Re 10

PORT OF OAKLAND

ENVIRONMENTAL HEALTH SERVICES
APR 28 2005
RECEIVED

April 21, 2005

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

RE: 1st Quarter 2005, Quarterly Groundwater Monitoring and Product Recovery Report – 2277 Seventh Street, Oakland, CA

Dear Mr. Chan:

Please find enclosed the subject Port of Oakland (Port) groundwater monitoring and product recovery report for 2277 Seventh Street in Oakland, California. This report is being submitted in accordance with Alameda County Health Care Services Agency (ACHCSA) requirements.

The next monitoring event will be performed during the second quarter of 2005, and will be in accordance with the aforementioned requirements. If you have any questions or comments regarding the results, please contact me at (510) 627-1134.

Sincerely,

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

Enclosure: noted

Cc (w encl.): Michele Heffes

Cc (w/o encl.): Jeff Jones
Rogerio Leong (Innovative Technical Solutions, Inc.)
Rachel B. Hess (Innovative Technical Solutions, Inc.)
Jeffrey D. Hess (Innovative Technical Solutions, Inc.)

Innovative Technical Solutions, Inc.

April 18, 2005

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

First Quarter of 2005 Quarterly Groundwater Monitoring and Product Monitoring Report
2277 Seventh Street
Oakland, California

Dear Mr. Rubin:

Innovative Technical Solutions, Inc. (ITSI) is pleased to submit this report to the Port of Oakland (Port) for the groundwater monitoring and sampling program at 2277 7th Street in Oakland, California (Figure 1). This report summarizes the quarterly monitoring of four groundwater monitoring wells (MW-2, MW-4, MW-5, and MW-8A) at 2277 7th Street. The locations of these wells are shown on Figure 2.

This report also encompasses the operation of the product recovery system at the 2277 7th Street site. The operation of the active product recovery system was stopped since April 2003 when a section of the conveyance system was removed for construction upgrades at the site. Collection of groundwater samples from monitoring wells MW-1 and MW-3 was not performed this quarter due to the presence of separate-phase petroleum hydrocarbons.

BACKGROUND

Monitoring wells were installed to assess groundwater quality following the removal of underground storage tanks (USTs) from the site in September 1993. The former USTs, located on the south side of Building C-401, consisted of two 10,000-gallon gasoline tanks (CF-17 and CF-18), one 500-gallon oil tank (CF-19), and one 300-gallon waste oil tank (CF-20). On April 20, 2000, Harding ESE (Harding) performed oversight of the abandonment of monitoring well MW-8, located at the northern edge of the property. This monitoring well was properly destroyed[1] to accommodate the construction of a railroad track associated with the Port of Oakland Vision 2000 improvements. All surface structures, including the well, needed to be removed.

Harding monitored MW-8 from 1998 until it was abandoned. During this time, no groundwater samples were collected because the well contained a thick, viscous, tar-like petroleum product. After the railroad construction was completed, the Port had a replacement well, MW-8A, installed in the same vicinity on October 2, 2001 by ITSI. MW-8A has been sampled since the Fourth quarter of 2001, and no separate phase petroleum has been detected.

[1] - Destruction and abandonment of all monitoring wells were performed in accordance with Alameda County Public Works Agency Guidelines

2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598
(925) 946-3100
fax (925) 256-8998
www.itsi.com

Site preparation activities for the construction of a new Harbor Facilities Center (HFC) were initiated in November 2002. The eastern side of Building C-401 was demolished, and the asphalt pavement east of the building was removed in December 2002. A concrete ring was placed around each well for protection and prevention from damage by heavy equipment during site demolition. Two monitoring wells (MW-6 and MW-7) were properly destroyed to facilitate the construction plans at the site, and six monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-8A) still remain onsite. The surface grade was raised approximately 2 feet in the vicinity of wells MW-2 and MW-3 during the first quarter of 2003.

On April 16, 2003, ITSI on behalf of the Port oversaw the removal of a 100-foot section of the product recovery conveyance system (refer to Figure 2). The Port contracted Dillard Environmental Services (Dillard) to perform the work. The section of product recovery system was removed to minimize interference with site development. A new product removal system will be installed after development activities are completed. The conveyance system consisted of a PVC conduit pipe containing the pneumatic and product recovery lines. These lines connected the system control box and the recovery tank to the skimmer pump installed in well MW-3. Portions of the surface concrete pieces and asphalt from the trench line were appropriately excavated, removed and stockpiled onsite. Sections of the removed conduit pipes and product line were appropriately disposed of and transported offsite by Dillard as non-RCRA hazardous solid waste material under the Uniform Hazardous Waste Manifest.

Monitoring wells were previously installed at the adjacent 2225 7th Street site to assess groundwater quality following the removal of USTs in 1989 and 1992. The 2225 7th Street site is also currently under modification for the construction of the future HFC. Buildings C-406 and C-407 were demolished and the entire surrounding asphalt pavement was removed in November 2002. The three former monitoring wells (MW-1, MW-2, and MW-3) located at the site were properly destroyed to facilitate the Port's construction plans.

On November 17 and 18, 2003, ITSI personnel raised monitoring wells MW-2 and MW-3 to match the asphalt surface elevation of the future HFC parking lot. New traffic rated well boxes were placed on the two wells and the elevation of the top of each well box was set with a laser level instrument. The elevations of the wells were subsequently surveyed on November 26, 2003 to a relative Port of Oakland datum by PLS Surveys, Inc. (PLS).

GROUNDWATER MONITORING

ITSI personnel performed groundwater monitoring and sampling at the 2277 7th Street site on March 29, 2005. Prior to purging and sampling the monitoring wells, the depth to groundwater below the top of the well casing was measured with a water level indicator. After measuring the depth to water, the wells were purged using a disposable bailer. Conductivity, pH, and temperature were monitored periodically during purging. Collection of groundwater samples was performed after removing a minimum of three well-casing volumes of water and upon stabilization of three consecutive measurements of conductivity, pH, and temperature. The depths to groundwater and field parameter measurements were recorded on the respective Monitoring Well Water Level Measurement and Monitoring Well Purging and Sampling forms included as Appendix A. The purge water was stored onsite in a 55-gallon DOT drum. Dillard Environmental Services Company, Inc. (Dillard) periodically removes and appropriately disposes of the purge water.

ITSI collected groundwater samples from the monitoring wells using Teflon disposable bailers and then transferred the groundwater into laboratory-provided containers. A duplicate sample was collected for quality assurance. Sample containers were labeled with the sample number, date and time of collection, and sampler's initials, and then placed in an insulated cooler with ice. The samples were accompanied by a laboratory provided trip blank and delivered under chain-of-custody protocol to Curtis & Tompkins in Berkeley, a California certified analytical laboratory.

The first quarter 2005 groundwater monitoring event at 2277 7th Street involved monitoring and sampling of monitoring wells MW-2, MW-4, MW-5, and MW-8A, and monitoring of the free-phase petroleum product in wells MW-1 and MW-3. Groundwater level measurements are summarized in Table 1 and product thickness measurements are summarized on Table 2. The groundwater gradient direction is presented on Figure 3. Copies of the respective Monitoring Well Water Level Measurement and Monitoring Well Purging and Sampling forms are included in Appendix A.

LABORATORY ANALYSIS OF GROUNDWATER SAMPLES

Curtis and Tompkins of Berkeley, California performed the chemical analyses of the groundwater samples using the following analytical methods:

- Total petroleum hydrocarbons as gasoline (TPHg) in accordance with EPA Method 8015B.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl t-butyl ether (MTBE) in accordance with EPA Method 8021B with confirmation of MTBE by EPA Method 8260B.
- TPH as diesel (TPHd) in accordance with EPA Method 8015B following a silica-gel cleanup procedure.
- TPH as motor oil (TPHmo) in accordance with EPA Method 8015B following a silica-gel cleanup procedure.

The laboratory results for 2277 7th Street are summarized in Table 3 and are shown on Figure 4. Copies of the laboratory results and chain-of-custody forms are provided in Appendix B.

FINDINGS

Groundwater measurements were conducted on March 29, 2005. The water levels are presented in Table 1. The groundwater elevation contour map is presented on Figure 3. According to these contours, the groundwater appears to be flowing towards the north-northeast. The groundwater flow direction observed during March 2005 is consistent with the historic flow direction reported in the previous reports.

Results of the March 29, 2005 groundwater sampling at 2277 7th Street are summarized below:

- TPHg was detected in one well at a concentration of 440 µg/L in MW-4. This result was classified as lighter hydrocarbons contributed to the quantitation.
- Benzene was detected in one well at a concentration of 140 µg/L in MW-4.
- Toluene was detected in one well at a concentration of 0.57 µg/L in MW-4.
- Ethylbenzene was not detected above the reporting limit in any of the wells sampled this quarter.

- Total xylenes was not detected above the reporting limit in any of the wells sampled this quarter.
- MTBE was not detected above the reporting limit in any of the wells sampled this quarter.
- TPHd was detected in one well at a concentration of 53 µg/L in well MW-8A.
- TPHmo was not detected above the reporting limit in any of the wells sampled this quarter.

QUALITY ASSURANCE AND QUALITY CONTROL

A duplicate sample was collected simultaneously from monitoring well MW-4 and labeled as MW-4D at 2277 7th Street on March 29, 2005 and submitted to the analytical laboratory to evaluate the precision of the analytical results. Precision is an indication of the reproducibility of results and is assessed by calculating the RPD between the primary sample result (X_1) and the duplicate sample result (X_2), as follows:

$$RPD = \frac{X_1 - X_2}{(X_1 + X_2)/2} \times 100$$

For example: A low RPD indicates high precision; a RPD of 67 percent indicates the two results differ by a factor of two. As shown below, the RPD was calculated for chemical compounds detected above the reporting limit in either the duplicate or primary sample.

2277 7th St.
MW-4
03/29/05

ANALYTE	X_1	X_2	RPD
MTBE	<2.0	<2.0	--
B	140	170	19.35%
T	0.57	0.72	23.26%
E	<0.50	<0.50	--
X	<0.50	<0.50	--
TPHd	<50	<50	--
TPHg	440	540	20.41%

- The relative percent difference between the analytical results from MW-4 and its duplicate sample MW-4D was 19.35% for benzene, 23.26% for toluene, and 20.41% for TPHg. The overall RPD values indicate that the results from the sample and the duplicate analysis are in agreement.

PRODUCT RECOVERY SYSTEM AT 2277 7TH STREET

Until April 16, 2003 the product recovery system at 2277 7th Street consisted of an air-actuated (active) product skimmer in MW-3. The product in MW-3 was discharged to a product recovery 1,000-gallon tank that Foss Environmental Services Company, Inc. (former contractor) emptied at various times throughout a quarter. A passive skimmer was installed in MW-1, and it was subsequently removed on May 22, 2000 because no measurable product appeared in the well. The passive skimmer was reinstalled in MW-1 after free product was detected in the well on September 6, 2000. The active and passive product recovery systems are currently interrupted with both skimmers removed from the wells due to activities related to the construction of the new HFC at the site.

The Port recently replaced the former free product recovery system with the installation of two mitigation systems at the site. Overaa Construction (Overaa) completed the installation of a soil gas venting system beneath the new HFC's building slab, and Beliveau Engineering Contractors, Inc., subcontracted to Dillard, has almost completed a new recovery system designed to recover the product floating on the groundwater beneath the site.

The free-phase petroleum product has been monitored in wells MW-1 and MW-3 on a quarterly basis in conjunction with every quarterly groundwater sampling event. Free-phase petroleum product was measured at 0.17 feet and 0.84 feet in MW-1 and MW-3, respectively, this quarter. Table 2 presents a summary of the product thickness data. A summary of the activities during the past quarters associated with the operation and maintenance of the product recovery system is presented in Table 4.

We appreciate the opportunity to present this report and trust that this document meets with your approval. Please do not hesitate to contact us at (925) 946-3105 with any questions or comments.

Sincerely yours,

INNOVATIVE TECHNICAL SOLUTIONS, INC.

