqueous	SC 5	06/17/14	06/17/14 15:30	E0617TDSL1			
099-12-180-4112	LCSD	Aqueous	SC 5	06/17/14	06/17/14 15:30	E0617TDSL1			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Dissolved	100.0	95.00	95	90.00	90	80-120	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Sample Analysis Summary Report

Work Order: 14-06-0914

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
RSK-175M	N/A	884	GC 14	2
RSK-175M	N/A	884	GC 61	2
RSK-175M	N/A	896	GC 14	2
RSK-175M	N/A	896	GC 61	2
RSK-175M	N/A	908	GC 14	2
SM 2320B	N/A	688	PH1/BUR03	1
SM 2540 C	N/A	722	SC 5	1

Glossary of Terms and Qualifiers

Work Order: 14-06-0914

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSO or PES/PESO associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



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

14-06-0914

Page 1 of 1

COC No. 88381

Project Contact (Hardcopy or PDF to):

Scott Forbes

EDF Report? YES

Chain-of-Custody Record and Analysis Request

Company/Address:

Kiff Analytical

Recommended but not mandatory to complete this section:

Sampling Company Log Code: CESC

Phone No.: 530-297-4800
 FAX No.: 530-297-4808
 Project Number: P1-140610
 P.O. No.: 88381

Global ID: T0600101410

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

Project Name:

Tesorero - Livermore #67076

Project Address:

Sample Designation	Sampling	
	Date	Time
MW-6	06/10/14	11:50
MW-7	06/10/14	14:35
MW-10	06/10/14	11:15
MW-11	06/10/14	16:30
IP-1	06/10/14	15:35
IP-5	06/10/14	13:05
IP-10	06/10/14	13:45
MW-12	06/10/14	16:45

Container / Preservative

1-L Poly None	250ml Poly None	VOA 40 ml None	VOA 40 ml HCl	Matrix
X	X	X	X	Water

Alkalinity SM 2320 (Total as CaCO ₃)	Carbon Dioxide by RSK 175	Hydrocarbons in Water by RSK 175 (Methane)	Total Dissolved Solids	Analysis Request								TAT	For Lab Use Only			
X	X	X	X											4-Days	X	1
X	X	X	X											X	X	2
X	X	X	X											X	X	3
X	X	X	X											X	X	4
X	X	X	X											X	X	5
X	X	X	X											X	X	6
X	X	X	X											X	X	7
X	X	X	X											X	X	8

Remarks:

Relinquished by:	<i>[Signature]</i>	Date	06/11/14	Time	1700	Received by:	
Relinquished by:	<i>[Signature]</i>	Date	06/11/14	Time		Received by:	
Relinquished by:	(Outras)	Date	6/12/14	Time	1000	Received by Laboratory:	<i>[Signature]</i>

Bill to: Accounts Payable



800.334.5000
ontrac.com

0914



D10010689361990

Date Printed 6/11/2014

Tracking# D10010689361990

Shipped From:
KIFF ANALYTICAL
2795 2ND STREET 300
DAVIS, CA 95618

Sent By: SAMPLE RECEIVINGX125
Phone#: (530)297-4800
wgt(lbs): 45
Reference: SUBS
Reference 2: 600

<p><i>Ship To Company:</i> CALSCIENCE ENVIRONMENTAL LABS 7440 LINCOLN WAY GARDEN GROVE, CA 92841 SAMPLE RECEIVING (714)895-5494</p>	<p><i>Service:</i> S <i>Sort Code:</i> ORG <i>Special Services:</i> Signature Required</p>
---	---

Return to Contents

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Kuff

DATE: 06/12/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.7 °C - 0.3 °C (CF) = 2.4 °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

Checked by: SM

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Checked by: SM

Sample _____ No (Not Intact) Not Present Checked by: GBS

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Collection date/time, matrix, and/or # of containers logged in based on sample labels.

No analysis requested. Not relinquished. No date/time relinquished.

Sampler's name indicated on COC.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------------------	--------------------------	--------------------------	-------------------------------------

Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Aqueous samples received within 15-minute holding time

<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

CONTAINER TYPE:

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (____) EnCores® TerraCores® _____

Aqueous: VOA VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 1PBna 500PB

250PB 250PBn 125PB 125PBz_{na} 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: _____ Labeled/Checked by: GBS

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 739

Preservative: h: HCL n: HNO₃ na₂:Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure z_{na}: ZnAc₂+NaOH f: Filtered Scanned by: 739





Laboratory Results

Mike Purchase
Arctos Environmental
2332 5th St., Suite A
Berkeley, CA 94610

Subject : 14 Water Samples
Project Name : Tesoro - Livermore #67076
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. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC.

Kiff Analytical, LLC is certified by the State of California under the Environmental Laboratory Accreditation Program (ELAP), lab number 08263CA.

If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy Turpen

Subject : 14 Water Samples
Project Name : Tesoro - Livermore #67076
Project Number : 01LV

Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound in samples DW-2 and DW-3 and for Ethanol in sample DW-6.

Recoveries for some Matrix Spike/ Matrix Spike Duplicate analytes were outside control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

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

Project Number : **01LV**

Sample : **MW-3**

Matrix : Water

Lab Number : 88388-01

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 00:00
Methanol	< 50	50	ug/L	EPA 8260B	06/14/14 00:00
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 00:00
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/14/14 00:00
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:00
1,2-Dichloroethane-d4 (Surr)	98.0		% Recovery	EPA 8260B	06/14/14 00:00
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	06/14/14 00:00

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

Project Number : **01LV**

Sample : **MW-4**

Matrix : Water

Lab Number : 88388-02

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 00:35
Methanol	< 50	50	ug/L	EPA 8260B	06/14/14 00:35
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 00:35
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/14/14 00:35
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 00:35
1,2-Dichloroethane-d4 (Surr)	99.0		% Recovery	EPA 8260B	06/14/14 00:35
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	06/14/14 00:35

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

Project Number : **01LV**

Sample : **MW-5**

Matrix : Water

Lab Number : 88388-03

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 01:09
Methanol	< 50	50	ug/L	EPA 8260B	06/14/14 01:09
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 01:09
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/14/14 01:09
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:09
1,2-Dichloroethane-d4 (Surr)	99.3		% Recovery	EPA 8260B	06/14/14 01:09
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	06/14/14 01:09

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

Project Number : **01LV**

Sample : **MW-8**

Matrix : Water

Lab Number : 88388-04

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 01:44
Methanol	80	50	ug/L	EPA 8260B	06/14/14 01:44
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 01:44
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/14/14 01:44
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 01:44
1,2-Dichloroethane-d4 (Surr)	98.5		% Recovery	EPA 8260B	06/14/14 01:44
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	06/14/14 01:44

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

Project Number : **01LV**

Sample : **MW-9**

Matrix : Water

Lab Number : 88388-05

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
Methyl-t-butyl ether (MTBE)	2.9	0.50	ug/L	EPA 8260B	06/14/14 02:18
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
Tert-Butanol	5.4	5.0	ug/L	EPA 8260B	06/14/14 02:18
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 04:08
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 02:18
TPH as Gasoline	780	50	ug/L	EPA 8260B	06/14/14 02:18
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:18
1,2-Dichloroethane-d4 (Surr)	97.8		% Recovery	EPA 8260B	06/14/14 02:18
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	06/14/14 02:18

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

Project Number : **01LV**

Sample : **DW-2**

Matrix : Water

Lab Number : 88388-06

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 18:09
Sulfate	16	0.50	mg/L	EPA 300.0	06/11/14 18:09
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 15:45
Ferrous Iron	0.30	0.10	mg/L	SM 3500-Fe D	06/11/14 16:14
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:36
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:36
Iron, Dissolved	1.0	0.10	mg/L	EPA 6010B	06/18/14 12:36
Manganese, Dissolved	2.4	0.0050	mg/L	EPA 6010B	06/18/14 12:36
Sodium, Dissolved	120	0.50	mg/L	EPA 6010B	06/18/14 12:36
Benzene	330	0.50	ug/L	EPA 8260B	06/17/14 04:43
Toluene	6.5	0.50	ug/L	EPA 8260B	06/17/14 04:43
Ethylbenzene	26	0.50	ug/L	EPA 8260B	06/17/14 04:43
Total Xylenes	7.3	0.50	ug/L	EPA 8260B	06/17/14 04:43
Methyl-t-butyl ether (MTBE)	100	0.50	ug/L	EPA 8260B	06/17/14 04:43
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 04:43
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 04:43
Tert-amyl methyl ether (TAME)	1.3	0.50	ug/L	EPA 8260B	06/17/14 04:43
Tert-Butanol	390	5.0	ug/L	EPA 8260B	06/17/14 04:43
Methanol	< 200	200	ug/L	EPA 8260B	06/17/14 04:43
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 04:43
TPH as Gasoline	4400	150	ug/L	EPA 8260B	06/14/14 03:27
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 04:43
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 04:43
1,2-Dichloroethane-d4 (Surr)	96.4		% Recovery	EPA 8260B	06/17/14 04:43
Toluene - d8 (Surr)	95.3		% Recovery	EPA 8260B	06/17/14 04:43

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

Project Number : **01LV**

Sample : **DW-3**

Matrix : Water

Lab Number : 88388-07

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	1.1	0.10	mg/L	EPA 300.0	06/11/14 18:32
Sulfate	56	5.0	mg/L	EPA 300.0	06/17/14 11:31
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 15:56
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	06/11/14 16:14
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:41
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:41
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	06/18/14 12:41
Manganese, Dissolved	0.87	0.0050	mg/L	EPA 6010B	06/18/14 12:41
Sodium, Dissolved	54	0.50	mg/L	EPA 6010B	06/18/14 12:41
Benzene	0.64	0.50	ug/L	EPA 8260B	06/14/14 02:52
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:52
Ethylbenzene	23	0.50	ug/L	EPA 8260B	06/14/14 02:52
Total Xylenes	9.4	0.50	ug/L	EPA 8260B	06/14/14 02:52
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:52
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:52
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:52
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:52
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 02:52
Methanol	< 80	80	ug/L	EPA 8260B	06/14/14 02:52
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 02:52
TPH as Gasoline	1900	50	ug/L	EPA 8260B	06/14/14 02:52
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:52
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 02:52
1,2-Dichloroethane-d4 (Surr)	97.7		% Recovery	EPA 8260B	06/14/14 02:52
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	06/14/14 02:52

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

Project Number : **01LV**

Sample : **DW-4**

Matrix : Water

Lab Number : 88388-08

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 00:41
Methanol	53	50	ug/L	EPA 8260B	06/18/14 00:41
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 00:41
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/18/14 00:41
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 00:41
1,2-Dichloroethane-d4 (Surr)	98.9		% Recovery	EPA 8260B	06/18/14 00:41
Toluene - d8 (Surr)	96.7		% Recovery	EPA 8260B	06/18/14 00:41

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

Project Number : **01LV**

Sample : **DW-6**

Matrix : Water

Lab Number : 88388-09

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/11/14 18:20
Sulfate	4.1	0.50	mg/L	EPA 300.0	06/11/14 18:20
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/11/14 16:08
Ferrous Iron	0.42	0.10	mg/L	SM 3500-Fe D	06/11/14 16:14
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:46
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:46
Iron, Dissolved	1.0	0.10	mg/L	EPA 6010B	06/18/14 12:46
Manganese, Dissolved	2.2	0.0050	mg/L	EPA 6010B	06/18/14 12:46
Sodium, Dissolved	54	0.50	mg/L	EPA 6010B	06/18/14 12:46
Benzene	19	0.50	ug/L	EPA 8260B	06/17/14 12:46
Toluene	3.0	0.50	ug/L	EPA 8260B	06/17/14 12:46
Ethylbenzene	39	0.50	ug/L	EPA 8260B	06/17/14 12:46
Total Xylenes	5.6	0.50	ug/L	EPA 8260B	06/17/14 12:46
Methyl-t-butyl ether (MTBE)	9.2	0.50	ug/L	EPA 8260B	06/17/14 12:46
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:46
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:46
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:46
Tert-Butanol	35	5.0	ug/L	EPA 8260B	06/17/14 12:46
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 12:46
Ethanol	< 8.0	8.0	ug/L	EPA 8260B	06/17/14 12:46
TPH as Gasoline	5400	200	ug/L	EPA 8260B	06/18/14 04:19
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:46
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:46
1,2-Dichloroethane-d4 (Surr)	97.5		% Recovery	EPA 8260B	06/17/14 12:46
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	06/17/14 12:46

