PORT OF OAKLAND

September 8, 2006

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

RE: RO#0000010 and RO#0000185_First Semi-Annual 2006 Groundwater Monitoring and Remediation System Operation and Maintenance Report - Port of Oakland, Harbor Facilities Complex, 2277 and 2225 Seventh Street, Oakland, CA_2006-09-08

Dear Mr. Chan:

Please find enclosed the report entitled *First Semi-Annual 2006 Groundwater Monitoring and Remediation System Operation and Maintenance Report - Port of Oakland, Harbor Facilities Complex, 2277 and 2225 Seventh Street, Oakland, CA ("Report")* dated September 2006, prepared by Baseline Environmental Consulting ("Baseline") on behalf of the Port of Oakland ("Port"). This Report is being submitted in accordance with Alameda County Health Care Services Agency ("County") requirements, as specified in a County letter dated March 23, 2006.[1]

The Port has retained Baseline to perform groundwater monitoring and maintenance of the remediation system. Results of the first semi-annual sampling event are contained in the enclosed report. Future monitoring will continue in accordance with the approved monitoring plan requirements, as specified in the above referenced County letter. The next monitoring event will be performed during the November/December 2006 time frame. If you have any questions or comments regarding the results, please contact Jeff Rubin at (510) 627-1134.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report prepared by Baseline are true and correct to the best of my knowledge. Please note that the report is stamped by both a Professional Geologist and Registered Professional Engineer in the State of California.

Sincerely,

Roberta L. Reinstein
Manager
Environmental Programs and Safety

Jeffrey L. Rubin, CPSS, REA
Port Associate Environmental Scientist
Environmental Programs and Safety

Enclosure: noted

Cc (w encl.): Michele Heffes

Cc (w/o encl.): Jeff Jones
James McCarty (Baseline Environmental)
Yane Nordhav (Baseline Environmental)

[1] Letter from Mr. Barney Chan (County) to Mr. Jeff Rubin (Port), regarding *Fuel Leak Cases RO0000010 and RO0000185, 2277 and 2225 7th St., Oakland, CA 94607*, dated March 23, 2006.

First Semi-Annual 2006 Groundwater Monitoring and Remediation System Operation and Maintenance Report

PORT OF OAKLAND
HARBOR FACILITIES COMPLEX
2277 and 2225 Seventh Street
Oakland, California

September 2006

For:
Port of Oakland
Oakland, California

Y5395-02

5900 Hollis Street, Suite D • Emeryville, California 94608 • (510) 420-8686

BASELINE

ENVIRONMENTAL CONSULTING

11 September 2006
Y5395-02

Mr. Jeff Rubin
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

Subject: First Semi-annual 2006 Groundwater Monitoring and Remediation System Operation and Maintenance Report, Port Of Oakland Harbor Facilities Complex, 2277 and 2225 Seventh Street, Oakland, California

Dear Mr. Rubin:

Enclosed please find the First Semi-Annual 2006 Groundwater Monitoring and Remediation System Operation and Maintenance Report for 2277 and 2225 Seventh Street, Alameda County Local Oversight Program case numbers RO0000010 and RO0000185, respectively. This report has been prepared for submittal to the County's Health Care Services, Department of Environmental Health to comply with the requirement for semi-annual groundwater monitoring and reporting at these two sites. The results of this quarter's groundwater monitoring do not indicate significant changes from previous monitoring events. The remediation system has recovered approximately 65 gallons of free-phase product since the end of 2004.

Sincerely,

Ylane Nordhav
Principal
Prof. Geologist No. 4009

PROFESSIONAL GEOLOGIST
YANE NORDHAV
No. 4009
STATE OF CALIFORNIA

James McCarty
Project Engineer
Prof. Engineer No. C62618

REGISTERED PROFESSIONAL ENGINEER
JAMES G. McCARTY
NO. C 62618
EXP. 6/30/08
CIVIL
STATE OF CALIFORNIA

YN:JM:km
Enclosure

5900 Hollis Street, Suite D • Emeryville, CA 94608-2008 • (510) 420-8686 • FAX (510) 420-1707
Emeryville Petaluma San Francisco

FIRST QUARTER 2006 GROUNDWATER MONITORING AND REMEDIATION SYSTEM OPERATION AND MAINTENANCE REPORT

PORT OF OAKLAND
HARBOR FACILITIES CENTER
2277 and 2225 Seventh Street
Oakland, California

SEPTEMBER 2006

FOR:
Port of Oakland
Oakland, California

Y5395-02

5900 Hollis Street, Suite D • Emeryville, California 94608 • (510) 420-8686

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PORT OF OAKLAND HARBOR FACILITIES CENTER
2277 and 2225 Seventh Street
Oakland, California

INTRODUCTION

This report summarizes the results of the first semi-annual groundwater monitoring event for 2006 performed at Port of Oakland's ("Port") two contiguous properties, 2227 and 2225 Seventh Street in Oakland, California ("Site") (Figure 1). The two properties have been impacted by petroleum releases from past operations of underground storage tanks ("USTs") and the Alameda County Health Care Services ("ACHCS") is providing regulatory oversight under the Local Oversight Program ("LOP"). The ACHCS LOP case number for 2277 Seventh Street is RO0000010 and for 2225 Seventh Street RO0000185. This report also summarizes the remediation system operation and maintenance ("O&M") activities and progress between January and July of 2006.

Together, the two properties encompass approximately 13 acres in size and are currently being redeveloped by the Port. The Port has developed the eight acres on the eastern portion of the Site as the Harbor Facilities Complex, with the new address 651 Maritime Street (Figure 2). The remaining five acres are currently being redeveloped for a portion of the Port's proposed new Maritime Support Center.

At 2277 Seventh Street, Uribe and Associates ("Uribe") removed four Port owned USTs in 1993. Uribe collected soil samples from beneath the tanks at the time of UST removal and submitted them for laboratory analyses. The laboratory reported the soil contained petroleum hydrocarbons in the diesel and gasoline range, as well as benzene, toluene, ethylbenzene, and xylene ("BTEX") compounds. Uribe also observed free-phase product on the groundwater within the excavation. In 1994, Uribe installed three groundwater monitoring wells at 2277 Seventh Street (MW-1 through MW-3) and in 1995, Alisto Engineering Group ("Alisto") installed five additional wells (MW-4 through MW-8). Quarterly groundwater monitoring was initiated in 1996 in accordance with an ACHCS approved workplan.[1]

At 2225 Seventh Street, former Port tenant Ringsby Terminals (formerly Dongary Investments) and/or its tenant owned and operated nine USTs. One of the tanks in the cluster failed a tank integrity test in 1989 and National Environmental Service Company ("NESCO") removed the UST in March 1990. During the UST removal, NESCO collected soil and groundwater samples from the excavation. Analytical results indicated the presence of diesel, and BTEX. Ramcon Engineering and Environmental Contracting ("RAMCON") removed seven of the USTs (six diesel and one bulk fuel oil) in 1992. RAMCON observed a hole in the bulk fuel tank and an unspecified petroleum product created a sheen on the groundwater in the excavation. During

[1] Uribe and Associates, 1994, Port of Oakland Building C-401, 2277 7th Street, Oakland, Report of Underground Storage Tank Removals, Appendix G – Workplan for Additional Site Characterization Activities, 23 February and letter from Alameda County Health Services to Port of Oakland, dated 18 April 1995.

separate event in 1992, RAMCON removed the remaining UST (a waste oil tank). Soil samples collected from the excavation indicated the presence of diesel, motor oil, benzene, xylenes, and polynuclear aromatic compounds ("PAHs"). A liquid sample collected from the excavation contained pure diesel. In 1993, RAMCO installed three groundwater monitoring wells (MW-1 through MW-3) at the 2225 Seventh Street site and in 1994 quarterly groundwater monitoring began as required by ACHCS.[2]

The groundwater impact from the two sites consists of a co-mingled plume containing both dissolved- and free-phase hydrocarbons in the diesel range. In addition, MW-4 on the 2277 Seventh Street property has historically contained dissolved hydrocarbons in the gasoline range.

In 1996, the Port installed a remediation system at 2277 Street to recover the free-phase product. The free product recovery system was operated until it was removed in 2003. Removal of this product recovery system was approved by the ACHCS on 27 March 2003, with the stipulation that a new free product recovery system would be installed. In 1998, Harding Lawson Associated abandoned MW-8 to facilitate the expansion of the railroad tracks north of 2277 Seventh Street and a replacement well, MW-8A, was installed in 2001. To facilitate the construction of the new Harbor Facilities Complex, groundwater monitoring wells MW-6 and MW-7 at 2277 Seventh Street and MW-1, MW-2, and MW-3 at 2225 Seventh Street were abandoned in 2002.

FIELD ACTIVITIES

The Port has monitored groundwater quality at the Site since 1994. The Port currently monitors groundwater quality using a network of six groundwater monitoring wells: MW-1, MW-2, MW-3, MW-4, MW-5, and MW-8A (Figure 2). The ACHCS approved a modification of the groundwater monitoring frequency in a letter to the Port dated 23 March 2006. The groundwater monitoring schedule was changed from quarterly to semi-annual; this report summarizes the first semi-annual monitoring event for 2006. During this monitoring event, BASELINE measured the depths to groundwater in the wells and checked for the presence of free-phase product. If BASELINE did not observe free phase product in a well, BASELINE collected a groundwater sample and submitted the sample for the following analyses:

- Total petroleum hydrocarbons as gasoline ("TPHg"), EPA Method 8015B;
- Total extractable petroleum hydrocarbons as diesel ("TEPHd") and motor oil ("TEPHmo"), EPA Method 8015B with a silica gel cleanup; and
- Benzene, toluene, ethylbenzene, and xylenes ("BTEX") and methyl tert-butyl ether ("MTBE"), EPA Method 8260B.

Between 9:51 AM and 1:00 PM on 28 July 2006, BASELINE measured the depth to groundwater (and product, if present) from the top of the well casing ("TOC") to the nearest one-hundredth of a foot in monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-8A using dual-phase interface probes.[3] BASELINE decontaminated the dual-phase interface probes

[2] Letter from Alameda County Health Services to Dongary Investments dated 26 July 1994.

[3] The depths to groundwater in wells MW-1 and MW-3 were measured using a dual-phase interface probe dedicated for use on wells that contain, or are suspected to contain, free-phase product. The dual-phase interface probe used on monitoring wells MW-2 and MW-4, and MW-8A is reserved for wells that are not suspected to contain free-phase product.

after each use by washing with an Alconox™ and water solution and then rinsing with deionized water.

BASELINE detected measurable free-phase product in monitoring wells MW-1 and MW-3 and therefore, these wells were also not sampled. BASELINE collected groundwater samples from MW-2, MW-5, and MW-8A. MW-4 was not immediately sampled because remediation of the groundwater at MW-4 is being performed by application of Oxygen Releasing Compound™ (ORC).

The ORC increases the dissolved oxygen ("DO") concentration of the groundwater. This stimulates aerobic bio-degradation of the petroleum contaminants in the groundwater. On 28 July 2006, Baseline removed the ORC to allow the groundwater to equilibrate prior to sampling. At the time of the ORC removal, the DO content of the groundwater at MW-4 was measured at 7.38 microgram per liter ("mg/L") or 82 percent of saturation. The groundwater sample was collected on 04 August 2006, one week after removal of the ORC. The DO content of the groundwater ranged from 0.12 to 0.51 mg/L on the day of sampling.

BASELINE purged monitoring wells MW-2, MW-4, MW-5, and MW-8A prior to sampling using a peristaltic pump and new disposable polyethylene and silicon tubing. BASELINE purged the wells of at least three well casing volumes of groundwater. Purging continued until the electrical conductivity, pH, and temperature of the water had stabilized. During purging, BASEINE first placed the pump intake at the bottom of the well to remove sediments. Once the groundwater appeared free of sediments, BASEINE raised the pump intake a few feet off the bottom of the well to complete the purging process. The monitoring details for each well are provided on the groundwater sampling forms in Appendix A.

BASELINE collected groundwater samples from the wells using the peristaltic pump with the intake of tubing placed a several feet off the bottom of the well. BASELINE decanted the groundwater samples directly into certified-clean containers[4] from the discharge end of the tubing. BASEINE also prepared a field duplicate, consisting of a duplicate groundwater sample from monitoring well MW-4 ("MW-4Dup"). BASELINE immediately labeled the sample containers with sample location, date, time and then stored the samples in a cooler containing ice. BASELINE submitted the groundwater samples under chain-of-custody protocol to Curtis & Tompkins, Ltd. of Berkeley, a California-certified analytical laboratory.

BASELINE generated approximately 24.5 gallons of purge water and decontamination water during the monitoring event. BASELINE placed the purge water into a 55-gallon drum, which was labeled with the Port's contact information and stored near the Harbor Facilities Complex hazardous materials storage lockers. The Port's environmental services contractor will arrange proper purge water disposal.

ANALYTICAL RESULTS

Analytical results for the groundwater samples collected are summarized on Figure 3 and Table 1. The laboratory analytical reports are provided in Appendix B. Historical analytical results for

[4] Containers were provided by Environmental Sampling Supply, which certifies that the containers meet or exceed the required detection limits established by the US EPA in *Specifications And Guidance For Contaminant-Free Sample Containers*, Publication 9240.05A, EPA/540/R-93/051, December 1992.

2277 Seventh Street, including samples collected by others, are summarized in Appendix C, Table C-2.

TPHg

The laboratory reported TPHg in the groundwater sample from monitoring well MW-4 at a concentration of 560 micrograms per liter ("µg/L") (590 µg/L in the duplicate sample). The laboratory did not report TPHg above the reporting limit in any of the samples from the other monitoring wells sampled.

BTEX and MTBE

The laboratory reported benzene at a concentration of 160 µg/L (150 µg/L in the duplicate sample) and ethylbenzene at 4.3 µg/L (4.5 µg/L in the duplicate sample) in the groundwater sample from MW-4. The laboratory did not report any BTEX constituents above the reporting limits in any of the samples from the other monitoring wells sampled. The laboratory did not report any MTBE above the reporting limit in any of the samples submitted.

TEPHd and TEPHmo

The laboratory reported concentrations above the reporting limit in three groundwater samples containing TEPHd; MW-4, MW-5, and MW-8A were reported to contain 92 µg/L, 70 µg/L, and 180 µg/L, respectively. The laboratory noted that the chromatographic patterns did not resemble the standard in samples from MW-4 and MW-8A. The laboratory did not report TEPHmo above the reporting limits in any of the groundwater samples submitted.

GROUNDWATER FLOW DIRECTION

BASELINE used the surveyed elevation of the top of each groundwater monitoring well casing and the measured depth to groundwater to calculate the groundwater elevation and flow direction. The groundwater elevation and product thickness data are summarized in Table 2. Product thickness is discussed in more detail below. Groundwater contours are presented on Figure 4. The groundwater flow direction at the time of measurement was towards the north at magnitude of 0.008 feet/foot. Historical groundwater and product levels for 2277 Seventh Street are included in Appendix C, Table C-1.

QUALITY ANALYSIS AND QUALITY CONTROL

BASELINE reviewed the laboratory data for completeness and accuracy. All of the laboratory quality assurance and quality control ("QA/QC") goals were met.

BASELINE collected a duplicate groundwater sample (MW-4Dup) from monitoring well MW-4. The laboratory reported concentrations of TPHg, TEPHd, benzene, and ethylbenzene in both samples. The relative percent difference ("RPD") between the original and the duplicate sample was five percent, eight percent, six, and five percent for TPHg, TEPHd, benzene, and ethylbenzene, respectively:

TPHg RPD	|560-590|/[(560+590)/2] = 5%
TEPHd RPD	|92-100|/[92+100/2] = 8%
Benzene RPD	|160-150|/[160+150/2] = 6%

Ethylbenzene RPD |4.3-4.5|/[4.3+4.5/2] = 5%

The U.S. Environmental Protection Agency considers an RPD of less than 25 percent acceptable for field duplicate water samples.[5]

Prior to initiating field activities BASELINE prepared a trip blank ("QCTB") by placing laboratory prepared distilled water into appropriate bottle ware. The QCTB was placed inside the chilled cooler and accompanied the samples throughout transit to the laboratory. The laboratory did not report any TPHg, TEPHd, TEPHmo, BTEX, or MTBE in the QCTB, indicating that the groundwater samples were not compromised from sample preservation, transportation, storage, and analysis.

BASELINE also prepared an equipment blank ("QCEB") using laboratory prepared distilled water and the same procedures used to collect groundwater samples. The laboratory did not report any TPHg, TEPHd, TEPHmo, BTEX, or MTBE in QCTB, indicating that the sampling procedure did not result in cross-contamination of the samples.

Based on the above QA/QC evaluation, BASELINE considers the data collected during the first semi-annual 2006 groundwater monitoring event valid and representative of Site conditions.

PRODUCT RECOVERY SYSTEM SUMMARY

The Port installed the Free Product Recovery ("FPR") system at the Harbor Facilities Complex in 2004 in accordance with the approved remedial action plan.[6] The FPR system includes nine recovery wells, RW-1 through RW-9 (Figure 2). The Port installed a utility box around each recovery well wellhead, which includes plumbing for the airline, product discharge line, and vacuum line. Five of the recovery wells (RW-3, RW-4, RW-6, RW-7 and RW-8) are equipped with air-actuated skimmer pumps manufactured by Xitech Instruments, Inc. A programmable controller controls the operation of the skimmer pumps. The frequency and duration that each skimmer pump runs is set by the programmable controller (Table 3). The skimmers discharges recovered product into a 500-gallon concrete encased aboveground storage tank ("convault") equipped with primary and secondary containment. The convault is also equipped with a sensor that activates a warning light and shuts off air supply to the skimmers if the tank is full.

BASELINE measured the product level in the recovery wells and checked the position of the pumps in the wells. BASELINE adjusted the skimmer pumps depth, changed filters, or replaced pumps, as necessary. Adjustments were made to the frequency and duration of operation for each skimmer (Table 3). BASELINE also performed miscellaneous maintenance duties; the activities performed and the results of product measurements are summarized in Table 4. The remediation system has recovered approximately 65 gallons of product since operation commenced at the end of 2004.

[5] US Environmental Protection Agency, 2001, *Training Course For CLP, Organic Data Validation.*

[6] Innovative Technical Solutions, Inc., 2002, Additional Site Characterization and Remedial Action Plan for 2225 and 2277 Seventh Street, Oakland, California, May.

PRODUCT THICKNESS

BASELINE measured product thickness in monitoring wells MW-1 and MW-3 during groundwater monitoring on 28 July 2006. Product thickness was measured in MW-1 at 0.47 foot (up from 0.29 foot in March 2006) and in MW-3 at 0.02 foot (down significantly from 0.62 in March 2006) (Table 2).

CONCLUSIONS AND RECOMMENDATIONS

The results from the first semi-annual 2006 monitoring event indicate that the petroleum hydrocarbon plume is stable; the concentrations of dissolved petroleum hydrocarbons and associated compounds are within the historical ranges. Free-phase product was confined to the wells that historically contained free product. The low levels of TPHg present appear to be confined to MW-4. Low concentrations of TEPHd reported in the groundwater samples from MW-4 and MW-8A appear to be aged and weathered, as the chromatograms did not match the diesel standard. The next groundwater sampling will be performed on November/December 2006.

While the TPHg concentration in MW-4 did not decrease relative to the reported level in the first quarter monitoring event, DO measurements indicate the ORC successfully increased the DO concentration in the well and use of the ORC should continue in order to obtain more data to evaluate its impact. However, the Port is in the process of raising the monitoring well wellheads to match the finish grade elevation for a portion of the Maritime Support Center and BASELINE will not reinstall the ORC in MW-4 until construction in the surrounding area is complete.

Between 31 July and 4 August 2006, BASELINE performed a vacuum pilot test to evaluate whether a low vacuum applied to the recovery wells will increase the product recovery rate. The results of the pilot test will be reported in a separate letter to the Port and ACHCS.