Rogerio Leong
Project Geologist

Rachel B. Hess
Project Manager

Jeffrey D. Hess, R.G.
Senior Geologist

REGISTERED GEOLOGIST
JEFFREY D. HESS
No. 4776
Exp. 4-2006
STATE OF CALIFORNIA

Attachments:

Table 1 – Groundwater Elevations Data, 2277 7th Street
Table 2 – Summary of Product Removal and Product Thickness, 2277 7th Street
Table 3 – Groundwater Sample Results, 2277 7th Street
Table 4 – Summary of Operation and Maintenance Activities

Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Groundwater Elevations, 2277 7th Street, March 29, 2005
Figure 4 – Groundwater Sample Results, 2277 7th Street, March 29, 2005

Appendix A – Monitoring Well Water Level Measurement Form and
Monitoring Well Purging and Sampling Form
Appendix B - Laboratory Reports
Appendix C – Daily Field Activity Report

Table 1
Groundwater Elevations Data
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	14.14	4/18/2000	8.21	5.93
		5/22/2000	8.17	5.97
		7/10/2001	10.00	4.14
		12/12/2001	NA	NA
		3/8/2002	NA	NA
		6/13/2002	NA	NA
		9/26/2002	NA	NA
		12/12/2002	NA	NA
		3/17/2003	NA	NA
		6/18/2003	NA	NA
		9/3/2003	NA	NA
		11/26/2003	NA	NA
		3/5/2004	NA	NA
		6/2/2004	NA	NA
		9/3/2004	NA	NA
		12/16/2004	NA	NA
		3/29/2005	NA	NA
MW-2	14.36	12/31/1997	8.73	5.63
		4/13/1998	7.72	6.64
		11/6/1998	9.43	4.93
		3/19/1999	8.21	6.15
		6/24/1999	8.91	5.45
		9/28/1999	9.42	4.94
		11/12/1999	9.63	4.73
		2/11/2000	8.54	5.82
		5/22/2000	8.10	6.26
		9/6/2000	8.79	5.57
		12/19/2000	9.19	5.17
		2/21/2001	7.99	6.37
		4/3/2001	8.23	6.13
		7/10/2001	8.70	5.66
		12/12/2001	8.16	6.20
		1/22/2002	7.64	6.72
		3/8/2002	8.31	6.05
		6/13/2002	8.64	5.72
		9/26/2002	8.95	5.41
		12/12/2002	9.17	5.19
		3/17/2003	7.77	6.59
		6/18/2003	8.44	5.92
		9/3/2003	8.98	5.38
	17.21	11/26/2003	12.01	5.20
		3/5/2004	9.75	7.46
		6/2/2004	11.22	5.99
		9/3/2004	11.62	5.59
		12/16/2004	10.80	6.41
		3/29/2005	9.67	7.54

Table 1
Groundwater Elevations Data
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-4	13.15	12/31/1997	7.09	6.06
		4/13/1998	7.71	5.44
		11/6/1998	8.69	4.46
		3/19/1999	8.00	5.15
		6/24/1999	8.45	4.70
		9/28/1999	8.73	4.42
		11/12/1999	8.83	4.32
		2/11/2000	7.71	5.44
		5/22/2000	8.09	5.06
		9/6/2000	8.32	4.83
		12/19/2000	8.47	4.68
		2/21/2001	7.51	5.64
		4/3/2001	8.13	5.02
		7/10/2001	8.12	5.03
		12/12/2001	7.65	5.50
		1/22/2002	7.60	5.55
		3/8/2002	7.96	5.19
		6/13/2002	8.20	4.95
		9/26/2002	8.21	4.94
		12/12/2002	8.38	4.77
		3/17/2003	7.72	5.43
		6/18/2003	8.02	5.13
		9/3/2003	8.29	4.86
		11/26/2003	8.69	4.46
		3/5/2004	7.45	5.70
		6/2/2004	8.25	4.90
		9/3/2004	8.31	4.84
		12/16/2004	7.96	5.19
		3/29/2005	7.11	6.04

Table 1
Groundwater Elevations Data
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-5	13.49	12/31/1997	6.38	7.11
		4/13/1998	5.56	7.93
		11/6/1998	6.59	6.90
		3/19/1999	6.20	7.29
		6/24/1999	6.73	6.76
		9/28/1999	6.91	6.58
		11/12/1999	7.06	6.43
		2/11/2000	7.00	6.49
		5/22/2000	6.21	7.28
		9/6/2000	6.56	6.93
		12/19/2000	6.68	6.81
		2/21/2001	6.08	7.41
		4/3/2001	6.38	7.11
		7/10/2001	6.58	6.91
		12/12/2001	6.40	7.09
		1/22/2002	6.10	7.39
		3/8/2002	6.10	7.39
		6/13/2002	6.31	7.18
		9/26/2002	6.60	6.89
		12/12/2002	6.75	6.74
		3/17/2003	5.73	7.76
		6/18/2003	6.10	7.39
		9/3/2003	6.50	6.99
		11/26/2003	6.70	6.79
		3/5/2004	5.70	7.79
		6/2/2004	6.27	7.22
		9/3/2004	6.61	6.88
		12/16/2004	6.02	7.47
		3/29/2005	5.25	8.24

Table 1
Groundwater Elevations Data
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-6	14.00	6/24/1999	8.61	5.39
		9/28/1999	9.26	4.74
		11/12/1999	8.01	5.99
		2/11/2000	7.20	6.80
		5/22/2000	7.13	6.87
		9/6/2000	7.12	6.88
		12/19/2000	7.57	6.43
		2/21/2001	7.50	6.50
		4/3/2001	6.88	7.12
		7/10/2001	7.15	6.85
		12/12/2001	9.50	4.50
		1/22/2002	6.69	7.31
		3/8/2002	6.98	7.02
		6/13/2002	7.45	6.55
		9/26/2002	7.95	6.05
		12/12/2002	7.71	6.29
		12/18/2002	Monitoring well was destroyed	
MW-7	14.35	12/31/1997	8.88	5.47
		4/13/1998	7.86	6.49
		11/6/1998	9.55	4.80
		3/19/1999	8.41	5.94
		6/24/1999	9.08	5.27
		9/28/1999	9.60	4.75
		11/12/1999	9.77	4.58
		2/11/2000	8.67	5.68
		5/22/2000	8.43	5.92
		9/6/2000	8.88	5.47
		12/19/2000	9.21	5.14
		2/21/2001	8.13	6.22
		4/3/2001	8.45	5.90
		7/10/2001	8.87	5.48
		12/12/2001	8.39	5.96
		1/22/2002	7.99	6.36
		3/8/2002	8.51	5.84
		6/13/2002	8.90	5.45
		9/26/2002	9.00	5.35
		12/12/2002	9.28	5.07
		12/18/2002	Monitoring well was destroyed	

Table 1
Groundwater Elevations Data
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-8A	12.94	12/12/2001	7.20	NA
		1/22/2002	7.20	5.74
		3/8/2002	7.70	5.24
		6/13/2002	7.72	5.22
		9/26/2002	7.91	5.03
		12/12/2002	8.15	4.79
		3/17/2003	7.28	5.66
		6/18/2003	7.72	5.22
		9/3/2003	8.18	4.76
		11/26/2003	8.55	4.39
		3/5/2004	6.92	6.02
		6/2/2004	7.92	5.02
		9/3/2004	8.16	4.78
		12/16/2004	7.62	5.32
		3/29/2005	6.63	6.31

[1] Elevation data relative to Port of Oakland datum; well surveys performed on September 12, 1996, February 4, 1998, and November 26, 2003, by PLS Surveys.

- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc.
- Monitoring MW-8 was abandoned on April 20, 2000 in order to construct a railroad track associated with the Port of Oakland's New Harbor Facility.

NA = Not available

Table 2
Summary of Product Removal and Product Thickness
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation of Top of Casing (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method [2]
MW-1	14.14	12/31/1997	-	-	-	0.2	passive skimmer
		1/29/1998	-	-	-	0.2	passive skimmer
		3/2/1998	-	-	-	0.018	passive skimmer
		5/11/1998	-	-	-	0.02	passive skimmer
		6/15/1998	-	-	-	0.2	passive skimmer
		11/6/1998	9.34	10.3	0.96	1.2	passive skimmer
		1/7/1999	-	-	-	0.2	passive skimmer
		2/11/1999	-	-	-	0.2	passive skimmer
		3/12/1999	-	-	-	0.2	passive skimmer
		3/19/1999	NM	8.45	>0.01	0.07	passive skimmer
		4/14/1999	-	-	-	0.2	passive skimmer
		5/11/1999	-	-	-	0.2	passive skimmer
		6/24/1999	8.88	9.63	0.8	0.2	passive skimmer
		7/15/1999	--	--	--	0.2	passive skimmer
		7/16/1999	--	--	--	0.2	passive skimmer
		8/27/1999	--	--	--	0.2	passive skimmer
		9/28/1999	--	--	0.65	0.2	passive skimmer
		10/5/1999	--	--	--	0.2	passive skimmer
		11/12/1999	9.38	10.27	0.89	0.2	passive skimmer
		12/21/1999	--	--	--	0.2	passive skimmer
		1/26/2000	--	--	--	0.2	passive skimmer
		1/28/2000	9.22	9.24	0.02	--	passive skimmer
		2/11/2000	--	7.00	0.00	0.2	passive skimmer
		3/1/2000	--	7.45	0.00	0.0	passive skimmer
		3/21/2000	NM	7.34	0.00	0.0	passive skimmer
		4/18/2000	NM	8.21	0.00	0.0	passive skimmer
		5/22/2000 [3]	NM	8.51	0.00	0 0	passive skimmer
		9/6/2000 [4]	8.52	9.24	0.72	0.0	passive skimmer
		9/21/2000	8.71	9.26	0.55	0.0	passive skimmer
		10/11/2000	--	--	--	0.0	passive skimmer
		11/30/2000	--	--	--	0.0	passive skimmer
		12/19/2000	9.5	9.89	0.39	0.0	passive skimmer
		2/22/2001	8.3	8.4	0.13	0.0	passive skimmer
		4/3/2001	8.3	8.55	0.25	0.0	passive skimmer
		4/23/2001	--	--	--	0.0	passive skimmer
		5/11/2001	--	--	--	0.0	passive skimmer
		5/30/2001	8.5	8.9	0.40	0.0	passive skimmer
		6/14/2001	--	--	--	0.0	passive skimmer
		7/10/2001	8.8	10	1.20	0.0	passive skimmer
		12/12/2001	NA	NA	NA	1.0	passive skimmer
		3/8/2002	NA	NA	NA	NA	passive skimmer
		4/3/2002	8.3	9.2	0.90	--	passive skimmer
		4/23/2002	8.5	9.6	1.10	--	passive skimmer
		5/10/2002	8.7	9.6	0.90	--	passive skimmer
		5/24/2002	8 8	10	1.20	--	passive skimmer