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

Project Number : **01LV**

Sample : **IP-6**

Matrix : Water

Lab Number : 88388-10

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	8.6	0.50	ug/L	EPA 8260B	06/17/14 13:18
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
Methyl-t-butyl ether (MTBE)	3.1	0.50	ug/L	EPA 8260B	06/17/14 13:18
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 13:18
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 13:18
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 13:18
TPH as Gasoline	70	50	ug/L	EPA 8260B	06/18/14 03:36
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:18
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	06/17/14 13:18
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	06/17/14 13:18

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

Project Number : **01LV**

Sample : **IP-4**

Matrix : Water

Lab Number : 88388-11

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
Methyl-t-butyl ether (MTBE)	1.2	0.50	ug/L	EPA 8260B	06/17/14 09:01
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 09:01
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 09:01
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 09:01
TPH as Gasoline	70	50	ug/L	EPA 8260B	06/17/14 09:01
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 09:01
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	06/17/14 09:01
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	06/17/14 09:01

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

Project Number : **01LV**

Sample : **IP-9**

Matrix : Water

Lab Number : 88388-12

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
Ethylbenzene	1.5	0.50	ug/L	EPA 8260B	06/17/14 13:51
Total Xylenes	2.4	0.50	ug/L	EPA 8260B	06/17/14 13:51
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 13:51
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 13:51
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 13:51
TPH as Gasoline	2000	50	ug/L	EPA 8260B	06/17/14 13:51
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 13:51
1,2-Dichloroethane-d4 (Surr)	95.9		% Recovery	EPA 8260B	06/17/14 13:51
Toluene - d8 (Surr)	98.0		% Recovery	EPA 8260B	06/17/14 13:51

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

Project Number : **01LV**

Sample : **IP-7**

Matrix : Water

Lab Number : 88388-13

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	18	0.50	ug/L	EPA 8260B	06/14/14 03:40
Toluene	0.77	0.50	ug/L	EPA 8260B	06/14/14 03:40
Ethylbenzene	7.5	0.50	ug/L	EPA 8260B	06/14/14 03:40
Total Xylenes	2.0	0.50	ug/L	EPA 8260B	06/14/14 03:40
Methyl-t-butyl ether (MTBE)	12	0.50	ug/L	EPA 8260B	06/14/14 03:40
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 03:40
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 03:40
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 03:40
Tert-Butanol	82	5.0	ug/L	EPA 8260B	06/14/14 03:40
Methanol	< 50	50	ug/L	EPA 8260B	06/14/14 03:40
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 03:40
TPH as Gasoline	2100	50	ug/L	EPA 8260B	06/14/14 03:40
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 03:40
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 03:40
1,2-Dichloroethane-d4 (Surr)	97.8		% Recovery	EPA 8260B	06/14/14 03:40
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	06/14/14 03:40

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

Project Number : **01LV**

Sample : **IP-3**

Matrix : Water

Lab Number : 88388-14

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2.6	0.50	ug/L	EPA 8260B	06/14/14 04:15
Toluene	1.0	0.50	ug/L	EPA 8260B	06/14/14 04:15
Ethylbenzene	7.2	0.50	ug/L	EPA 8260B	06/14/14 04:15
Total Xylenes	7.4	0.50	ug/L	EPA 8260B	06/14/14 04:15
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 04:15
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 04:15
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 04:15
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 04:15
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 04:15
Methanol	< 50	50	ug/L	EPA 8260B	06/14/14 04:15
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/14/14 04:15
TPH as Gasoline	580	50	ug/L	EPA 8260B	06/14/14 04:15
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 04:15
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/14/14 04:15
1,2-Dichloroethane-d4 (Surr)	98.2		% Recovery	EPA 8260B	06/14/14 04:15
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	06/14/14 04:15

Report Number : 88388

Date : 06/18/2014

QC Report : Method Blank Data

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

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/17/2014	Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/2014	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	06/17/2014	Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/17/2014	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	06/17/2014	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Methanol	< 50	50	ug/L	EPA 8260B	06/16/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/2014	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Methanol	< 50	50	ug/L	EPA 8260B	06/13/2014	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	1,2-Dichloroethane-d4 (Surr)	98.7		%	EPA 8260B	06/16/2014
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/2014	Toluene - d8 (Surr)	99.2		%	EPA 8260B	06/16/2014
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/13/2014	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
1,2-Dichloroethane-d4 (Surr)	97.4		%	EPA 8260B	06/13/2014	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Toluene - d8 (Surr)	98.8		%	EPA 8260B	06/13/2014	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014
						Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
						Methanol	< 50	50	ug/L	EPA 8260B	06/17/2014
						Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
						Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014
						Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
						TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/17/2014
						1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
						1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
						1,2-Dichloroethane-d4 (Surr)	97.5		%	EPA 8260B	06/17/2014
						Toluene - d8 (Surr)	97.4		%	EPA 8260B	06/17/2014

Report Number : 88388

Date : 06/18/2014

QC Report : Method Blank Data

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

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/17/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Hexavalent Chromium	<1.0	1.0	ug/L	EPA 7199	06/11/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Ferrous Iron	<0.10	0.10	mg/L	SM 3500-Fe D	06/11/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	06/11/2014
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	06/11/2014
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/2014	Sulfate	<0.50	0.50	mg/L	EPA 300.0	06/11/2014
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014	Sulfate	<0.50	0.50	mg/L	EPA 300.0	06/17/2014
Methanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/2014						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/13/2014						
Tert-aryl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/13/2014						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/13/2014						
1,2-Dichloroethane-d4 (Surr)	98.8		%	EPA 8260B	06/13/2014						
Toluene - d8 (Surr)	101		%	EPA 8260B	06/13/2014						
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014						
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Methanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014						
Tert-aryl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/17/2014						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
1,2-Dichloroethane-d4 (Surr)	99.2		%	EPA 8260B	06/17/2014						
Toluene - d8 (Surr)	102		%	EPA 8260B	06/17/2014						

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Hexavalent Chromium														
	88381-01	< 1.0	5.00	5.00	5.29	4.85	ug/L	EPA 7199	6/11/14	106	97.0	8.76	90.0-110	10
Ferrous Iron														
	88381-01	0.60	0.251	0.251	0.862	0.863	mg/L	SM 3500-Fe D	6/11/14	105	106	0.116	70.0-130	25
Nitrate as N														
	88381-02	< 0.10	0.500	0.500	0.343	0.351	mg/L	EPA 300.0	6/11/14	68.6	70.1	2.23	90.0-110	10
Sulfate														
	88381-02	15	2.50	2.50	17.6	17.7	mg/L	EPA 300.0	6/11/14	104	107	0.490	90.0-110	10
Arsenic, (Dis)														
	88381-01	< 0.015	0.400	0.400	0.429	0.446	mg/L	EPA 6010B	6/17/14	106	110	3.86	75-125	20
Chromium, (Dis)														
	88381-01	< 0.0050	0.400	0.400	0.393	0.408	mg/L	EPA 6010B	6/17/14	98.3	102	3.74	75-125	20
Iron, (Dis)														
	88381-01	1.4	0.400	0.400	1.80	1.85	mg/L	EPA 6010B	6/17/14	86.0	99.5	2.96	75-125	20
Manganese, (Dis)														
	88381-01	2.2	0.400	0.400	2.46	2.52	mg/L	EPA 6010B	6/17/14	68.2	83.8	2.49	75-125	20