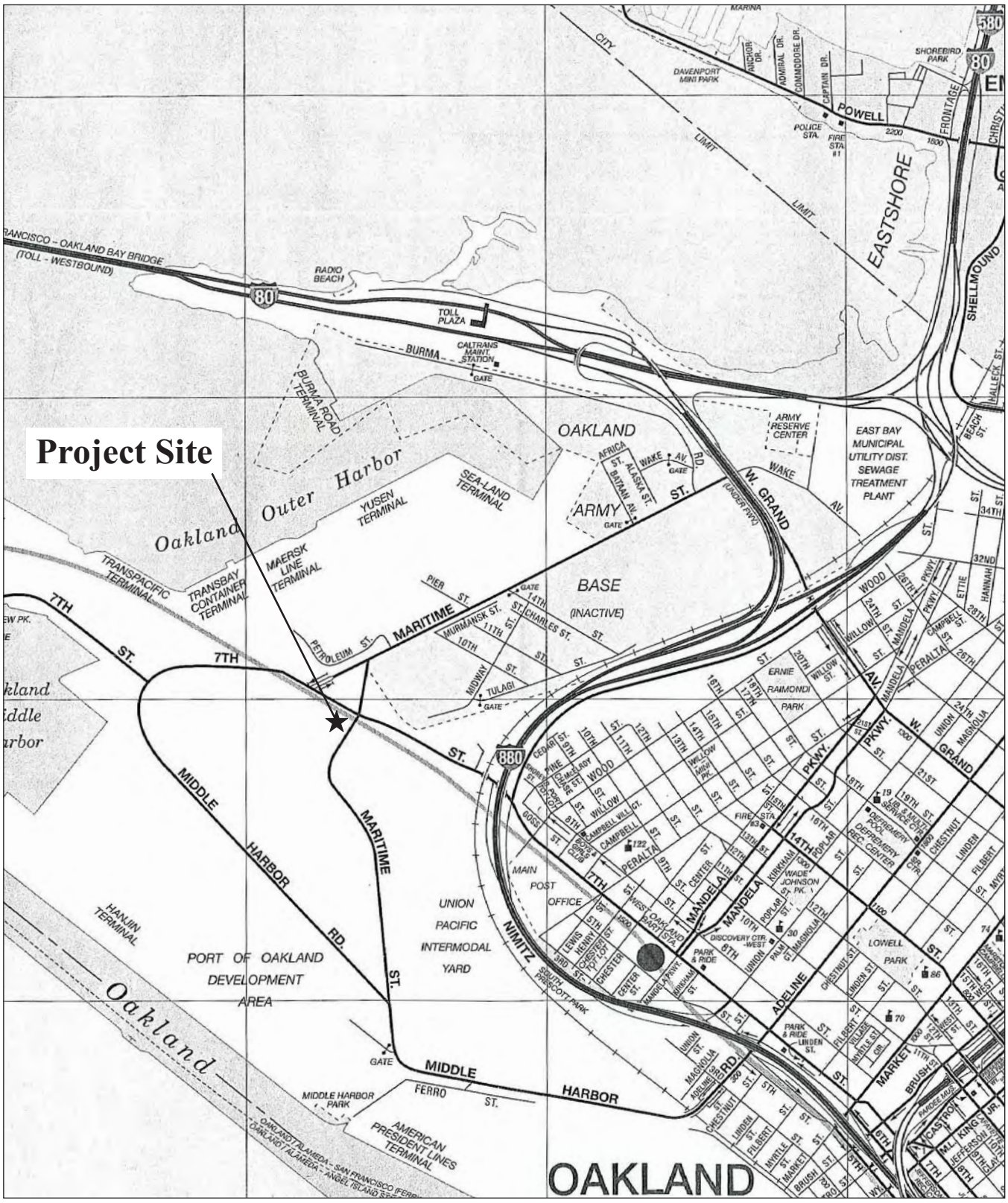
LIMITATIONS

The conclusions presented in this report are professional opinions based on the indicated data described in this report. They are intended only for the purpose, site, and project indicated. Opinions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the subject property can occur with time, because of natural processes or the works of man, on the subject sites or on adjacent properties. Changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

FIGURES

REGIONAL LOCATION

Figure 1



2277 and 2225 Seventh Street
Port of Oakland
Oakland, California

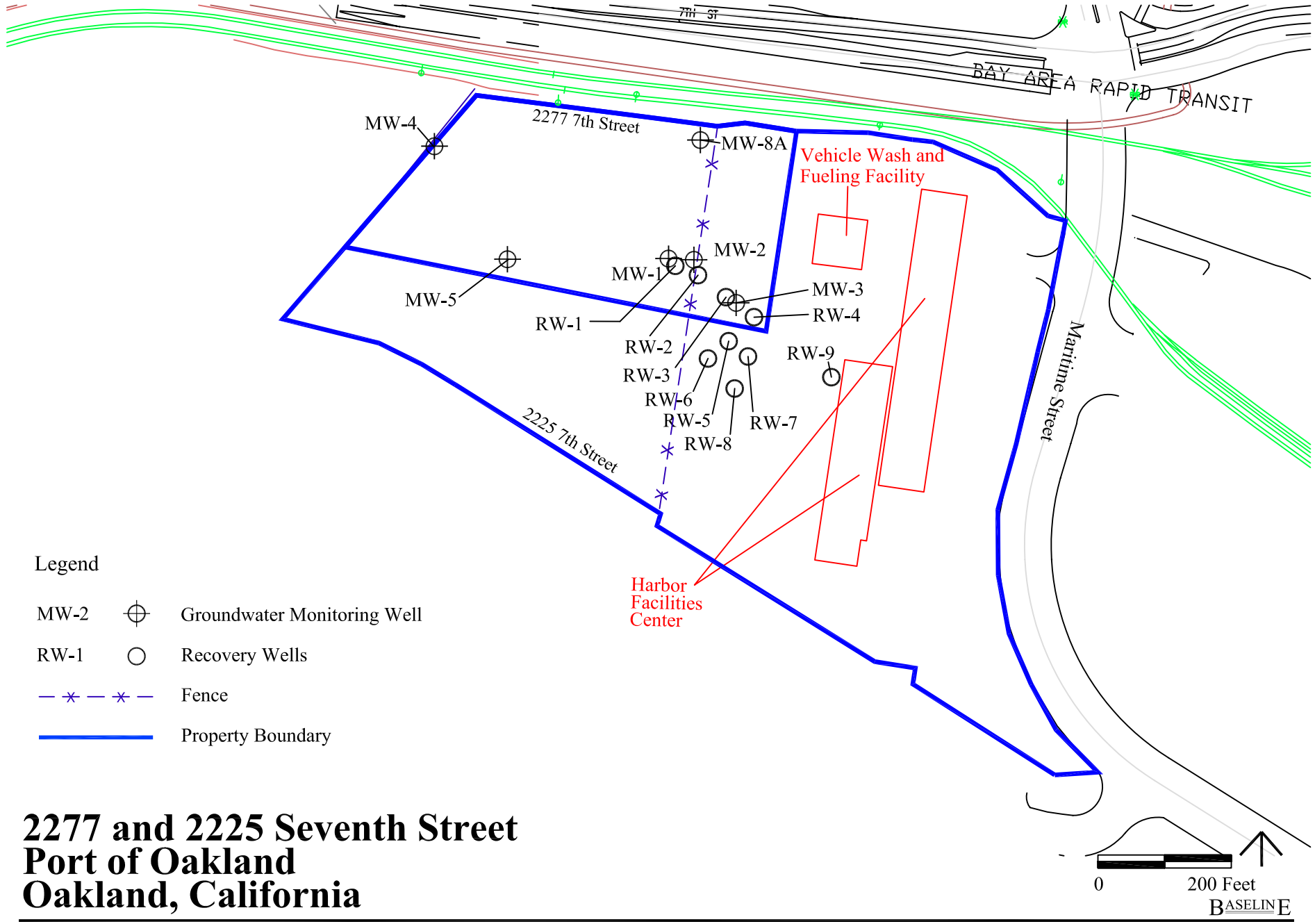
0 2000 Feet

BASELINE

Y5395-02.00498.Fig1.cdr 8/14/06

SITE PLAN

Figure 2

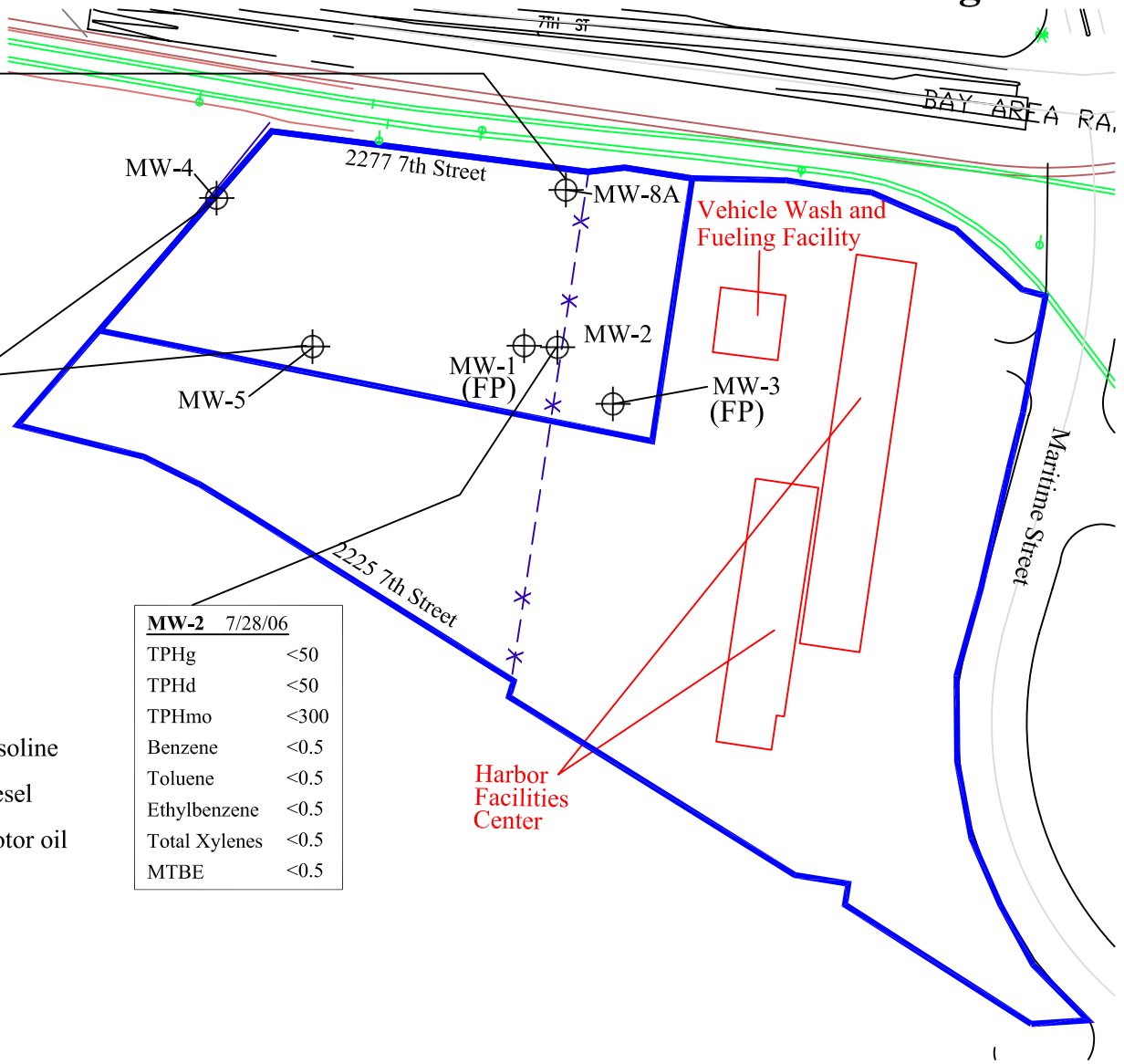


2277 and 2225 Seventh Street
Port of Oakland
Oakland, California

Y5395-02.00498.Fig2.dwg 8/25/06

ANALYTICAL RESULTS JULY 2006

Figure 3



MW-8A 7/28/06	
TPHg	<50
TPHd	70
TPHmo	<300
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Total Xylenes	<0.5
MTBE	<0.5

MW-4 8/4/06		Duplicate
TPHg	560	590
TPHd	92	100
TPHmo	<300	<300
Benzene	160	150
Toluene	<1.3	<1.3
Ethylbenzene	4.3	4.5
Total Xylenes	<1.3	<1.3
MTBE	<1.3	<1.3

MW-5 7/28/06	
TPHg	<50
TPHd	180
TPHmo	<300
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Total Xylenes	<0.5
MTBE	<0.5

MW-2 7/28/06	
TPHg	<50
TPHd	<50
TPHmo	<300
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Total Xylenes	<0.5
MTBE	<0.5

Legend

MW-2	Groundwater Monitoring Well
TPHg	Total petroleum hydrocarbons as gasoline
TPHd	Total petroleum hydrocarbons as diesel
TPHmo	Total petroleum hydrocarbons as motor oil
MTBE	Methyl tert butyl ether
(FP)	Free phase product in well
— ✳ — ✳ —	Fence
———	Property Boundary

Note: Concentrations are in units of micrograms per liter.

0 200 Feet

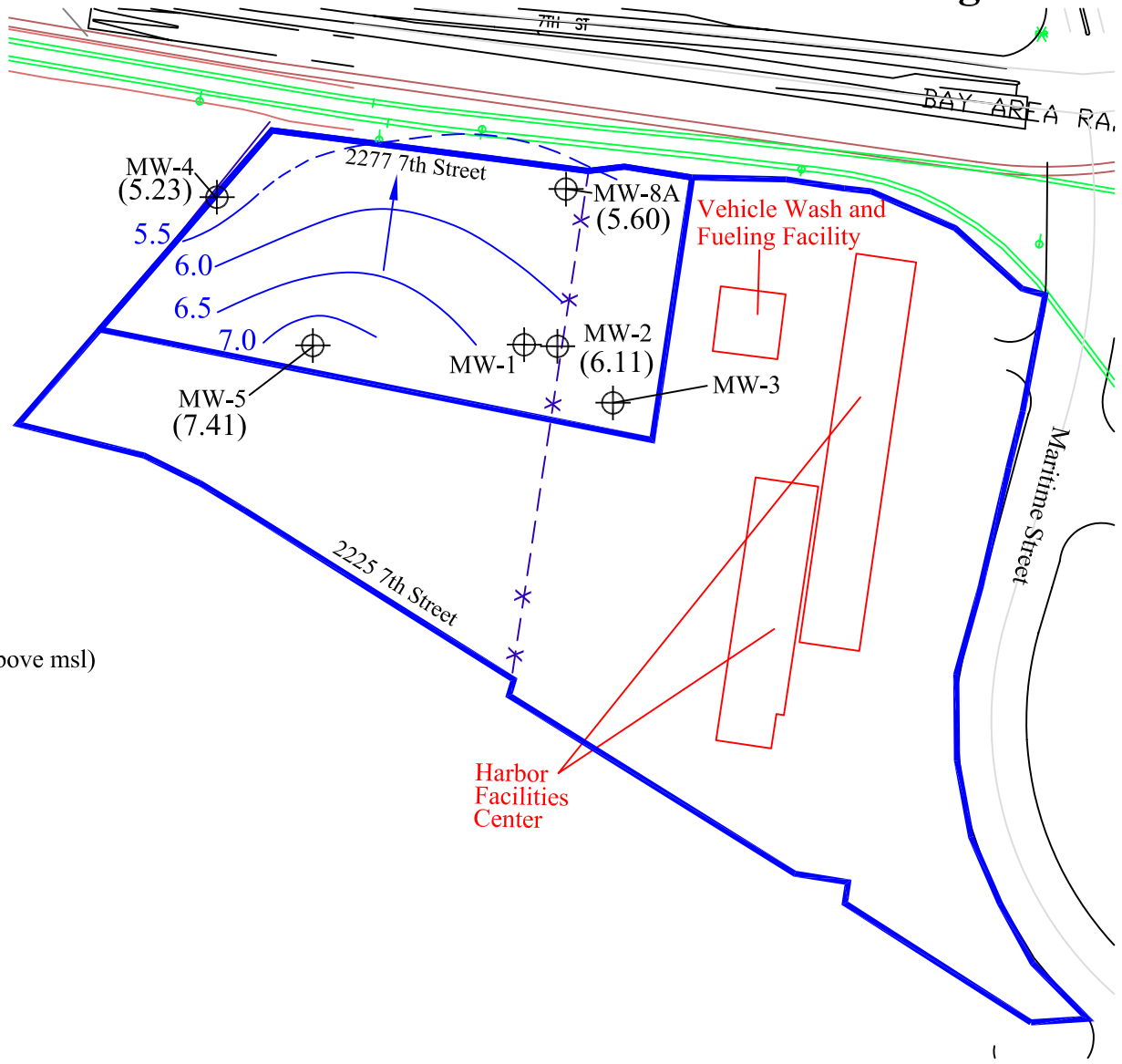
2277 and 2225 Seventh Street
Port of Oakland
Oakland, California

BASELINE

Y5395-02.00498.dwg 8/25/06

GROUNDWATER CONTOURS JULY 2006

Figure 4



2277 and 2225 Seventh Street
Port of Oakland
Oakland, California

BASELINE

Y5395-02.00498.Fig4.dwg 8/29/06

TABLES

TABLE 1: **Groundwater Analytical Results - July 2006 (µg/L)**
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Sample ID	Date	TPHg	TEPHd	TEPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-2	07/28/06	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	08/04/06	**560**	**92 ***	<300	**160**	<1.3	**4.3**	<1.3	<1.3
MW-4dup	08/04/06	**590**	**100 ***	<300	**150**	<1.3	**4.5**	<1.3	<1.3
MW-5	07/28/06	<50	**180**	<300	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8A	07/28/06	<50	**70 ***	<300	<0.5	<0.5	<0.5	<0.5	<0.5
QCEB	07/28/06	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5
QCTB	07/28/06	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

See Figure 2 for monitoring well locations.
µg/L = micrograms per liter.
TPHg = total petroleum hydrocarbons in gasoline range.
TEPHd = total petroleum hydrocarbons in diesel range.
TEPHmo = total petroleum hydrocarbons in motor oil range.
MTBE = methyl-tert butyl ether
QCEB = equipment blank quality control sample.
QCTB = trip blank quality control sample.
<xx = not detected by the laboratory above the reporting limit, the value following the less than sign.
Bold indicates the analyte was reported above the laboratory reporting limit.
* Sample exhibits a chromatographic pattern, which does not resemble the standard.

TABLE 2: **Groundwater Elevation Data - March 2006**
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing Elevation [1] (feet)	Depth to Product (feet btc)	Depth to Water (feet btc)	Product Thickness (feet)	Groundwater Elevation [1] (feet)
MW-1	7/28/2006	14.14	7.88	8.35	0.47	NC
MW-2	7/28/2006	16.96	NP	10.85	--	6.11
MW-3	7/28/2006	16.18	9.81	9.83	0.02	NC
MW-4	7/28/2006	13.15	NP	7.92	--	5.23
MW-5	7/28/2006	13.49	NP	6.08	--	7.41
MW-8A	7/28/2006	12.94	NP	7.34	--	6.65

Notes:

See Figure 2 for monitoring well locations.

NP = no product detected with the interface probe.

NC = not calculated due to the presence of free-phase product in the well.

-- = no measurable product in the well.

btc = below top of the well casing.

[1] Elevation data relative to Port of Oakland datum (3.202 feet below sea level datum of 1929, NGVD 29).

Table 3: Free Product Recovery System Settings - First Half of 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Recovery Well	1/1/06 to 2/3/06 [1]		2/3/06 to 6/27/06		6/27/06 to 3/31/06	
	Frequency	Time	Frequency	Time	Frequency	Time
RW-1	NO	NO	NO	NO	NO	NO
RW-2	NO	NO	NO	NO	NO	NO
RW-3	Once every two weeks	1:30	Once a day	0:05	Twice a day	2:00
RW-4	Once every two weeks	0:30	Once every four days	0.02	NO	NO
RW-5	NO	NO	NO	NO	NO	NO
RW-6	Once every two weeks	1:00	Once every four days	0.02	Once a week	1:00
RW-7	Once every two weeks	0:30	Once every four days	0.02	Once a week	1:00
RW-8	Once every two weeks	0:30	Once every four days	0.02	Once a week	1:00

Notes:
See Figure 2 for recovery well locations.
Frequency = the frequency with which the skimmer pump operates.
Duration = the length of time the skimmer pumps operates each time it is activated.
NO = not operating, no measurable product in the recovery well.

[1] BASELINE'S initial site visit was on 3 February 2006, prior to that time the system was operated by Treadwell and Rollo, Inc. These setting represent the operating condition observed at that time.