Table 2
Summary of Product Removal and Product Thickness
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation of Top of Casing (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method [2]
MW-1 (Cont'd)	14.14	6/13/2002	8.7	10	1.30	--	passive skimmer
		6/21/2002	8.8	10	1.20	--	passive skimmer
		7/5/2002	8.5	9.4	0.90	0.2	passive skimmer
		7/19/2002	8.6	9.6	1.00	0.2	passive skimmer
		7/30/2002	8.5	9.3	0.80	0.2	passive skimmer
		8/14/2002	8.5	9.3	0.80	0.2	passive skimmer
		9/13/2002	8.8	9.6	0.80	0.2	passive skimmer
		9/26/2002	8.6	9.5	0.90	0.2	passive skimmer
		10/14/2002	9.0	10.1	1.10	0.2	passive skimmer
		11/4/2002	9.22	10.12	0.90	0.2	passive skimmer
		11/21/2002	8 48	8.86	0.38	0.2	passive skimmer
		12/6/2002	8.85	9.38	0.53	0.0	passive skimmer
		12/18/2002	8.05	8.26	0.21	0.2	passive skimmer
		12/30/2002	7.61	7.63	0.02	<0.1	passive skimmer
		1/2/2003	7.36	7.36	sheen	<0.1	passive skimmer
		1/3/2003	7.35	7.35	sheen	<0.1	passive skimmer
		1/14/2003	7.35	7.36	sheen	<0.1	passive skimmer
		1/30/2003	7.75	7.81	0.06	<0.1	passive skimmer
		2/18/2003	7.81	8.35	0.54	<0.1	passive skimmer
		2/26/2003	7.72	8.62	0.90	<0.1	passive skimmer
		3/13/2003	7.80	8.11	0.89	0.2	passive skimmer
		3/17/2003	7.61	8.88	1.27	0.2	passive skimmer
		4/16/2003	7.42	8.71	1.29	<0.2	passive skimmer
		6/18/2003	8.20	9.44	1.24	<0.2	passive skimmer
		9/3/2003	8.50	9.40	0.90	--	[8]
		11/26/2003	8.85	9.25	0.40	--	[8]
		3/5/2004	6.76	7.07	0.31	--	[8]
		6/2/2004	8.26	8.71	0.45	--	[8]
		9/3/2004	8.70	9.11	0.41	--	[8]
		12/16/2004	7.75	7.92	0.17	--	[8]
		3/29/2005	6.21	6.38	0.17	--	[8]
MW-3	14.22	12/31/1997	-	-	-	30	active skimmer
		1/29/1998	-	-	-	10	active skimmer
		4/13/1998	-	-	-	240	active skimmer
		5/11/1998	-	-	-	1,545	active skimmer
		6/15/1998	-	-	-	1,950	active skimmer
		11/6/1998	8.84	9.94	1.1	500	active skimmer
		1/5/1999	-	-	-	275[2]	active skimmer
		1/14/1999	-	-	-	400[2]	active skimmer
		2/3/1999	-	-	-	400[2]	active skimmer
		2/26/1999	-	-	-	570[2]	active skimmer
		3/19/1999	7.52	8.05	0.5	211	active skimmer
		6/16/1999	-	-	-	310	active skimmer
		6/24/1999	8.38	8.56	0.2	--	active skimmer
		7/14/1999	--	--	--	50[2]	active skimmer

Table 2
Summary of Product Removal and Product Thickness
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation of Top of Casing (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method [2]
MW-3	14.22	9/28/1999	--	--	0.2	--	active skimmer
(Cont'd)		10/29/1999	--	--	--	125[2]	active skimmer
		11/12/1999	9.14	9.23	0.09	--	active skimmer
		1/28/2000	--	--	--	135	active skimmer
		2/11/2000	7.97	8.37	0.40	40	active skimmer
		3/1/2000	6.59	7.24	0.65	0.0	active skimmer
		3/21/2000	6.50	6.56	0.06	35	active skimmer
		4/18/2000	--	--	--	--	active skimmer
		5/22/2000	7.51	8.05	0.54	40	active skimmer
		6/26/2000	7.82	8.2	0.38	90	active skimmer
		7/25/2000	7.90	8.92	1 02	20	active skimmer
		8/31/2000	8.15	9.5	1.35	30	active skimmer
		9/6/2000	8.21	9.42	1.21	--	active skimmer
		9/21/2000	8.30	8.88	0.58	115	active skimmer
		10/11/2000	--	--	--	170	active skimmer
		11/30/2000	--	--	--	105	active skimmer
		12/19/2000	8.60	9.65	1.05	10	active skimmer
		2/22/2001	6.36	8.15	1.79	--	active skimmer
		4/3/2001	7.48	8.88	1.40	--	active skimmer
		4/23/2001	7.85	9.1	1.25	--	active skimmer
		5/11/2001	--	--	--	--	active skimmer
		5/30/2001	7.75	9.1	1.35	--	active skimmer
		6/14/2001	--	--	--	--	active skimmer
		7/10/2001	8.10	9.6	1.50	--	active skimmer
		12/12/2001	NA	NA	NA	1,000[5]	active skimmer
		3/8/2002	7.80	8	0.20	1,000[5]	active skimmer
		4/3/2002	7.60	7.7	0.10	--	active skimmer
		4/23/2002	7.90	8.4	0.50	--	active skimmer
		4/25/2002	7.90	8.8	0.90	--	active skimmer
		5/10/2002	8.10	8.2	0.10	--	active skimmer
		5/24/2002	8.05	8.1	0.05	--	active skimmer
		6/13/2002	8.10	8.7	0.60	1,000[5]	active skimmer
		7/5/2002	8.10	8.95	0.85	--	active skimmer
		7/19/2002	8.10	8.9	0.80	--	active skimmer
		7/30/2002	8.10	8.9	0.80	--	active skimmer
		8/14/2002	8.10	8.9	0.80	--	active skimmer
		9/13/2002	8.30	9.3	1.00	--	active skimmer
		9/26/2002	8.30	9.0	0.70	--	active skimmer
		10/14/2002	8.60	9.5	0.90	--	active skimmer
		11/4/2002	8.75	9.99	1.24	--	active skimmer
		11/21/2002	8.59	11.29	2.70	150[6]	active skimmer
		12/6/2002	8.56	9.3	0.74	150[6]	active skimmer
		12/18/2002	7.35	8.43	1.08	25[6]	active skimmer

Table 2
Summary of Product Removal and Product Thickness
Port of Oakland, 2277 7th Street, Oakland, California

Well ID	Elevation of Top of Casing (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method [2]
MW-3 (Cont'd)	14.22	12/30/2002	6.50	7.15	0.65	25 [6]	active skimmer
		1/2/2003	6.20	6.20	sheen	--	active skimmer
		1/3/2003	6.21	6.21	sheen	--	active skimmer
		1/14/2003	6.20	6.21	0.01	--	active skimmer
		1/30/2003	6.81	6.85	0.04	--	active skimmer
		2/18/2002	7.09	7.15	0.06	--	active skimmer
		2/26/2003	7.04	7.11	0.07	--	active skimmer
		3/13/2003	7.22	8.11	0.89	--	active skimmer
		3/17/2003	7.15	7.50	0.35	5 [6]	active skimmer
		4/16/2003	7.27	8.25	0.98	--	active skimmer
		6/18/2003	7.78	9.00	1.22	--	[7]
		9/3/2003	8.31	9.96	1.65	--	[7]
	16.18 [9]	11/26/2003	10.79	12.85	2.06	--	[7]
		3/5/2004	8.39	9.85	1.46	--	[7]
		6/2/2004	10.03	11.35	1.32	--	[7]
		9/3/2004	10.46	12.06	1.59	--	[7]
		12/16/2004	9.41	10.38	0.97	--	[7]
		3/29/2005	8.17	9.01	0.84	--	--
MW-6	14.00	13/31/97	-	-	-	0.0014	passive skimmer
		1/29/1998	-	-	-	0.0014	passive skimmer
		3/2/1998	-	-	-	0.0014	passive skimmer
		11/6/1998	NM	9.62	>0.01	0.0	passive skimmer
		3/19/1999	NM	7.37	>0.01	0.0	passive skimmer
MW-8 [1]	12.94	12/31/1997	8.49	8.82	0.33	4.38	-
		11/6/1998	9.25	10.3	1.1	3.48	-

- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc
- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product*
- Product removal volumes from 11/6/98 on represent total product removed during that reporting period.

[1] Free product in well is too viscous to allow product thickness or groundwater level measurements

[2] Product removal totals for MW-3 are estimated from documentation of product removal from the treatment system performed by Performance Excavators, Inc.

[3] The passive skimmer was removed from MW-1 on 5/22/00.

[4] The passive skimmer replaced MW-1 on 9/6/00.

[5] Removal total is the volume of both product and wastewater removed from the treatment system by Foss Environmental Services Company, Inc.

[6] Product removed is based on volume measured in the 1,000-gallon holding poly-tank.

[7] The active skimmer was removed from MW-3 on 04/16/2003

[8] Passive skimmer was removed from MW-1

[9] Elevation data relative to Port of Oakland datum; well surveys performed on November 26, 2003, by PLS Survey.

NM - Well checked for free product but not able to detect a measurable amount in the well.

Shaded area indicates data from this reporting period.

NA - Not Available

Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
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
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	06/24/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	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	<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

Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)
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	<1	<4
	03/19/99	81	<50	<300	250	<1	1.2	<1	<4
Dup.	06/24/99	190	<50	<300	360	1.4	2.2	1	24
	09/28/99	750 [3,5]	63 [3,5]	<300	280	1.5	<1	<1	<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
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

Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)
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
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	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
	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
	05/22/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/06/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	12/05/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	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

Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/1)	TPHmo (µg/1)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/1)	MTBE (µg/1)
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							
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]
	12/18/02	Monitoring well was destroyed							

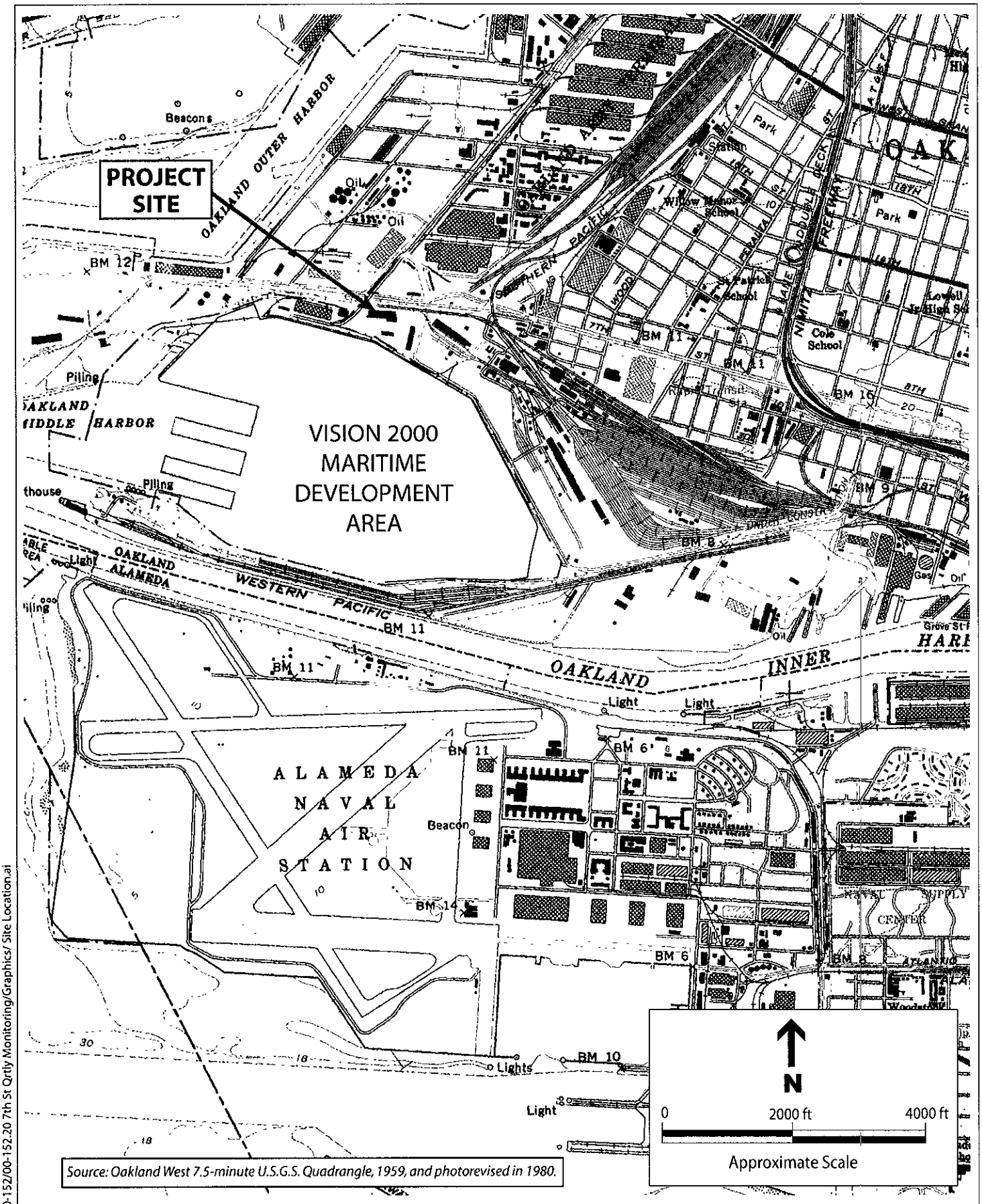
Table 3
Groundwater Sample Results
Port of Oakland, 2277 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
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

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 which does not resemble standard
16 Sample extracted out of hold time
- Data from December 1997 through April 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc.
-Data prior to December 1997 taken from *Groundwater Analytical Results, Quarterly Groundwater Monitoring Report: Third Quarter 1997, Building C-401, 2277 7th Street, Oakland, CA, dated October 24, 1997, by Uribe and Associate*
17 Presence confirmed, but Relative Percent Difference (RPD) between columns exceeds 40%
NA Not Analyzed.