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Sodium, (Dis)	88381-01	78	0.400	0.400	77.3	81.7	mg/L	EPA 6010B	6/17/14	0.00	872	5.51	75-125	20
1,2-Dibromoethane	88384-01	<0.50	40.3	40.3	43.5	44.3	ug/L	EPA 8260B	6/13/14	108	110	1.88	70.0-130	25
1,2-Dichloroethane	88384-01	<0.50	40.0	40.0	43.2	44.0	ug/L	EPA 8260B	6/13/14	108	110	1.63	70.0-130	25
Benzene	88384-01	<0.50	40.0	40.0	41.7	43.0	ug/L	EPA 8260B	6/13/14	104	107	3.08	70.0-130	25
Diisopropyl ether	88384-01	<0.50	40.0	40.0	39.6	40.8	ug/L	EPA 8260B	6/13/14	99.0	102	3.08	70.0-130	25
Ethanol	88384-01	<5.0	100	100	113	116	ug/L	EPA 8260B	6/13/14	113	116	2.65	55.0-150	25
Ethyl-tert-butyl ether	88384-01	<0.50	40.0	40.0	40.3	42.4	ug/L	EPA 8260B	6/13/14	101	106	5.03	70.0-130	25
Ethylbenzene	88384-01	<0.50	40.0	40.0	41.7	44.2	ug/L	EPA 8260B	6/13/14	104	110	5.75	70.0-130	25
Methanol	88384-01	<50	1000	1000	1030	1040	ug/L	EPA 8260B	6/13/14	103	104	0.473	65.0-150	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Methyl-t-butyl ether	88384-01	3.2	40.1	40.1	45.3	45.8	ug/L	EPA 8260B	6/13/14	105	106	1.20	70.0-130	25
P + M Xylene	88384-01	<0.50	40.0	40.0	40.2	42.3	ug/L	EPA 8260B	6/13/14	100	106	5.17	70.0-130	25
Tert-Butanol	88384-01	1700	200	200	1840	1860	ug/L	EPA 8260B	6/13/14	80.7	88.0	8.62	70.0-130	25
Tert-amyl-methyl ether	88384-01	<0.50	40.0	40.0	41.5	42.6	ug/L	EPA 8260B	6/13/14	104	106	2.59	70.0-130	25
Toluene	88384-01	<0.50	40.0	40.0	42.3	43.2	ug/L	EPA 8260B	6/13/14	106	108	2.23	70.0-130	25
1,2-Dibromoethane	88406-02	<0.50	40.3	40.3	43.6	43.1	ug/L	EPA 8260B	6/16/14	108	107	1.14	70.0-130	25
1,2-Dichloroethane	88406-02	<0.50	40.0	40.0	41.8	41.0	ug/L	EPA 8260B	6/16/14	104	102	1.93	70.0-130	25
Benzene	88406-02	<0.50	40.0	40.0	42.0	41.7	ug/L	EPA 8260B	6/16/14	105	104	0.745	70.0-130	25
Diisopropyl ether	88406-02	<0.50	40.0	40.0	39.8	39.3	ug/L	EPA 8260B	6/16/14	99.4	98.2	1.29	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Ethanol	88406-02	<5.0	100	100	112	110	ug/L	EPA 8260B	6/16/14	112	110	1.87	55.0-150	25
Ethyl-tert-butyl ether	88406-02	<0.50	40.0	40.0	40.9	40.6	ug/L	EPA 8260B	6/16/14	102	102	0.632	70.0-130	25
Ethylbenzene	88406-02	<0.50	40.0	40.0	42.3	42.7	ug/L	EPA 8260B	6/16/14	106	107	1.14	70.0-130	25
Methanol	88406-02	<50	1000	1000	953	924	ug/L	EPA 8260B	6/16/14	95.3	92.4	3.02	65.0-150	25
Methyl-t-butyl ether	88406-02	<0.50	40.1	40.1	41.6	41.6	ug/L	EPA 8260B	6/16/14	104	104	0.0661	70.0-130	25
P + M Xylene	88406-02	0.67	40.0	40.0	42.0	42.4	ug/L	EPA 8260B	6/16/14	103	104	1.02	70.0-130	25
Tert-Butanol	88406-02	35	200	200	240	240	ug/L	EPA 8260B	6/16/14	102	102	0.0570	70.0-130	25
Tert-amyl-methyl ether	88406-02	<0.50	40.0	40.0	41.3	40.9	ug/L	EPA 8260B	6/16/14	103	102	0.946	70.0-130	25
Toluene	88406-02	<0.50	40.0	40.0	42.2	41.8	ug/L	EPA 8260B	6/16/14	105	104	0.974	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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-Dibromoethane	88414-03	<0.50	40.3	40.3	41.9	41.6	ug/L	EPA 8260B	6/17/14	104	103	0.861	70.0-130	25
1,2-Dichloroethane	88414-03	<0.50	40.0	40.0	41.8	41.1	ug/L	EPA 8260B	6/17/14	104	103	1.66	70.0-130	25
Benzene	88414-03	<0.50	40.0	40.0	41.1	40.5	ug/L	EPA 8260B	6/17/14	103	101	1.37	70.0-130	25
Diisopropyl ether	88414-03	<0.50	40.0	40.0	39.5	38.8	ug/L	EPA 8260B	6/17/14	98.7	97.1	1.60	70.0-130	25
Ethanol	88414-03	<5.0	100	100	86.1	86.5	ug/L	EPA 8260B	6/17/14	86.1	86.5	0.393	55.0-150	25
Ethyl-tert-butyl ether	88414-03	<0.50	40.0	40.0	43.8	44.2	ug/L	EPA 8260B	6/17/14	110	110	0.822	70.0-130	25
Ethylbenzene	88414-03	<0.50	40.0	40.0	41.2	41.3	ug/L	EPA 8260B	6/17/14	103	103	0.324	70.0-130	25
Methanol	88414-03	<50	1000	1000	879	859	ug/L	EPA 8260B	6/17/14	87.9	85.9	2.33	65.0-150	25
Methyl-t-butyl ether	88414-03	<0.50	40.1	40.1	47.8	47.6	ug/L	EPA 8260B	6/17/14	119	119	0.536	70.0-130	25
P + M Xylene	88414-03	<0.50	40.0	40.0	39.8	40.2	ug/L	EPA 8260B	6/17/14	99.5	100	0.898	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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	88414-03	<5.0	200	200	205	204	ug/L	EPA 8260B	6/17/14	102	102	0.524	70.0-130	25
Tert-amyl-methyl ether	88414-03	<0.50	40.0	40.0	43.3	43.2	ug/L	EPA 8260B	6/17/14	108	108	0.317	70.0-130	25
Toluene	88414-03	<0.50	40.0	40.0	40.8	40.2	ug/L	EPA 8260B	6/17/14	102	100	1.48	70.0-130	25
1,2-Dibromoethane	88384-02	<0.50	40.3	40.3	45.8	45.6	ug/L	EPA 8260B	6/13/14	114	113	0.381	70.0-130	25
1,2-Dichloroethane	88384-02	<0.50	40.0	40.0	50.4	50.0	ug/L	EPA 8260B	6/13/14	126	125	0.933	70.0-130	25
Benzene	88384-02	<0.50	40.0	40.0	45.2	44.7	ug/L	EPA 8260B	6/13/14	113	112	1.21	70.0-130	25
Diisopropyl ether	88384-02	<0.50	40.0	40.0	45.9	45.3	ug/L	EPA 8260B	6/13/14	115	113	1.31	70.0-130	25
Ethanol	88384-02	<5.0	100	100	90.4	97.5	ug/L	EPA 8260B	6/13/14	90.4	97.5	7.48	55.0-150	25
Ethyl-tert-butyl ether	88384-02	<0.50	40.0	40.0	48.6	47.8	ug/L	EPA 8260B	6/13/14	122	120	1.64	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Ethylbenzene	88384-02	<0.50	40.0	40.0	43.6	43.2	ug/L	EPA 8260B	6/13/14	109	108	1.06	70.0-130	25
Methanol	88384-02	<50	1000	1000	1360	1380	ug/L	EPA 8260B	6/13/14	136	138	1.65	65.0-150	25
Methyl-t-butyl ether	88384-02	<0.50	40.1	40.1	48.4	50.2	ug/L	EPA 8260B	6/13/14	121	125	3.65	70.0-130	25
P + M Xylene	88384-02	<0.50	40.0	40.0	44.3	43.6	ug/L	EPA 8260B	6/13/14	111	109	1.46	70.0-130	25
Tert-Butanol	88384-02	1800	200	200	2050	2100	ug/L	EPA 8260B	6/13/14	121	148	19.8	70.0-130	25
Tert-amyl-methyl ether	88384-02	<0.50	40.0	40.0	48.0	48.0	ug/L	EPA 8260B	6/13/14	120	120	0.194	70.0-130	25
Toluene	88384-02	<0.50	40.0	40.0	45.2	44.9	ug/L	EPA 8260B	6/13/14	113	112	0.683	70.0-130	25
1,2-Dibromoethane	88388-11	<0.50	40.3	40.3	45.5	45.4	ug/L	EPA 8260B	6/17/14	113	113	0.304	70.0-130	25
1,2-Dichloroethane	88388-11	<0.50	40.0	40.0	44.6	44.5	ug/L	EPA 8260B	6/17/14	112	111	0.325	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Benzene	88388-11	<0.50	40.0	40.0	42.7	42.7	ug/L	EPA 8260B	6/17/14	107	107	0.0912	70.0-130	25
Diisopropyl ether	88388-11	<0.50	40.0	40.0	38.6	38.3	ug/L	EPA 8260B	6/17/14	96.4	95.7	0.744	70.0-130	25
Ethanol	88388-11	<5.0	100	100	95.6	101	ug/L	EPA 8260B	6/17/14	95.6	101	5.72	55.0-150	25
Ethyl-tert-butyl ether	88388-11	<0.50	40.0	40.0	40.9	41.1	ug/L	EPA 8260B	6/17/14	102	103	0.575	70.0-130	25
Ethylbenzene	88388-11	<0.50	40.0	40.0	44.7	44.6	ug/L	EPA 8260B	6/17/14	112	112	0.189	70.0-130	25
Methanol	88388-11	<50	1000	1000	887	908	ug/L	EPA 8260B	6/17/14	88.7	90.8	2.35	65.0-150	25
Methyl-t-butyl ether	88388-11	1.2	40.1	40.1	43.6	43.5	ug/L	EPA 8260B	6/17/14	106	105	0.146	70.0-130	25
P + M Xylene	88388-11	<0.50	40.0	40.0	42.5	42.7	ug/L	EPA 8260B	6/17/14	106	107	0.331	70.0-130	25
Tert-Butanol	88388-11	<5.0	200	200	213	213	ug/L	EPA 8260B	6/17/14	106	106	0.110	70.0-130	25
Tert-amyl-methyl ether	88388-11	<0.50	40.0	40.0	44.3	44.0	ug/L	EPA 8260B	6/17/14	111	110	0.747	70.0-130	25

Report Number : 88388

Date : 06/18/2014

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Toluene	88388-11	<0.50	40.0	40.0	44.5	44.2	ug/L	EPA 8260B	6/17/14	111	110	0.674	70.0-130	25
Toluene	88414-02	<0.50	40.0	40.0	42.7	44.3	ug/L	EPA 8260B	6/17/14	107	111	3.87	70.0-130	25
Nitrate as N	88381-03	0.87	5.00	5.00	5.68	5.59	mg/L	EPA 300.0	6/11/14	96.0	94.3	1.51	90.0-110	10
Sulfate	88381-03	8.0	25.0	25.0	33.8	33.9	mg/L	EPA 300.0	6/17/14	103	103	0.191	90.0-110	10

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	108	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	102	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	104	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	96.4	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	6/17/14	105	85-115
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	6/13/14	104	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	6/13/14	103	70.0-130
Benzene	40.0	ug/L	EPA 8260B	6/13/14	101	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	6/13/14	95.2	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/13/14	108	55.0-150
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	6/13/14	97.5	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	6/13/14	104	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/13/14	102	65.0-150
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	6/13/14	99.4	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	6/13/14	101	70.0-130
TPH as Gasoline	484	ug/L	EPA 8260B	6/13/14	111	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/13/14	102	70.0-130
Tert-amyl-methyl ether	40.0	ug/L	EPA 8260B	6/13/14	99.8	70.0-130
Toluene	40.0	ug/L	EPA 8260B	6/13/14	102	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	6/16/14	101	70.0-130

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	6/16/14	97.9	70.0-130
Benzene	40.1	ug/L	EPA 8260B	6/16/14	98.1	70.0-130
Diisopropyl ether	40.1	ug/L	EPA 8260B	6/16/14	93.4	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/16/14	108	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	6/16/14	93.7	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	6/16/14	101	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/16/14	93.0	65.0-150
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	6/16/14	97.2	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	6/16/14	99.1	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/16/14	97.0	70.0-130
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	6/16/14	98.2	70.0-130
Toluene	40.1	ug/L	EPA 8260B	6/16/14	98.6	70.0-130
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	6/17/14	106	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	6/17/14	103	70.0-130
Benzene	40.0	ug/L	EPA 8260B	6/17/14	103	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	6/17/14	99.6	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/17/14	81.5	55.0-150
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	6/17/14	112	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	6/17/14	107	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/17/14	88.7	65.0-150
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	6/17/14	120	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	6/17/14	106	70.0-130

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
TPH as Gasoline	485	ug/L	EPA 8260B	6/17/14	116	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/17/14	102	70.0-130
Tert-amyl-methyl ether	40.0	ug/L	EPA 8260B	6/17/14	110	70.0-130
Toluene	40.0	ug/L	EPA 8260B	6/17/14	103	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	6/13/14	110	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	6/13/14	118	70.0-130
Benzene	40.1	ug/L	EPA 8260B	6/13/14	110	70.0-130
Diisopropyl ether	40.1	ug/L	EPA 8260B	6/13/14	111	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/13/14	95.5	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	6/13/14	117	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	6/13/14	108	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/13/14	138	65.0-150
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	6/13/14	114	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	6/13/14	108	70.0-130
TPH as Gasoline	484	ug/L	EPA 8260B	6/13/14	102	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/13/14	113	70.0-130
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	6/13/14	115	70.0-130
Toluene	40.1	ug/L	EPA 8260B	6/13/14	109	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	6/17/14	109	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	6/17/14	108	70.0-130
Benzene	40.1	ug/L	EPA 8260B	6/17/14	104	70.0-130

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Diisopropyl ether	40.1	ug/L	EPA 8260B	6/17/14	94.4	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/17/14	93.9	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	6/17/14	101	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	6/17/14	110	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/17/14	89.8	65.0-150
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	6/17/14	103	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	6/17/14	105	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	6/17/14	104	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/17/14	103	70.0-130
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	6/17/14	108	70.0-130
Toluene	40.1	ug/L	EPA 8260B	6/17/14	108	70.0-130
TPH as Gasoline	486	ug/L	EPA 8260B	6/17/14	107	70.0-130
Hexavalent Chromium	5.00	ug/L	EPA 7199	6/11/14	98.8	90.0-110
Ferrous Iron	0.251	mg/L	SM 3500-Fe D	6/11/14	98.1	70.0-130
Nitrate as N	5.00	mg/L	EPA 300.0	6/11/14	99.4	90.0-110
Nitrate as N	5.00	mg/L	EPA 300.0	6/11/14	94.6	90.0-110

Report Number : 88388

Date : 06/18/2014

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Sulfate	25.0	mg/L	EPA 300.0	6/11/14	94.8	90.0-110
Sulfate	25.0	mg/L	EPA 300.0	6/17/14	101	90.0-110