Table 4: Summary of Product Thickness Measurements
and Operation and Maintenance Activities - First Semi-Annual 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Site Visit Date:2/3/2006					
Recovery Well	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Volume (gallons)	Comments
RW-1	--	--	--	--	Silt grading activities being performed on-site so did not check this vault
RW-2	None	7.66	--	--	No pump
RW-3	8.35	8.70	0.35	0.06	
RW-4	7.73	7.75	0.02	0.003	Air inlet and exhaust tubing disconnected from pump, significant water in vault (1/2 full), lots of biogrowth on outside of pump
RW-5	None	6.88	NA	NA	No cap and no pump
RW-6	7.35	7.39	0.04	0.01	Pumping but looks like only water, vault 1/2 full of water.
RW-7	7.02	7.09	0.07	0.01	Pumping but looks like only water.
RW-8	7.92	8.00	0.08	0.01	Pumping but no product in line, vault 1/2 full of water.
RW-9	None	9.21	NA	NA	No pump
Depth of product in convault			0.11	feet	
Approximate volume recovered			29	gallons	

Site Visit Date:2/8/2006					
Recovery Well	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Volume (gallons)	Comments
RW-1	None	6.4	NA	NA	Pulled pump out, put cap on well.
RW-2	--	--	NA	NA	
RW-3	8.50	8.80	0.3	0.05	Kinked discharge line, put piece of 3/4-inch hose around the tubing to provide support.
RW-4	7.74	7.76	0.02	0.003	Exhaust valve stuck open, put back pressure on valve and it began working.
RW-5	--	--	NA	NA	Put cap on well
RW-6	7.26	7.33	0.07	0.01	Pumping but looks like only water, vault 1/2 full of water.
RW-7	6.94	7.01	0.07	0.01	
RW-8	7.68	7.70	0.02	0.00	Exhaust valve stuck open, put back pressure on valve and it began working.
RW-9	--	--	NA	NA	Put cap on well
Depth of product in convault			0.11	feet	
Approximate volume recovered			29	gallons	

Table 4: Summary of Product Thickness Measurements
and Operation and Maintenance Activities - First Semi-Annual 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Site Visit Date:3/3/2006					
Recovery Well	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Volume (gallons)	Comments
RW-1	--	--	NA	NA	
RW-2	--	--	NA	NA	
RW-3	8.15	8.16	0.01	0.00	
RW-4	7.12	7.13	0.01	0.002	
RW-5	--	--	NA	NA	
RW-6	7.37	7.41	0.04	0.01	
RW-7	6.95	7.04	0.09	0.01	
RW-8	7.71	7.80	0.09	0.01	
RW-9	--	--	NA	NA	
Depth of product in convault			0.12	feet	
Approximate volume recovered			31	gallons	

Site Visit Date:3/10/2006					
Recovery Well	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Volume (gallons)	Comments
RW-1	--	--	NA	NA	
RW-2	--	--	NA	NA	
RW-3	7.90	7.92	0.02	0.00	Replace tubing with more flexible tube to reduce kinking
RW-4	--	--	NA	NA	
RW-5	--	--	NA	NA	
RW-6	7.14	7.15	0.01	0.00	
RW-7	--	--	NA	NA	
RW-8	--	--	NA	NA	
RW-9	--	--	NA	NA	
Depth of product in convault			0.12	feet	
Approximate volume recovered			31	gallons	

Table 4: Summary of Product Thickness Measurements
and Operation and Maintenance Activities - First Semi-Annual 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Site Visit Date:3/22/2006					
Recovery Well	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Volume (gallons)	Comments
RW-1	--	--	NA	NA	
RW-2	--	--	NA	NA	
RW-3	8.13	8.14	0.01	0.00	
RW-4	7.09	7.10	0.01	0.002	
RW-5	--	--	NA	NA	
RW-6	7.05	7.06	0.01	0.00	Replace tubing with more flexible tube to reduce kinking.
RW-7	6.70	6.71	0.01	0.00	
RW-8	None	7.43	NA	NA	
RW-9	--	--	NA	NA	
Depth of product in convault			0.14	feet	
Approximate volume recovered			37	gallons	

Site Visit Date:3/22/2006					
Recovery Well	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Volume (gallons)	Comments
RW-1	--	--	NA	NA	
RW-2	--	--	NA	NA	
RW-3	8.13	8.14	0.01	0.00	
RW-4	7.09	7.10	0.01	0.002	
RW-5	--	--	NA	NA	
RW-6	7.05	7.06	0.01	0.00	Replace tubing with more flexible tube to reduce kinking.
RW-7	6.70	6.71	0.01	0.00	
RW-8	None	7.43	NA	NA	
RW-9	--	--	NA	NA	
Depth of product in convault			0.14	feet	
Approximate volume recovered			37	gallons	

Table 4: Summary of Product Thickness Measurements
and Operation and Maintenance Activities - First Semi-Annual 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Date: 4/4/06					
Recovery Well	Depth to Product	Depth to Water	Product Thickness	Product Volume	Comments:
	feet	feet	feet	gallons	
RW-1	--	--	--	--	
RW-2	--	--	--	--	
RW-3	6.94	6.95	0.01	0.00	Utility box over half full of runoff water, water dripping inside well from leaking vacuum pipe
RW-4	--	--	NA	NA	Utility box full of runoff water
RW-5	--	--	--	--	
RW-6	6.84	6.85	0.01	0.00	
RW-7	6.44	6.45	0.01	0.00	
RW-8	None	7.35		--	
RW-9	--	--	--	--	
Depth of product in convault			0.14	feet	
Approximate volume recovered			37	gallons	

Date: 4/7/06					
Recovery Well	Depth to Product	Depth to Water	Product Thickness	Product Volume	Comments:
	feet	feet	feet	gallons	
RW-1	--	--	--	--	
RW-2	--	--	--	--	
RW-3	7.38	7.39	0.01	0.00	Installed temporary rubber seal around utility box lid to reduce surface water intrusion
RW-4	6.35	6.37	0.02	0.003	Installed temporary rubber seal around utility box lid to reduce surface water intrusion
RW-5	--	--	--	--	
RW-6	6.80	6.81	0.01	0.00	
RW-7	6.40	6.41	0.01	0.00	
RW-8	None	7.22		--	
RW-9	--	--	--	--	
Depth of product in convault			0.14	feet	
Approximate volume recovered			37	gallons	

Table 4: Summary of Product Thickness Measurements
and Operation and Maintenance Activities - First Semi-Annual 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Date: 4/28/06					
Recovery Well	Depth to Product	Depth to Water	Product Thickness	Product Volume	Comments:
	feet	feet	feet	gallons	
RW-1	--	--	--	--	
RW-2	--	--	--	--	
RW-3	8.09	8.10	0.01	0.00	
RW-4	6.75	6.75	0	0.000	
RW-5	--	--	--	--	
RW-6	6.90	6.90	0	0.00	Some water in vault. Water in discharge line, replaced pump with spare.
RW-7	6.50	6.50	0	0.00	
RW-8	7.27	7.27		--	
RW-9	--	--	--	--	
Depth of product in convault			0.15	feet	
Approximate volume recovered			39	gallons	

Date: 4/23/06					
Recovery Well	Depth to Product	Depth to Water	Product Thickness	Product Volume	Comments:
	feet	feet	feet	gallons	
RW-1	--	--	--	--	
RW-2	--	--	--	--	
RW-3	8.85	8.97	0.12	0.02	
RW-4	7.52	7.52	0	0.000	
RW-5	--	--	--	--	
RW-6	7.25	7.80	0.55	0.09	
RW-7	6.85	6.86	0.01	0.00	
RW-8	7.63	7.63		--	
RW-9	--	--	--	--	
Depth of product in convault			0.16	feet	
Approximate volume recovered			42	gallons	

Table 4: Summary of Product Thickness Measurements
and Operation and Maintenance Activities - First Semi-Annual 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Date: 6/6/06					
Recovery Well	Depth to Product	Depth to Water	Product Thickness	Product Volume	Comments:
	feet	feet	feet	gallons	
RW-1	--	--	--	--	
RW-2	--	--	--	--	
RW-3	9.05	9.16	0.11	0.02	Removed all product in well then tuned off pump to RW-3 to do product recovery test.
RW-4	7.74	7.75	0.01	0.002	
RW-5	--	--	--	--	
RW-6	7.32	7.69	0.37	0.06	H_2O in product line, turned on pump, cleaned filter w/pressure washer, reinstalled filter.
RW-7	--	6.95	--	--	Observed product and H_2O in line, turned pump on blowing bubbles. Washed off filter and reinstalled with same results. Replaced pump with spare.
RW-8	--	7.70		--	
RW-9	--	--	--	--	
Depth of product in convault			0.17	feet	
Approximate volume recovered			45	gallons	

Date: 6/27/06					
Recovery Well	Depth to Product	Depth to Water	Product Thickness	Product Volume	Comments:
	feet	feet	feet	gallons	
RW-1	--	--	--	--	
RW-2	--	--	--	--	
RW-3	9.29	9.30	0.01	0.00	Slowed down pump rate.
RW-4	--	8.07	--	--	No product, left inactive.
RW-5	--	--	--	--	
RW-6	7.53	7.62	0.09	0.01	Pumping water, replaced filter but did not work,, replaced pump with spare.
RW-7	7.11	7.12	0.01	0.00	Lowered pump.
RW-8	--	7.87		--	Lowered pump.
RW-9	--	--	--	--	
Depth of product in convault			0.25	feet	
Approximate volume recovered			65	gallons	

Table 4: Summary of Product Thickness Measurements
and Operation and Maintenance Activities - First Semi-Annual 2006
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Date: 7/31/06					
Recovery Well	Depth to Product	Depth to Water	Product Thickness	Product Volume	Comments:
	feet	feet	feet	gallons	
RW-1	--	--	--	--	
RW-2	--	--	--	--	
RW-3	9.64	9.68	0.04	0.01	Began pilot test by applying a low vacuum to well head.
RW-4	--	--	--	--	
RW-5	--	--	--	--	
RW-6	--	7.74	--	--	Began pilot test by applying a low vacuum to well head.
RW-7	--	--	--	--	
RW-8	--	--		--	
RW-9	--	--	--	--	
Depth of product in convault			0.25	feet	
Approximate volume recovered			65	gallons	

Notes:
See Figure 2 for recovery well locations.
-- = not measured
NA = not applicable

APPENDIX A

GROUNDWATER SAMPLING FORMS

GROUNDWATER SAMPLING

Project No.	Y5395-02	Well No.:	MW-1	Date:	7/28/2006
Project name:	Harbor Facilities Center	Depth of well bgs (feet):			15.5
Location:	Port of Oakland	Well diameter (inches):			2
	2277 7th Street, Oakland	Screened interval bgs (feet):			5.5-15.5
Recorded by:	RMR	Filter pack interval bgs (feet):			4.5-15.5
Weather:	Overcast, afternoon sun	TOC elevation (feet):			14.14
Precip. in past 5 days [1] (inches):	None	Water Level from TOC (feet):	8.35	Time:	10:22
Water Level Instrument:	Dual-phase interface probe (Solinst)	Product level from TOC (feet):	7.88	Time:	10:22

VOLUME OF WATER TO BE REMOVED

[(ft) - (ft)] x 0.083 ft)^2 x π x 7.48 gal/ft^3 = _____ gallons in one casing volume
well depth well level well radius

CALIBRATION

	Time	Temp (°C)	pH	NTU	E C (µmho/cm)
Calibration Standard:					
Before Purging:					
After Puging:					

FIELD MEASUREMENTS

Time	Temp (°C)	pH	E C (µmho/cm)	Cumulative Gallons Removed	Odor	NTU

Measured product level only, no groundwater sample collected due to the presence of free-phase product.

Appearance of sample:		Time:	
Duplicate/blank number:		Time:	
Purge method:			
Sampling equipment:		VOA attachment:	
Sample containers:			
Sample analyses:		Laboratory:	
Decontamination method:	Alconox and water, DI water rinse	Rinsate disposal:	

[1] Source: Oakland Fire Service Station "ONO".

TOC = top of casing

bgs = below ground surface

GROUNDWATER SAMPLING

Project No.	Y5395-02	Well No.:	MW-2	Date:	7/28/2006
Project name:	Harbor Facilities Center	Depth of well from TOC (feet):			18.1
Location:	Port of Oakland	Well diameter (inches):			2
	2277 7th Street, Oakland	Screened interval bgs (feet):			8.4-18.4
Recorded by:	RMR	Filter pack interval bgs (feet):			7.4-18.4
Weather:	Overcast, afternoon sun	TOC elevation (feet):			16.96
Precip. in past 5 days [1] (inches):	None	Water Level from TOC (feet):	10.85	Time:	10:12
Water Level Instrument:	Dual-phase interface probe (Solinst)	Product level from TOC (feet):	None	Time:	10:12

VOLUME OF WATER TO BE REMOVED

(18.10 ft well depth − -10.85 ft water level) x (0.083 ft)^2 x π x 7.48 gal/ft^3 = 1.2 gallons in one casing volume

CALIBRATION

	Time	Temp (°C)	pH	NTU	E C (µmho/cm)
Calibration Standard:	--	--	7.00	50	1,000
Before Purging:	10:45	18.9	7.00	50	1,000
After Puging:	14:24	26.0	7.40	48.4	1,027

FIELD MEASUREMENTS

Time	Temp (°C)	pH	E C (µmho/cm)	Cumulative Gallons Removed	Odor	NTU
13:10	20.5	7.7	1,328	1	None observed	3.0
13:17	20.1	7.51	1,430	2	None observed	2.3
13:26	19.8	7.56	1,474	3	None observed	2.1
13:45	20.7	7.68	1,496	4	None observed	5.5

Appearance of sample:	Clear	Time:	14;15
Duplicate/blank number:	None	Time:	NA
Purge method:	Peristaltic pump with polyethylene and silicon tubing		
Sampling equipment:	Same as purge equipment	VOA attachment:	None
Sample containers:	3 VOAs, 2-liter amber		
Sample analyses:	TPH-g,-d,-mo; BTEX; & MTBE	Laboratory:	Curtis & Tompkins
Decontamination method:	Alconox and water, DI water rinse	Rinsate disposal:	Stored onsite, Port contractor to remove

[1] Source: Oakland Fire Service Station "ONO".

TOC = top of casing

bgs = below ground surface

GROUNDWATER SAMPLING

Project No.	Y5395-02	Well No.:	MW-3	Date:	7/28/2006
Project name:	Harbor Facilities Center	Depth of well bgs (feet):			17.5
Location:	Port of Oakland	Well diameter (inches):			2
	2277 7th Street, Oakland	Screened interval bgs (feet):			7.5-17.5
Recorded by:	RMR	Filter pack interval bgs (feet):			6.5-17.5
Weather:	Overcast, afternoon sun	TOC elevation (feet):			16.18
Precip. in past 5 days [1] (inches):	None	Water Level from TOC (feet):	9.83	Time:	1:00
Water Level Instrument:	Dual-phase interface probe (Solinst)	Product level from TOC (feet):	9.81	Time:	1:00

VOLUME OF WATER TO BE REMOVED

[(ft) - (ft)] x 0.083 ft)^2 x π x 7.48 gal/ft^3 = _____ gallons in one casing volume
well depth well level well radius

CALIBRATION

	Time	Temp (°C)	pH	NTU	E C (µmho/cm)
Calibration Standard:					
Before Purging:					
After Puging:					

FIELD MEASUREMENTS

Time	Temp (°C)	pH	E C (µmho/cm)	Cumulative Gallons Removed	Odor	NTU

Measured product level only, no groundwater sample collected due to the presence of free-phase product.

Appearance of sample:		Time:	
Duplicate/blank number:		Time:	
Purge method:			
Sampling equipment:		VOA attachment:	
Sample containers:			
Sample analyses:		Laboratory:	
Decontamination method:	Alconox and water, DI water rinse	Rinsate disposal:	

[1] Source: Oakland Fire Service Station "ONO".

TOC = top of casing

bgs = below ground surface

GROUNDWATER SAMPLING

Project No.	Y5395-02	Well No.:	MW-4	Date:	8/4/2006	
Project name:	Harbor Facilities Center	Depth of well from TOC (feet):			18.8	
Location:	Port of Oakland	Well diameter (inches):			2	
	2277 7th Street, Oakland	Screened interval bgs (feet):			8.0-18.0	
Recorded by:	RMR	Filter pack interval bgs (feet):			7.0-18.0	
Weather:	Sunny and clear	TOC elevation (feet):			13.15	
Precip. in past 5 days [1] (inches):	0	Water Level from TOC (feet):	7.92	Time:	9:23	7/28/06
Water Level Instrument:	Dual-phase interface probe (Solinst)	Product level from TOC (feet):	None	Time:	9:23	7/28/06

VOLUME OF WATER TO BE REMOVED

(18.79 ft well depth − 7.92 ft water level) x (0.083 ft well radius)^2 x π x 7.48 gal/ft^3 = 1.8 gallons in one casing volume

CALIBRATION

	Time	Temp (°C)	pH	NTU	E C (µmho/cm)	DO
Calibration Standard:	--	--	7	50	1,000	100%
Before Purging:	8:37	19.3	7.02	50.9	1,001	99.60%
After Puging:	11:03	27.2	7.3	51.4	1,031	72.00%

FIELD MEASUREMENTS

Time	Temp (°C)	pH	E C (µmho/cm)	Cumulative Gallons Removed	Odor	NTU	DO (mg/L)
Removed silty/sand sediment from the bottom of well.							
7/28/2006 9:25							7.38
8/4/2006 9:56	20.9	7.22	1,320	2	None observed	107	0.51
10:06	20.8	7.26	1,371	3	None observed	27.5	0.51
10:20	21.1	7.26	1,386	4	None observed	11.5	0.24
10:30	20.8	7.26	1,391	6	None observed	7.8	0.15
10:35	20.8	7.26	1,392	7	None observed	3.2	0.12

Appearance of sample:	Clear	Time:	10:37
Duplicate/blank number:	MW-4d	Time:	10:45
Purge method:	Peristaltic pump with polyethylene and silicon tubing		
Sampling equipment:	Same as purge equipment	VOA attachment:	None
Sample containers:	3 VOAs, 2-liter amber		
Sample analyses:	TPH-g,-d,-mo; BTEX; & MTBE	Laboratory:	Curtis & Tompkins
Decontamination method:	Alconox and water, DI water rinse	Rinsate disposal:	Stored onsite, Port contractor to remove

[1] Source: Oakland Fire Service Station "ONO".

TOC = top of casing

bgs = below ground surface

GROUNDWATER SAMPLING

Project No.	Y5395-02	Well No.:	MW-5	Date:	7/28/2006
Project name:	Harbor Facilities Center	Depth of well from TOC (feet):			18.4
Location:	Port of Oakland	Well diameter (inches):			2
	2277 7th Street, Oakland	Screened interval bgs (feet):			8.0-18.0
Recorded by:	RMR	Filter pack interval bgs (feet):			7.0-18.0
Weather:	Overcast, afternoon sun	TOC elevation (feet):			13.49
Precip. in past 5 days [1] (inches):	None	Water Level from TOC (feet):	6.08	Time:	9:56
Water Level Instrument:	Dual-phase interface probe (Solinst)	Product level from TOC (feet):	None	Time:	9:56

VOLUME OF WATER TO BE REMOVED

(18.35 ft well depth - -6.08 ft water level) x (0.083 ft)^2 x π x 7.48 gal/ft^3 = 2.0 gallons in one casing volume (well radius)

CALIBRATION

	Time	Temp (°C)	pH	NTU	E C (µmho/cm)
Calibration Standard:	--	--	7.00	50	1,000
Before Purging:	10:45	18.9	7.00	50	1,000
After Puging:	14:24	26.0	7.4	48.4	1,027

FIELD MEASUREMENTS

Time	Temp (°C)	pH	E C (µmho/cm)	Cumulative Gallons Removed	Odor	NTU
Removed silty/sand sediment from the bottom of well, some clay below sand.						
10:54	18.8	7.28	2,108	2.5	None observed	27.9
11:06	18.7	7.33	2,217	4	None observed	12.4
11:18	18.6	7.33	2,130	6	None observed	4.5
11:28	18.6	7.34	2,232	7	None observed	3.7

Appearance of sample:	Clear	Time:	11:33
Duplicate/blank number:	None	Time:	
Purge method:	Peristaltic pump with polyethylene and silicon tubing		
Sampling equipment:	Same as purge equipment	VOA attachment:	None
Sample containers:	3 VOAs, 2-liter amber		
Sample analyses:	TPH-g,-d,-mo; BTEX; & MTBE	Laboratory:	Curtis & Tompkins
Decontamination method:	Alconox and water, DI water rinse	Rinsate disposal:	Stored onsite, Port contractor to remove

[1] Source: Oakland Fire Service Station "ONO".