Table 4
Summary of Operation and Maintenance Activities
Port of Oakland, 2277 7th Street, Oakland, California

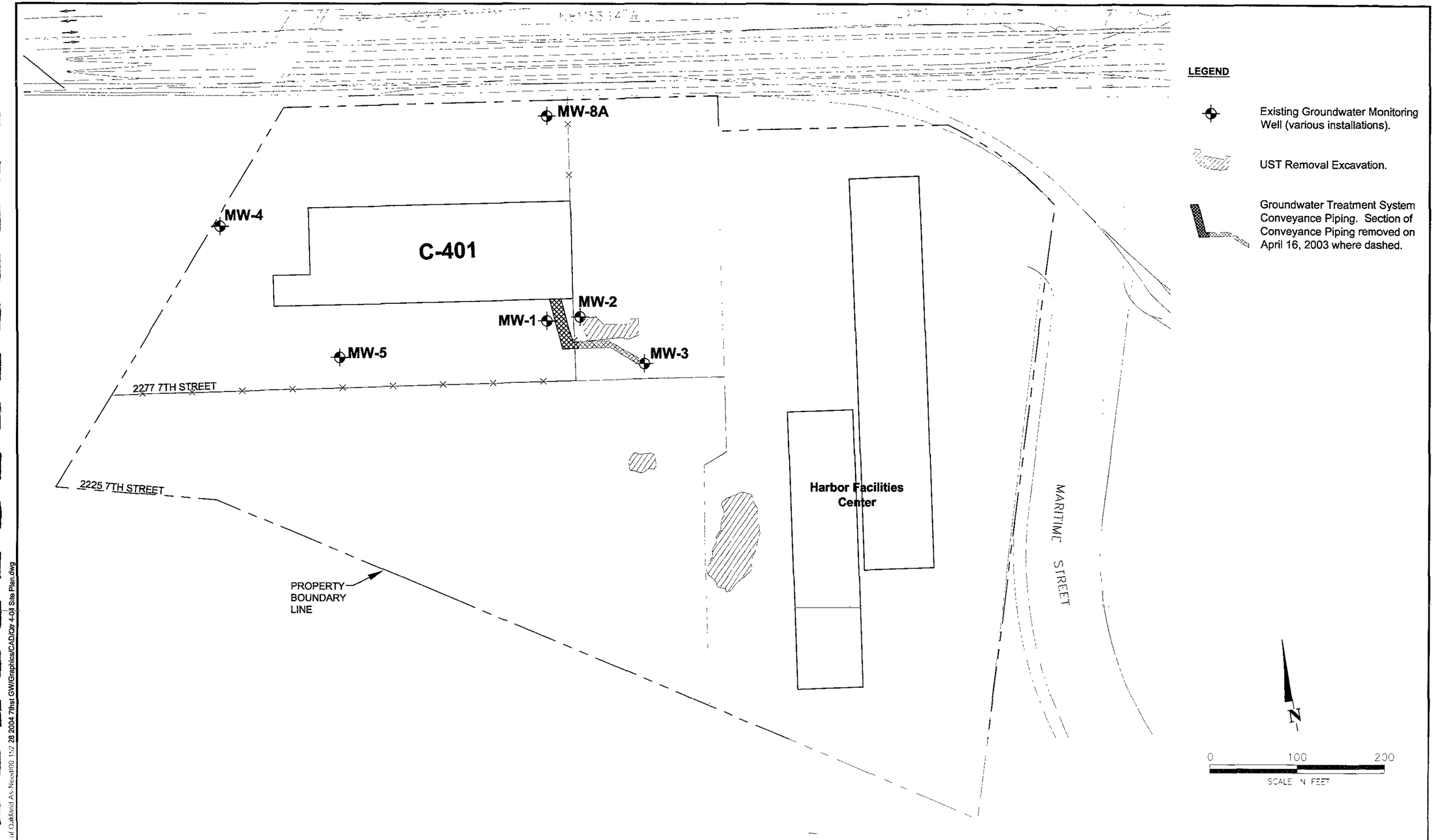
Date	System Status	Comments
7/5/2002	Off	System is turned off and is in the process of being moved to new location
7/19/2002	Off	System is moved to new location but is not hooked up to electricity
7/30/2002	Off	System is moved to new location but is not hooked up to electricity.
8/14/2002	Off	System is moved to new location but is not hooked up to electricity.
9/13/2002	On	System is powered and operating.
9/26/2002	On	System operating OK.
10/14/2002	On	System operating OK
11/4/2002	On	System operating OK.
11/21/2002	On	System operating OK
12/6/2002	On	System operating OK.
12/18/2002	On	System operating OK
12/23/2002	On	System operating OK.
12/27/2002	On	System operating OK.
12/30/2002	On	System operating OK
1/2/2003	Off	System is turned off because no free product was detected in well MW-3
1/3/2003	Off	System is turned off because no free product was detected in well MW-3
1/14/2003	Off	System is turned off because only product sheen was detected in well MW-3
1/30/2003	Off	System is turned off because only product sheen was detected in well MW-3
2/18/2003	Off	System is turned off because only product sheen was detected in well MW-3
2/26/2003	Off	System is turned off because only product sheen was detected in well MW-3
3/13/2003	Off	System is kept off because of the expected rainfall during weekend
3/17/2003	On	System is tested to verify that only product is being recovered from well MW-3
4/16/2003	Off	Product recovery line was removed due to Port's construction upgrades at the site
6/18/2003	Off	Product recovery line was removed on 04/16/2003
9/3/2003	Off	Product recovery line was removed on 04/16/2003
11/26/2003	Off	Product recovery line was removed on 04/16/2003
3/5/2004	Off	Product recovery line was removed on 04/16/2003
6/2/2004	Off	Product recovery line was removed on 04/16/2003
9/3/2004	Off	Product recovery line was removed on 04/16/2003
12/16/2004	Off	Product recovery line was removed on 04/16/2003
3/29/2005	Off	Product recovery line was removed on 04/16/2003



Source: Oakland West 7.5-minute U.S.G.S. Quadrangle, 1959, and photorevised in 1980.

Projects/2000/00-152/00-152.20 7th St Qrtly Monitoring/Graphics/ Site Location.ai

ITSI Innovative Technical Solutions, Inc.	**Port of Oakland** 2277 Seventh Street Oakland, California	**Figure 1** Site Location Map

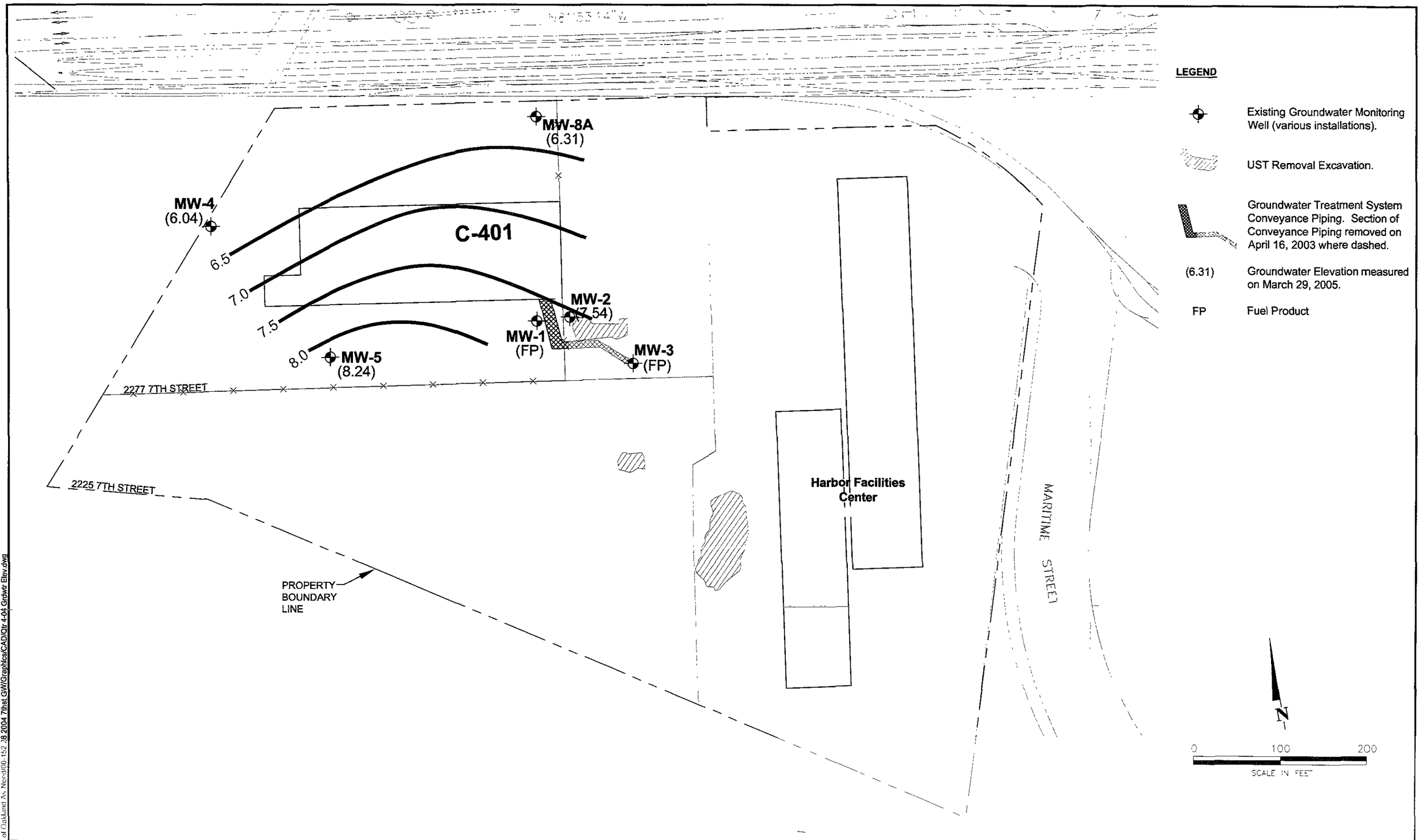


Innovative Technical Solutions, Inc.