SAMPLE RECEIPT CHECKLIST

SRG #: 88388

Sample Receipt	Initials/Date: <i>Rm 061114</i>	Storage Time: <i>1505</i>	Sample Login	Initials/Date: <i>TJB 061114</i>
TAT: <input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush	<input type="checkbox"/> Split	<input checked="" type="checkbox"/> Courier	<input type="checkbox"/> Over-the-counter
Temp °C <i>2.2</i>	<input type="checkbox"/> N/A	Therm ID <i>1R-1</i>	Time <i>1449</i>	
Coolant present		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Water
For Shipments Only:		Custody Seals		
		<input type="checkbox"/> N/A	<input type="checkbox"/> Intact	<input type="checkbox"/> Broken

Chain-of-Custody:	Yes	No
Is COC present?	<input checked="" type="checkbox"/>	
Is COC signed by relinquisher?	<input checked="" type="checkbox"/>	
Is COC dated by relinquisher?	<input checked="" type="checkbox"/>	
Is the sampler's name on the COC?	<input checked="" type="checkbox"/>	
Are there analyses or hold for all samples?	<input checked="" type="checkbox"/>	

Documented on	COC	Labels	Discrepancies:
Sample ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Project ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Sample Date	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Sample Time	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Does COC match project history?			<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Samples:	N/A	Yes	No
Are sample custody seals intact?	<input checked="" type="checkbox"/>		
Are sample containers intact?		<input checked="" type="checkbox"/>	
Is preservation documented?		<input checked="" type="checkbox"/>	
In-house Analysis:	N/A	Yes	No
Are preservatives acceptable?		<input checked="" type="checkbox"/>	
Are samples within holding time?		<input checked="" type="checkbox"/>	
Are sample container types correct?		<input checked="" type="checkbox"/>	
Is there adequate sample volume?			<input checked="" type="checkbox"/>

Comments:

Receipt Details:	Matrix	Container Type	# of Containers
	<i>WA</i>	<i>VOA</i>	<i>54</i>
	<i>WA</i>	<i>Poly</i>	<i>15</i>

CS Required:

Proceed With Analysis: YES NO Init/Date:

Client Communication:



Subcontract Laboratory Report Attachments



Calscience



WORK ORDER NUMBER: 14-06-0915

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Kiff Analytical

Client Project Name: Tesoro - Livermore #67076

Attention: Joel Kiff
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Amanda Porter

Approved for release on 06/19/2014 by:
Amanda Porter
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: Tesoro - Livermore #67076
 Work Order Number: 14-06-0915

1	Work Order Narrative.	3
2	Client Sample Data.	4
	2.1 RSK-175M Carbon Dioxide (Aqueous).	4
	2.2 RSK-175M Methane (Aqueous).	5
	2.3 Combined Inorganic Tests.	6
3	Quality Control Sample Data.	7
	3.1 Sample Duplicate.	7
	3.2 LCS/LCSD.	9
4	Sample Analysis Summary.	13
5	Glossary of Terms and Qualifiers.	14
6	Chain-of-Custody/Sample Receipt Form.	15

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/12/14. They were assigned to Work Order 14-06-0915.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-2	14-06-0915-1-C	06/11/14 10:30	Aqueous	GC 14	N/A	06/16/14 13:26	140616L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		10100	6.80		4.00		
DW-3	14-06-0915-2-C	06/11/14 09:45	Aqueous	GC 14	N/A	06/16/14 13:45	140616L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		10200	6.80		4.00		
DW-6	14-06-0915-3-C	06/11/14 09:40	Aqueous	GC 14	N/A	06/16/14 14:05	140616L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		18300	6.80		4.00		
Method Blank	099-12-659-709	N/A	Aqueous	GC 14	N/A	06/16/14 12:05	140616L02
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		ND	1.70		1.00		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DW-2	14-06-0915-1-B	06/11/14 10:30	Aqueous	GC 52	N/A	06/17/14 13:50	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1780	8.00		8.00		
DW-3	14-06-0915-2-B	06/11/14 09:45	Aqueous	GC 52	N/A	06/17/14 14:45	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		426	1.00		1.00		
DW-6	14-06-0915-3-A	06/11/14 09:40	Aqueous	GC 52	N/A	06/17/14 15:35	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		3210	20.0		20.0		
Method Blank	099-12-663-2183	N/A	Aqueous	GC 52	N/A	06/17/14 11:38	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		ND	1.00		1.00		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received:
Work Order:

06/12/14
14-06-0915

Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
DW-2	14-06-0915-1				06/11/14 10:30		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	664	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	820	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
DW-3	14-06-0915-2				06/11/14 09:45		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	401	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	170	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
DW-6	14-06-0915-3				06/11/14 09:40		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	431	5.00	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	575	1.00	1.00		mg/L	06/17/14	06/17/14	SM 2540 C
Method Blank					N/A		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO3)	ND	1.0	1.00		mg/L	N/A	06/17/14	SM 2320B
Solids, Total Dissolved	ND	1.0	1.00		mg/L	06/17/14	06/17/14	SM 2540 C

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Sample Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
14-06-0914-1	Sample	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKD2
14-06-0914-1	Sample Duplicate	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKD2
<u>Parameter</u>		<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO3)		604.0	608.0	1	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
14-06-0914-1	Sample	Aqueous	SC 5	06/17/14 00:00	06/17/14 15:30	E0617TDSD1
14-06-0914-1	Sample Duplicate	Aqueous	SC 5	06/17/14 00:00	06/17/14 15:30	E0617TDSD1

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Dissolved	730.0	710.0	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-659-709	LCS	Aqueous	GC 14	N/A	06/16/14 11:24	140616L02			
099-12-659-709	LCSD	Aqueous	GC 14	N/A	06/16/14 11:44	140616L02			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	104.0	93.96	90	97.71	94	80-120	4	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-663-2183	LCS	Aqueous	GC 52	N/A	06/17/14 10:42	140617L01			
099-12-663-2183	LCSD	Aqueous	GC 52	N/A	06/17/14 11:07	140617L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Methane	102.0	91.48	90	91.48	90	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-859-385	LCS	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKB2
099-15-859-385	LCSD	Aqueous	PH1/BUR03	N/A	06/17/14 17:28	E0617ALKB2

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	100.0	98.00	98	98.00	98	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/12/14
Work Order: 14-06-0915
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-180-4112	LCS	Aqueous	SC 5	06/17/14	06/17/14 15:30	E0617TDSL1			
099-12-180-4112	LCSD	Aqueous	SC 5	06/17/14	06/17/14 15:30	E0617TDSL1			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Dissolved	100.0	95.00	95	90.00	90	80-120	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Sample Analysis Summary Report

Work Order: 14-06-0915

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
RSK-175M	N/A	884	GC 14	2
RSK-175M	N/A	884	GC 52	2
RSK-175M	N/A	896	GC 52	2
SM 2320B	N/A	688	PH1/BUR03	1
SM 2540 C	N/A	722	SC 5	1

Glossary of Terms and Qualifiers

Work Order: 14-06-0915

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

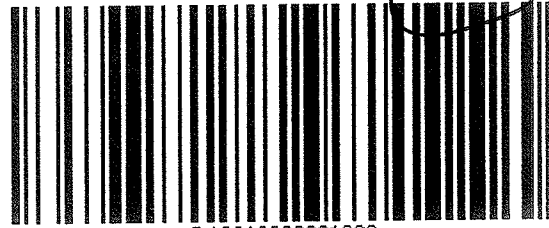
Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

0915



800.334.5000
ontrac.com



D10010689361990

Date Printed 6/11/2014

Tracking#D10010689361990

Shipped From:
KIFF ANALYTICAL
2795 2ND STREET 300
DAVIS, CA 95618

Sent By: SAMPLE RECEIVINGX125
Phone#: (530)297-4800
wgt(lbs): 45
Reference: SUBS
Reference 2: 600

<i>Ship To Company:</i> CALSCIENCE ENVIRONMENTAL LABS 7440 LINCOLN WAY GARDEN GROVE, CA 92841 SAMPLE RECEIVING (714)895-5494	<i>Service:</i> S <i>Sort Code:</i> ORG <i>Special Services:</i> Signature Required
--	---

Return to Contents

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Kyff

DATE: 06/12/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.7 °C - 0.3 °C (CF) = 2.4 °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 Checked by: 826

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Checked by: 826

Sample _____ No (Not Intact) Not Present Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....			
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (____) EnCores® TerraCores® _____

Aqueous: VOA VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 1PBna 500PB

250PB 250PBn 125PB 125PBzanna 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: _____ Labeled/Checked by: 802

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 659

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure zanna: ZnAc₂+NaOH f: Filtered Scanned by: 659

Return to Contents

Laboratory Results


Mike Purchase
Arctos Environmental
2332 5th St., Suite A
Berkeley, CA 94610

Subject : 11 Water Samples
Project Name : Tesoro - Livermore #67076
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. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the Environmental Laboratory Accreditation Program (ELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Troy Turpen

Subject : 11 Water Samples
Project Name : Tesoro - Livermore #67076
Project Number : 01LV

Case Narrative

Benzene, Ethanol and TPH as Gasoline results for sample MW-2 by Method EPA 8260B are from a previously opened sample container. Results may be biased low. There was insufficient sample volume for analysis of an unopened container.

TPH as Gasoline, Toluene and Total Xylenes results for sample IP-8 by Method EPA 8260B are from a previously opened sample container. Results may be biased low. There was insufficient sample volume for analysis of an unopened container.

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

The Method Reporting Limit for Ethanol has been increased due to the presence of an interfering compound for sample MW-1.

Recoveries for some Matrix Spike/Matrix Spike Duplicate analytes were outside of control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

Sample IP-8 was analyzed by EPA Method 8260B from a bottle that contained headspace bubbles greater than 1/4 inch in diameter.

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

Project Number : **01LV**

Sample : **IP-2**

Matrix : Water

Lab Number : 88392-01

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2.4	0.50	ug/L	EPA 8260B	06/17/14 12:13
Toluene	2.4	0.50	ug/L	EPA 8260B	06/17/14 12:13
Ethylbenzene	2.2	0.50	ug/L	EPA 8260B	06/17/14 12:13
Total Xylenes	5.9	0.50	ug/L	EPA 8260B	06/17/14 12:13
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:13
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:13
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:13
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:13
Tert-Butanol	6.4	5.0	ug/L	EPA 8260B	06/17/14 12:13
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 12:13
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 12:13
TPH as Gasoline	350	50	ug/L	EPA 8260B	06/17/14 12:13
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:13
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 12:13
1,2-Dichloroethane-d4 (Surr)	99.8		% Recovery	EPA 8260B	06/17/14 12:13
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	06/17/14 12:13

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

Project Number : **01LV**

Sample : **MW-2**

Matrix : Water

Lab Number : 88392-02

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/12/14 15:51
Sulfate	2.7	0.50	mg/L	EPA 300.0	06/12/14 15:51
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/12/14 09:57
Ferrous Iron	0.51	0.10	mg/L	SM 3500-Fe D	06/12/14 11:07
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 11:52
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 11:52
Iron, Dissolved	2.6	0.10	mg/L	EPA 6010B	06/18/14 11:52
Manganese, Dissolved	2.8	0.0050	mg/L	EPA 6010B	06/18/14 11:52
Sodium, Dissolved	74	0.50	mg/L	EPA 6010B	06/18/14 11:52
Benzene	520	2.5	ug/L	EPA 8260B	06/17/14 23:30
Toluene	40	0.50	ug/L	EPA 8260B	06/17/14 08:59
Ethylbenzene	300	0.50	ug/L	EPA 8260B	06/17/14 08:59
Total Xylenes	320	0.50	ug/L	EPA 8260B	06/17/14 08:59
Methyl-t-butyl ether (MTBE)	120	0.50	ug/L	EPA 8260B	06/17/14 08:59
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 08:59
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 08:59
Tert-amyl methyl ether (TAME)	1.4	0.50	ug/L	EPA 8260B	06/17/14 08:59
Tert-Butanol	100	5.0	ug/L	EPA 8260B	06/17/14 08:59
Methanol	< 80	80	ug/L	EPA 8260B	06/17/14 08:59
Ethanol	< 25	25	ug/L	EPA 8260B	06/17/14 23:30
TPH as Gasoline	6900	250	ug/L	EPA 8260B	06/17/14 23:30
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 08:59
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 08:59
1,2-Dichloroethane-d4 (Surr)	93.4		% Recovery	EPA 8260B	06/17/14 08:59
Toluene - d8 (Surr)	97.6		% Recovery	EPA 8260B	06/17/14 08:59