TOC = top of casing

bgs = below ground surface

GROUNDWATER SAMPLING

Project No.	Y5395-02	Well No.:	MW-8A	Date:	7/28/2006
Project name:	Harbor Facilities Center	Depth of well from TOC (feet):			20.6
Location:	Port of Oakland	Well diameter (inches):			2
	2277 7th Street, Oakland	Screened interval bgs (feet):			5.0-20.0
Recorded by:	RMR	Filter pack interval bgs (feet):			4.0-20.8
Weather:	Overcast, afternoon sun	TOC elevation (feet):			12.94
Precip. in past 5 days [1] (inches):	None	Water Level from TOC (feet):	7.34	Time:	9:51
Water Level Instrument:	Dual-phase interface probe (Solinst)	Product level from TOC (feet):	None	Time:	9:51

VOLUME OF WATER TO BE REMOVED

(20.55 ft well depth − 7.34 ft water level) x (0.083 ft well radius)^2 x π x 7.48 gal/ft^3 = 2.2 gallons in one casing volume

CALIBRATION

	Time	Temp (°C)	pH	NTU	E C (µmho/cm)
Calibration Standard:	--	--	7.00	50	1,000
Before Purging:	10:45	18.9	7.00	50	1,000
After Puging:	14:24	26.0	7.40	48.4	1,027

FIELD MEASUREMENTS

Time	Temp (°C)	pH	E C (µmho/cm)	Cumulative Gallons Removed	Odor	NTU
Sediment at bottom pumped out					None observed	
12:02	19.6	7.56	2,393	1.5	None observed	14.6
12:10	19.6	7.56	2,400	2.5	None observed	12
12:16	19.6	7.56	2,431	3.5	None observed	8.2
12:26	19.5	7.55	2,432	5	None observed	5.4
12:36	19.5	7.55	2,437	6.5	None observed	3.8

Appearance of sample:	Clear	Time:	12:41
Duplicate/blank number:	None	Time:	
Purge method:	Peristaltic pump with polyethylene and silicon tubing		
Sampling equipment:	Same as purge equipment	VOA attachment:	None
Sample containers:	3 VOAs, 2-liter amber		
Sample analyses:	TPH-g,-d,-mo; BTEX; & MTBE	Laboratory:	Curtis & Tompkins
Decontamination method:	Alconox and water, DI water rinse	Rinsate disposal:	Port contractor

[1] Source: Oakland Fire Service Station "ONO".

TOC = top of casing

bgs = below ground surface

APPENDIX B

LABORATORY ANALYTICAL REPORT

Quality Control Checklist
for Review of Laboratory Report

Job No.: Y5395-02 **Site:** Harbor Facility Complex

Laboratory: Curtis and Tompkins, Ltd. **Laboratory Report No:** 188411

Report Date: 16 August 2006 **BASELINE Review By:** JGM

	Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on Ano@ responses; document discussion in comments section.)**			
1a. Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	X		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	X		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor=s name?			X
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of Ahold@ samples)?			X
1e. Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			X
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?	X		
2a. Is the laboratory report format consistent and legible throughout the report?	X		
2b. Are the sample and reported dates shown in the laboratory report correct?	X		
3a. Does the lab report include the original chain-of-custody form?	X		
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?	X		
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	X		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	X		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			X
6. Are the units in the lab report provided for each analysis consistent	X		

	Yes	No	NA
throughout the report?			
7. Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	X		
8a. Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	X		
8b. If no, is an explanation provided by the laboratory?			X
9a. Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	X		
9b. If no, was it flagged in the report?			X
10. If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?	X		
11a. Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	X		
11b. Is a standard chromatogram(s) included in the laboratory report?	X		
11c. Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	X		
12. Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*	X		
13a. REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			X
13b. REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			X
13c. REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			X
13d. REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			X
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses			
14. Are field blanks reported as AND@? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			X
15. Are trip blanks reported as AND@? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by*			X

	Yes	No	NA
the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.			
16. Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			X
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	X		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results.*	X		
18b. If no, is an explanation provided in the case narrative to validate the data?			X
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*	X		
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			X
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	X		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab=s limits (failure is probably due to matrix interference).*	X		

	Yes	No	NA
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?	X		
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA Asample@ prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab=s limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*	X		
21b. If no, is an explanation given in the case narrative to validate the data?			X

Comments: .

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Baseline Environmental
5900 Hollis St.
Suite D
Emeryville, CA 94608

Date: 16-AUG-06
Lab Job Number: 188411
Project ID: Y5395-02
Location: HFC, 2277 7th St. Oakland, CA

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	188411
Client:	Baseline Environmental
Project:	Y5395-02
Location:	HFC, 2277 7th St. Oakland, CA
Request Date:	07/28/06
Samples Received:	07/28/06

This hardcopy data package contains sample and QC results for five water samples, requested for the above referenced project on 07/28/06. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

188411

CHAIN OF CUSTODY RECORD

Turn-around Time: Standard
Lab: Curtis & Tompkins
BASELINE Contact Person: Bill Scott/James McCarty

Project Number	Project Name and Location:
Y5395-02	Harbor Facilities Complex, 2277 Seventh St., Oakland CA

Samplers: (Signature) Reginald Ramirez

Sample ID No. Station	Date:	Time:	Media	Containers: No.	Type: SS	Encore	L-AG	40-ml VOA	L-Poly	250 ml Poly	500 ml Poly	Preservative: None	HCl	NO_3	SO_4	NaOH	TPH as gasoline (8015B)	TEPH diesel & m.o. (8015B) w/silica gel cleanup	BTEX & MTBE 8260B	Remarks/ Composite
MW-2	7/28	14:15	W	3				X					X				X		X	
MW-2	7/28	14:15	W	2			X					X						X		
MW-4	7/28		W	3				X					X				X		X	
MW-4	7/28		W	2			X					X						X		
MW-4dup	7/28		W	3				X					X				X		X	
MW-4dup	7/28		W	2			X					X						X		
MW-5	7/28	11:33	W	3				X					X				X		X	
MW-5	7/28	11:33	W	2			X					X						X		
MW-8A	7/28	12:41	W	3				X					X				X		X	
MW-8A	7/28	12:41	W	2			X					X						X		
QC EB	7/28	14:40	W	3				X					X				X		X	
QC EB	7/28	14:40	W	2			X					X						X		
QC TB	7/28	14:04	W	3				X					X				X		X	

1
1A
2
3
4
5

Relinquished by: (Signature)	Custody Seal Yes No	Date/Time	Received by: (Signature)	Custody Seal intact Yes No NA	Date/Time	Conditions of Samples Upon Arrival at Laboratory:
Reginald Ramirez		15:31 / 7/28			7/28/06 3:30pm	
Relinquished by: (Signature)	Custody Seal Yes No	Date/Time	Received by: (Signature)	Custody Seal intact Yes No NA	Date/Time	Remarks: Please provide EDD & EDF to BASELINE. Please invoice Jeff Rubin at Port of Oakland, W.O. 202386 TSO #21. Please e-mail copy of the analytical results to jrubin@portoakland.com
Relinquished by: (Signature)	Custody Seal Yes No	Date/Time	Received by: (Signature)	Custody Seal intact Yes No NA	Date/Time	
Received at laboratory with intact custody seal: (Signature)		Date/Time	Comments: Received Ambient Intact			

Bill's/C:/chain of Custody/MasterC-o-C-seal 5-02

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	07/28/06
Units:	ug/L	Received:	07/28/06
Diln Fac:	1.000	Analyzed:	07/31/06
Batch#:	115881		

Field ID: MW-2 Lab ID: 188411-001
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	69-137
Bromofluorobenzene (FID)	117	80-133

Field ID: MW-5 Lab ID: 188411-002
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	69-137
Bromofluorobenzene (FID)	110	80-133

Field ID: MW-8A Lab ID: 188411-003
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	69-137
Bromofluorobenzene (FID)	111	80-133

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	07/28/06
Units:	ug/L	Received:	07/28/06
Diln Fac:	1.000	Analyzed:	07/31/06
Batch#:	115881		

Field ID: QCEB
Type: SAMPLE
Lab ID: 188411-004

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	69-137
Bromofluorobenzene (FID)	117	80-133

Field ID: QCTB
Type: SAMPLE
Lab ID: 188411-005

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	69-137
Bromofluorobenzene (FID)	107	80-133

Type: BLANK
Lab ID: QC349761

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	69-137
Bromofluorobenzene (FID)	115	80-133

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC349762	Batch#:	115881
Matrix:	Water	Analyzed:	07/31/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,041	102	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	69-137
Bromofluorobenzene (FID)	116	80-133

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	115881
MSS Lab ID:	188398-003	Sampled:	07/27/06
Matrix:	Water	Received:	07/28/06
Units:	ug/L	Analyzed:	07/31/06
Diln Fac:	1.000		

Type: MS Lab ID: QC349763

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	22.72	2,000	1,876	93	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	96	69-137
Bromofluorobenzene (FID)	108	80-133

Type: MSD Lab ID: QC349764

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,935	96	80-120	3	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	69-137
Bromofluorobenzene (FID)	110	80-133

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	115928
Lab ID:	188411-001	Sampled:	07/28/06
Matrix:	Water	Received:	07/28/06
Units:	ug/L	Analyzed:	08/01/06
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	MW-5	Batch#:	115928
Lab ID:	188411-002	Sampled:	07/28/06
Matrix:	Water	Received:	07/28/06
Units:	ug/L	Analyzed:	08/01/06
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	MW-8A	Batch#:	115928
Lab ID:	188411-003	Sampled:	07/28/06
Matrix:	Water	Received:	07/28/06
Units:	ug/L	Analyzed:	08/01/06
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	102	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	QCEB	Batch#:	115928
Lab ID:	188411-004	Sampled:	07/28/06
Matrix:	Water	Received:	07/28/06
Units:	ug/L	Analyzed:	08/01/06
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	QCTB	Batch#:	115928
Lab ID:	188411-005	Sampled:	07/28/06
Matrix:	Water	Received:	07/28/06
Units:	ug/L	Analyzed:	08/01/06
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	80-130
Toluene-d8	98	80-120
Bromofluorobenzene	99	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC349950	Batch#:	115928
Matrix:	Water	Analyzed:	08/01/06
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	188411	Location:	Harbor Facilities Complex, 2277 7thSt
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	115928
Units:	ug/L	Analyzed:	08/01/06
Diln Fac:	1.000		

Type: BS Lab ID: QC349948

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	21.86	87	72-120
Benzene	25.00	24.36	97	80-120
Toluene	25.00	24.58	98	80-120
Chlorobenzene	25.00	24.35	97	80-120
Ethylbenzene	25.00	26.78	107	80-120
m,p-Xylenes	50.00	53.51	107	80-121
o-Xylene	25.00	25.69	103	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-122

Type: BSD Lab ID: QC349949

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	21.98	88	72-120	1	20
Benzene	25.00	24.85	99	80-120	2	20
Toluene	25.00	24.98	100	80-120	2	20
Chlorobenzene	25.00	24.41	98	80-120	0	20
Ethylbenzene	25.00	26.61	106	80-120	1	20
m,p-Xylenes	50.00	51.47	103	80-121	4	20
o-Xylene	25.00	25.90	104	80-120	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	101	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-122

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	188411	Location:	HFC, 2277 7th St. Oakland, CA
Client:	Baseline Environmental	Prep:	EPA 3520C
Project#:	Y5395-02	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	07/28/06
Units:	ug/L	Received:	07/28/06
Diln Fac:	1.000	Prepared:	08/01/06
Batch#:	115935	Analyzed:	08/03/06

Field ID: MW-2 Lab ID: 188411-001
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	124	65-130

Field ID: MW-5 Lab ID: 188411-002
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	180	50
Motor Oil C24-C36	ND	300

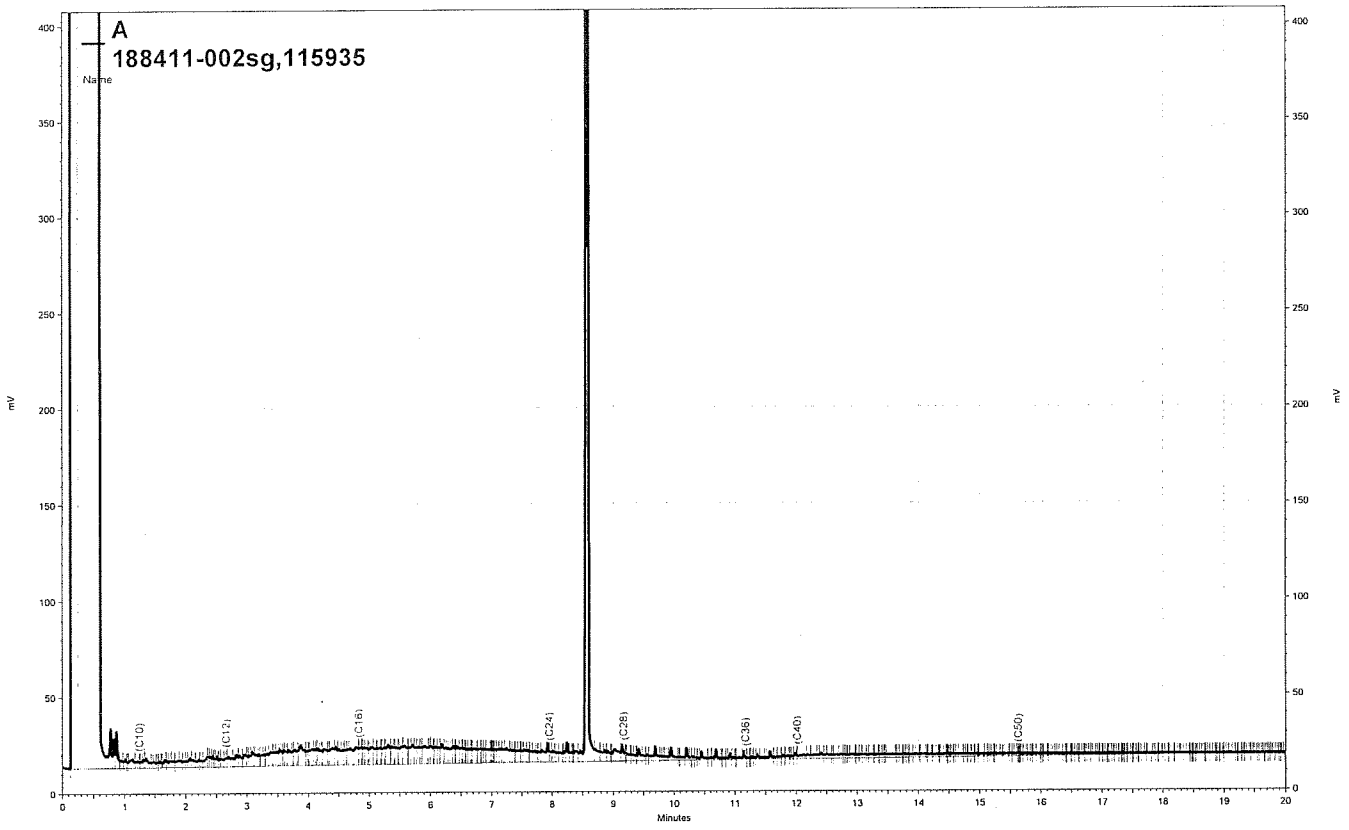
Surrogate	%REC	Limits
Hexacosane	107	65-130

Field ID: MW-8A Lab ID: 188411-003
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	70 Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	123	65-130

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit



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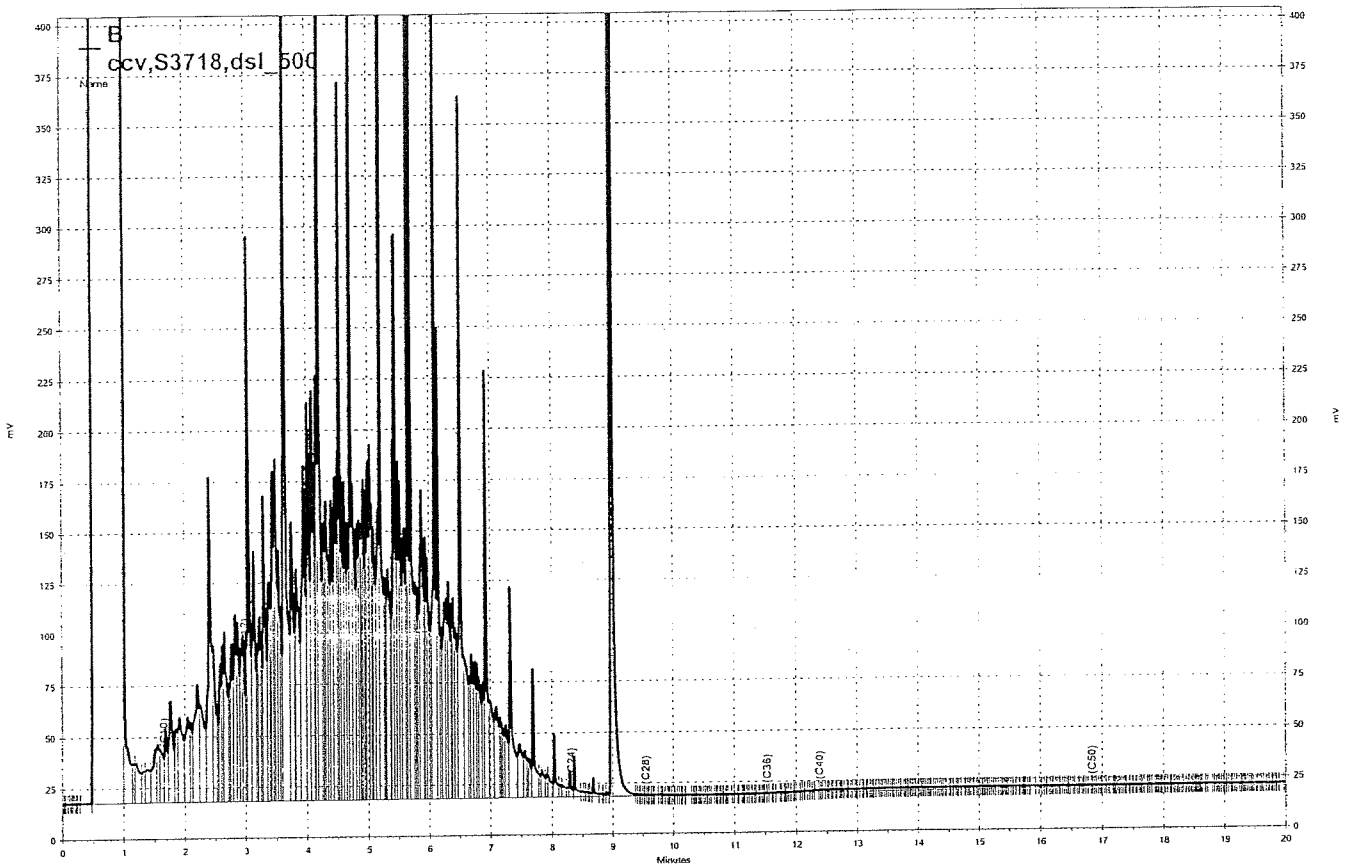
MW-5