First Quarter 2005, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 2
Site Plan

Projects/00-152 Port of Oakland As-Need/00 152 28 2004 7thst GW/Graphics/CAD/Qtr 4-04 Site Plan.dwg

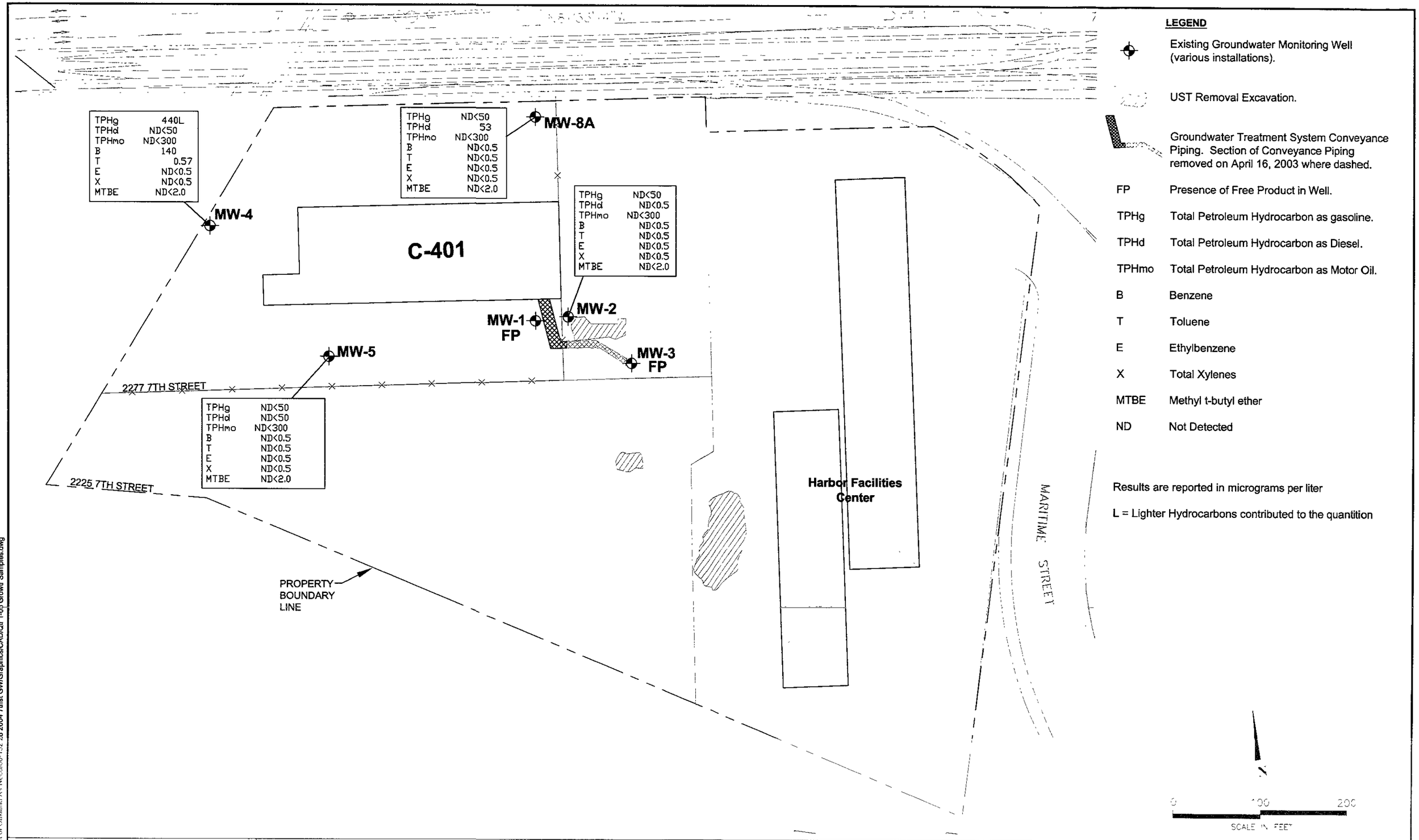


Innovative Technical Solutions, Inc.

First Quarter 2005, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 3
Groundwater Elevations
March 29, 2005

Project:/00-152 Port of Oakland As Need/00-152 28 2004 7thst GW/Graphics/CAD/Qtr 4-04 Grdwtr Elev.dwg



Innovative Technical Solutions, Inc.

First Quarter 2005, Quarterly Groundwater Monitoring and Product Recovery
2277 Seventh Street
Oakland, California

Figure 4
Groundwater Sample Results
March 29.2005

APPENDIX A

MONITORING WELL WATER LEVEL MEASUREMENT FORM
AND
MONITORING WELL PURGING AND SAMPLING FORM

Innovative Technical Solutions, Inc.

MONITORING WELL WATER LEVEL MEASUREMENT FORM

PROJECT NAME: 2277 7th Street PROJECT NO.: 00-152.28

MEASURED BY: R. LEONG DATE: 03/29/2005

Monitoring Well ID	Depth to Water (feet)	Total Well Depth (feet)	Time
MW-2	9.67	17.70	
MW-4	7.11	18.71	
MW-5	5.25	16.60	
MW-6	Well was destroyed on December 18, 2002		
MW-7	Well was destroyed on December 18, 2002		
MW-8A	6.63	20.40	

ITSI Innovative Technical Solutions, Inc.

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORTOF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-2 TESTED BY: R. LEONG DATE: 03/29/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 9.67

Total Well Depth (ft.): 17.70 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): ~0.5 gpm

Time Start Purge: 11:27 Time End Purge: 11:37

Comments :

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	17.70		9.67		8.03		0.16	0.64	1.44		1.28

Time	11:27	11:29	11:31	11:33	11:35	11:37	
Cumulative Volume Purged (gals)	0.65	0.13	1.95	2.60	2.95	3.60	
Cumulative Number of Casing Volumes	0.5	1	1.5	2.0	2.5	3.0	
Temperature (F° C°)	17.1	17.0	16.9	17.0	16.8	16.9	
pH	7.38	7.36	7.37	7.36	7.36	7.35	
Specific Conductivity (mS/cm)	1.68	1.70	1.70	1.71	1.71	1.70	
Turbidity (NTU)	9	15	17	19	24	29	

WELL SAMPLING

Sampling Time: 11:45 Sampling Method: Disposable Bailer

Duplicate Sample & Time: NONE

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW-2	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-2	5 voas	TPHg, MTBE, BTEX	HCL	C&T

Innovative Technical Solutions, Inc.

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORTOF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-4 TESTED BY: R. LEONG DATE: 03/29/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 7.11

Total Well Depth (ft.): 18.71 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): ~0.5 gpm

Time Start Purge: 1310 Time End Purge: 1320

Comments :

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	18.71	-	7.11	=	11.60	x	0.16	0.64	1.44	=	1.85

Time	1310	1312	1314	1316	13:18	1320	
Cumulative Volume Purged (gals)	1.0	2.0	3.0	4.0	5.0	6.0	
Cumulative Number of Casing Volumes	0.5	~1.0	~1.5	~2.0	~2.5	3.2	
Temperature (F°/C°)	18.4	18.2	18.0	18.0	17.8	17.7	
pH	7.05	7.03	7.07	7.11	7.12	7.14	
Specific Conductivity (mS/cm)	1.80	1.80	1.81	1.83	1.84	1.84	
Turbidity (NTU)	10	75	112	152	227	320	

WELL SAMPLING

Sampling Time: 1330 Sampling Method: Disposable Bailer

Duplicate Sample & Time: MW-4D @ 1340

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW4 & MW-4D	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-4 & MW-4D	5 voas	TPHg, MTBE, BTEX	HCL	C&T

Innovative Technical Solutions, Inc.

Sheet 1 of 1

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORTOF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-5 TESTED BY: R. LEONG DATE: 03/29/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 5.25

Total Well Depth (ft.): 16.60 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): ~0.45

Time Start Purge: 13:55 Time End Purge: 14:05

Comments : Baled surface water inside well box.

Well Volume Calculation (fill in before purging)	Total Depth (ft)		Depth to Water (ft)		Water Column (ft)		Multiplier for Casing Diameter (in)				Casing Volume (gal)
							2	4	6		
	16.60	-	5.25	=	11.35	x	0.16	0.64	1.44	=	1.80

Time	13:55	13:57	13:59	14:01	14:03	14:05	
Cumulative Volume Purged (gals)	0.90	1.80	2.70	3.60	4.50	5.40	
Cumulative Number of Casing Volumes	0.5	1.0	1.5	2.0	2.5	3.0	
Temperature (F° C°)	17.5	17.1	16.7	16.2	16.5	16.6	
pH	7.61	7.65	7.45	7.32	7.32	7.33	
Specific Conductivity (mS/cm)	1.95	1.98	2.06	2.16	2.15	2.16	
Turbidity (NTU)	51	196	521	735	751	768	

WELL SAMPLING

Sampling Time: 1410 Sampling Method: Disposable Bailer

Duplicate Sample & Time: NONE

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW-5	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-5	5 voas	TPHg, MTBE, BTEX	HCL	C&T

Innovative Technical Solutions, Inc.

Sheet 1 of 1

MONITORING WELL PURGING AND SAMPLING FORM

PROJECT NAME: PORTOF OAKLAND – 2277 7th STREET PROJECT NO.: 00-152.28

WELL NO.: MW-8A TESTED BY: R. LEONG DATE: 03/29/2005

WELL PURGING

Measuring Point Description: Top of Casing (TOC) Static Water Level (ft.): 6.63

Total Well Depth (ft.): ~~6.63~~ 20.40 Purge Method: Disposable Bailer

Water Level Measurement Method: Solinst W. L. Purge Rate (gpm): ~ 0.6 gpm

Time Start Purge: 1217 Time End Purge: 1227

Comments :

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	20.40		6.63		13.77		0.16	0.64	1.44		2.20

Time	12:17	12:19	12:21	12:23	12:25	12:27	
Cumulative Volume Purged (gals)	1.2	2.2	3.3	4.4	5.5	6.6	
Cumulative Number of Casing Volumes	0.5	1.0	1.5	2.0	2.5	3.0	
Temperature (F° C°)	16.8	16.8	16.7	16.6			
pH	7.75	7.76	7.35	7.39	7.40	7.40	
Specific Conductivity (mS/cm)	1.39	1.40	1.92	1.91	1.93	2.05	
Turbidity (NTU)	>1,000	>1,000	———			>	

WELL SAMPLING

Sampling Time: 1240 Sampling Method: Disposable Bailer

Duplicate Sample & Time: NONE

Sample ID	Volume/ Container	Analysis Requested	Preservatives	Lab
MW-8A	2 (1 L Amber)	TPHd, TPHmo	none	C&T
MW-8A	5 voas	TPHg, MTBE, BTEX	HCL	C&T

APPENDIX B

LABORATORY REPORTS

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

APR 18 2005

ANALYTICAL REPORT

Prepared for:

Innovative Technical Solutions, Inc.
2730 Shadelands Drive
Suite 100
Walnut Creek, CA 94598-2540

Date: 14-APR-05
Lab Job Number: 178566
Project ID: 00.15220
Location: 2277 7th Port of Oakland

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:	178566
Client:	Innovative Technical Solutions,Inc.
Project:	00.15220
Location:	2277 7th Port of Oakland
Request Date:	03/29/05
Samples Received:	03/29/05

This hardcopy data package contains sample and QC results for six water samples, requested for the above referenced project on 03/29/05. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):
No analytical problems were encountered.

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

Chain-Of-Custody

Innovative Technical Solutions, Inc.
~~2855 Mitchell Drive, Suite 111~~ 2730 Shadelands Dr. Ste 100
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Project Name and Number: Port of Oakland / 00152.28
Project Manager: Rachel Hess
Site Location: 2277 7th Street, Oakland, Ca

Laboratory Name: Curtis & Tompkins
Address: 2323 5th Street, Berkeley, Ca
Contact Name: Anna Rocanello
Phone: (510) 486-0900

Date: 03/29/2005
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPH-g by 8015B	TPH-mo by 8015B	TPH-g by 8015B	BTEX + MTBE by 8021B	MTBE Confirmation by 8260B	Preservative:	Container Type:	Special Instructions/Comments
													Silica Gel Cleanup for TPH-mo
Trip Blank	-	03/29/05	0700	2	H_2O			X	X	X	-	1L	
MW-2	15		1145	7		X	X	X	X	X	HCl	1L	
MW-4	12		1330	7		X	X	X	X	X	HCl	1L	
MW-4D	12		1340	7		X	X	X	X	X	HCl	1L	
MW-5	15		1410	7		X	X	X	X	X	HCl	1L	
MW-8A	15	↓	1240	7	↓	X	X	X	X	X	HCl	1L	VOAs unpreserved 1 + 1 R 3/29/05

Sampled By: Rogerio Leong
Signature:
Special Instructions: Direct Bill Port of Oakland
Contact Jeff Rubin @ (510) 627-1134
Send Results to: (w/fax #) Rachel Hess @ (925) 256-8998
Turnaround Time: Standard

Sampler: Rogerio Leong
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Rogerio Leong	03/29/05	1530	Anna Rocanello	3/29/05	1530

Original – Laboratory Yellow – Field/Office

In Curtis Office

Curtis & Tompkins, Ltd.