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

Project Number : **01LV**

Sample : **DW-1**

Matrix : Water

Lab Number : 88392-03

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/12/14 16:02
Sulfate	27	0.50	mg/L	EPA 300.0	06/12/14 16:02
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/12/14 10:06
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	06/12/14 11:08
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:06
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:06
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	06/18/14 12:06
Manganese, Dissolved	3.1	0.0050	mg/L	EPA 6010B	06/18/14 12:06
Sodium, Dissolved	140	0.50	mg/L	EPA 6010B	06/18/14 12:06
Benzene	56	0.50	ug/L	EPA 8260B	06/18/14 01:16
Toluene	9.4	0.50	ug/L	EPA 8260B	06/18/14 01:16
Ethylbenzene	130	0.50	ug/L	EPA 8260B	06/18/14 01:16
Total Xylenes	220	0.50	ug/L	EPA 8260B	06/18/14 01:16
Methyl-t-butyl ether (MTBE)	18	0.50	ug/L	EPA 8260B	06/18/14 01:16
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 01:16
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 01:16
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 01:16
Tert-Butanol	14	5.0	ug/L	EPA 8260B	06/18/14 01:16
Methanol	< 50	50	ug/L	EPA 8260B	06/18/14 01:16
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 01:16
TPH as Gasoline	3600	150	ug/L	EPA 8260B	06/17/14 02:58
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 01:16
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/18/14 01:16
1,2-Dichloroethane-d4 (Surr)	94.8		% Recovery	EPA 8260B	06/18/14 01:16
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	06/18/14 01:16

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

Project Number : **01LV**

Sample : **MW-1**

Matrix : Water

Lab Number : 88392-04

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 22:55
Toluene	1.6	0.50	ug/L	EPA 8260B	06/17/14 22:55
Ethylbenzene	27	0.50	ug/L	EPA 8260B	06/17/14 22:55
Total Xylenes	58	0.50	ug/L	EPA 8260B	06/17/14 22:55
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 22:55
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 22:55
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 22:55
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 22:55
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/14 22:55
Methanol	< 50	50	ug/L	EPA 8260B	06/17/14 22:55
Ethanol	< 10	10	ug/L	EPA 8260B	06/17/14 22:55
TPH as Gasoline	2500	50	ug/L	EPA 8260B	06/17/14 22:55
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 22:55
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/14 22:55
1,2-Dichloroethane-d4 (Surr)	97.0		% Recovery	EPA 8260B	06/17/14 22:55
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	06/17/14 22:55

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

Project Number : **01LV**

Sample : **DW-8**

Matrix : Water

Lab Number : 88392-05

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/12/14 16:14
Sulfate	1.1	0.50	mg/L	EPA 300.0	06/12/14 16:14
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/12/14 10:17
Ferrous Iron	0.67	0.10	mg/L	SM 3500-Fe D	06/12/14 11:09
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:18
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:18
Iron, Dissolved	2.8	0.10	mg/L	EPA 6010B	06/18/14 12:18
Manganese, Dissolved	3.3	0.0050	mg/L	EPA 6010B	06/18/14 12:18
Sodium, Dissolved	170	0.50	mg/L	EPA 6010B	06/18/14 12:18
Benzene	2400	7.0	ug/L	EPA 8260B	06/18/14 03:01
Toluene	2100	7.0	ug/L	EPA 8260B	06/18/14 03:01
Ethylbenzene	1700	7.0	ug/L	EPA 8260B	06/18/14 03:01
Total Xylenes	6400	7.0	ug/L	EPA 8260B	06/18/14 03:01
Methyl-t-butyl ether (MTBE)	< 7.0	7.0	ug/L	EPA 8260B	06/18/14 03:01
Diisopropyl ether (DIPE)	< 7.0	7.0	ug/L	EPA 8260B	06/18/14 03:01
Ethyl-t-butyl ether (ETBE)	< 7.0	7.0	ug/L	EPA 8260B	06/18/14 03:01
Tert-amyl methyl ether (TAME)	< 7.0	7.0	ug/L	EPA 8260B	06/18/14 03:01
Tert-Butanol	67	40	ug/L	EPA 8260B	06/18/14 03:01
Methanol	< 700	700	ug/L	EPA 8260B	06/18/14 03:01
Ethanol	< 70	70	ug/L	EPA 8260B	06/18/14 03:01
TPH as Gasoline	52000	700	ug/L	EPA 8260B	06/18/14 03:01
1,2-Dichloroethane	< 7.0	7.0	ug/L	EPA 8260B	06/18/14 03:01
1,2-Dibromoethane	< 7.0	7.0	ug/L	EPA 8260B	06/18/14 03:01
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	06/18/14 03:01
Toluene - d8 (Surr)	96.5		% Recovery	EPA 8260B	06/18/14 03:01

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

Project Number : **01LV**

Sample : **IP-8**

Matrix : Water

Lab Number : 88392-06

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	1200	5.0	ug/L	EPA 8260B	06/18/14 15:34
Toluene	3300	5.0	ug/L	EPA 8260B	06/18/14 15:34
Ethylbenzene	940	5.0	ug/L	EPA 8260B	06/18/14 15:34
Total Xylenes	6400	9.0	ug/L	EPA 8260B	06/18/14 22:55
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 15:34
Diisopropyl ether (DIPE)	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 15:34
Ethyl-t-butyl ether (ETBE)	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 15:34
Tert-amyl methyl ether (TAME)	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 15:34
Tert-Butanol	28	25	ug/L	EPA 8260B	06/18/14 15:34
Methanol	< 500	500	ug/L	EPA 8260B	06/18/14 15:34
Ethanol	< 50	50	ug/L	EPA 8260B	06/18/14 15:34
TPH as Gasoline	52000	900	ug/L	EPA 8260B	06/18/14 22:55
1,2-Dichloroethane	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 15:34
1,2-Dibromoethane	< 5.0	5.0	ug/L	EPA 8260B	06/18/14 15:34
1,2-Dichloroethane-d4 (Surr)	97.7		% Recovery	EPA 8260B	06/18/14 15:34
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	06/18/14 15:34

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

Project Number : **01LV**

Sample : **DW-7**

Matrix : Water

Lab Number : 88392-07

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/12/14 16:25
Sulfate	10	0.50	mg/L	EPA 300.0	06/12/14 16:25
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/12/14 10:29
Ferrous Iron	0.13	0.10	mg/L	SM 3500-Fe D	06/12/14 11:09
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:23
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:23
Iron, Dissolved	0.63	0.10	mg/L	EPA 6010B	06/18/14 12:23
Manganese, Dissolved	2.4	0.0050	mg/L	EPA 6010B	06/18/14 12:23
Sodium, Dissolved	120	0.50	mg/L	EPA 6010B	06/18/14 12:23
Benzene	380	1.5	ug/L	EPA 8260B	06/18/14 00:05
Toluene	13	1.5	ug/L	EPA 8260B	06/18/14 00:05
Ethylbenzene	370	1.5	ug/L	EPA 8260B	06/18/14 00:05
Total Xylenes	190	1.5	ug/L	EPA 8260B	06/18/14 00:05
Methyl-t-butyl ether (MTBE)	79	1.5	ug/L	EPA 8260B	06/18/14 00:05
Diisopropyl ether (DIPE)	< 1.5	1.5	ug/L	EPA 8260B	06/18/14 00:05
Ethyl-t-butyl ether (ETBE)	< 1.5	1.5	ug/L	EPA 8260B	06/18/14 00:05
Tert-amyl methyl ether (TAME)	< 1.5	1.5	ug/L	EPA 8260B	06/18/14 00:05
Tert-Butanol	240	7.0	ug/L	EPA 8260B	06/18/14 00:05
Methanol	< 150	150	ug/L	EPA 8260B	06/18/14 00:05
Ethanol	< 15	15	ug/L	EPA 8260B	06/18/14 00:05
TPH as Gasoline	12000	150	ug/L	EPA 8260B	06/18/14 00:05
1,2-Dichloroethane	< 1.5	1.5	ug/L	EPA 8260B	06/18/14 00:05
1,2-Dibromoethane	< 1.5	1.5	ug/L	EPA 8260B	06/18/14 00:05
1,2-Dichloroethane-d4 (Surr)	96.3		% Recovery	EPA 8260B	06/18/14 00:05
Toluene - d8 (Surr)	93.7		% Recovery	EPA 8260B	06/18/14 00:05

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

Project Number : **01LV**

Sample : **DW-9**

Matrix : Water

Lab Number : 88392-08

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Ferrous Iron	0.42	0.10	mg/L	SM 3500-Fe D	06/12/14 11:09
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/12/14 10:40
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/12/14 17:00
Sulfate	< 0.50	0.50	mg/L	EPA 300.0	06/12/14 17:00
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:28
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:28
Iron, Dissolved	1.3	0.10	mg/L	EPA 6010B	06/18/14 12:28
Manganese, Dissolved	2.2	0.0050	mg/L	EPA 6010B	06/18/14 12:28
Sodium, Dissolved	69	0.50	mg/L	EPA 6010B	06/18/14 12:28
Benzene	380	2.5	ug/L	EPA 8260B	06/18/14 01:51
Toluene	11	2.5	ug/L	EPA 8260B	06/18/14 01:51
Ethylbenzene	300	2.5	ug/L	EPA 8260B	06/18/14 01:51
Total Xylenes	81	2.5	ug/L	EPA 8260B	06/18/14 01:51
Methyl-t-butyl ether (MTBE)	41	2.5	ug/L	EPA 8260B	06/18/14 01:51
Diisopropyl ether (DIPE)	< 2.5	2.5	ug/L	EPA 8260B	06/18/14 01:51
Ethyl-t-butyl ether (ETBE)	< 2.5	2.5	ug/L	EPA 8260B	06/18/14 01:51
Tert-amyl methyl ether (TAME)	< 2.5	2.5	ug/L	EPA 8260B	06/18/14 01:51
Tert-Butanol	100	15	ug/L	EPA 8260B	06/18/14 01:51
Methanol	< 250	250	ug/L	EPA 8260B	06/18/14 01:51
Ethanol	< 25	25	ug/L	EPA 8260B	06/18/14 01:51
TPH as Gasoline	13000	250	ug/L	EPA 8260B	06/18/14 01:51
1,2-Dichloroethane	< 2.5	2.5	ug/L	EPA 8260B	06/18/14 01:51
1,2-Dibromoethane	< 2.5	2.5	ug/L	EPA 8260B	06/18/14 01:51
1,2-Dichloroethane-d4 (Surr)	99.8		% Recovery	EPA 8260B	06/18/14 01:51
Toluene - d8 (Surr)	95.4		% Recovery	EPA 8260B	06/18/14 01:51