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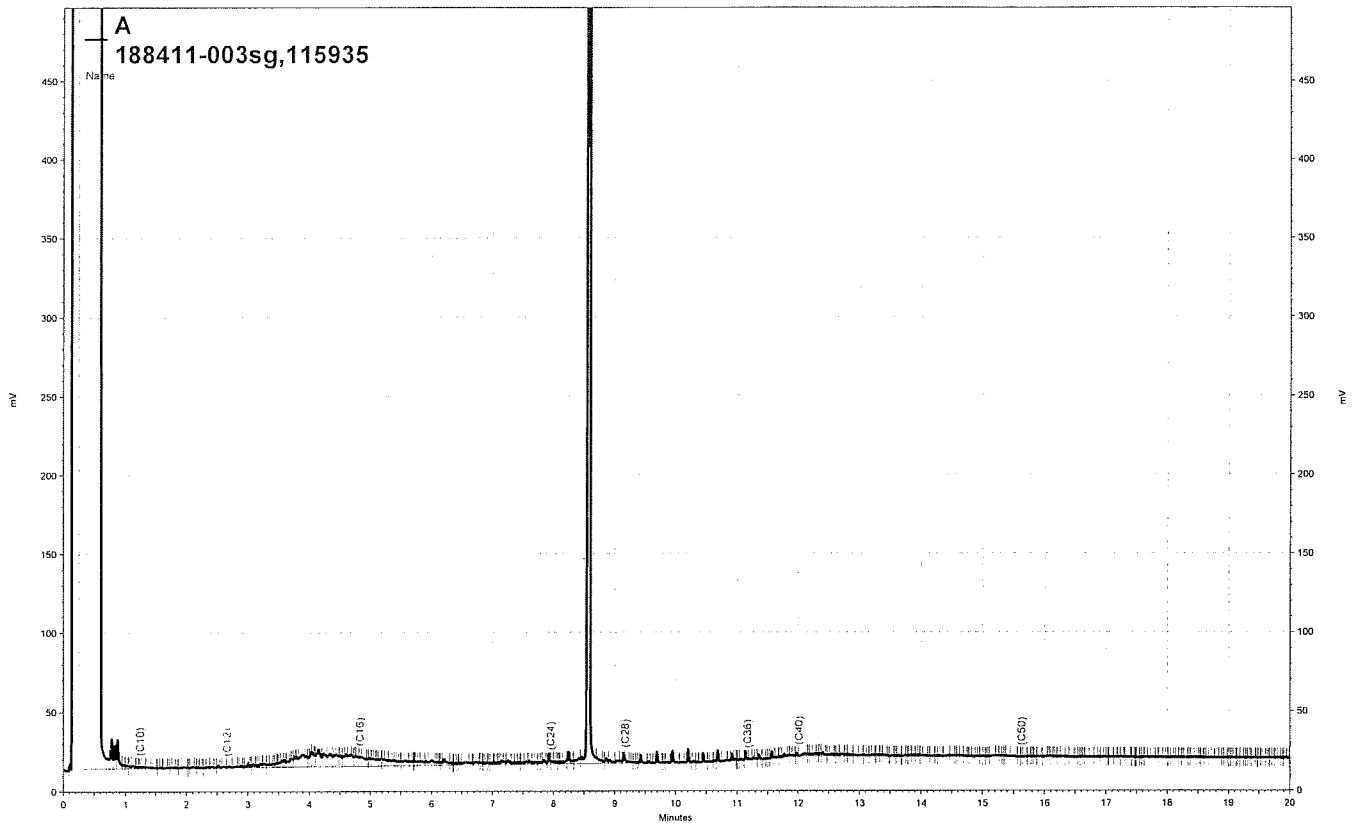
Diesel



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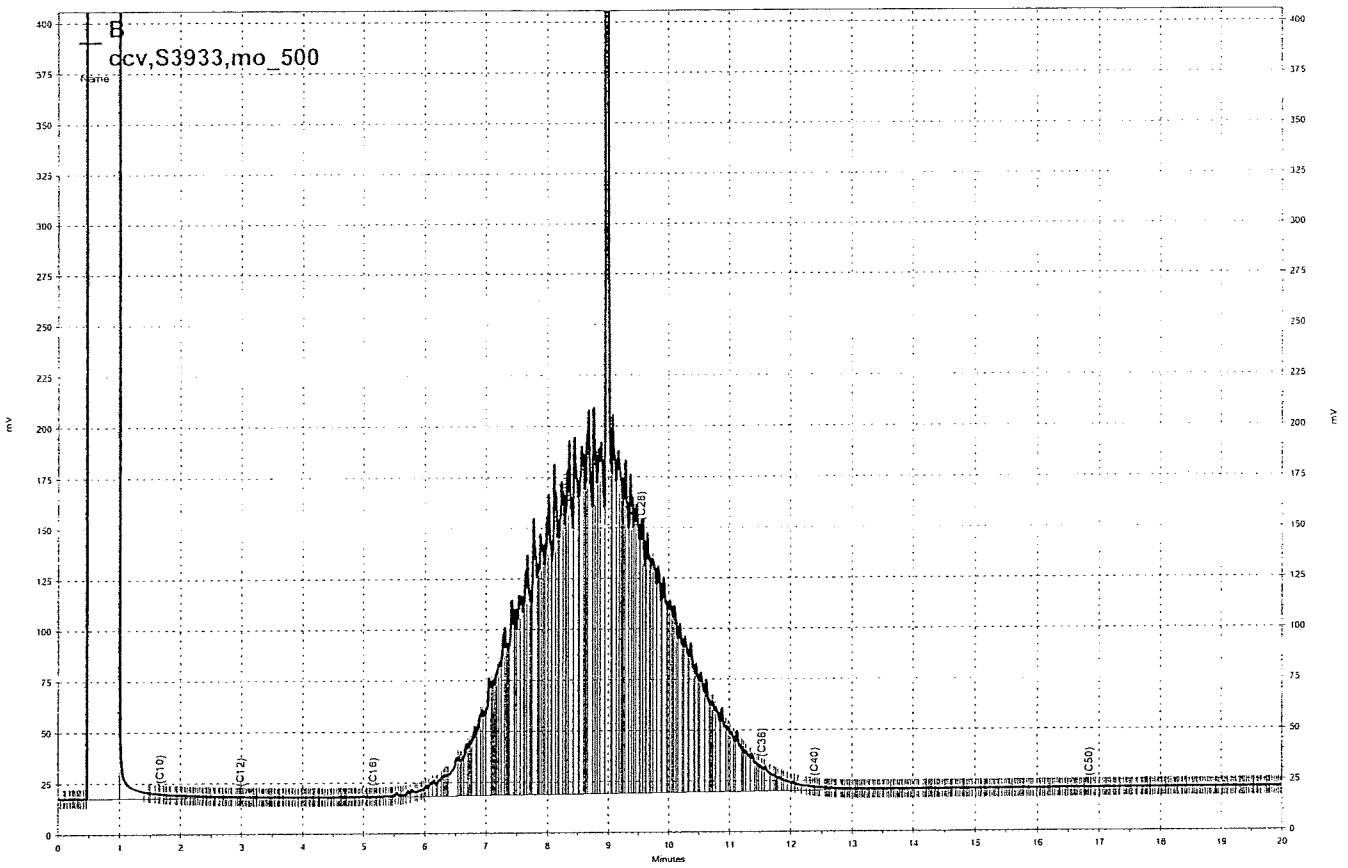
MW-8A



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Motor Oil

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	188411	Location:	HFC, 2277 7th St. Oakland, CA
Client:	Baseline Environmental	Prep:	EPA 3520C
Project#:	Y5395-02	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	07/28/06
Units:	ug/L	Received:	07/28/06
Diln Fac:	1.000	Prepared:	08/01/06
Batch#:	115935	Analyzed:	08/03/06

Field ID: QCEB
Type: SAMPLE
Lab ID: 188411-004
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	127	65-130

Type: BLANK
Lab ID: QC349971
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	105	65-130

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	188411	Location:	HFC, 2277 7th St. Oakland, CA
Client:	Baseline Environmental	Prep:	EPA 3520C
Project#:	Y5395-02	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	115935
Units:	ug/L	Prepared:	08/01/06
Diln Fac:	1.000	Analyzed:	08/03/06

Type: BS
Lab ID: QC349972

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,224	89	61-133

Surrogate	%REC	Limits
Hexacosane	96	65-130

Type: BSD
Lab ID: QC349973

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,128	85	61-133	4	31

Surrogate	%REC	Limits
Hexacosane	92	65-130

RPD= Relative Percent Difference

Quality Control Checklist
for Review of Laboratory Report

Job No.: Y5395-02 **Site:** Harbors Facility Center

Laboratory: Curtis and Tompkins, Ltd. **Laboratory Report No:** 188545

Report Date: 31 August 2006 **BASELINE Review By:** JGM

	Yes	No	NA
GENERAL QUESTIONS **(Describe "no" responses below in "comments" section. Contact the laboratory, as required, for further explanation or action on Ano@ responses; document discussion in comments section.)**			
1a. Does the report include a case narrative? *(A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE)*	X		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	X		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor=s name?			X
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of Ahold@ samples)?			X
1e. Does the case narrative explain why requested analyses could not be performed by laboratory (e.g., insufficient sample)?			X
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable) ?	X		
2a. Is the laboratory report format consistent and legible throughout the report?	X		
2b. Are the sample and reported dates shown in the laboratory report correct?	X		
3a. Does the lab report include the original chain-of-custody form?	X		
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?	X		
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	X		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	X		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			X
6. Are the units in the lab report provided for each analysis consistent	X		

	Yes	No	NA
throughout the report?			
7. Are the detection limits (DL) appropriate based on the intended use of the data? (e.g., DL below applicable MCLs for water quality issues?)	X		
8a. Are detection limits appropriate based on the analysis performed? (i.e., not elevated due to dilution effects)	X		
8b. If no, is an explanation provided by the laboratory?			X
9a. Were the samples analyzed within the appropriate holding time? (generally 2 weeks for volatiles, and up to 6 months for total metals)	X		
9b. If no, was it flagged in the report?			X
10. If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?	X		
11a. Do the chromatograms confirm quantitative laboratory results? (petroleum hydrocarbons)	X		
11b. Is a standard chromatogram(s) included in the laboratory report?	X		
11c. Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)	X		
12. Are the results consistent with previous analytical results from the site? *(If no, contact the lab and request review/reanalysis of data, as appropriate)*	X		
13a. REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			X
13b. REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			X
13c. REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) which triggered the need for a revision?			X
13d. REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as data reported in the original report, except where the report was revised to correct incorrectly reported data?			X
QA/QC Questions Field/Laboratory Quality Control - Groundwater Analyses			
14. Are field blanks reported as AND@? (groundwater samples) *A field blank is a sample of DI water which is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.*			X
15. Are trip blanks reported as AND@? (groundwater samples/volatile analyses) *A trip blank is a sample of contaminant-free matrix placed in an appropriate container by*			X

	Yes	No	NA
the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.			
16. Are duplicate sample results consistent with the original sample? (groundwater samples) *Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability).*			X
Batch Quality Control (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	X		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? *Used to assess lab contamination and prevent false positive results. MBs should be AND.@*	X		
18b. If no, is an explanation provided in the case narrative to validate the data?			X
18c. Are analytes which may be considered laboratory contaminants reported below the laboratory reporting limit? *Common lab contaminants include acetone, methylene chloride, diethylhexyl phthalate, and di-n-octyl phthalate.*	X		
18d. If no, was the laboratory contacted to determine whether reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			X
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. *LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of, matrix QC data.*	X		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. *The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab=s limits (failure is probably*	X		

	Yes	No	NA
due to matrix interference).			
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?			X
Sample Quality Control			
21a. Are the surrogate spikes reported within the lab=s acceptable recovery limits? *A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spike into the sample or QA Asample@ prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab=s limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.*	X		
21b. If no, is an explanation given in the case narrative to validate the data?			X

Comments:

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Baseline Environmental
5900 Hollis St.
Suite D
Emeryville, CA 94608

Date: 31-AUG-06
Lab Job Number: 188545
Project ID: STANDARD
Location: Harbor Facilities Complex

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: _____ for AM
Project Manager

Reviewed by: _____ for TB
Operations Manager

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	188545
Client:	Baseline Environmental
Location:	Harbor Facilities Complex
Request Date:	08/04/06
Samples Received:	08/04/06

This hardcopy data package contains sample and QC results for two water samples, requested for the above referenced project on 08/04/06. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
Tel: (510) 420-8686 Fax: (510) 420-1707

188545

CHAIN OF CUSTODY RECORD

Turn-around Time: Standard
Lab: Curtis & Tompkins
BASELINE Contact Person: Bill Scott/James McCarty

Project Number	Project Name and Location:
Y5395-02	Harbor Facilities Complex, 2277 Seventh St., Oakland CA

Samplers: (Signature) Reginald Ramsey

Sample ID No. Station	Date:	Time:	Media	Containers: No.	Type: SS	Encore	L-AG	40-ml VOA	L-Poly	250 ml Poly	500 ml Poly	Preservative Ice and: None	HCl	NO_3	SO_4	NaOH	TPH as gasoline (8015B)	TEPH diesel & m.o. (8015B) w/silica gel cleanup	BTEX & MTBE 8260B	Remarks/ Composite
~~MW-2~~			W	3				X					X				X		X	
~~MW-2~~			W	2			X					X						X		
MW-4	8/4	10:37	W	3				X					X				X		X	
MW-4	8/4	10:37	W	2			X					X						X		
MW-4dup	8/4	10:45	W	3				X					X				X		X	
MW-4dup	8/4	10:45	W	2			X					X						X		
~~MW-5~~			W	3				X					X				X		X	
~~MW-5~~			W	2			X					X						X		
~~MW-8A~~			W	3				X					X				X		X	
~~MW-8A~~			W	2			X					X						X		

Relinquished by: (Signature)	Custody Seal Yes No	Date/Time	Received by: (Signature)	Custody Seal intact Yes No NA	Date/Time	Conditions of Samples Upon Arrival at Laboratory:
Reginald Ramsey		8/4 11:45				
Relinquished by: (Signature)	Custody Seal Yes No	Date/Time	Received by: (Signature)	Custody Seal intact Yes No NA	Date/Time	Remarks: Please provide EDD & EDF to BASELINE Please invoice Jeff Rubin at Port of Oakland, W.O. 202386 TSO #21 Please e-mail copy of the analytical results to jrubin@portoakland.com
Relinquished by: (Signature)	Custody Seal Yes No	Date/Time	Received by: (Signature)	Custody Seal intact Yes No NA	Date/Time	
Received at laboratory with intact custody seal: (Signature)		Date/Time	Comments: include in lab report 188411			

cold and c

Bill's/C:/chain of Custody/MasterC-o-C-seal 5-02

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	08/04/06
Units:	ug/L	Received:	08/04/06
Batch#:	116082	Analyzed:	08/04/06

Field ID: MW-4 Lab ID: 188545-001
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	560	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	69-137
Bromofluorobenzene (FID)	89	80-133

Field ID: MW-4DUP Lab ID: 188545-002
Type: SAMPLE Diln Fac: 5.000

Analyte	Result	RL
Gasoline C7-C12	590	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	69-137
Bromofluorobenzene (FID)	91	80-133

Type: BLANK Diln Fac: 1.000
Lab ID: QC350553

Analyte	Result	RL
Gasoline C7-C12	ND	50

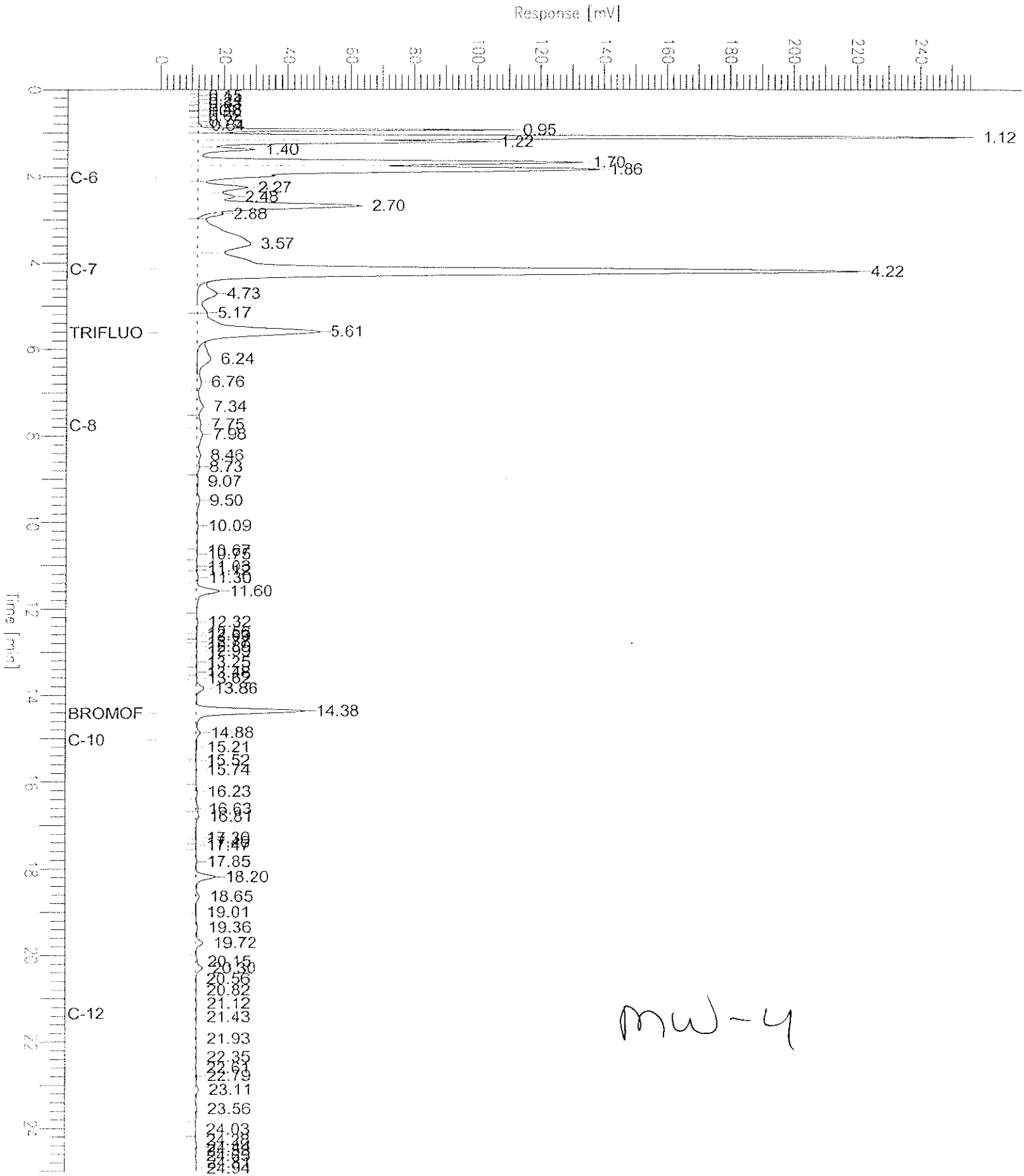
Surrogate	%REC	Limits
Trifluorotoluene (FID)	81	69-137
Bromofluorobenzene (FID)	83	80-133

ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 188545-001,116082,tvh only
FileName : G:\GC05\DATA\216g008.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 0 mV

Sample #: b1.9 Page 1 of 1
Date : 8/6/06 06:47 PM
Time of Injection: 8/4/06 07:47 PM
Low Point : -0.38 mV High Point : 256.85 mV
Plot Scale: 257.2 mV

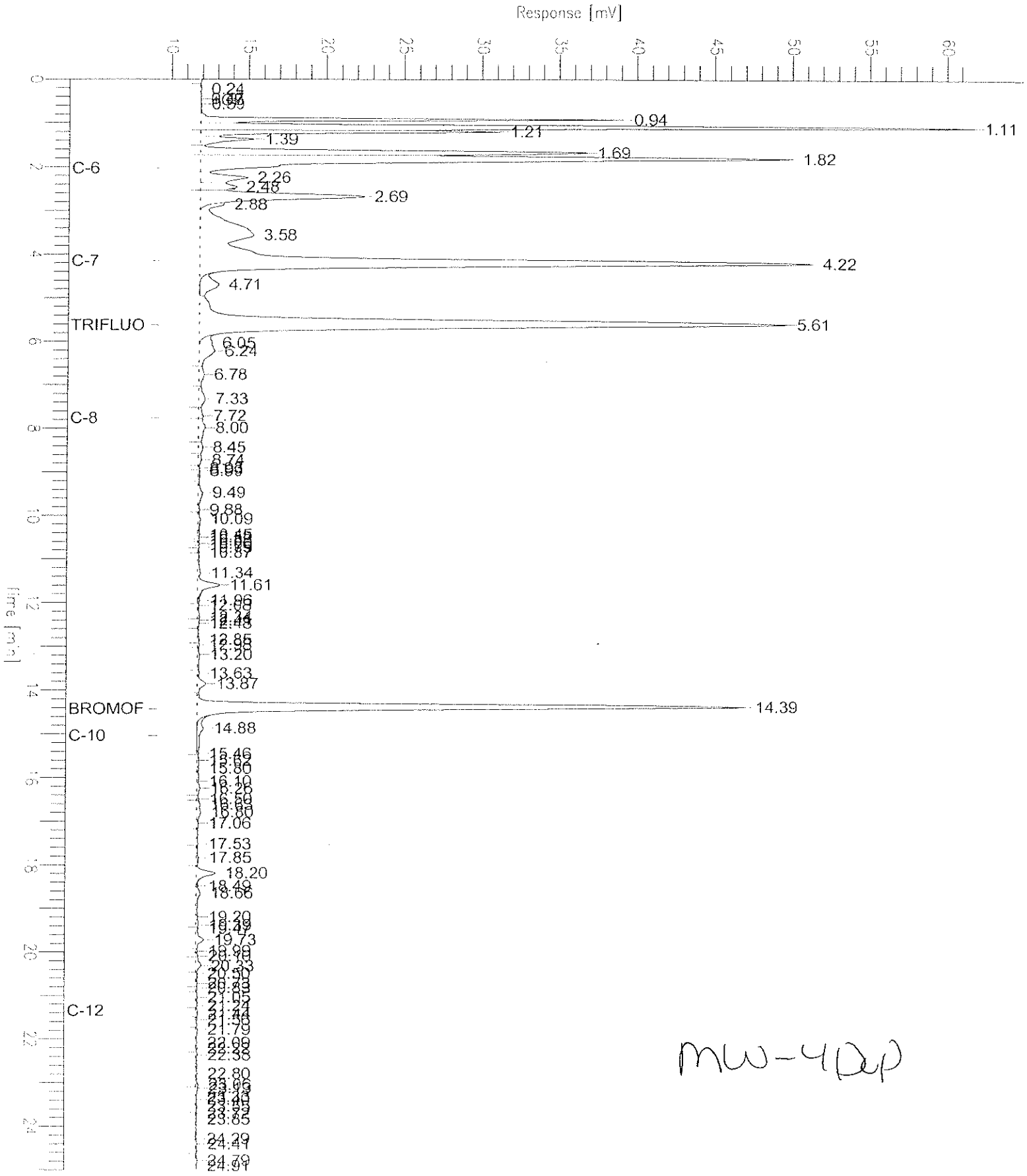


MW-4

Chromatogram

Sample Name : 188545-002,116082,5x,tvh only
FileName : G:\GC05\DATA\216g006.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 9 mV