COOLER RECEIPT CHECKLIST

Login#: 178566 Date Received: 3/29/05 Number of Coolers: 1
Client: TTSI Project: POO

A. Preliminary Examination Phase
Date Opened: 3/29/05 By (print): Peter P. (sign)

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES NO
If YES, enter carrier name and airbill number:
2. Were custody seals on outside of cooler? ..... YES NO
How many and where? Seal date: Seal name:
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO N/A
4. Were custody papers dry and intact when received? ..... YES NO
5. Were custody papers filled out properly (ink, signed, etc.)? ..... YES NO
6. Did you sign the custody papers in the appropriate place? ..... YES NO
7. Was project identifiable from custody papers? ..... YES NO
If YES, enter project name at the top of this form.
8. If required, was sufficient ice used? Samples should be 2-6 degrees C. ..... YES NO
Type of ice: wet Temperature: 0 ice

B. Login Phase
Date Logged In: 3/29/05 By (print): Peter P. (sign)

1. Describe type of packing in cooler: 2 zip loc bags for VOAs
2. Did all bottles arrive unbroken? ..... YES NO
3. Were labels in good condition and complete (ID, date, time, signature, etc.)? ..... YES NO
4. Did bottle labels agree with custody papers? ..... YES NO
5. Were appropriate containers used for the tests indicated? ..... YES NO
6. Were correct preservatives added to samples? ..... YES NO
7. Was sufficient amount of sample sent for tests indicated? ..... YES NO
8. Were bubbles absent in VOA samples? If NO, list sample Ids below ..... YES NO
9. Was the client contacted concerning this sample delivery? ..... YES NO
If YES, give details below.
Who was called? By whom? Date:

Additional Comments:

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220		
Matrix:	Water	Sampled:	03/29/05
Units:	ug/L	Received:	03/29/05
Diln Fac:	1.000	Analyzed:	03/29/05
Batch#:	100578		

Field ID: TRIP BLANK
Type: SAMPLE
Lab ID: 178566-001

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	86	63-141	EPA 8015B
Bromofluorobenzene (FID)	96	79-139	EPA 8015B
Trifluorotoluene (PID)	78	63-133	EPA 8021B
Bromofluorobenzene (PID)	89	79-128	EPA 8021B

Field ID: MW-2
Type: SAMPLE
Lab ID: 178566-002

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	88	63-141	EPA 8015B
Bromofluorobenzene (FID)	99	79-139	EPA 8015B
Trifluorotoluene (PID)	84	63-133	EPA 8021B
Bromofluorobenzene (PID)	95	79-128	EPA 8021B

L= Lighter hydrocarbons contributed to the quantitation
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220		
Matrix:	Water	Sampled:	03/29/05
Units:	ug/L	Received:	03/29/05
Diln Fac:	1.000	Analyzed:	03/29/05
Batch#:	100578		

Field ID: MW-4 Lab ID: 178566-003
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	440 L	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	140	0.50	EPA 8021B
Toluene	0.57	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	89	63-141	EPA 8015B
Bromofluorobenzene (FID)	95	79-139	EPA 8015B
Trifluorotoluene (PID)	86	63-133	EPA 8021B
Bromofluorobenzene (PID)	93	79-128	EPA 8021B

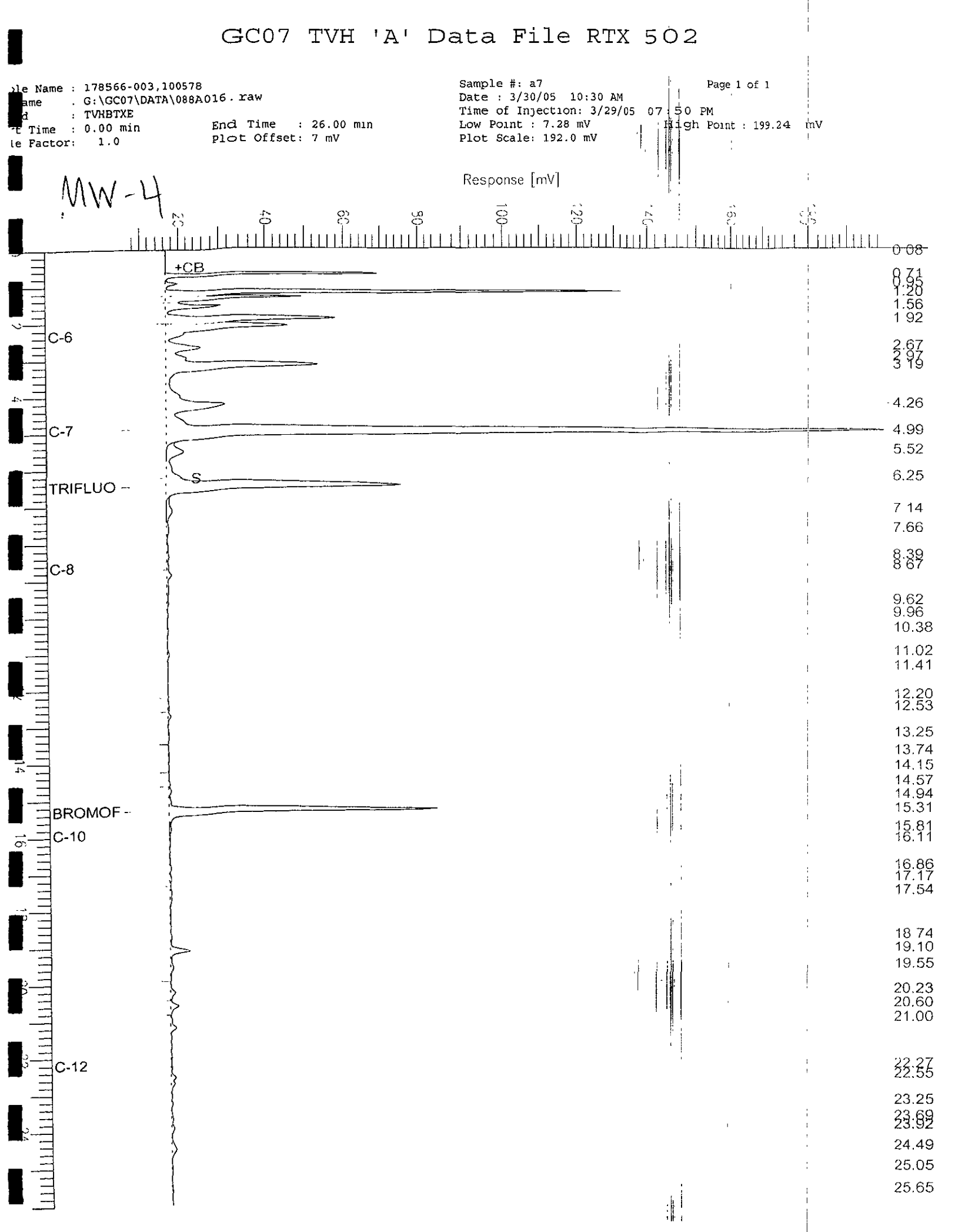
Field ID: MW-4D Lab ID: 178566-004
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	540 L	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	170	0.50	EPA 8021B
Toluene	0.72	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	90	63-141	EPA 8015B
Bromofluorobenzene (FID)	96	79-139	EPA 8015B
Trifluorotoluene (PID)	88	63-133	EPA 8021B
Bromofluorobenzene (PID)	94	79-128	EPA 8021B

L= Lighter hydrocarbons contributed to the quantitation
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

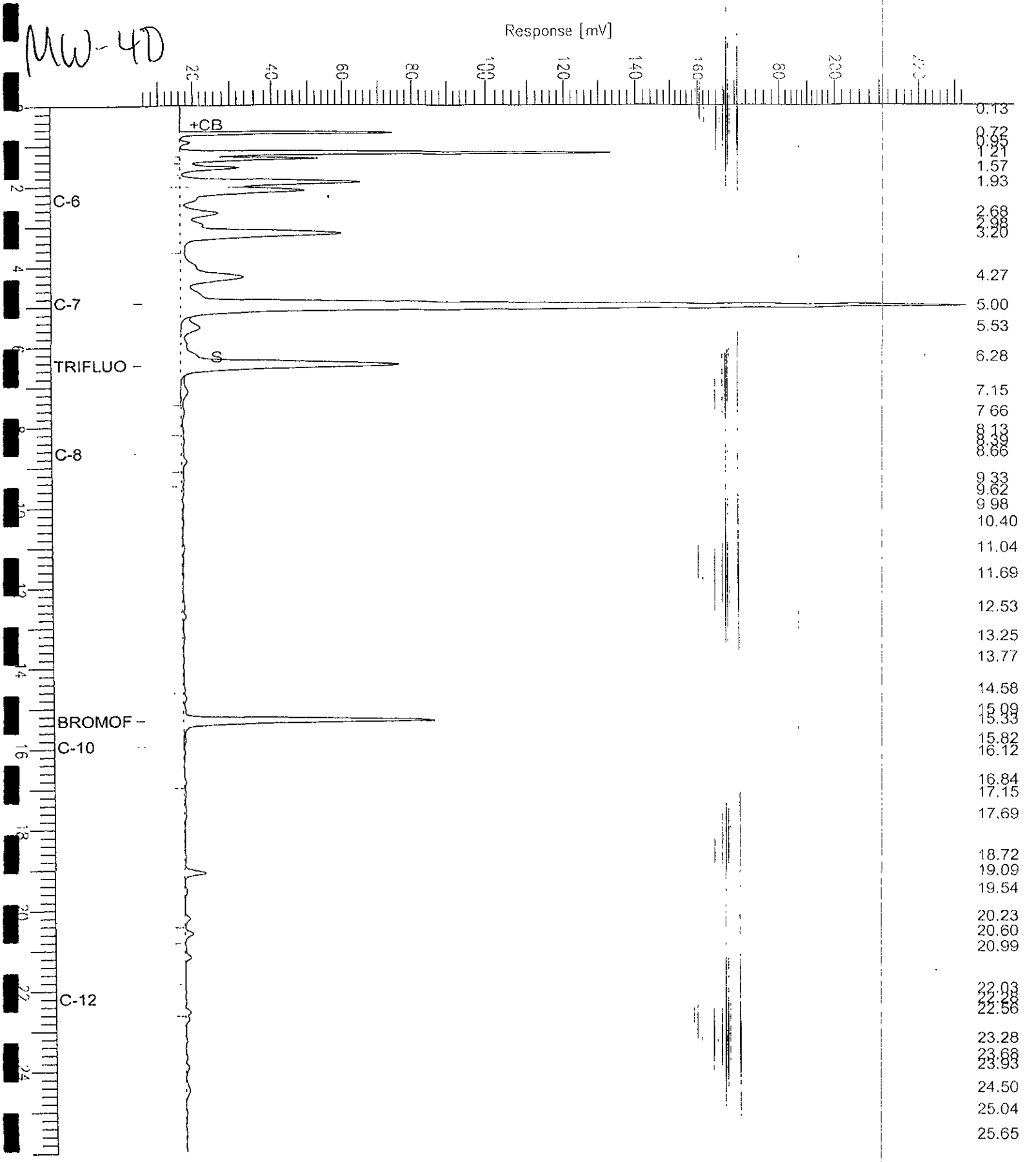


GC07 TVH 'A' Data File RTX 502

ple Name : 178566-004,100578
Name : G:\GC07\DATA\088A017.raw
od : TVHBTXE
rt Time : 0.00 min End Time : 26.00 min
le Factor: 1.0 Plot Offset: 5 mV

Sample #: a7
Date : 3/30/05 10:30 AM
Time of Injection: 3/29/05 08:25 PM
Low Point : 5.43 mV High Point : 233.22 mV
Plot Scale: 227.8 mV

MW-4D



GC07 TVH 'A' Data File RTX 502

mple Name : ccv/lcs,qc288108,100578,S73,5/5000
eName : G:\GC07\DATA\088A003.raw
hod : TVHBTXE
art Time : 0.00 min
ale Factor: 1.0