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

Project Number : **01LV**

Sample : **DW-5**

Matrix : Water

Lab Number : 88392-09

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Ferrous Iron	< 0.10	0.10	mg/L	SM 3500-Fe D	06/12/14 11:10
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/12/14 10:52
Nitrate as N	< 0.10	0.10	mg/L	EPA 300.0	06/12/14 17:11
Sulfate	26	0.50	mg/L	EPA 300.0	06/12/14 17:11
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/14 12:32
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/14 12:32
Iron, Dissolved	0.14	0.10	mg/L	EPA 6010B	06/18/14 12:32
Manganese, Dissolved	1.0	0.0050	mg/L	EPA 6010B	06/18/14 12:32
Sodium, Dissolved	290	1.0	mg/L	EPA 6010B	06/18/14 13:54
Benzene	53	4.0	ug/L	EPA 8260B	06/17/14 05:18
Toluene	4.3	4.0	ug/L	EPA 8260B	06/17/14 05:18
Ethylbenzene	340	4.0	ug/L	EPA 8260B	06/17/14 05:18
Total Xylenes	410	4.0	ug/L	EPA 8260B	06/17/14 05:18
Methyl-t-butyl ether (MTBE)	< 4.0	4.0	ug/L	EPA 8260B	06/17/14 05:18
Diisopropyl ether (DIPE)	< 4.0	4.0	ug/L	EPA 8260B	06/17/14 05:18
Ethyl-t-butyl ether (ETBE)	< 4.0	4.0	ug/L	EPA 8260B	06/17/14 05:18
Tert-amyl methyl ether (TAME)	< 4.0	4.0	ug/L	EPA 8260B	06/17/14 05:18
Tert-Butanol	< 20	20	ug/L	EPA 8260B	06/17/14 05:18
Methanol	< 400	400	ug/L	EPA 8260B	06/17/14 05:18
Ethanol	< 40	40	ug/L	EPA 8260B	06/17/14 05:18
TPH as Gasoline	18000	400	ug/L	EPA 8260B	06/17/14 05:18
1,2-Dichloroethane	< 4.0	4.0	ug/L	EPA 8260B	06/17/14 05:18
1,2-Dibromoethane	< 4.0	4.0	ug/L	EPA 8260B	06/17/14 05:18
1,2-Dichloroethane-d4 (Surr)	98.0		% Recovery	EPA 8260B	06/17/14 05:18
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	06/17/14 05:18



Report Number : 88392

Date : 06/19/2014

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

Project Number : **01LV**

Sample : **MW-6**

Matrix : Water

Lab Number : 88392-10

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Hexavalent Chromium	< 1.0	1.0	ug/L	EPA 7199	06/12/14 11:03



Report Number : 88392

Date : 06/19/2014

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

Project Number : **01LV**

Sample : **MW-10**

Matrix : Water

Lab Number : 88392-11

Sample Date :06/11/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Hexavalent Chromium	5.4	1.0	ug/L	EPA 7199	06/12/14 11:14

Report Number : 88392

Date : 06/19/2014

QC Report : Method Blank Data

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

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Arsenic, Dissolved	< 0.015	0.015	mg/L	EPA 6010B	06/18/2014	1,2-Dichloroethane-d4 (Surr)	98.7	0.50	%	EPA 8260B	06/16/2014
Chromium, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/2014	Toluene - d8 (Surr)	99.2	0.50	%	EPA 8260B	06/16/2014
Iron, Dissolved	< 0.10	0.10	mg/L	EPA 6010B	06/18/2014	Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Manganese, Dissolved	< 0.0050	0.0050	mg/L	EPA 6010B	06/18/2014	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Sodium, Dissolved	< 0.50	0.50	mg/L	EPA 6010B	06/18/2014	Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Methanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014
Methanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	TPH as Gasoline	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014
1,2-Dichloroethane-d4 (Surr)	98.9		%	EPA 8260B	06/17/2014	1,2-Dichloroethane-d4 (Surr)	97.5		%	EPA 8260B	06/17/2014
Toluene - d8 (Surr)	100		%	EPA 8260B	06/17/2014	Toluene - d8 (Surr)	97.4		%	EPA 8260B	06/17/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014	TPH as Gasoline	< 5.0	5.0	ug/L	EPA 8260B	06/18/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014						
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						
Methanol	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014						
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						
TPH as Gasoline	< 5.0	5.0	ug/L	EPA 8260B	06/16/2014						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/16/2014						

Report Number : 88392

Date : 06/19/2014

QC Report : Method Blank Data

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

Project Number : **01LV**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Ferrous Iron	<0.10	0.10	mg/L	SM 3500-Fe D	06/12/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Hexavalent Chromium	<1.0	1.0	ug/L	EPA 7199	06/12/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Nitrate as N	<0.10	0.10	mg/L	EPA 300.0	06/12/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014	Sulfate	<0.50	0.50	mg/L	EPA 300.0	06/12/2014
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014						
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Methanol	< 50	50	ug/L	EPA 8260B	06/17/2014						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/17/2014						
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/17/2014						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/17/2014						
1,2-Dichloroethane-d4 (Surr)	99.2		%	EPA 8260B	06/17/2014						
Toluene - d8 (Surr)	102		%	EPA 8260B	06/17/2014						
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	06/18/2014						
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
Methanol	< 50	50	ug/L	EPA 8260B	06/18/2014						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	06/18/2014						
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	06/18/2014						
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	06/18/2014						
Toluene - d8 (Surr)	102		%	EPA 8260B	06/18/2014						

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Ferrous Iron	88392-02	0.51	0.251	0.251	0.741	0.770	mg/L	SM 3500-Fe D	6/12/14	92.5	104	3.84	70.0-130	25
Hexavalent Chromium	88392-02	< 1.0	5.00	5.00	5.23	5.43	ug/L	EPA 7199	6/12/14	104	109	3.83	90.0-110	10
Nitrate as N	88392-02	< 0.10	5.00	5.00	4.89	5.00	mg/L	EPA 300.0	6/12/14	97.8	99.9	2.16	90.0-110	10
Sulfate	88392-02	2.7	25.0	25.0	28.2	28.7	mg/L	EPA 300.0	6/12/14	102	104	1.73	90.0-110	10
Arsenic, (Dis)	88392-02	< 0.015	0.400	0.400	0.423	0.431	mg/L	EPA 6010B	6/18/14	105	107	1.78	75-125	20
Chromium, (Dis)	88392-02	< 0.0050	0.400	0.400	0.396	0.402	mg/L	EPA 6010B	6/18/14	98.9	100	1.50	75-125	20
Iron, (Dis)	88392-02	2.6	0.400	0.400	2.97	2.97	mg/L	EPA 6010B	6/18/14	100	102	0.202	75-125	20
Manganese, (Dis)	88392-02	2.8	0.400	0.400	3.15	3.17	mg/L	EPA 6010B	6/18/14	74.8	80.8	0.759	75-125	20

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Sodium, (Dis)	88392-02	74	0.400	0.400	73.9	75.2	mg/L	EPA 6010B	6/18/14	0.00	225	1.74	75-125	20
1,2-Dibromoethane	88392-02	<0.50	40.3	40.3	36.5	37.5	ug/L	EPA 8260B	6/17/14	90.6	93.0	2.63	70.0-130	25
1,2-Dichloroethane	88392-02	<0.50	40.0	40.0	35.6	36.2	ug/L	EPA 8260B	6/17/14	89.1	90.4	1.49	70.0-130	25
Diisopropyl ether	88392-02	<0.50	40.0	40.0	32.3	33.0	ug/L	EPA 8260B	6/17/14	80.8	82.5	2.11	70.0-130	25
Ethyl-tert-butyl ether	88392-02	<0.50	40.0	40.0	29.2	31.4	ug/L	EPA 8260B	6/17/14	73.1	78.6	7.23	70.0-130	25
Ethylbenzene	88392-02	300	40.0	40.0	344	344	ug/L	EPA 8260B	6/17/14	114	113	0.730	70.0-130	25
Methanol	88392-02	66	1000	1000	1360	1250	ug/L	EPA 8260B	6/17/14	129	119	8.61	65.0-150	25
Methyl-t-butyl ether	88392-02	120	40.1	40.1	150	157	ug/L	EPA 8260B	6/17/14	60.1	76.6	24.2	70.0-130	25
P + M Xylene	88392-02	300	40.0	40.0	350	350	ug/L	EPA 8260B	6/17/14	136	136	0.489	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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	88392-02	100	200	200	344	340	ug/L	EPA 8260B	6/17/14	120	119	1.50	70.0-130	25
Tert-amyl-methyl ether	88392-02	1.4	40.0	40.0	32.2	33.7	ug/L	EPA 8260B	6/17/14	76.8	80.7	4.99	70.0-130	25
Toluene	88392-02	40	40.0	40.0	74.0	75.0	ug/L	EPA 8260B	6/17/14	85.9	88.5	2.97	70.0-130	25
1,2-Dibromoethane	88406-02	<0.50	40.3	40.3	43.6	43.1	ug/L	EPA 8260B	6/16/14	108	107	1.14	70.0-130	25
1,2-Dichloroethane	88406-02	<0.50	40.0	40.0	41.8	41.0	ug/L	EPA 8260B	6/16/14	104	102	1.93	70.0-130	25
Benzene	88406-02	<0.50	40.0	40.0	42.0	41.7	ug/L	EPA 8260B	6/16/14	105	104	0.745	70.0-130	25
Diisopropyl ether	88406-02	<0.50	40.0	40.0	39.8	39.3	ug/L	EPA 8260B	6/16/14	99.4	98.2	1.29	70.0-130	25
Ethanol	88406-02	<5.0	100	100	112	110	ug/L	EPA 8260B	6/16/14	112	110	1.87	55.0-150	25
Ethyl-tert-butyl ether	88406-02	<0.50	40.0	40.0	40.9	40.6	ug/L	EPA 8260B	6/16/14	102	102	0.632	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Ethylbenzene	88406-02	<0.50	40.0	40.0	42.3	42.7	ug/L	EPA 8260B	6/16/14	106	107	1.14	70.0-130	25
Methanol	88406-02	<50	1000	1000	953	924	ug/L	EPA 8260B	6/16/14	95.3	92.4	3.02	65.0-150	25
Methyl-t-butyl ether	88406-02	<0.50	40.1	40.1	41.6	41.6	ug/L	EPA 8260B	6/16/14	104	104	0.0661	70.0-130	25
P + M Xylene	88406-02	0.67	40.0	40.0	42.0	42.4	ug/L	EPA 8260B	6/16/14	103	104	1.02	70.0-130	25
Tert-Butanol	88406-02	35	200	200	240	240	ug/L	EPA 8260B	6/16/14	102	102	0.0570	70.0-130	25
Tert-amyl-methyl ether	88406-02	<0.50	40.0	40.0	41.3	40.9	ug/L	EPA 8260B	6/16/14	103	102	0.946	70.0-130	25
Toluene	88406-02	<0.50	40.0	40.0	42.2	41.8	ug/L	EPA 8260B	6/16/14	105	104	0.974	70.0-130	25
1,2-Dibromoethane	88414-03	<0.50	40.3	40.3	41.9	41.6	ug/L	EPA 8260B	6/17/14	104	103	0.861	70.0-130	25
1,2-Dichloroethane	88414-03	<0.50	40.0	40.0	41.8	41.1	ug/L	EPA 8260B	6/17/14	104	103	1.66	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Benzene	88414-03	<0.50	40.0	40.0	41.1	40.5	ug/L	EPA 8260B	6/17/14	103	101	1.37	70.0-130	25
Diisopropyl ether	88414-03	<0.50	40.0	40.0	39.5	38.8	ug/L	EPA 8260B	6/17/14	98.7	97.1	1.60	70.0-130	25
Ethanol	88414-03	<5.0	100	100	86.1	86.5	ug/L	EPA 8260B	6/17/14	86.1	86.5	0.393	55.0-150	25
Ethyl-tert-butyl ether	88414-03	<0.50	40.0	40.0	43.8	44.2	ug/L	EPA 8260B	6/17/14	110	110	0.822	70.0-130	25
Ethylbenzene	88414-03	<0.50	40.0	40.0	41.2	41.3	ug/L	EPA 8260B	6/17/14	103	103	0.324	70.0-130	25
Methanol	88414-03	<50	1000	1000	879	859	ug/L	EPA 8260B	6/17/14	87.9	85.9	2.33	65.0-150	25
Methyl-t-butyl ether	88414-03	<0.50	40.1	40.1	47.8	47.6	ug/L	EPA 8260B	6/17/14	119	119	0.536	70.0-130	25
P + M Xylene	88414-03	<0.50	40.0	40.0	39.8	40.2	ug/L	EPA 8260B	6/17/14	99.5	100	0.898	70.0-130	25
Tert-Butanol	88414-03	<5.0	200	200	205	204	ug/L	EPA 8260B	6/17/14	102	102	0.524	70.0-130	25
Tert-amyl-methyl ether	88414-03	<0.50	40.0	40.0	43.3	43.2	ug/L	EPA 8260B	6/17/14	108	108	0.317	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Toluene	88414-03	<0.50	40.0	40.0	40.8	40.2	ug/L	EPA 8260B	6/17/14	102	100	1.48	70.0-130	25
1,2-Dibromoethane	88388-11	<0.50	40.3	40.3	45.5	45.4	ug/L	EPA 8260B	6/17/14	113	113	0.304	70.0-130	25
1,2-Dichloroethane	88388-11	<0.50	40.0	40.0	44.6	44.5	ug/L	EPA 8260B	6/17/14	112	111	0.325	70.0-130	25
Benzene	88388-11	<0.50	40.0	40.0	42.7	42.7	ug/L	EPA 8260B	6/17/14	107	107	0.0912	70.0-130	25
Diisopropyl ether	88388-11	<0.50	40.0	40.0	38.6	38.3	ug/L	EPA 8260B	6/17/14	96.4	95.7	0.744	70.0-130	25
Ethanol	88388-11	<5.0	100	100	95.6	101	ug/L	EPA 8260B	6/17/14	95.6	101	5.72	55.0-150	25
Ethyl-tert-butyl ether	88388-11	<0.50	40.0	40.0	40.9	41.1	ug/L	EPA 8260B	6/17/14	102	103	0.575	70.0-130	25
Ethylbenzene	88388-11	<0.50	40.0	40.0	44.7	44.6	ug/L	EPA 8260B	6/17/14	112	112	0.189	70.0-130	25
Methanol	88388-11	<50	1000	1000	887	908	ug/L	EPA 8260B	6/17/14	88.7	90.8	2.35	65.0-150	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Methyl-t-butyl ether	88388-11	1.2	40.1	40.1	43.6	43.5	ug/L	EPA 8260B	6/17/14	106	105	0.146	70.0-130	25
P + M Xylene	88388-11	<0.50	40.0	40.0	42.5	42.7	ug/L	EPA 8260B	6/17/14	106	107	0.331	70.0-130	25
Tert-Butanol	88388-11	<5.0	200	200	213	213	ug/L	EPA 8260B	6/17/14	106	106	0.110	70.0-130	25
Tert-amyl-methyl ether	88388-11	<0.50	40.0	40.0	44.3	44.0	ug/L	EPA 8260B	6/17/14	111	110	0.747	70.0-130	25
Toluene	88388-11	<0.50	40.0	40.0	44.5	44.2	ug/L	EPA 8260B	6/17/14	111	110	0.674	70.0-130	25
P + M Xylene	88432-27	1.9	40.0	40.0	35.7	35.2	ug/L	EPA 8260B	6/18/14	84.5	83.2	1.58	70.0-130	25
1,2-Dibromoethane	88405-11	<0.50	40.3	40.3	50.1	47.3	ug/L	EPA 8260B	6/18/14	124	117	5.75	70.0-130	25
1,2-Dichloroethane	88405-11	<0.50	40.0	40.0	48.4	45.8	ug/L	EPA 8260B	6/18/14	121	114	5.54	70.0-130	25
Benzene	88405-11	<0.50	40.0	40.0	46.7	43.9	ug/L	EPA 8260B	6/18/14	117	110	6.11	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

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

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
Diisopropyl ether	88405-11	<0.50	40.0	40.0	44.0	42.1	ug/L	EPA 8260B	6/18/14	110	105	4.38	70.0-130	25
Ethanol	88405-11	<5.0	100	100	106	100	ug/L	EPA 8260B	6/18/14	106	100	5.72	55.0-150	25
Ethyl-tert-butyl ether	88405-11	<0.50	40.0	40.0	46.1	43.7	ug/L	EPA 8260B	6/18/14	115	109	5.27	70.0-130	25
Ethylbenzene	88405-11	<0.50	40.0	40.0	46.8	44.6	ug/L	EPA 8260B	6/18/14	117	112	4.79	70.0-130	25
Methanol	88405-11	<5.0	1000	1000	1040	970	ug/L	EPA 8260B	6/18/14	104	97.0	7.41	65.0-150	25
Methyl-t-butyl ether	88405-11	<0.50	40.1	40.1	44.9	43.2	ug/L	EPA 8260B	6/18/14	112	108	3.86	70.0-130	25
Tert-Butanol	88405-11	<5.0	200	200	226	214	ug/L	EPA 8260B	6/18/14	113	107	5.89	70.0-130	25
Tert-amyl-methyl ether	88405-11	<0.50	40.0	40.0	48.2	45.8	ug/L	EPA 8260B	6/18/14	120	114	5.11	70.0-130	25
Toluene	88405-11	<0.50	40.0	40.0	48.4	45.7	ug/L	EPA 8260B	6/18/14	121	114	5.70	70.0-130	25

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Arsenic, (Dis)	0.400	mg/L	EPA 6010B	6/18/14	104	85-115
Chromium, (Dis)	0.400	mg/L	EPA 6010B	6/18/14	99.8	85-115
Iron, (Dis)	0.400	mg/L	EPA 6010B	6/18/14	103	85-115
Manganese, (Dis)	0.400	mg/L	EPA 6010B	6/18/14	95.6	85-115
Sodium, (Dis)	0.400	mg/L	EPA 6010B	6/18/14	109	85-115
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	6/17/14	97.8	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	6/17/14	99.0	70.0-130
Diisopropyl ether	40.1	ug/L	EPA 8260B	6/17/14	91.0	70.0-130
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	6/17/14	80.5	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	6/17/14	102	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/17/14	137	65.0-150
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	6/17/14	89.6	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	6/17/14	101	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/17/14	102	70.0-130
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	6/17/14	81.9	70.0-130
Toluene	40.1	ug/L	EPA 8260B	6/17/14	100	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	6/16/14	101	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	6/16/14	97.9	70.0-130
Benzene	40.1	ug/L	EPA 8260B	6/16/14	98.1	70.0-130
Diisopropyl ether	40.1	ug/L	EPA 8260B	6/16/14	93.4	70.0-130

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Ethanol	100	ug/L	EPA 8260B	6/16/14	108	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	6/16/14	93.7	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	6/16/14	101	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/16/14	93.0	65.0-150
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	6/16/14	97.2	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	6/16/14	99.1	70.0-130
TPH as Gasoline	484	ug/L	EPA 8260B	6/16/14	115	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/16/14	97.0	70.0-130
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	6/16/14	98.2	70.0-130
Toluene	40.1	ug/L	EPA 8260B	6/16/14	98.6	70.0-130
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	6/17/14	106	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	6/17/14	103	70.0-130
Benzene	40.0	ug/L	EPA 8260B	6/17/14	103	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	6/17/14	99.6	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/17/14	81.5	55.0-150
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	6/17/14	112	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	6/17/14	107	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/17/14	88.7	65.0-150
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	6/17/14	120	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	6/17/14	106	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	6/17/14	116	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/17/14	102	70.0-130

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Tert-amyl-methyl ether	40.0	ug/L	EPA 8260B	6/17/14	110	70.0-130
Toluene	40.0	ug/L	EPA 8260B	6/17/14	103	70.0-130
P + M Xylene	39.9	ug/L	EPA 8260B	6/18/14	104	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	6/18/14	115	70.0-130
1,2-Dibromoethane	40.4	ug/L	EPA 8260B	6/17/14	109	70.0-130
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	6/17/14	108	70.0-130
Benzene	40.1	ug/L	EPA 8260B	6/17/14	104	70.0-130
Diisopropyl ether	40.1	ug/L	EPA 8260B	6/17/14	94.4	70.0-130
Ethanol	100	ug/L	EPA 8260B	6/17/14	93.9	55.0-150
Ethyl-tert-butyl ether	40.1	ug/L	EPA 8260B	6/17/14	101	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	6/17/14	110	70.0-130
Methanol	1000	ug/L	EPA 8260B	6/17/14	89.8	65.0-150
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	6/17/14	103	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	6/17/14	105	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	6/17/14	104	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	6/17/14	103	70.0-130
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	6/17/14	108	70.0-130
Toluene	40.1	ug/L	EPA 8260B	6/17/14	108	70.0-130
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	6/18/14	114	70.0-130

QC Report : Laboratory Control Sample (LCS)

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

Project Number : **01LV**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dichloroethane	39.7	ug/L	EPA 8260B	6/18/14	111	70.0-130
Benzene	39.7	ug/L	EPA 8260B	6/18/14	108	70.0-130
Diisopropyl ether	39.7	ug/L	EPA 8260B	6/18/14	102	70.0-130
Ethanol	99.3	ug/L	EPA 8260B	6/18/14	98.9	55.0-150
Ethyl-tert-butyl ether	39.7	ug/L	EPA 8260B	6/18/14	106	70.0-130
Ethylbenzene	39.7	ug/L	EPA 8260B	6/18/14	110	70.0-130
Methanol	993	ug/L	EPA 8260B	6/18/14	97.0	65.0-150
Methyl-t-butyl ether	39.8	ug/L	EPA 8260B	6/18/14	103	70.0-130
Tert-Butanol	198	ug/L	EPA 8260B	6/18/14	106	70.0-130
Tert-amyl-methyl ether	39.7	ug/L	EPA 8260B	6/18/14	112	70.0-130
Toluene	39.7	ug/L	EPA 8260B	6/18/14	112	70.0-130
Ferrous Iron	0.251	mg/L	SM 3500-Fe D	6/12/14	99.7	70.0-130
Hexavalent Chromium	5.00	ug/L	EPA 7199	6/12/14	100	90.0-110
Nitrate as N	5.00	mg/L	EPA 300.0	6/12/14	104	90.0-110
Sulfate	25.0	mg/L	EPA 300.0	6/12/14	104	90.0-110



SAMPLE RECEIPT CHECKLIST

SRG #: 88392

Sample Receipt Initials/Date: TJB 061114 Storage Time: 1623 Sample Login Initials/Date: TJB 061114
 TAT: Standard Rush Split None Method of Receipt: Courier Over-the-counter Shipped
 Temp °C 1.0 N/A Therm ID IR-3 Time 1615 Coolant present Yes No Water Temp Excursion

For Shipments Only: Cooler Receipt Initials/Date/Time: Custody Seals N/A Intact Broken

Chain-of-Custody:	Yes	No
Is COC present?	X	
Is COC signed by relinquisher?	X	
Is COC dated by relinquisher?	X	
Is the sampler's name on the COC?	X	
Are there analyses or hold for all samples?	X	

Documented on	COC	Labels	Discrepancies:
Sample ID	X	X	
Project ID	X	X	
Sample Date	X	X	
Sample Time	X	X	
Does COC match project history? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Samples:	N/A	Yes	No
Are sample custody seals intact?	X		
Are sample containers intact?		X	
Is preservation documented?		X	
In-house Analysis:	N/A	Yes	No
Are preservatives acceptable?		X	
Are samples within holding time?		X	
Are sample container types correct?		X	
Is there adequate sample volume?		X	

Comments: Preservative is not indicated on gray-capped VOA's, but NP is written on white-capped VOA's.
 Sample Receiving will log in the gray-capped VOAs as HCl-preserved. Bubbles are present in samples -05 (VOA 3) and -06 (VOAs 2,3). TJB 061114 1907

Receipt Details:	Container Type	# of Containers
Matrix WA	VOA	51
Matrix WA	Poly	32

CS Required:

Proceed With Analysis: YES NO Init/Date:

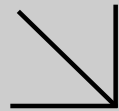
Client Communication:



Subcontract Laboratory Report Attachments



Calscience



WORK ORDER NUMBER: 14-06-1050

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Kiff Analytical

Client Project Name: Tesoro - Livermore #67076

Attention: Joel Kiff
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Amanda Porter

Approved for release on 06/19/2014 by:
Amanda Porter
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: Tesoro - Livermore #67076
 Work Order Number: 14-06-1050

1	Work Order Narrative.	3
2	Client Sample Data.	4
	2.1 RSK-175M Carbon Dioxide (Aqueous).	4
	2.2 RSK-175M Methane (Aqueous).	5
	2.3 Combined Inorganic Tests.	6
3	Quality Control Sample Data.	7
	3.1 Sample Duplicate.	7
	3.2 LCS/LCSD.	9
4	Sample Analysis Summary.	13
5	Glossary of Terms and Qualifiers.	14
6	Chain-of-Custody/Sample Receipt Form.	15

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/13/14. They were assigned to Work Order 14-06-1050.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	14-06-1050-1-C	06/11/14 11:35	Aqueous	GC 14	N/A	06/14/14 11:30	140613L03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		64800	17.0		10.0		
DW-1	14-06-1050-2-C	06/11/14 11:50	Aqueous	GC 14	N/A	06/14/14 11:49	140613L03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		46500	17.0		10.0		
DW-8	14-06-1050-3-C	06/11/14 12:20	Aqueous	GC 14	N/A	06/14/14 12:08	140613L03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		55300	17.0		10.0		
DW-7	14-06-1050-4-C	06/11/14 13:50	Aqueous	GC 14	N/A	06/14/14 12:28	140613L03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		39200	17.0		10.0		
DW-9	14-06-1050-5-C	06/11/14 14:00	Aqueous	GC 14	N/A	06/14/14 12:47	140613L03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		33100	17.0		10.0		
DW-5	14-06-1050-6-C	06/11/14 14:10	Aqueous	GC 14	N/A	06/14/14 13:06	140613L03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		22800	17.0		10.0		
Method Blank	099-12-659-711	N/A	Aqueous	GC 14	N/A	06/13/14 19:49	140613L03
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Carbon Dioxide		ND	1.70		1.00		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: RSK-175M
Units: ug/L

Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	14-06-1050-1-A	06/11/14 11:35	Aqueous	GC 52	N/A	06/17/14 17:06	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		4260	20.0		20.0		
DW-1	14-06-1050-2-A	06/11/14 11:50	Aqueous	GC 52	N/A	06/17/14 17:57	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		1270	8.00		8.00		
DW-8	14-06-1050-3-A	06/11/14 12:20	Aqueous	GC 52	N/A	06/17/14 18:24	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		3430	8.00		8.00		
DW-7	14-06-1050-4-A	06/11/14 13:50	Aqueous	GC 52	N/A	06/17/14 18:49	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		4850	8.00		8.00		
DW-9	14-06-1050-5-A	06/11/14 14:00	Aqueous	GC 52	N/A	06/17/14 19:41	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		5910	20.0		20.0		
DW-5	14-06-1050-6-A	06/11/14 14:10	Aqueous	GC 52	N/A	06/17/14 20:07	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		3080	20.0		20.0		
Method Blank	099-12-663-2183	N/A	Aqueous	GC 52	N/A	06/17/14 11:38	140617L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
Methane		ND	1.00		1.00		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received:
Work Order:

06/13/14
14-06-1050

Project: Tesoro - Livermore #67076

Page 1 of 1

Client Sample Number	Lab Sample Number				Date/Time Collected		Matrix	
MW-2	14-06-1050-1				06/11/14 11:35		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	676	5.00	1.00		mg/L	N/A	06/18/14	SM 2320B
Solids, Total Dissolved	790	1.00	1.00		mg/L	06/18/14	06/18/14	SM 2540 C
DW-1	14-06-1050-2				06/11/14 11:50		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	690	5.00	1.00		mg/L	N/A	06/18/14	SM 2320B
Solids, Total Dissolved	815	1.00	1.00		mg/L	06/18/14	06/18/14	SM 2540 C
DW-8	14-06-1050-3				06/11/14 12:20		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	790	5.00	1.00		mg/L	N/A	06/18/14	SM 2320B
Solids, Total Dissolved	970	1.00	1.00		mg/L	06/18/14	06/18/14	SM 2540 C
DW-7	14-06-1050-4				06/11/14 13:50		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	638	5.00	1.00		mg/L	N/A	06/18/14	SM 2320B
Solids, Total Dissolved	800	1.00	1.00		mg/L	06/18/14	06/18/14	SM 2540 C
DW-9	14-06-1050-5				06/11/14 14:00		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	488	5.00	1.00		mg/L	N/A	06/18/14	SM 2320B
Solids, Total Dissolved	625	1.00	1.00		mg/L	06/18/14	06/18/14	SM 2540 C
DW-5	14-06-1050-6				06/11/14 14:10		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	788	5.00	1.00		mg/L	N/A	06/18/14	SM 2320B
Solids, Total Dissolved	1040	10.0	1.00		mg/L	06/18/14	06/18/14	SM 2540 C
Method Blank					N/A		Aqueous	
<u>Parameter</u>	<u>Results</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	<u>Units</u>	<u>Date Prepared</u>	<u>Date Analyzed</u>	<u>Method</u>
Alkalinity, Total (as CaCO ₃)	ND	1.0	1.00		mg/L	N/A	06/18/14	SM 2320B
Solids, Total Dissolved	ND	1.0	1.00		mg/L	06/18/14	06/18/14	SM 2540 C

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Sample Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
14-06-0976-3	Sample	Aqueous	PH1/BUR03	N/A	06/18/14 16:55	E0618ALKD4
14-06-0976-3	Sample Duplicate	Aqueous	PH1/BUR03	N/A	06/18/14 16:55	E0618ALKD4
<u>Parameter</u>		<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alkalinity, Total (as CaCO3)		256.0	258.0	1	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
14-06-1119-1	Sample	Aqueous	N/A	06/18/14 00:00	06/18/14 17:25	E0618TDSD3
14-06-1119-1	Sample Duplicate	Aqueous	N/A	06/18/14 00:00	06/18/14 17:25	E0618TDSD3

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total Dissolved	1275	1265	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-659-711	LCS	Aqueous	GC 14	N/A	06/13/14 19:10	140613L03			
099-12-659-711	LCSD	Aqueous	GC 14	N/A	06/13/14 19:30	140613L03			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	104.0	94.14	91	104.9	101	80-120	11	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: RSK-175M

Project: Tesoro - Livermore #67076

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-663-2183	LCS	Aqueous	GC 52	N/A	06/17/14 10:42	140617L01			
099-12-663-2183	LCSD	Aqueous	GC 52	N/A	06/17/14 11:07	140617L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Methane	102.0	91.48	90	91.48	90	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: SM 2320B

Project: Tesoro - Livermore #67076

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-859-384	LCS	Aqueous	PH1/BUR03	N/A	06/18/14 16:55	E0618ALKB4
099-15-859-384	LCSD	Aqueous	PH1/BUR03	N/A	06/18/14 16:55	E0618ALKB4

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	100.0	98.00	98	98.00	98	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95618-6505

Date Received: 06/13/14
Work Order: 14-06-1050
Preparation: N/A
Method: SM 2540 C

Project: Tesoro - Livermore #67076

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-180-4114	LCS	Aqueous	N/A	06/18/14	06/18/14 17:25	E0618TDSB3			
099-12-180-4114	LCSD	Aqueous	N/A	06/18/14	06/18/14 17:25	E0618TDSB3			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Dissolved	100.0	105.0	105	110.0	110	80-120	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Sample Analysis Summary Report

Work Order: 14-06-1050

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
RSK-175M	N/A	888	GC 14	2
RSK-175M	N/A	888	GC 52	2
RSK-175M	N/A	896	GC 52	2
RSK-175M	N/A	908	GC 14	2
SM 2320B	N/A	848	PH1/BUR03	1
SM 2540 C	N/A	722	N/A	1


Return to Contents

Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 14-06-1050

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
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 suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSO or PES/PESO associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



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

14-06-1050

COC No. **88392** Page 1 of 1

Project Contact (Hardcopy or PDF to):

Scott Forbes

Company/Address:

Kiff Analytical

Phone No.: **530-297-4800**

Project Number: **01LV**

FAX No.: **530-297-4808**

P.O. No.: **88392**

Project Name:

Tesoro - Livermore #67076

Project Address:

Sampling

Date

Time

06/11/14 11:35

06/11/14 11:50

06/11/14 12:20

06/11/14 13:50

06/11/14 14:00

06/11/14 14:10

EDF Report? YES

Recommended but not mandatory to complete this section:

Sampling Company Log Code: **CESS**

Global ID: **T0600101410**

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

Container / Preservative

Matrix

1-L Poly None

250ml Poly None

VOA 40 ml None

VOA 40 ml HCl

Water

Chain-of-Custody Record and Analysis Request

Analysis Request

Alkalinity SM 2320 (Total as CaCO₃)

Carbon Dioxide by RSK 175

Hydrocarbons in Water by RSK 175 (Methane

Total Dissolved Solids

TAT

4-Days

For Lab Use Only

1
2
3
4
5
6

Remarks:

Time Received by:

1700

Time Received by:

1955

Time Received by Laboratory:

1955

Time Received by Laboratory:

1955

Time Received by Laboratory:

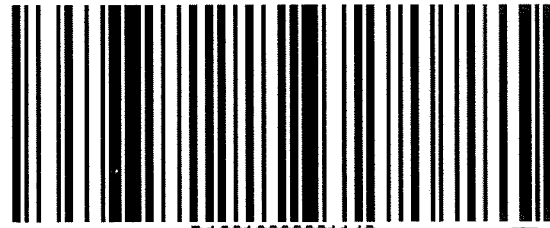
1955

Bill to: Accounts Payable

Relinquished by: *[Signature]* Date: 06/12/14
 Relinquished by: *[Signature]* Date: 06/13/14
 Relinquished by: (On-trac) Date: 06/13/14



800.334.5000
ontrac.com



D10010689681140

1050

Date Printed 6/12/2014

Tracking#D10010689681140

Shipped From:
KIFF ANALYTICAL
2795 2ND STREET 300
DAVIS, CA 95618

Sent By: SAMPLE RECEIVINGX125
Phone#: (530)297-4800
wgt(lbs): 45
Reference: SUBS
Reference 2: 600

Ship To Company:
CALSCIENCE ENVIRONMENTAL LABS
7440 LINCOLN WAY
GARDEN GROVE, CA 92841
SAMPLE RECEIVING (714)895-5494

Service: **S**
Sort Code: **ORG**
Special Services:
Signature Required

Return to Contents

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Kiff

DATE: 06/13/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.5 °C - 0.3 °C (CF) = 3.2 °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

Checked by: 826

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A

Sample _____ No (Not Intact) Not Present

Checked by: 826

Checked by: 659

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (____) EnCores® TerraCores® _____

Aqueous: VOA VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 1PBna 500PB

250PB 250PBn 125PB 125PBzanna 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: _____ Labeled/Checked by: 659

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 862

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure zanna: ZnAc₂+NaOH f: Filtered Scanned by: 862

Return to Contents

ATTACHMENT F
WASTE MANIFESTS