Sample #: b1.3 Page 1 of 1
Date : 8/6/06 06:47 PM
Time of Injection: 8/4/06 06:44 PM
Low Point : 9.34 mV High Point : 61.78 mV
Plot Scale: 52.4 mV

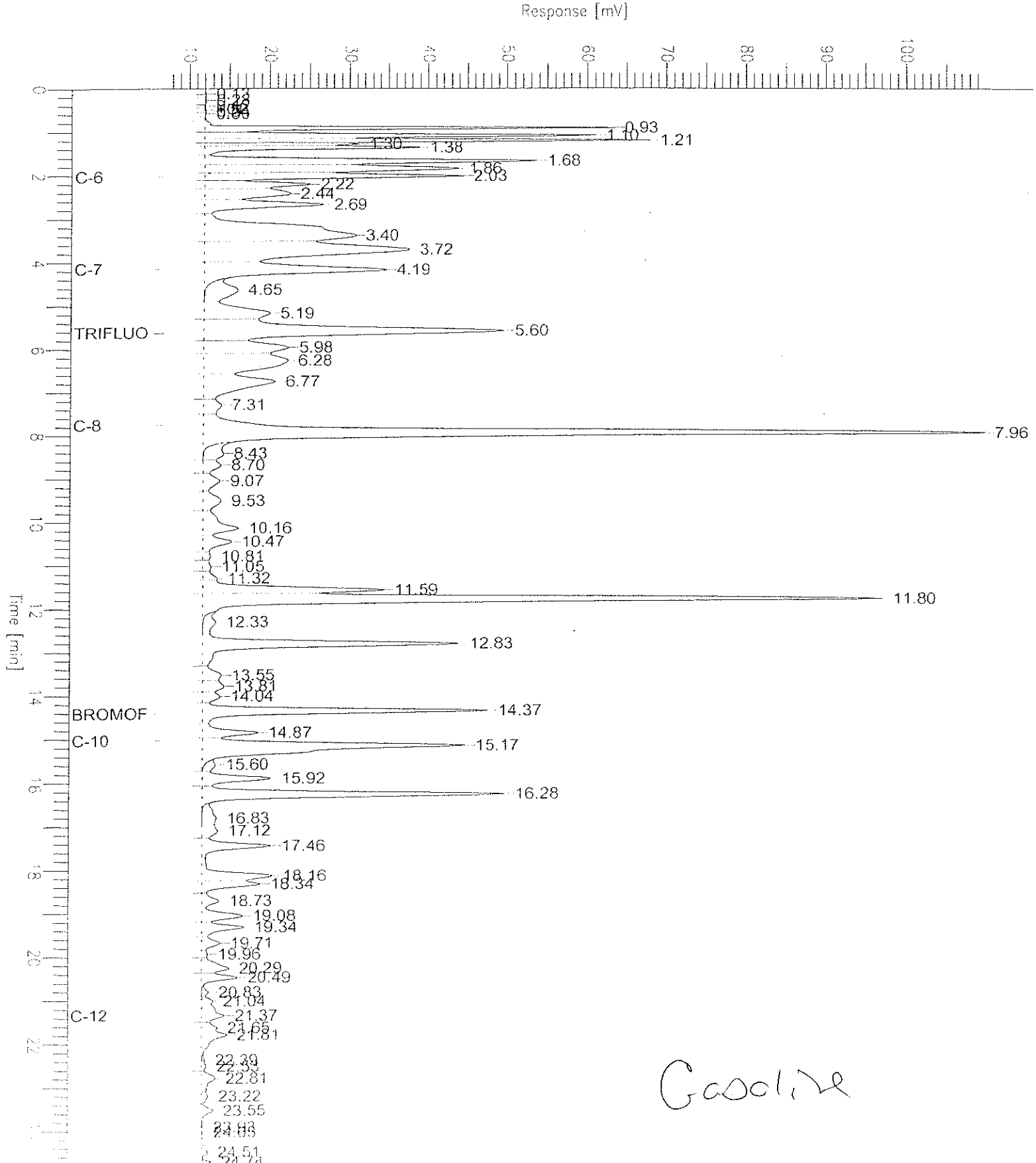


MW-4(2)

Chromatogram

Sample Name : ccv,tvh,116082,s3982,2.5/5000
FileName : G:\GC05\DATA\216g003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 7 mV

Sample #: Page 1 of 1
Date : 8/6/06 06:46 PM
Time of Injection: 8/4/06 06:37 AM
Low Point : 7.04 mV High Point : 109.77 mV
Plot Scale: 102.7 mV



Gasoline

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC350555	Batch#:	116082
Matrix:	Water	Analyzed:	08/04/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	951.5	95	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	69-137
Bromofluorobenzene (FID)	99	80-133

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	116082
MSS Lab ID:	188546-009	Sampled:	08/03/06
Matrix:	Water	Received:	08/04/06
Units:	ug/L	Analyzed:	08/05/06
Diln Fac:	1.000		

Type: MS Lab ID: QC350602

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	15.69	2,000	1,877	93	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	123	69-137
Bromofluorobenzene (FID)	98	80-133

Type: MSD Lab ID: QC350603

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,898	94	80-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	69-137
Bromofluorobenzene (FID)	103	80-133

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	08/04/06
Units:	ug/L	Received:	08/04/06
Diln Fac:	1.000	Prepared:	08/08/06
Batch#:	116182		

Field ID: MW-4
Type: SAMPLE
Lab ID: 188545-001

Analyzed: 08/09/06
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	92 Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	81	65-130

Field ID: MW-4DUP
Type: SAMPLE
Lab ID: 188545-002

Analyzed: 08/09/06
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	100 Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	115	65-130

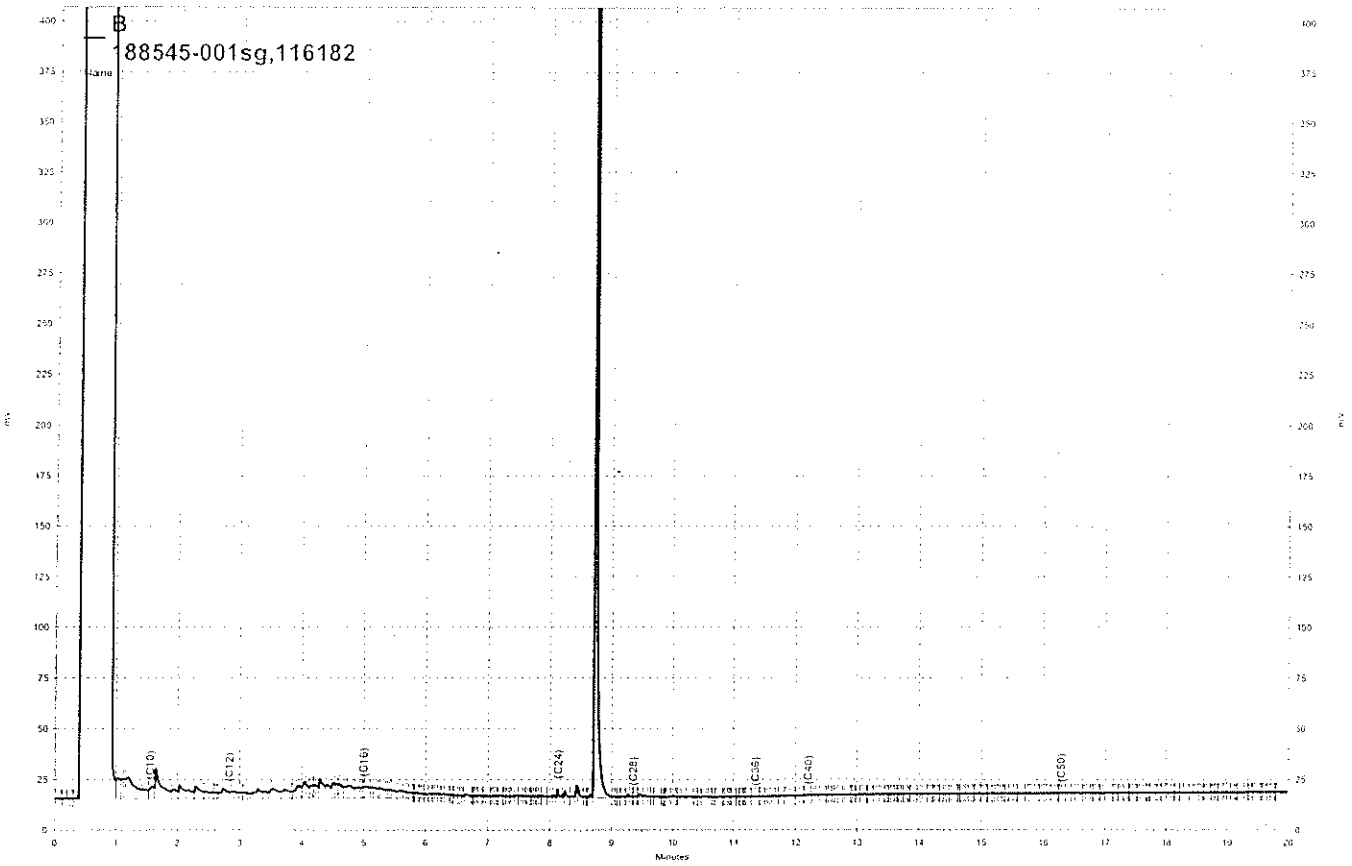
Type: BLANK
Lab ID: QC350944

Analyzed: 08/10/06
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	115	65-130

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit



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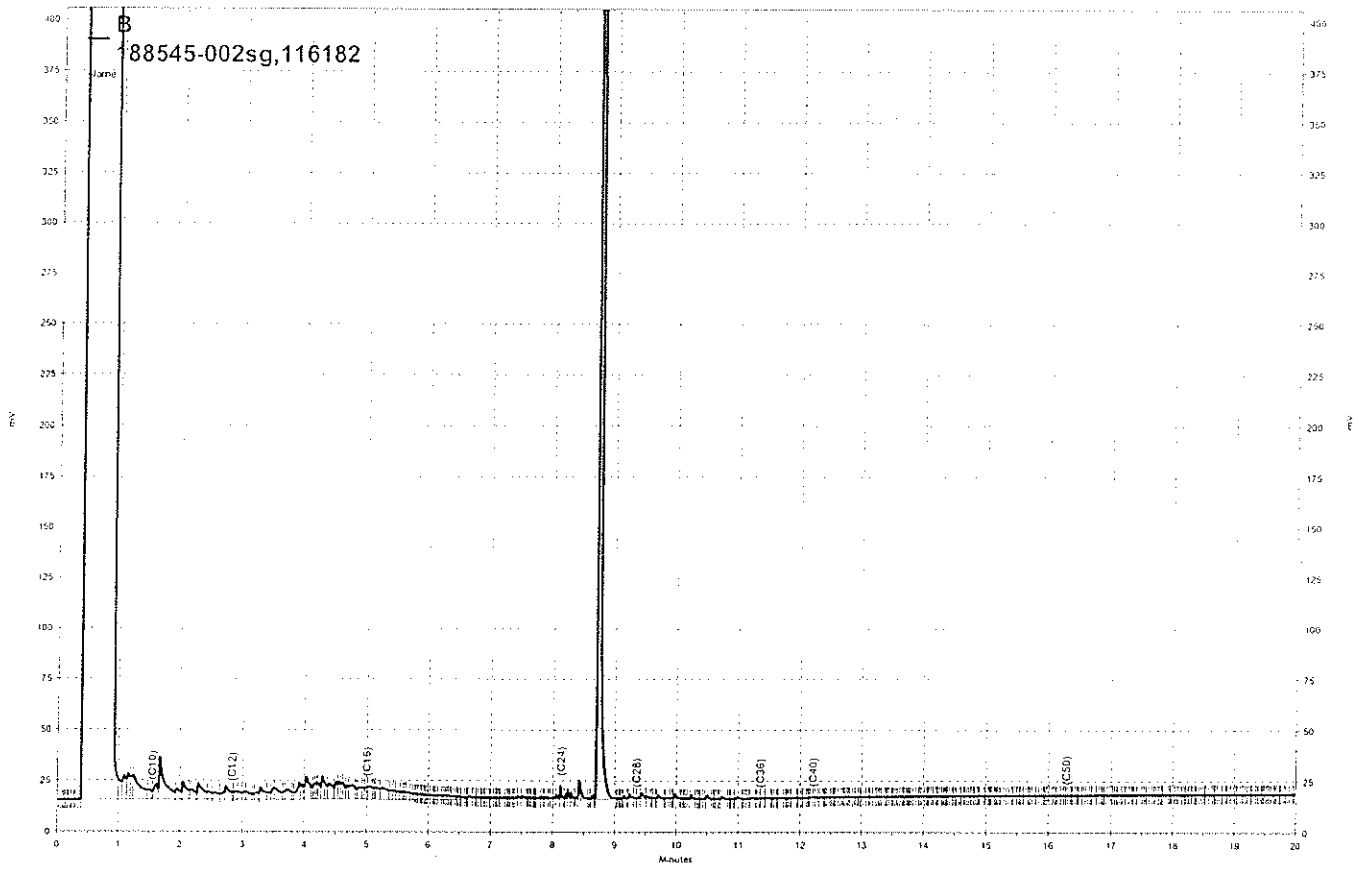

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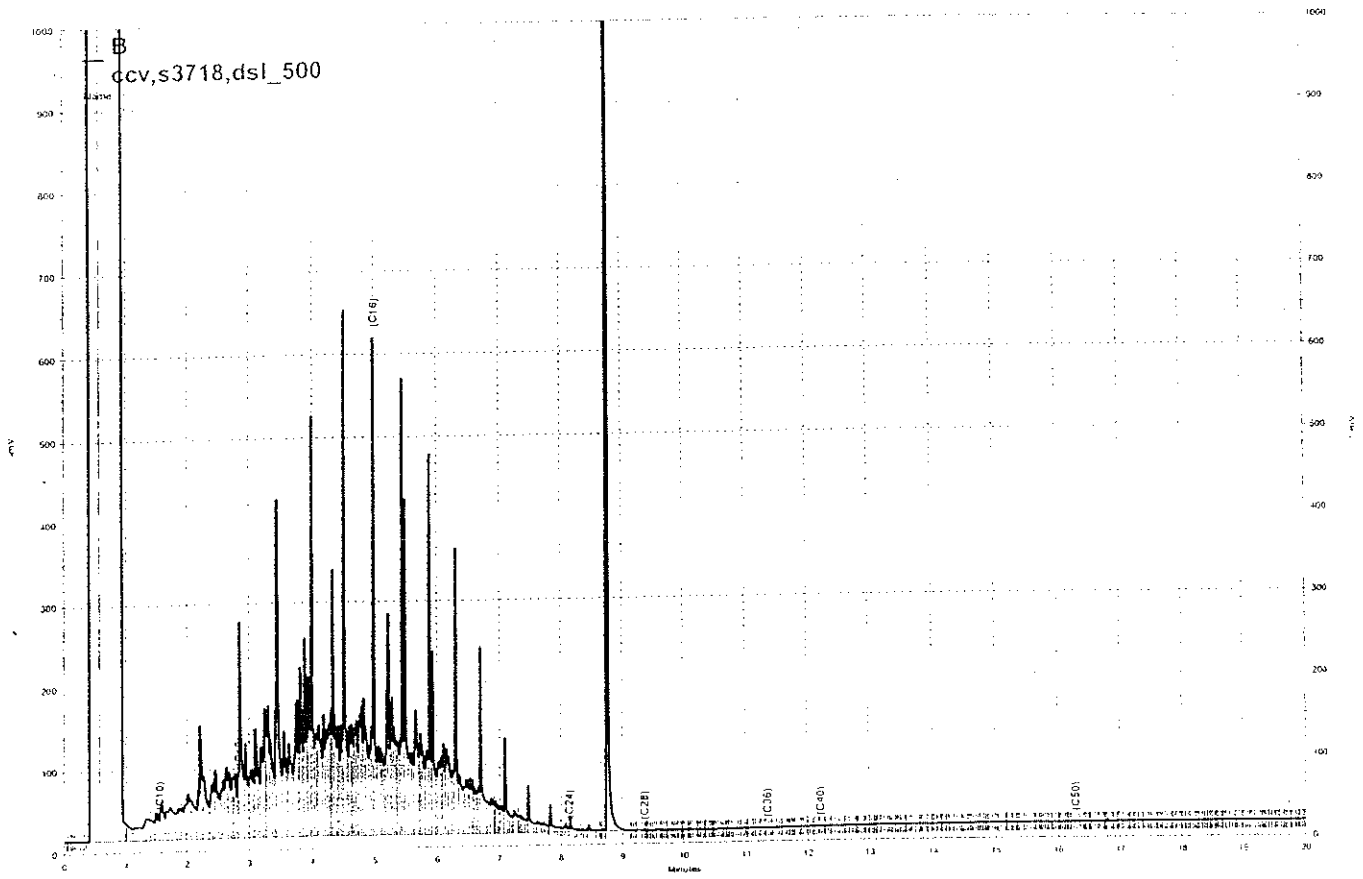