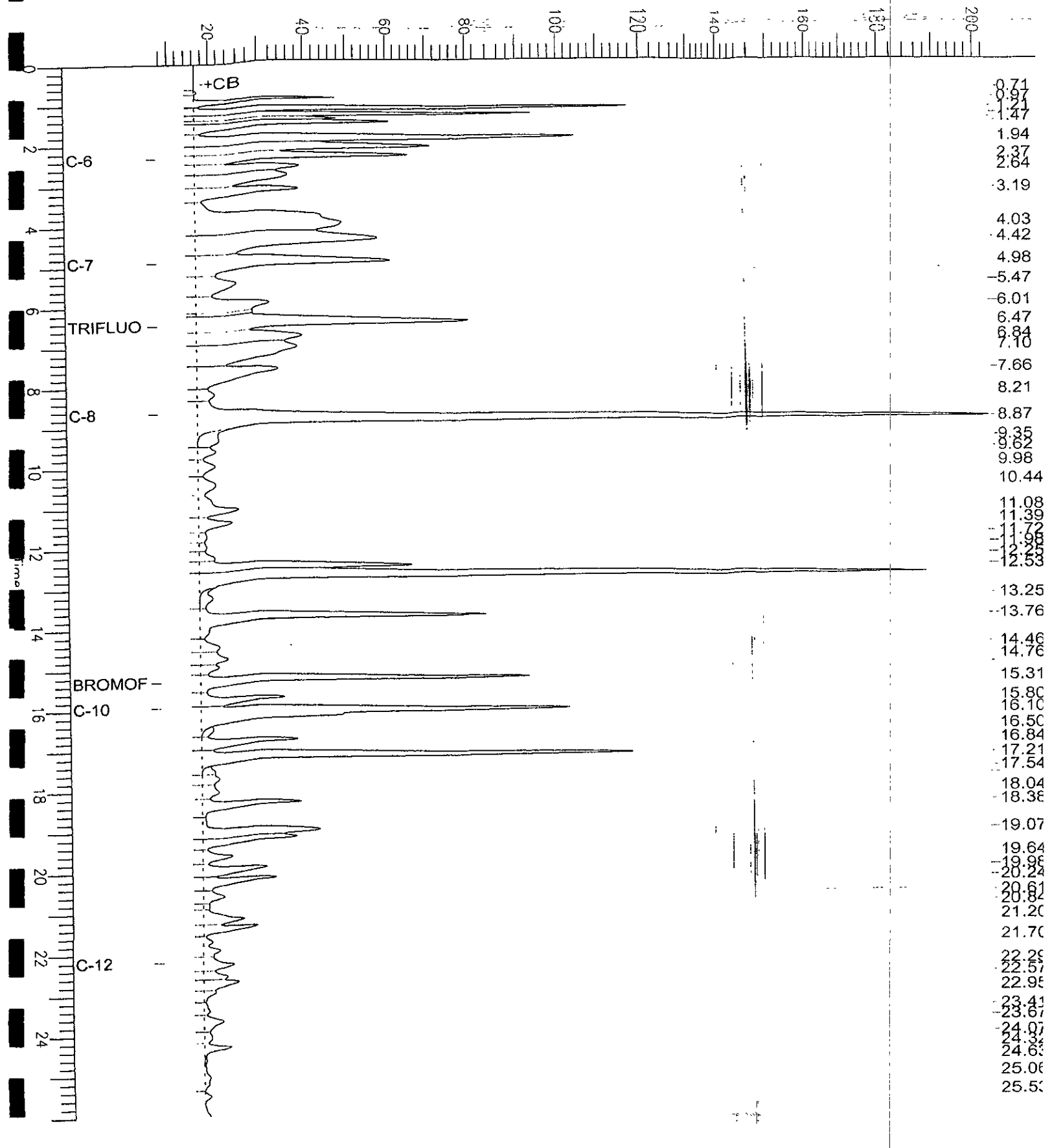
End Time : 26.00 min
Plot Offset: 7 mV

Sample #:
Date : 3/29/05 12:11 PM
Time of Injection: 3/29/05 11:44 AM
Low Point : 7.19 mV
Plot Scale: 196.1 mV

High Point : 203.33 mV

Gasoline

Response [mV]



Total Volatile Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220		
Matrix:	Water	Sampled:	03/29/05
Units:	ug/L	Received:	03/29/05
Diln Fac:	1.000	Analyzed:	03/29/05
Batch#:	100578		

Field ID: MW-5 Lab ID: 178566-005
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	89	63-141	EPA 8015B
Bromofluorobenzene (FID)	96	79-139	EPA 8015B
Trifluorotoluene (PID)	86	63-133	EPA 8021B
Bromofluorobenzene (PID)	95	79-128	EPA 8021B

Field ID: MW-8A Lab ID: 178566-006
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	89	63-141	EPA 8015B
Bromofluorobenzene (FID)	100	79-139	EPA 8015B
Trifluorotoluene (PID)	86	63-133	EPA 8021B
Bromofluorobenzene (PID)	96	79-128	EPA 8021B

L= Lighter hydrocarbons contributed to the quantitation
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220		
Matrix:	Water	Sampled:	03/29/05
Units:	ug/L	Received:	03/29/05
Diln Fac:	1.000	Analyzed:	03/29/05
Batch#:	100578		

Type: BLANK Lab ID: QC288106

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	87	63-141	EPA 8015B
Bromofluorobenzene (FID)	97	79-139	EPA 8015B
Trifluorotoluene (PID)	83	63-133	EPA 8021B
Bromofluorobenzene (PID)	92	79-128	EPA 8021B

L= Lighter hydrocarbons contributed to the quantitation
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd

atch QC Report

Total Volatile Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC288107	Batch#:	100578
Matrix:	Water	Analyzed:	03/29/05
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	17.38	87	67-125
Benzene	20.00	18.25	91	80-120
Toluene	20.00	18.81	94	80-120
Ethylbenzene	20.00	19.62	98	80-120
m,p-Xylenes	20.00	19.15	96	80-120
o-Xylene	20.00	19.42	97	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	88	63-133
Bromofluorobenzene (PID)	100	79-128

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC288108	Batch#:	100578
Matrix:	Water	Analyzed:	03/29/05
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,132	107	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	63-141
Bromofluorobenzene (FID)	105	79-139

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 5030B
Project#:	00.15220	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	100578
MSS Lab ID:	178547-004	Sampled:	03/28/05
Matrix:	Water	Received:	03/29/05
Units:	ug/L	Analyzed:	03/29/05
Diln Fac:	1.000		

Type: MS Lab ID: QC288142

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	34.32	2,000	2,105	104	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	63-141
Bromofluorobenzene (FID)	101	79-139

Type: MSD Lab ID: QC288143

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,071	102	80-120	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	63-141
Bromofluorobenzene (FID)	99	79-139

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3520C
Project#:	00.15220	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/29/05
Units:	ug/L	Received:	03/29/05
Diln Fac:	1.000	Prepared:	04/04/05
Batch#:	100814		

Field ID:	MW-2	Analyzed:	04/06/05
Type:	SAMPLE	Cleanup Method:	EPA 3630C
Lab ID:	178566-002		

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

Surrogate	%REC	Limits
Hexacosane	95	55-143

Field ID:	MW-4	Analyzed:	04/06/05
Type:	SAMPLE	Cleanup Method:	EPA 3630C
Lab ID:	178566-003		

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

Surrogate	%REC	Limits
Hexacosane	108	55-143

Field ID:	MW-4D	Analyzed:	04/06/05
Type:	SAMPLE	Cleanup Method:	EPA 3630C
Lab ID:	178566-004		

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

Surrogate	%REC	Limits
Hexacosane	102	55-143

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3520C
Project#:	00.15220	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/29/05
Units:	ug/L	Received:	03/29/05
Diln Fac:	1.000	Prepared:	04/04/05
Batch#:	100814		

Field ID:	MW-5	Analyzed:	04/07/05
Type:	SAMPLE	Cleanup Method:	EPA 3630C
Lab ID:	178566-005		

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

Surrogate	%REC	Limits
Hexacosane	98	55-143

Field ID:	MW-8A	Analyzed:	04/07/05
Type:	SAMPLE	Cleanup Method:	EPA 3630C
Lab ID:	178566-006		

Analyte	Result	RL
Diesel C10-C24	53	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	77	55-143

Type:	BLANK	Analyzed:	04/06/05
Lab ID:	QC289048	Cleanup Method:	EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	81	55-143

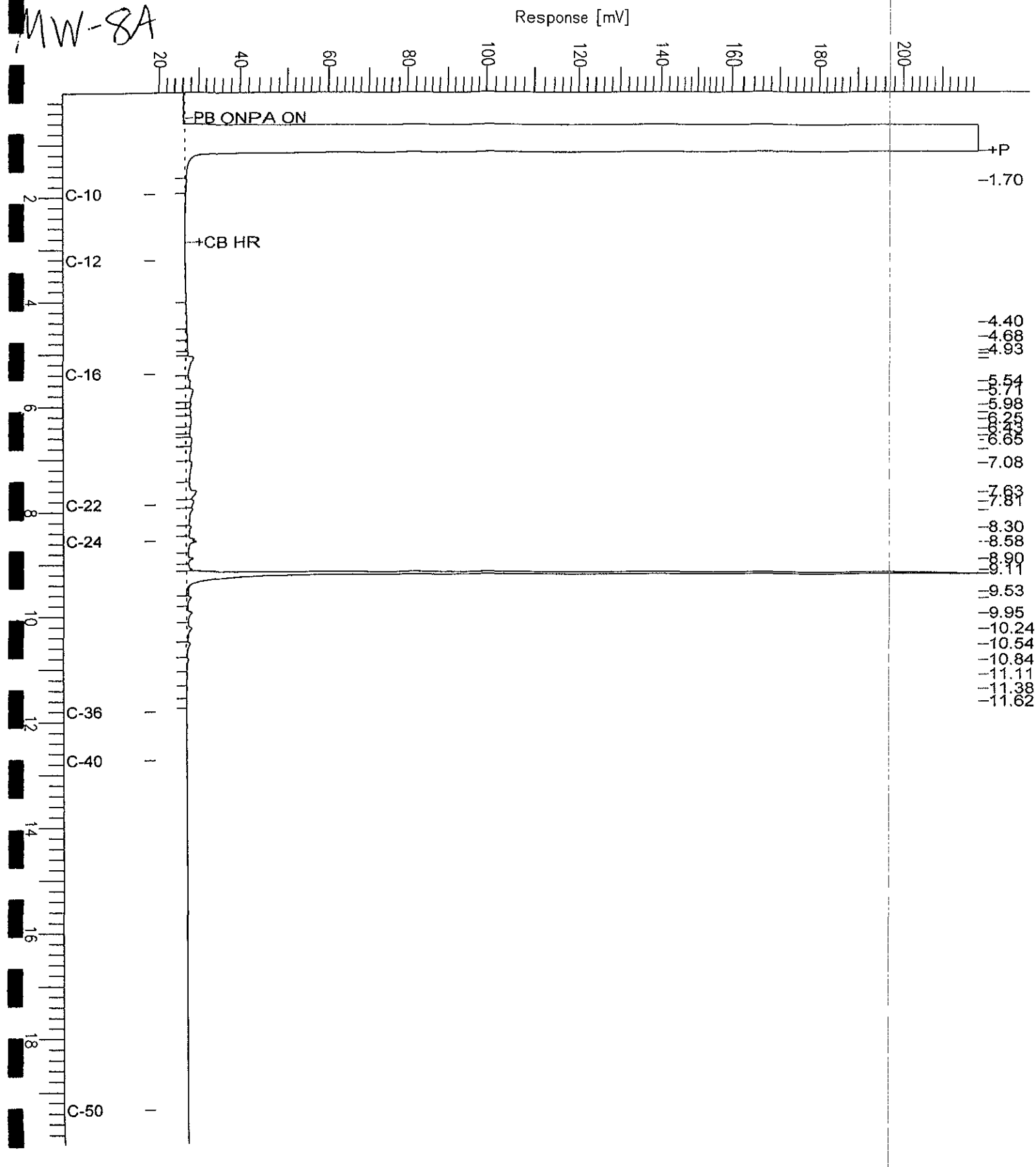
ND= Not Detected
RL= Reporting Limit

Chromatogram

mple Name : 178566-006sg,100814
eName : G:\GC15\CHB\094B119.RAW
hod : BTEH094S.MTH
rt Time : 0.01 min End Time : 19.99 min
ale Factor: 0.0 Plot Offset: 19 mV