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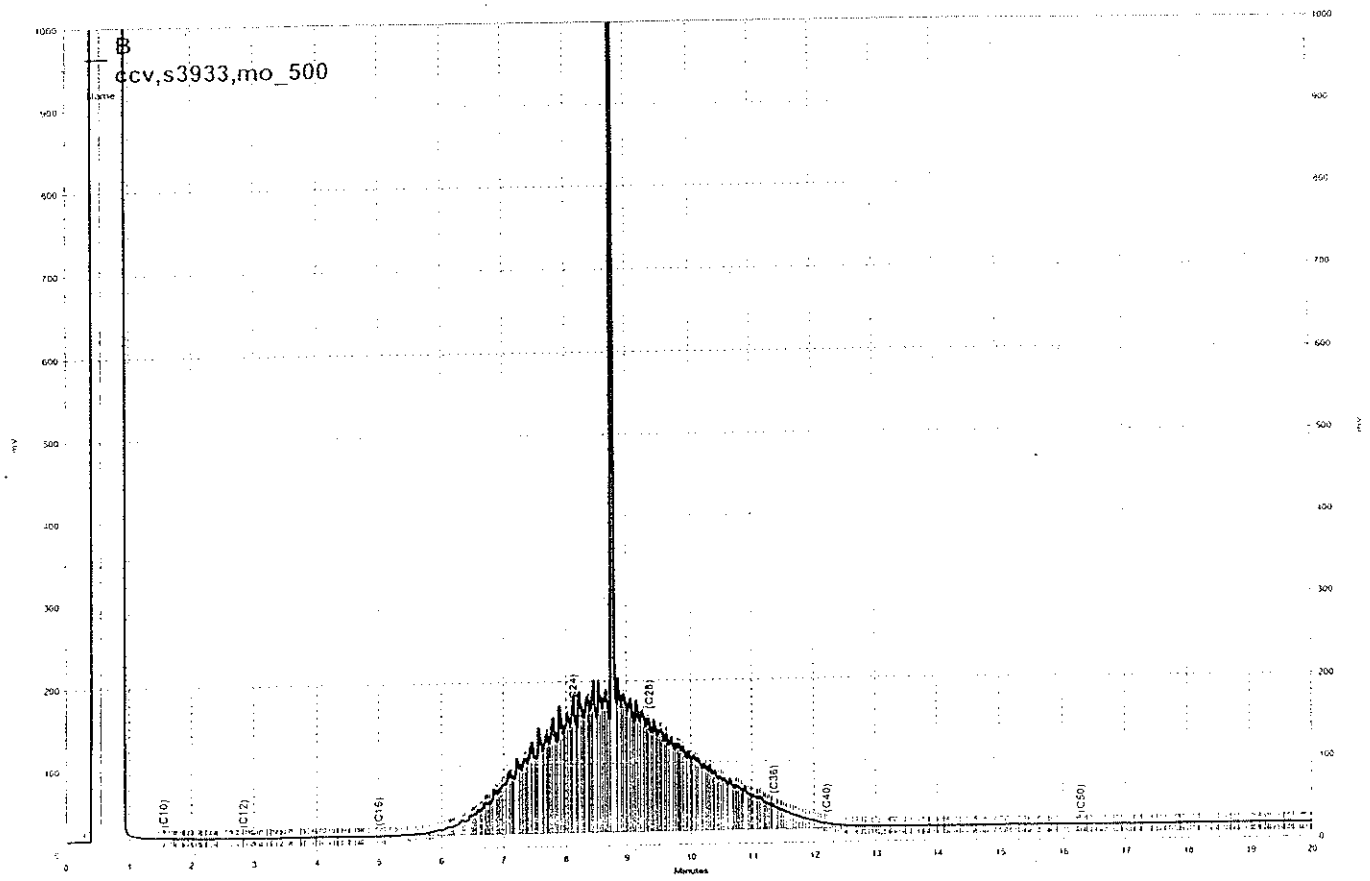

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Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	116182
Units:	ug/L	Prepared:	08/08/06
Diln Fac:	1.000	Analyzed:	08/09/06

Type: BS
Lab ID: QC350945

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,081	83	61-133

Surrogate	%REC	Limits
Hexacosane	88	65-130

Type: BSD
Lab ID: QC350946

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,389	96	61-133	14	31

Surrogate	%REC	Limits
Hexacosane	97	65-130

RPD= Relative Percent Difference

11.0

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	MW-4	Batch#:	116180
Lab ID:	188545-001	Sampled:	08/04/06
Matrix:	Water	Received:	08/04/06
Units:	ug/L	Analyzed:	08/08/06
Diln Fac:	2.500		

Analyte	Result	RL
MTBE	ND	1.3
Benzene	160	1.3
Toluene	ND	1.3
Chlorobenzene	ND	1.3
Ethylbenzene	4.3	1.3
m,p-Xylenes	ND	1.3
o-Xylene	ND	1.3
1,3-Dichlorobenzene	ND	1.3
1,4-Dichlorobenzene	ND	1.3
1,2-Dichlorobenzene	ND	1.3

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	109	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	112	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	MW-4DUP	Batch#:	116180
Lab ID:	188545-002	Sampled:	08/04/06
Matrix:	Water	Received:	08/04/06
Units:	ug/L	Analyzed:	08/08/06
Diln Fac:	2.500		

Analyte	Result	RL
MTBE	ND	1.3
Benzene	150	1.3
Toluene	ND	1.3
Chlorobenzene	ND	1.3
Ethylbenzene	4.5	1.3
m,p-Xylenes	ND	1.3
o-Xylene	ND	1.3
1,3-Dichlorobenzene	ND	1.3
1,4-Dichlorobenzene	ND	1.3
1,2-Dichlorobenzene	ND	1.3

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	110	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC350924	Batch#:	116180
Matrix:	Water	Analyzed:	08/08/06
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	107	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	116180
Units:	ug/L	Analyzed:	08/08/06
Diln Fac:	1.000		

Type: BS Lab ID: QC350925

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	20.28	81	72-120
Benzene	25.00	24.19	97	80-120
Toluene	25.00	24.55	98	80-120
Chlorobenzene	25.00	23.96	96	80-120
Ethylbenzene	25.00	27.33	109	80-120
m,p-Xylenes	50.00	57.34	115	80-121
o-Xylene	25.00	27.25	109	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	94	80-122

Type: BSD Lab ID: QC350926

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	20.19	81	72-120	0	20
Benzene	25.00	22.97	92	80-120	5	20
Toluene	25.00	23.33	93	80-120	5	20
Chlorobenzene	25.00	23.08	92	80-120	4	20
Ethylbenzene	25.00	26.22	105	80-120	4	20
m,p-Xylenes	50.00	55.52	111	80-121	3	20
o-Xylene	25.00	26.46	106	80-120	3	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	93	80-122

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	188545	Location:	Harbor Facilities Complex
Client:	Baseline Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	116180
MSS Lab ID:	188589-014	Sampled:	08/03/06
Matrix:	Water	Received:	08/08/06
Units:	ug/L	Analyzed:	08/09/06
Diln Fac:	1.000		

Type: MS Lab ID: QC350952

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.06769	25.00	18.87	75	75-120
Benzene	<0.08408	25.00	25.76	103	80-122
Toluene	<0.1415	25.00	25.58	102	80-120
Chlorobenzene	<0.07490	25.00	25.00	100	80-120
Ethylbenzene	<0.06927	25.00	29.02	116	80-121
m,p-Xylenes	<0.1365	50.00	60.29	121	80-121
o-Xylene	<0.07818	25.00	28.13	113	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	112	80-130
Toluene-d8	104	80-120
Bromofluorobenzene	93	80-122

Type: MSD Lab ID: QC350953

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	19.42	78	75-120	3	20
Benzene	25.00	24.75	99	80-122	4	20
Toluene	25.00	25.05	100	80-120	2	20
Chlorobenzene	25.00	24.27	97	80-120	3	20
Ethylbenzene	25.00	27.81	111	80-121	4	20
m,p-Xylenes	50.00	58.48	117	80-121	3	20
o-Xylene	25.00	27.17	109	80-120	3	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	109	80-130
Toluene-d8	104	80-120
Bromofluorobenzene	96	80-122

RPD= Relative Percent Difference

APPENDIX C

HISTORICAL DATA

TABLE C-1 : **Groundwater Elevation Data**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Monitoring Well	Date Measured	Elevation [1] Top of Casing (feet)	Depth to Product (feet btc)	Depth to Water (feet btc)	Product Thickness (feet)	Groundwater Elevation [1] (feet)
MW-1						
	04/18/00	14.14	NM	8.21	0.0	5.93
	05/22/00	14.14	NM	8.51	0.0	5.97
	07/10/01	14.14	8.8	10.00	1.2	4.14
	12/12/01	14.14	NA	NA	NA	NC
	03/08/02	14.14	NM	NA	NA	NC
	06/13/02	14.14	8.70	10.00	1.30	NC
	09/26/02	14.14	8.60	9.50	0.90	NC
	03/17/03	14.14	7.61	8.88	1.27	NC
	06/18/03	14.14	8.20	9.44	1.24	NC
	09/03/03	14.14	8.50	9.40	0.90	NC
	11/26/03	14.14	8.85	9.25	0.40	NC
	03/05/04	14.14	6.76	7.07	0.31	NC
	06/02/04	14.14	8.26	8.71	0.45	NC
	09/03/04	14.14	8.70	9.11	0.41	NC
	12/16/04	14.14	7.75	7.92	0.17	NC
	03/29/05	14.14	6.21	6.38	0.17	NC
	06/14/05	14.14	7.41	7.61	0.20	NC
	08/10/05	14.14	8.05	8.55	0.50	NC
	09/29/05	14.14	8.28	8.95	0.67	NC
	12/21/05	14.14	5.70	5.90	0.20	NC
	03/24/06	14.14	5.98	6.27	0.29	NC
	07/28/06	14.14	7.88	8.35	0.47	NC
MW-2						
	12/31/97	14.36	NP	8.73	0.00	5.63
	04/13/98	14.36	NP	7.72	0.00	6.64
	11/06/98	14.36	NP	9.43	0.00	4.93
	03/19/99	14.36	NP	8.21	0.00	6.15
	06/24/99	14.36	NP	8.91	0.00	5.45
	09/28/99	14.36	NP	9.42	0.00	4.94
	11/12/99	14.36	NP	9.63	0.00	4.73
	02/11/00	14.36	NP	8.54	0.00	5.82
	05/22/00	14.36	NP	8.10	0.00	6.26
	09/06/00	14.36	NP	8.79	0.00	5.57
	12/19/00	14.36	NP	9.19	0.00	5.17
	02/21/01	14.36	NP	7.99	0.00	6.37
	04/03/01	14.36	NP	8.23	0.00	6.13
	07/10/01	14.36	NP	8.70	0.00	5.66
	12/12/01	14.36	NP	8.16	0.00	6.20
	01/22/02	14.36	NP	7.64	0.00	6.72
	03/08/02	14.36	NP	8.31	0.00	6.05
	06/13/02	14.36	NP	8.64	0.00	5.72
	09/26/02	14.36	NP	8.95	0.00	5.41
	12/12/02	14.36	NP	9.17	0.00	5.19
	03/17/03	14.36	NP	7.77	0.00	6.59
	06/18/03	14.36	NP	8.44	0.00	5.92
	09/03/03	14.36	NP	8.98	0.00	5.38

TABLE C-1 : **Groundwater Elevation Data**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Monitoring Well	Date Measured	Elevation [1] Top of Casing (feet)	Depth to Product (feet btc)	Depth to Water (feet btc)	Product Thickness (feet)	Groundwater Elevation [1] (feet)
	11/26/03	17.21	NP	12.01	0.00	5.20
	03/05/04	17.21	NP	9.75	0.00	7.46
	06/02/04	17.21	NP	11.22	0.00	5.99
	09/03/04	17.21	NP	11.62	0.00	5.59
	12/16/04	17.21	NP	10.80	0.00	6.41
	03/29/05	17.21	NP	9.67	0.00	7.54
	06/14/05	17.21	NP	10.68	0.00	6.53
	08/10/05	17.21	NP	11.05	0.00	6.16
	09/29/05	17.21	NP	11.32	0.00	5.89
	12/21/05	16.96	NP	9.57	0.00	7.39
	03/24/06	16.96	NP	9.55	0.00	7.41
	07/28/06	16.96	NP	10.85	0.00	6.11
MW-3						
	11/06/98	14.22	8.84	9.94	1.10	NC
	03/19/99	14.22	7.52	8.05	0.53	NC
	06/24/99	14.22	8.38	8.56	0.18	NC
	11/12/99	14.22	9.14	9.23	0.09	NC
	02/11/00	14.22	7.97	8.37	0.40	NC
	03/01/00	14.22	6.59	7.24	0.65	NC
	03/21/00	14.22	6.50	6.56	0.06	NC
	05/22/00	14.22	7.51	8.05	0.54	NC
	06/26/00	14.22	7.82	8.20	0.38	NC
	07/25/00	14.22	7.90	8.92	1.02	NC
	08/31/00	14.22	8.15	9.50	1.35	NC
	09/06/00	14.22	8.21	9.42	1.21	NC
	09/21/00	14.22	8.30	8.88	0.58	NC
	12/19/00	14.22	8.60	9.65	1.05	NC
	02/22/01	14.22	6.36	8.15	1.79	NC
	04/03/01	14.22	7.48	8.88	1.40	NC
	04/23/01	14.22	7.85	9.10	1.25	NC
	05/30/01	14.22	7.75	9.10	1.35	NC
	07/10/01	14.22	8.10	9.60	1.50	NC
	03/08/02	14.22	7.80	8.00	0.20	NC
	04/03/02	14.22	7.60	7.70	0.10	NC
	04/23/02	14.22	7.90	8.40	0.50	NC
	04/25/02	14.22	7.90	8.80	0.90	NC
	05/10/02	14.22	8.10	8.20	0.10	NC
	05/24/02	14.22	8.05	8.10	0.05	NC
	06/13/02	14.22	8.10	8.70	0.60	NC
	07/05/02	14.22	8.10	8.95	0.85	NC
	07/19/02	14.22	8.10	8.90	0.80	NC
	07/30/02	14.22	8.10	8.90	0.80	NC
	08/14/02	14.22	8.10	8.90	0.80	NC
	09/13/02	14.22	8.30	9.30	1.00	NC
	09/26/02	14.22	8.30	9.00	0.70	NC
	10/14/02	14.22	8.60	9.50	0.90	NC
	11/04/02	14.22	8.75	9.99	1.24	NC

TABLE C-1 : **Groundwater Elevation Data**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Monitoring Well	Date Measured	Elevation [1] Top of Casing (feet)	Depth to Product (feet btc)	Depth to Water (feet btc)	Product Thickness (feet)	Groundwater Elevation [1] (feet)
	11/21/02	14.22	8.59	11.29	2.70	NC
	12/06/02	14.22	8.56	9.30	0.74	NC
	12/18/02	14.22	7.35	8.43	1.08	NC
	12/30/02	14.22	6.50	7.15	0.65	NC
	01/02/03	14.22	6.20	6.20	0.00	8.02
	01/03/03	14.22	6.21	6.21	0.00	8.01
	01/14/03	14.22	6.20	6.21	0.01	8.01
	01/30/03	14.22	6.81	6.85	0.04	7.37
	02/18/02	14.22	7.09	7.15	0.06	NC
	02/26/03	14.22	7.04	7.11	0.07	NC
	03/13/03	14.22	7.22	8.11	0.89	NC
	03/17/03	14.22	7.15	7.50	0.35	NC
	04/16/03	14.22	7.27	8.25	0.98	NC
	06/18/03	14.22	7.78	9.00	1.22	NC
	09/03/03	14.22	8.31	9.96	1.65	NC
	11/26/03	16.18	10.79	12.85	2.06	NC
	03/05/04	16.18	8.39	9.85	1.46	NC
	06/02/04	16.18	10.03	11.35	1.32	NC
	09/03/04	16.18	10.46	12.06	1.60	NC
	12/16/04	16.18	9.41	10.38	0.97	NC
	03/29/05	16.18	8.17	9.01	0.84	NC
	06/14/05	16.18	9.59	10.55	0.96	NC
	08/10/05	16.18	9.91	11.15	1.24	NC
	09/29/05	16.18	10.21	11.61	1.40	NC
	12/21/05	16.18	8.21	8.28	0.07	NC
	03/24/06	16.18	8.20	8.82	0.62	NC
	07/28/06	16.18	9.81	9.83	0.02	NC
MW-4						
	12/31/97	13.15	NP	7.09	0.0	6.06
	04/13/98	13.15	NP	7.71	0.0	5.44
	11/06/98	13.15	NP	8.69	0.0	4.46
	03/19/99	13.15	NP	8.00	0.0	5.15
	06/24/99	13.15	NP	8.45	0.0	4.70
	09/28/99	13.15	NP	8.73	0.0	4.42
	11/12/99	13.15	NP	8.83	0.0	4.32
	02/11/00	13.15	NP	7.71	0.0	5.44
	05/22/00	13.15	NP	8.09	0.0	5.06
	09/06/00	13.15	NP	8.32	0.0	4.83
	12/19/00	13.15	NP	8.47	0.0	4.68
	02/21/01	13.15	NP	7.51	0.0	5.64
	04/03/01	13.15	NP	8.13	0.0	5.02
	07/10/01	13.15	NP	8.12	0.0	5.03
	12/12/01	13.15	NP	7.65	0.0	5.50
	01/22/02	13.15	NP	7.60	0.0	5.55
	03/08/02	13.15	NP	7.96	0.0	5.19
	06/13/02	13.15	NP	8.20	0.0	4.95
	09/26/02	13.15	NP	8.21	0.0	4.94

TABLE C-1 : **Groundwater Elevation Data**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Monitoring Well	Date Measured	Elevation [1] Top of Casing (feet)	Depth to Product (feet btc)	Depth to Water (feet btc)	Product Thickness (feet)	Groundwater Elevation [1] (feet)
	12/12/02	13.15	NP	8.38	0.0	4.77
	03/17/03	13.15	NP	7.72	0.0	5.43
	06/18/03	13.15	NP	8.02	0.0	5.13
	09/03/03	13.15	NP	8.29	0.0	4.86
	11/26/03	13.15	NP	8.69	0.0	4.46
	03/05/04	13.15	NP	7.45	0.0	5.70
	06/02/04	13.15	NP	8.25	0.0	4.90
	09/03/04	13.15	NP	8.31	0.0	4.84
	12/16/04	13.15	NP	7.96	0.0	5.19
	03/29/05	13.15	NP	7.11	0.0	6.04
	06/14/05	13.15	NP	7.90	0.0	5.25
	08/10/05	13.15	NP	7.86	0.0	5.29
	09/29/05	13.15	NP	8.00	0.0	5.15
	12/21/05	13.15	NP	7.30	0.0	5.85
	03/24/06	13.15	NP	7.05	0.0	6.10
	07/28/06	13.15	NP	7.92	0.0	5.23
MW-5						
	12/31/97	13.49	NP	6.38	0.0	7.11
	04/13/98	13.49	NP	5.56	0.0	7.93
	11/06/98	13.49	NP	6.59	0.0	6.90
	03/19/99	13.49	NP	6.20	0.0	7.29
	06/24/99	13.49	NP	6.73	0.0	6.76
	09/28/99	13.49	NP	6.91	0.0	6.58
	11/12/99	13.49	NP	7.06	0.0	6.43
	02/11/00	13.49	NP	7.00	0.0	6.49
	05/22/00	13.49	NP	6.21	0.0	7.28
	09/06/00	13.49	NP	6.56	0.0	6.93
	12/19/00	13.49	NP	6.68	0.0	6.81
	02/21/01	13.49	NP	6.08	0.0	7.41
	04/03/01	13.49	NP	6.38	0.0	7.11
	07/10/01	13.49	NP	6.58	0.0	6.91
	12/12/01	13.49	NP	6.40	0.0	7.09
	01/22/02	13.49	NP	6.10	0.0	7.39
	03/08/02	13.49	NP	6.10	0.0	7.39
	06/13/02	13.49	NP	6.31	0.0	7.18
	09/26/02	13.49	NP	6.60	0.0	6.89
	12/12/02	13.49	NP	6.75	0.0	6.74
	03/17/03	13.49	NP	5.73	0.0	7.76
	06/18/03	13.49	NP	6.10	0.0	7.39
	09/03/03	13.49	NP	6.50	0.0	6.99
	11/26/03	13.49	NP	6.70	0.0	6.79
	03/05/04	13.49	NP	5.70	0.0	7.79
	06/02/04	13.49	NP	6.27	0.0	7.22
	09/03/04	13.49	NP	6.61	0.0	6.88
	12/16/04	13.49	NP	6.02	0.0	7.47
	03/29/05	13.49	NP	5.25	0.0	8.24
	06/14/05	13.49	NP	5.82	0.0	7.67

TABLE C-1 : **Groundwater Elevation Data**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Monitoring Well	Date Measured	Elevation [1] Top of Casing (feet)	Depth to Product (feet btc)	Depth to Water (feet btc)	Product Thickness (feet)	Groundwater Elevation [1] (feet)
	08/10/05	13.49	NP	6.00	0.0	7.49
	09/29/05	13.49	NP	6.26	0.0	7.23
	12/21/05	13.49	NP	5.91	0.0	7.58
	03/24/06	13.49	NP	NA[2]	NA[2]	NA[2]
	07/28/06	13.49	NP	6.08	0.00	7.41
MW-6						
	06/24/99	14.00	NP	8.61	0.0	5.39
	09/28/99	14.00	NP	9.26	0.0	4.74
	11/12/99	14.00	NP	8.01	0.0	5.99
	02/11/00	14.00	NP	7.20	0.0	6.80
	05/22/00	14.00	NP	7.13	0.0	6.87
	09/06/00	14.00	NP	7.12	0.0	6.88
	12/19/00	14.00	NP	7.57	0.0	6.43
	02/21/01	14.00	NP	7.50	0.0	6.50
	04/03/01	14.00	NP	6.88	0.0	7.12
	07/10/01	14.00	NP	7.15	0.0	6.85
	12/12/01	14.00	NP	9.50	0.0	4.50
	01/22/02	14.00	NP	6.69	0.0	7.31
	03/08/02	14.00	NP	6.98	0.0	7.02
	06/13/02	14.00	NP	7.45	0.0	6.55
	09/26/02	14.00	NP	7.95	0.0	6.05
	12/12/02	14.00	NP	7.71	0.0	6.29
	12/18/02	Monitoring well was destroyed				
MW-7						
	12/31/97	14.35	NP	8.88	0.0	5.47
	04/13/98	14.35	NP	7.86	0.0	6.49
	11/06/98	14.35	NP	9.55	0.0	4.8
	03/19/99	14.35	NP	8.41	0.0	5.94
	06/24/99	14.35	NP	9.08	0.0	5.27
	09/28/99	14.35	NP	9.60	0.0	4.75
	11/12/99	14.35	NP	9.77	0.0	4.58
	02/11/00	14.35	NP	8.67	0.0	5.68
	05/22/00	14.35	NP	8.43	0.0	5.92
	09/06/00	14.35	NP	8.88	0.0	5.47
	12/19/00	14.35	NP	9.21	0.0	5.14
	02/21/01	14.35	NP	8.13	0.0	6.22
	04/03/01	14.35	NP	8.45	0.0	5.9
	07/10/01	14.35	NP	8.87	0.0	5.48
	12/12/01	14.35	NP	8.39	0.0	5.96
	01/22/02	14.35	NP	7.99	0.0	6.36
	03/08/02	14.35	NP	8.51	0.0	5.84
	06/13/02	14.35	NP	8.90	0.0	5.45
	09/26/02	14.35	NP	9.00	0.0	5.35
	12/12/02	14.35	NP	9.28	0.0	5.07
	12/18/02	Monitoring well was destroyed				
MW-8 [3]						
	12/31/97	12.94	8.49	8.82	0.33	NC
	11/06/98	12.94	9.25	10.3	1.05	NC

TABLE C-1 : **Groundwater Elevation Data**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Monitoring Well	Date Measured	Elevation [1] Top of Casing (feet)	Depth to Product (feet btc)	Depth to Water (feet btc)	Product Thickness (feet)	Groundwater Elevation [1] (feet)
	11/21/98	Monitoring well was destroyed				
MW-8A						
	12/12/01	12.94	NP	7.20	0.0	NA
	01/22/02	12.94	NP	7.20	0.0	5.74
	03/08/02	12.94	NP	7.70	0.0	5.24
	06/13/02	12.94	NP	7.72	0.0	5.22
	09/26/02	12.94	NP	7.91	0.0	5.03
	12/12/02	12.94	NP	8.15	0.0	4.79
	03/17/03	12.94	NP	7.28	0.0	5.66
	06/18/03	12.94	NP	7.72	0.0	5.22
	09/03/03	12.94	NP	8.18	0.0	4.76
	11/26/03	12.94	NP	8.55	0.0	4.39
	03/05/04	12.94	NP	6.92	0.0	6.02
	06/02/04	12.94	NP	7.92	0.0	5.02
	09/03/04	12.94	NP	8.16	0.0	4.78
	12/16/04	12.94	NP	7.62	0.0	5.32
	03/29/05	12.94	NP	6.63	0.0	6.31
	06/14/05	12.94	NP	7.60	0.0	5.34
	08/10/05	12.94	NP	7.50	0.0	5.44
	09/29/05	12.94	NP	7.76	0.0	5.18
	12/21/05	12.94	NP	6.90	0.0	6.04
	03/24/06	12.94	NP	6.65	0.0	6.29
	07/28/06	12.94	NP	7.34	0.0	6.65

Notes:
Source of data prior to December 2005: Innovative Technical Solutions, Inc*Third Quarter of 2005 Groundwter Monitoring and Product Monitoring Report* , 8 November 2005.
NP = no product detected with the interface probe
NC = not calculated due to the presence of free-phase product in the well
btc = below top of the well casing
NA = not available
NM = not measured

[1] Elevation data relative to Port of Oakland datum.
[2] Well could not be measured due to abundant surface water covering well head.
[3] Viscous product not related to the lighter product identified in other wells.

TABLE C-2: **Groundwater Analytical Results (µg/L)**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Well ID	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-1	05/22/00	3,600	41,000	<3,000	100	13 [8]	2.9	2.05	3.2 [8]
MW-2	05/27/94	87	470	NA	<0.5	<0.5	<0.5	<0.5	NA
	03/29/95	<50	110	1,400	<0.4	<0.3	<0.3	<0.4	NA
	09/06/95	<50	NA	NA	<0.4	<0.3	<0.3	<0.4	NA
	01/08/96	<50	<50	1200	<0.4	<0.3	<0.3	<0.4	NA
	04/04/96	<50	160	320	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	<50	120	1400	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	230 [1,2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	<50	714	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	51	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	82	<50	<250	0.56	<0.5	<0.5	<1.0	NA
	12/31/97	<50	<47	<280	1.4	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<50	<300	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/24/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	11/12/99	<50	120 [2,6]	<300	<0.5	<0.5	<0.5	<0.5	6.3 [8,9]
	02/11/00	<50	<50	<300	5.4	<0.5	<0.5	<0.5	<2
	05/22/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/06/00	<50	<50	<300	0.76 [8]	<0.5	<0.5	<0.5	<0.5 [10]
	12/19/00	200 [3,11]	<50	<300	39	1.8	<0.5	2.6	<0.5 [10,12]
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/05/01	<50	<50	<300	4.4	<0.5	<0.5	<0.5	5.0 [14]
	03/08/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	06/13/02	62 [15]	<57	<570	<0.5	<0.5	<0.5	<0.5	<5.0
	09/26/02	69 [2]	<50	<500	1.8	<0.5	<0.5	<0.5	<5.0
	12/12/02	<50	<50	<300	0.98	<0.5	<0.5	<0.5	<2.0
	03/17/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/18/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/03	<50	<50	<300	3.2	<0.5	<0.5	<0.5	<2.0
	11/26/03	<50	<50	<300	3	<0.5	<0.5	<0.5	<2.0
	03/05/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/02/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/16/04	<50	96 [6, 15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/29/05	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	08/10/05	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE C-2: **Groundwater Analytical Results (µg/L)**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Well ID	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
	09/29/05	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5
	12/21/05	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5
	03/24/06	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5
	07/28/06	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	09/11/95	150	<200	500	23	<0.3	<0.3	<0.4	NA
	01/08/96	790	90	400	170	1.2	0.6	0.6	NA
	04/04/96	1,100	180	300	320	1.6	1.1	1.2	NA
	07/10/96	1,200	120	300	470	1.5	0.8	0.8	NA
	12/03/96	990	220 [1,2]	<250	350	3.3	1.3	1.3	NA
	03/28/97	440 [2]	<50	<250	190	1.2	0.64	<1.0	NA
	06/13/97	1,300	92 [5]	<250	500	5.5	3.4	2.8	NA
	09/18/97	1,300	150	<250	550	4.9	2.1	2.00	NA
	12/31/97	73 [1,2,3]	<47	<280	110 [1]	1.0 [1]	<0.5	<1.0	NA
	04/13/98	150 [2,3]	<50	<300	520	2.9	<2.5	<5.0	NA
	11/06/98	<50	<50	<300	250	1.7	<1.0	<1.0	<4
	03/19/99	81	<50	<300	250	<1	1.2	<1.0	<4
Dup.	06/24/99	190	<50	<300	360	1.4	2.2	1.0	24
	09/28/99	750 [3,5]	63 [3,5]	<300	280	1.5	<1.0	<1.0	<4
	11/12/99	330 [3]	840 [2]	<300	740	<2.5	<2.5	<2.5	42 [9]
	02/11/00	200 [2]	<50	<300	58	0.73	<0.5	<0.5	4.4 [8]
	05/22/00	240	<50	<300	500	<2.5	<2.5	<2.5	17
	09/06/00	530 [2,3]	<50	<300	190	0.93	0.6	0.57	<0.5 [10]
	12/19/00	960 [3,11]	70 [5]	<300	420	<2.5	<2.5	<2.5	<0.5 [10,12]
	12/19/00	1,200 [3,11]	<50	<300	440	<2.5	<2.5	<2.5	<0.5 [10,12]
	02/21/01	450 [13]	<50	<300	120	<0.5	<0.5	<0.5	<0.5 [10]
	07/10/01	<250	110 [2,13]	<300	620	2.6	2.9	<2.5	<0.5 [8,10]
	12/05/01	180	<50	<300	61	<0.5	<0.5	<0.5	3.8 [14]
	03/08/02	490 [2]	54 [2]	<500	180	<2.5	<2.5	<2.5	<25
	06/13/02	830 [2]	<50	<500	250	<5.0	<5.0	<5.0	<50
Dup.	06/13/02	820 [2]	<56	<560	240	<5.0	<5.0	<5.0	<50
	09/26/02	390 [2]	57	<500	150	2.1	<1.0	<1.0	<10
Dup.	09/26/02	500 [2]	<50 [16]	<500 [16]	200	1.5	<1.0	<1.0	<10
	12/12/02	580	<50	<300	240	1.4	0.56	<0.5	<2.0
Dup.	12/12/02	2,400	<50	<300	680	5.0	2.3	1.4	<2.0
	03/17/03	130 [15]	<50	<300	320 [17]	<0.5	<0.5	<0.5	<0.5 [10]
Dup.	03/17/03	82 [15]	<50	<300	190	0.64 [17]	0.56	0.53	<0.5 [10]
	06/18/03	360 [11, 15]	<50	<300	150	<0.5	<0.5	<0.5	<2.0
Dup.	06/18/03	330 [11, 15]	<50	<300	140	<0.5	<0.5	<0.5	<2.0
	09/03/03	140 [11, 15]	<50	<300	240	1.3	<0.5	<0.5	<2.0

TABLE C-2: **Groundwater Analytical Results (µg/L)**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Well ID	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
Dup.	09/03/03	83 [11, 15]	<50	<300	130	0.58 [17]	<0.5	<0.5	<2.0
	11/26/03	160 [15]	68 [15]	<300	320	0.91 [17]	<0.5	0.53	<2.0
Dup.	11/26/03	120 [15]	<50	<300	210	0.66 [17]	<0.5	<0.5	<2.0
	03/05/04	90 [11]	<50	<300	190	1.1	0.55	0.50 [17]	23 [14,17], <0.5 [10]
Dup.	03/05/04	84 [11]	<50	<300	180	0.81	<0.5	<0.5	21 [14,17], <0.5 [10]
	06/02/04	620 [13]	<50	<300	210	0.55 [17]	<0.5	<0.5	<2.0
Dup.	06/02/04	400 [13]	<50	<300	130	<0.5	<0.5	<0.5	<2.0
	09/03/04	780 [13, 15]	<50	<300	<0.5	1.0 [17]	<0.5	0.57	<2.0
Dup.	09/03/04	370 [13, 15]	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/16/04	840	<50	<300	290	1.3 [17]	0.69	0.75	<2.0
Dup.	12/16/04	670	<50	<300	230	1.3 [17]	<0.5	<0.5	<2.0
	03/29/05	440 [13]	<50	<300	140	0.57	<0.5	<0.5	<2.0
Dup.	03/29/05	540 [13]	<50	<300	170	0.72	<0.5	<0.5	<2.0
	08/10/05	500 [18]	<50	<250	180	<2.5	<2.5	<2.5	<2.5
	09/29/05	360 [18]	59 [20]	<250	160	<5.0	<5.0	<5.0	<5.0
Dup.	09/29/05	420 [18]	<50	<250	150	<5.0	<5.0	<5.0	<5.0
	12/21/05	110	<50	<300	76	<0.5	<0.5	<0.5	<0.5
Dup.	12/21/05	160	<50	<300	76	<0.5	<0.5	<0.5	<0.5
	03/24/06	420	51	<300	120	0.8	<0.7	<0.7	<0.7
Dup.	03/24/06	440	<50	<300	130	<0.7	<0.7	<0.7	<0.7
	08/04/06	560	92 [2]	<300	160	<1.3	4.3	<1.3	<1.3
Dup.	08/04/06	590	100 [2]	<300	150	<1.3	4.5	<1.3	<1.3
MW-5	09/11/95	90	<300	2,500	3.3	<0.3	<0.3	<0.4	NA
	04/04/96	<50	180	520	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	<50	120	1,500	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	200 [1,2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	12/31/97	<50	<47	<280	<0.5	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<47	<280	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/24/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	3.1
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	11/12/99	<50	110 [2,6]	<300	<0.5	<0.5	<0.5	<0.5	5.5 [9]
	02/11/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	05/22/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/06/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0

TABLE C-2: **Groundwater Analytical Results (µg/L)**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Well ID	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/05/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/08/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	06/13/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	09/26/02	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	12/12/02	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/17/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 [10]
	06/18/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	11/26/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	4.1 [14], <0.5 [10]
	03/05/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/02/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/16/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	2.2 [14], <0.5 [10]
	03/29/05	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	08/10/05	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5
Dup.	08/10/05	<50 [19]	<50 [19]	<250	<0.5	<0.5	<0.5	<0.5	<0.5
	09/29/05	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5
	12/21/05	<50	180 [15,22]	<300	<0.5	<0.5	<0.5	<0.5	<0.5
	07/28/06	<50	180	<300	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	11/06/98	120	12,000	1,200	19	0.65	1.8	<0.5	<2
	03/19/99	170	3,800	580	21	0.86	1.5	2.9	<2
	06/24/99	120	1,700 [7]	<300 [7]	18	<0.5	1.0	<0.5	54
	09/28/99	130 [3,5]	820	<300	20	0.51	2.2	<0.5	<2
	11/12/99	150	11,000 [2,6]	3,000 [3,6]	27	<0.5	2.2	<0.5	13 [9]
	02/11/00	270 [2]	2,300	<300	23	0.51	2.7	<0.5	5.8
	05/22/00	350	3,000	<300	18	0.51	<0.5	<0.5	7.7
	09/06/00	190	610	<300	26	<0.5	1.7	<0.5	<0.5 [10]
	12/19/00	130 [3,11]	620	<300	24	<0.5	1.6	<0.5	<2
	02/21/01	120 [13]	440	<300	21	<0.5	0.96	<0.5	<2
	07/10/01	120	560	<300	29	<0.5	0.99	<0.5	<2
	12/12/01	53	550	<300	27	<0.5	1.3	<0.5	<2.0
	03/08/02	160 [2]	640 [2]	<500	30	<0.5	<0.5	<0.5	5.0 [14]
	06/13/02	160 [2]	670 [2]	<500	34	<0.5	<0.5	<0.5	<5.0
	09/26/02	230 [2]	1400 [2]	<500	40	0.64	0.8	<0.5	<5.0
	12/12/02	53	110	<300	43	<0.5	<0.5	<0.5	<2.0
	12/18/02	Monitoring well was destroyed							

TABLE C-2: **Groundwater Analytical Results (µg/L)**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Well ID	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-7	09/06/95	<50	<300	800	<0.4	<0.3	<0.3	<0.4	NA
	01/08/96	<50	410	110	<0.4	<0.3	<0.3	<0.4	NA
	04/04/96	<50	530	340	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	80	840	1,700	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	280 [1,2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	65 [6]	94 [2]	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	<50	100	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	<50	240	<250	<0.5	<0.5	<0.5	<1.0	NA
	12/31/97	<50	53 [2,3]	<280	<0.5	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<48	<290	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	5.3
	06/24/99	73	<50	<300	<0.5	<0.5	<0.5	<0.5	12
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	14
	11/12/99	<50	600 [2,6]	420 [3]	<0.5	<0.5	<0.5	<0.5	15 [9]
	02/11/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	51
	05/22/00	110	53 [2]	<300	<0.5	<0.5	<0.5	<0.5	75
	09/06/00	50 [6]	<50	<300	<0.5	<0.5	<0.5	<0.5	40 [10]
	12/19/00	54 [11]	51 [5]	<300	<0.5	<0.5	<0.5	<0.5	47 [10,12]
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	66 [10]
Dup.	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	60 [10]
	07/10/01	<50	51 [2]	<300	<0.5	<0.5	<0.5	<0.5	76 [10]
Dup.	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	75 [10]
	12/12/01	51	<50	<300	<0.5	<0.5	<0.5	<0.5	98 [14]
Dup.	12/12/01	64	52 [13, 15]	<300	<0.5	<0.5	<0.5	<0.5	96 [14]
	03/08/02	52 [2]	<50	<500	<0.5	<0.5	<0.5	<0.5	24 [14]
	06/13/02	87 [2]	54 [2]	<500	<0.5	<0.5	<0.5	<0.5	51
	09/26/02	83 [2]	84 [2]	<500	<0.5	<0.5	<0.5	<0.5	75 [10]
	12/12/02	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	58 [14]
MW-8A	12/12/01	68	720 [11,15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/08/02	<50	760 [2]	<570	<0.5	<0.5	<0.5	<0.5	<5.0
Dup.	03/08/02	<50	350 [2]	<580	<0.5	<0.5	<0.5	<0.5	<5.0
	06/13/02	<50	570 [2]	<570	<0.5	<0.5	<0.5	<0.5	<5.0
	09/26/02	<50	410 [2]	<500	<0.5	<0.5	<0.5	<0.5	<5.0
	12/12/02	<50	160 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/17/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 [10]
	06/18/03	<50	74 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/03	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	3.0 [14]/<0.5 [10]
	11/26/03	<50	94 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/05/04	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	06/02/04	<50	67 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	09/03/04	<50	86 [15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/16/04	<50	160 [6, 15]	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	03/29/05	<50	53	<300	<0.5	<0.5	<0.5	<0.5	<2.0

TABLE C-2: **Groundwater Analytical Results (µg/L)**
Port of Oakland Harbor Facilities Center
2277 7th Street, Oakland, California

Well ID	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
	08/10/05	<50 [19]	150 [15, 19]	<250	<0.5	<0.5	<0.5	<0.5	<0.5
	09/29/05	<50	66 [21]	<250	<0.5	<0.5	<0.5	<0.5	<0.5
	12/21/05	<50	63 [15,22]	<300	<0.5	<0.5	<0.5	<0.5	<0.5
	03/24/06	<50	71	<300	<0.5	<0.5	<0.5	<0.5	<0.5
	07/28/06	<50	70 [15]	<300	<0.5	<0.5	<0.5	<0.5	<0.5

TABLE C-2: **Groundwater Analytical Results (µg/L)**
Port of Oakland Harbor Facilities Center
2277 and 2225 7th Street, Oakland, California

Notes:
Data prior to December 2005 from *3rd Quarterly Groundwater Monitoring, and Product Recovery Report* dated 8 November 2005, by Innovative Technical Solutions, Inc.
µg/L = micrograms per liter
Dup. = duplicate sample
NA = not analyzed
TPHg = total petroleum hydrocarbons in gasoline range.
TPHd = total petroleum hydrocarbons in diesel range.
TPHmo = total petroleum hydrocarbons in motor oil range.
MTBE = methyl-tert butyl ether

[1]Analyte found in the associated blank as well as in the sample.
[2]Hydrocarbons present do not match profile of laboratory standard.
[3]Low-boiling-point/lighter hydrocarbons are present in the sample.
[4]Chromatographic pattern matches known laboratory contaminant.
[5]Hydrocarbons are present in the requested fuel quantification range, but do not resemble pattern of available fuel standard.
[6]High-boiling-point/heavier hydrocarbons are present in sample.
[7]Sample did not pass laboratory QA/QC and may be biased low.
[8]Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor or two.
[9]Trip blank contained MTBE at a concentration of 4.2 µg/L.
[10]MTBE detections confirmed by EPA Test Method 8260. 8260 results displayed.
[11]Sample exhibits unknown single peak or peaks.
[12]EPA Method 8260 confirmation analyzed past holding time.
[13]Lighter hydrocarbons contributed to the quantitation.
[14]MTBE results from EPA Test Method 8021B.
[15]Sample exhibits fuel pattern that does not resemble standard.
[16]Sample extracted out of hold time.
[17]Presence confirmed, but Relative Percent Difference (RPD) between columns exceeds 40%.
[18]Unmodified or weakly modified gasoline is significant.
[19]Liquid sample contains greater than ~1 vol.% sediment.
[20]Gasoline compounds are significant.
[21]Diesel range compounds are significant; no recognizable pattern.
[22]Heavier hydrocarbons contributed to the quantitation.