Sample #: 100814 Page 1 of 1
Date : 4/7/05 12:03 PM
Time of Injection: 4/7/05 10:23 AM
Low Point : 19.00 mV High Point : 219.15 mV
Plot Scale: 200.2 mV

MW-8A



Chromatogram

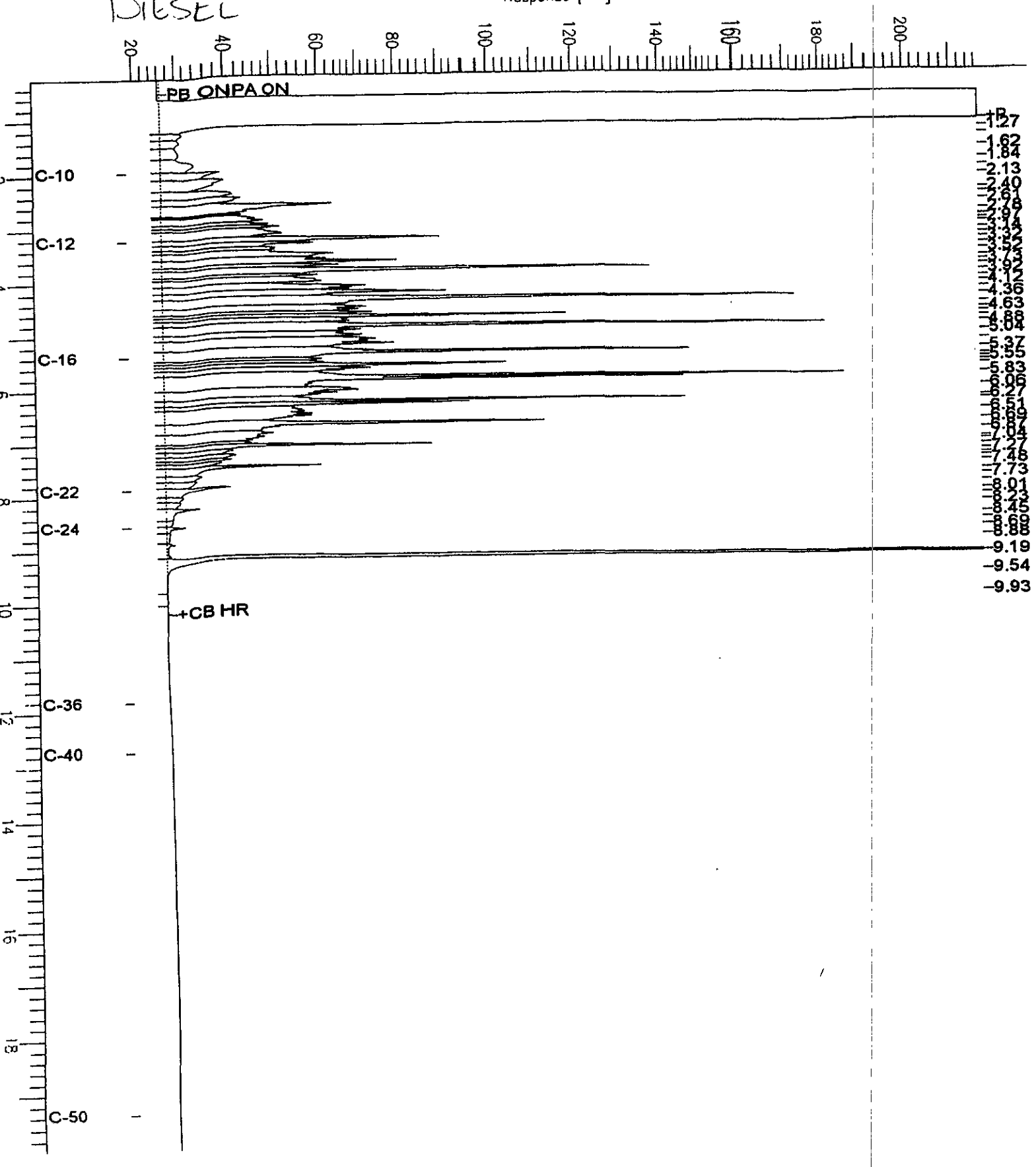
ple Name : ccv,S72,dsl
eName : G:\GC15\CHB\094B003.RAW
hod : BTEH088S.MTH
art Time : 0.23 min
ale Factor: 0.0

End Time : 19.99 min
Plot Offset: 18 mV

Sample #: 500mg/L
Date : 4/4/05 12:01 PM
Time of Injection: 4/4/05 09:43 AM
Low Point : 18.28 mV
Plot Scale: 198.4 mV

High Point : 216.65 mV

DIESEL



Chromatogram

ple Name : ccv,S97,mo
Name : G:\GC15\CHB\094B004 - RAW
od : BTEH088S.MTH
rt Time : 0.01 min
le Factor: 0.0

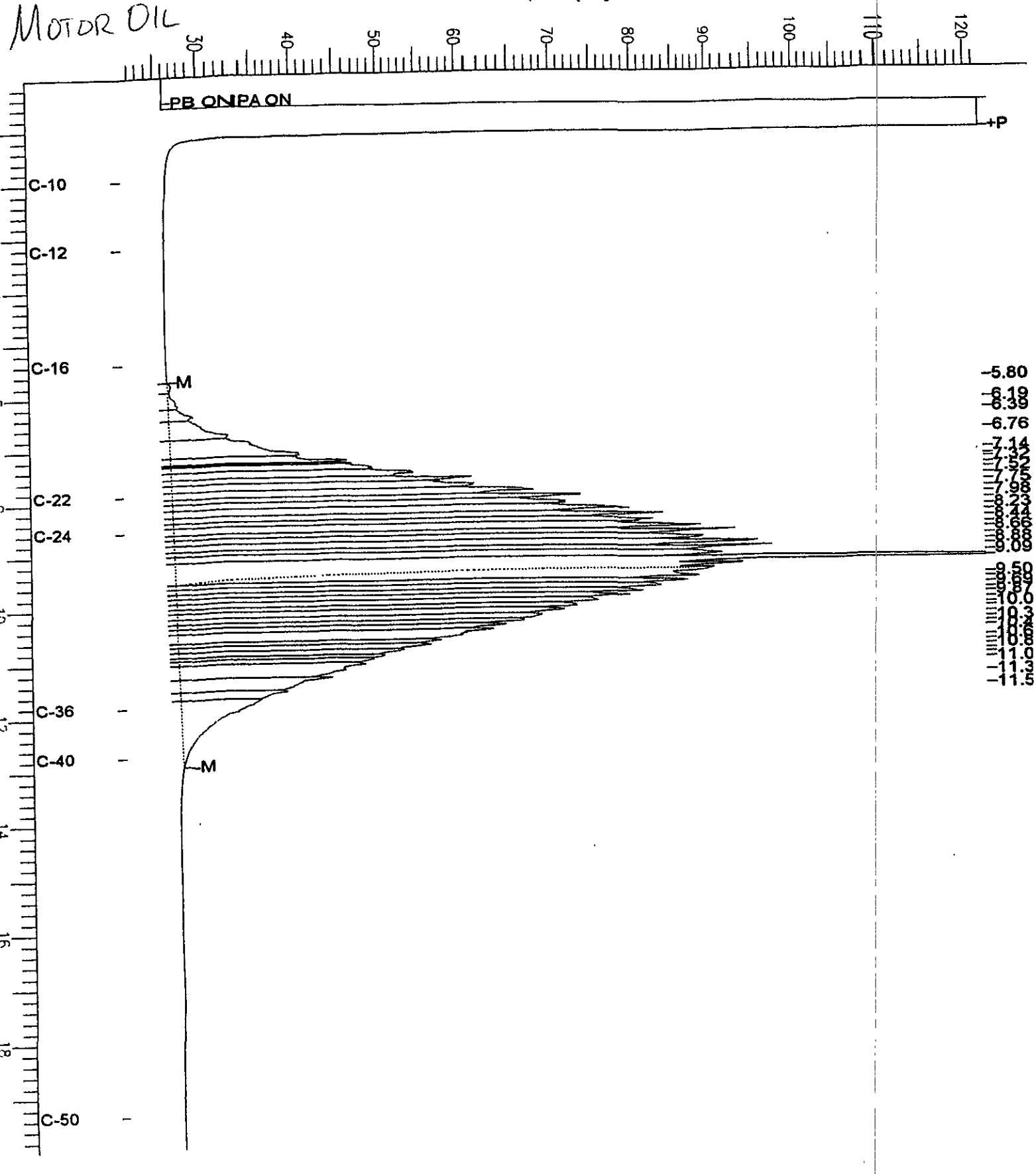
End Time : 19.99 min
Plot Offset: 21 mV

Sample #: 500mg/L
Date : 4/4/05 12:02 PM
Time of Injection: 4/4/05 10:12 AM
Low Point : 21.06 mV
Plot Scale: 100.6 mV

High Point : 121.63 mV

Response [mV]

MOTOR OIL



Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3520C
Project#:	00.15220	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC289049	Batch#:	100814
Matrix:	Water	Prepared:	04/04/05
Units:	ug/L	Analyzed:	04/06/05

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,320	93	50-133

Surrogate	%REC	Limits
Hexacosane	83	55-143

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	178566	Location:	2277 7th Port of Oakland
Client:	Innovative Technical Solutions,Inc.	Prep:	EPA 3520C
Project#:	00.15220	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	100814
MSS Lab ID:	178478-001	Sampled:	03/23/05
Matrix:	Water	Received:	03/24/05
Units:	ug/L	Prepared:	04/04/05
Diln Fac:	1.000		

Type:	MS	Analyzed:	04/06/05
Lab ID:	QC289050	Cleanup Method:	EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	<12.82	2,500	2,480	99	42-127

Surrogate	%REC	Limits
Hexacosane	88	55-143

Type:	MSD	Analyzed:	04/07/05
Lab ID:	QC289051	Cleanup Method:	EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,364	95	42-127	5	45

Surrogate	%REC	Limits
Hexacosane	85	55-143

RPD= Relative Percent Difference

8.0

APPENDIX C

DAILY FIELD ACTIVITY REPORT

Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, California 94598
(925) 946-3100 (Tel), (925) 256-8998 (Fax)

PROJECT NAME: 00-152.28
PROJECT NUMBER: Port of Oakland

DAILY ACTIVITY REPORT

DATE: 03/29/2005
PAGE 1 OF 1

SITE LOCATION: 2271 7th Street, Oakland

DESCRIPTION OF FIELD ACTIVITIES AND EVENTS

08:00 Pick up Equipment and cooler at W.C. office
09:00 Pick up drums at Alameda trailer
09:30 Purchase buckets, strings + Ice
10:30 Arrive at site
11:00 Monitor MW-3 for Free Product
DTP = 8.17'; DTW = 9.01'
11:15 Set up at MW-2
11:45 Sample MW-2
12:05 Set up at MW-8A
12:40 Sample MW-8A
13:00 Set up at MW-4
13:30 Sample MW-4
13:40 Sample MW-4D as duplicate of MW-4
13:50 Set up at MW-5
14:10 Sample MW-5
14:20 Set up to measure MW-1 for free product
DTP = 6.21'; DTW = 6.38'
14:40 Leave 2 drums near New system and MW-2 area at the New Facility Bldg. 1 drum contains PPE and the other about 20 gallons of purged water from MW-2; MW-4; MW-5; and MW-8A
Label drums with "Pending Analysis" stickers.

15:00 Leave site to C&T in Berkeley.

PREPARED BY: ROGERIO LEONG
DATE: March 29, 2005
PREPARER'S SIGNATURE: