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October 23, 2007

Mr. Steven Plunkett
Hazardous Materials Specialist
Alameda County Health Care Services Agency,
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **UST Site- 801 Maritime Street**
Port of Oakland, Oakland, CA
Fuel Leak Case RO0000019

Dear Mr. Plunkett:

The Port of Oakland (Port) herein submits a technical report for your consideration. The report, *Additional Site Investigation at 801 Maritime Street, Underground Storage Tank Site, Port of Oakland, Oakland, California, Fuel Leak Case RO0000019*, was prepared on the behalf of the Port by R&M Environmental and Infrastructure Engineering, Inc. Should you have any questions, please contact John Prall at (510) 627-1373 or by e-mail at jprall@portokalnd.com.

I declare under penalty of perjury, that the information contained in this letter and attachment is true and correct to the best of my knowledge.

Sincerely,

Roberta L. Reinstein

Roberta Reinstein
Manager, Environmental Programs and Safety

Enclosure Noted.

CC: John Prall, Port of Oakland
Jeff Jones, Port of Oakland
Michele Heffes, Port of Oakland
Deborah Ballati, Farella Braun + Martell, LLP
Chris Noma, Wendel Rosen Black and Dean, LLP

ADDITIONAL SITE INVESTIGATION

At
801 Maritime Street, Underground Storage Tank Site
Port of Oakland, Oakland, California
Fuel Leak Case RO0000019

Prepared for

Port of Oakland
Environmental Programs & Safety Department
530 Water Street
Oakland, CA 94607

Prepared by

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7994 Capwell Drive
Oakland, CA 94621-2015

Under

Contract/Resolution No. 5135
On-call Environmental Compliance Consulting Services at the Port of Oakland
Technical Service Order 9

James E. Gribi, P.G.
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August 27, 2007

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APPENDICES

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ACRONYMS

ACHCSA	Alameda County Health Care Services Agency
ACPWA	Alameda County Public Works Agency
APN	Assessors Parcel Number
Baseline	Baseline Environmental Consulting
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
DO	dissolved oxygen
EPA	Environmental Protection Agency
EP&SD	Environmental Programs and Safety Department
IDW	Investigative-derived waste
NM	Not measured
MTBE	Methyl tertiary-butyl ether
ORP	Oxidation reduction potential
PID	Photoionization detector
PVC	Polyvinyl chloride
R&M	R&M Environmental and Infrastructure Engineering, Inc.
RWQCB	Regional Water Quality Control Board
TDS	Total Dissolved Solids
TPH-d	Total petroleum hydrocarbons as diesel
TPH-g	Total petroleum hydrocarbons as gasoline
TRPH	Total recoverable petroleum hydrocarbons
QA/QC	Quality Assurance/Quality Control
TDS	Total dissolved solids
USA	Underground Service Alert
USCS	Unified Soil Classification System
UST	Underground storage tank
VOA	Volatile organic analysis
VOCs	Volatile organic compounds

SUMMARY

At the direction of and per the work plan approved by the Alameda County Health Care Services Agency ("ACHCSA"), additional site characterization was performed at a Port of Oakland former underground storage tank ("UST") site, identified as the "801 Maritime Street" site in Oakland. A total of 10 borings were advanced to a depth of approximately 12 ft below ground surface. A total of 19 soil samples and 10 grab groundwater samples were collected and analyzed for total petroleum hydrocarbons as gasoline ("TPH-g"), total petroleum hydrocarbons as diesel ("TPH-d"), methyl tertiary-butyl ether ("MTBE"), and benzene, toluene, ethylbenzene, and xylenes ("BTEX"). In addition, the one groundwater monitoring well that currently exists at the site was redeveloped and sampled. The water sample was also analyzed for TPH-g, TPH-d, MTBE, and BTEX.

Analytical results for soil and grab groundwater samples presented in Figures 4 and 5 indicate only minor petroleum hydrocarbon impacts in soil and groundwater. The impact appears to be localized at or near Boring RM-5. The soil sample from this boring contained 36 mg/kg TPH-g and 150 mg/kg TPH-d; the corresponding values for the grab groundwater sample were 73 µg/L TPH-g and 53 µg/L TPH-d. Benzene was not detected in any of the soil and groundwater samples from these borings, but was present at a very low concentration in the water sample from MW-1. This water sample also contained 62 µg/L TPH-g and 4,800 µg/L TPH-d. To delineate the extent of soil and groundwater contamination in the vicinity MW-1 and RM-5 that may have its origin in the former location of the UST, we are proposing to proceed with the installation of two previously planned new monitoring wells and implementation of quarterly groundwater monitoring. The proposed locations of the two new monitoring wells (to be designated as MW-2 and MW-3) are shown in Figure 3.

1.0 INTRODUCTION

This report describes additional soil and grab groundwater sampling that has been performed at the Port of Oakland's former UST site at 801 Maritime Street in Oakland, California. Removal of the USTs in February 1989 and subsequent construction and sampling of an on-site monitoring well (MW-1) revealed evidence of fuel releases to the soil and groundwater[1]. The ACHCSA requested the Port to undertake additional site characterization and groundwater monitoring to generate supplementary data needed for site closure consideration[2]. The work plan for this additional site characterization and monitoring[3], which was approved by ACHCSA[4], calls for the following:

- Advancing 10 borings and collecting and analyzing soil and grab groundwater samples;
- Based on sample analysis results, proposing locations for installation of two additional monitoring wells, with the proposed locations subject to review and approval by ACHCSA;
- Installing and developing the two new monitoring wells and re-developing the existing monitoring well;
- Performing quarterly monitoring of all three wells; and
- Preparing and submitting reports of findings.

The task of advancing borings and collecting and analyzing soil and groundwater samples has now been completed and locations are suggested below for the installation of the two new monitoring wells. In order to have a better database for proposing new monitoring well locations, monitoring well MW-1 was also sampled after it was re-developed.

[1] "Report on Tank Removal and Remediation Activities, 801 Maritime Street", prepared for the Port of Oakland by Baseline Environmental Consulting ("Baseline"), April 1989.
[2] Letter from Mr. Barney M. Chan of Alameda County Health Care Services Agency to Mr. John Prall of Port of Oakland, December 20, 2006.
[3] Copy of Work Plan is presented in Appendix E.
[4] Work Plan Approval Letter from Mr. Barney M. Chan of Alameda County Health Care Services Agency to Mr. John Prall of Port of Oakland, February 28, 2007.

2.0 SITE DESCRIPTION AND HISTORY[5]

2.1 LOCATION

Figure 1 is a vicinity map for the project site as it exists today. Prior to 1989, the 801 Maritime Street address was a discrete site separate from the maritime container terminals that surrounded it to the west. Since 1989, the site has been demolished and has become part of nearby Berth 24 and the only evidence of the former land use is in reports and old aerial photographs. The 801 Maritime Street address no longer exists; the current address of Berth 24 is 909 Maritime Street.

2.2 SITE AND OPERATION HISTORY

801 Maritime Street was the site of a large commercial warehouse used for the temporary storage of bailed cotton. The site also included a set of three USTs (used by the tenant for vehicle refueling) and two sets of fueling dispensers. The Port originally surmised that USTs were installed in 1959 but, based on a recent investigation by Port staff member John Prall, and a Port environmental consultant, Baseline, the Port now suspects the USTs were installed in the 1940s by the United States Army. The Army is known to have had a service station in the same area as the 801 Maritime USTs. More recent maps prepared by the Port in 1958 and 1959 also show three USTs in place in the same area and spatial orientation.

The three USTs at the site (identified by the Port as CF-06, CF-07, and CF-35) were removed on February 16, 1989. During removal, Baseline reported that all three USTs were of single wall steel construction and each was strapped to a concrete slab due to buoyancy problems with the shallow groundwater conditions[1]. UST CF-06 had a capacity of 10,000 gallons and was used to store diesel fuel. USTs CF-07 and CF-35 had capacities of 20,000 and 10,000 gallons, respectively, and were used to store diesel fuel although both USTs had been configured to also store gasoline.

Visual examination of the USTs after removal did no reveal any evidence of corrosion, punctures or leaks; however, discolored soils and petroleum odors were noted. Groundwater that accumulated in the

[5] Much of the information in this section has been excerpted from a 31 May 2006 letter from Ms. Roberta Reinstein, Manager, Port Environment and Safety Department, to Mr. Barney Chan of Alameda County Health Care Services Agency.

excavation contained oil and exhibited sheen. The impacted groundwater was pumped out of the excavation pit and hauled away for proper disposal. The USTs removal and related field activities were conducted under the lead of ACHCSA. Originally, this site was assigned by the ACHCSA a unique identification number of STID #3780 that is now assigned as #RO0000019.

Analysis of soil and groundwater samples collected during the removal indicated that: (1) there had been a release of petroleum hydrocarbons; (2) the release consisted of primarily diesel hydrocarbons; (3) the soil under the fill ends for two of the USTs contained the highest diesel hydrocarbon concentrations (1,600 and 3,600 mg/Kg); and (4) volatile hydrocarbons (gasoline and benzene, toluene, ethylbenzene, and xylenes ("BTEX")) were present in the vicinity of one of the USTs. The analytical results were transmitted by the Port to ACHCSA in March 1989. Subsequently, ACHCSA required the Port to file an Unauthorized Release Report, characterize the release, perform a preliminary assessment, and develop a remediation plan. In response to ACHCSA's directive, Baseline completed a report in April 1989 entitled "*Report on Tank Removal and Remediation Activities, 801 Maritime Street"*.

Approximately 1,500 cubic yards of contaminated soils removed from the tank pit were stockpiled near the excavation and bioremediated on site under the guidance of Baseline. After treatment, the cleaned soil was transported to the Port's Building L-615 site at the Oakland North Field Airport and used as fill at the ground surface. Baseline reported on the on-site bioremediation effort in its March 1990 report, entitled "*Report on Verification Sampling for Bioremediation Program at 801 Maritime Street, Oakland"*.

On October 8, 1992, ACHCSA submitted a letter to the Regional Water Quality Control Board ("RWQCB") with a recommendation to the Board stating that "no further action [for the 801 Maritime Site] is required at this time". The ACHCSA also requested that the RWQCB forward notification of the final site closure determination. Therefore, the Port assumed the site was closed in 1992. On March 14, 1994, ACHCSA reopened the site to further investigation, citing finding from the April 1989 Baseline report as justification for the request. The Port, through ERM-WEST, prepared a site-specific work plan and Alisto Engineering Group installed a single monitoring well in July 1996, as recommended by Baseline. Quarterly monitoring activities continued from 1996 to 2001.

On March 27, 2006, ACHCSA made a determination that additional technical information was needed to move the site toward closure[2]. The information request was partially fulfilled by the Port's May 2006

submission to the ACHCSA. This report provides the additional technical information required by the ACHCSA addressing additional soil and groundwater investigation surrounding the old UST site[3,4].

3.0 FIELD ACTIVITIES

3.1 SITE CHARACTERIZATION

3.1.1 Borehole Locations

A total of 10 borings, designated as RM-1 through RM-10 (see Figure 3), were advanced on March 15, 2007 at locations downgradient and upgradient from the location of the former USTs. The boring locations were positioned to delineate the suspected location of a contaminant plume.

3.1.2 Preparatory Activities

Prior to drilling to collect soil and grab groundwater samples key activities included the following:

- Marking proposed drilling locations on the pavements (Photo #2);
- Securing a drilling permit (No. W2007-0286) from the Alameda County Public Works Agency (ACPWA). A copy of this permit is presented in Appendix C;
- Discussing with the Port the location of underground utilities, piping, tanks, and other objects, subsurface utility clearance of the proposed drilling locations (Photo #3) and notification of the Underground Service Alert (secured USA Ticket No. 083346). The subsurface utility clearance was performed by C. Cruz Sub-Surface Locators, Inc. (Milpitas, CA) on March 13, 2007;
- Securing services of a licensed driller (Gregg Drilling, Martinez, CA; C-57 License #485165) that advanced the borings and collected soil and grab groundwater samples;
- Arranging with a state-certified analytical laboratory (McCampbell Analytical, Inc. Pittsburg, CA) to provide sample containers and coolers and analyze the samples; and
- Notifying the regulatory inspector, Ms. Vicki Hamlin (Tel.: 510-670-5443), Alameda County Public Works Agency, of the drilling date of March 15 (notified via telephone on 3/13/2007).

3.1.3 Soil and Grab Groundwater Sampling

All borings were advanced by the “direct push” method using a Geoprobe rig. The drilling and collection of samples followed the following protocol:

- Used hollow-stem auger to drill past surface asphalt layer (Photo #4). Hand augered all boreholes to a depth of 5 ft before employing the "direct push" method (Photo #5). Examined the initial opening in the pavement for presence of volatile organic compounds (VOCs) using a photoionization detector (PID);

- A registered geologist logged the portion of the boreholes that were hand augered, as well as the remainder of the borehole which was subsequently advanced via Geoprobe (see Boring Logs in Appendix D);

- Visually inspected and described soil samples according to Unified Soil Classification System (USCS; Photo #6), noted any distinct petroleum or gasoline odor or coloration; collected a portion of the soil samples in Ziploc bags, sealed the bags, and placed them in the sun for release of hydrocarbons, if any; at the end of the day, obtained PID readings for each bagged sample and noted them on the boring logs;

- Collected soil samples at depth intervals of approximately 5 ft or less, with the number of soil samples collected at each boring varying from 1 to 4; used new butyrate tubes measuring approximately 2 inches in diameter by 4 feet in length to retrieve the samples; the tubes were then cut open for examination and borehole logging and for collection of samples from specific depths. The samples were placed in new 6-inch long butyrate tube sections that were cut specifically for this purpose;

- The sample containers were labeled with borehole number, sample depth, project number, and date and time and placed in a cooler with ice and delivered to McCampbell Analytical, Inc. (Pittsburg, CA), a state-certified analytical laboratory, for analysis under chain-of-custody documentation (Photo #7);

- Temporary piezometers with 3/4-inch diameter PVC screen and riser pipes were installed in each borehole. The well screens were closed at the bottom with PVC plugs (bottom caps). A peristaltic pump was used to purge 1-2 gallons of water from each piezometer (Photo #8). A single “grab” water sample was retrieved (Photo #9) from each piezometer for laboratory analysis. These samples were collected in laboratory-supplied 40-mL glass vials. After sample collection, some time was allowed for water level recovery before the depth to water was measured and recorded;

- Following sampling, all boreholes were backfilled from total depth to surface with cement grout. A bentonite plug was used to backfill the last few inches; the borehole was topped off with cement slurry and dyed to match the surrounding surface (Photo #10);

- A steam cleaner was used to decontaminate the drilling and sampling equipment before use and between each borehole location; and

- All investigation-derived wastes (IDW) created by advancing borings, decontamination, soil sampling, and borehole backfilling were collected in buckets and transferred to a 55-gallon drum that was left on site for disposal by the Port of Oakland (Photo #11).

3.1.4 Soil and Grab Groundwater Sample Analysis

The 19 soil samples and 10 grab groundwater samples that were collected from the 10 borings were sent under chain-of-custody documentation to a state-certified analytical laboratory (McCampbell Analytical,

Pittsburg, CA) and analyzed for TPH-g via EPA Method 8015M, TPH-d via EPA Method 8015C with silica gel clean up, and for BTEX and MTBE via EPA Method 8020.

3.2 REDEVELOPMENT AND SAMPLING OF MONITORING WELL MW-1

3.2.1 WELL REDEVELOPMENT

On April 9, 2007 monitoring well MW-1 was redeveloped by RSI Drilling (Woodland, CA; Photo #12) under the following protocol:

- Before redevelopment, measured depth to water and depth to bottom from top of the casing; based on these measurements, calculated the approximate wet casing volume (i.e., volume of water standing in well casing);
- Developed the well by surging and pumping using a 1-inch diameter steel pipe with a plunger on the end and a 2-inch Grundfos submersible pump; several wetted volumes were purged while measuring water quality parameters (temperature, pH, conductivity, dissolved oxygen ("DO"), turbidity and oxidation-reduction potential ("ORP"). Development continued until water appeared clean and clear of entrained sediment and water quality parameters stabilized; and
- Purge water and decontamination water were collected in a sealed and labeled 55-gallon drum and left on site for subsequent profiling and disposal by the Port of Oakland.

3.2.2 Groundwater Sampling and Sample Analysis

MW-1 was sampled on April 12, 2007, some 72 hours after redevelopment (Photo #13). Sampling was conducted under the following protocol:

- A peristaltic pump was used to purge 3 casing volumes of water from the well. During purging, water quality parameters (temperature, pH, conductivity, DO and ORP) were measured and recorded;
- Samples were collected in four 40-mL Volatile Organic Analysis ("VOA"; for TPH-g, BTEX, and MTBE), one 1-L amber glass bottle (for TPH-d) and one 250-mL polyethylene container (for total dissolved solids ("TDS")). The containers were labeled and stored in a cooler with ice and delivered to Curtis and Tompkins, Ltd (Berkeley, CA), a state-certified analytical laboratory, under chain-of-custody documentation; and
- After sample collection, some time was allowed for water recovery before measuring the depth to water, which was recorded on the well development sheet (Appendix G).

Curtis and Tompkins analyzed the water samples for TPH-g via EPA Method 8015M, TPH-d via EPA Method 8015C with silica gel clean up, BTEX and MTBE via EPA Method 8020, and TDS via EPA Method 160.1.

Well redevelopment field data are presented in Appendix G and analytical results and chain-of-custody documentation are presented in Appendix B.

4.0 RESULTS AND DISCUSSION

4.1 SITE CHARACTERIZATION

4.1.1 Field Measurements

As noted in Section 3.1.3, field measurements during soil and grab groundwater sampling consisted of PID readings for the soil samples that appeared most impacted based on visual and olfactory considerations and measuring the depth-to-water in the temporary piezometers. The results are presented in Table 1. These PID readings are in general agreement with laboratory sample analysis results presented in Section 4.1.2 (i.e., soil samples from borings with field PID readings greater than zero contain detectable concentrations of TPH-g). Depth to water values in the 10 borings ranged from 7.2 to 8.48 feet.

Table 1: Field PID Readings for Soil Samples and Depth to Water Measured in Borings

Boring-Depth (ft)	PID (ppm)	Depth to Water (ft)
RM-1-6	0	7.40
RM-1-11 (BAG)	0	
RM-2-8	0	7.20
RM-3-3	31.8	8.05
RM-3-4	7.3	
RM-3-9	1.4	
RM-3-1 (BAG)	10.7	
RM-4-11 (BAG)	0	8.40
RM-5-6 (BAG)	11.6	7.60
RM-6-10 (BAG)	0	8.23
RM-7-9 (BAG)	0	7.41
RM-8-10 (BAG)	0	8.48
RM-9-8.5 (BAG)	0	7.60
RM-10-9 (BAG)	0	7.48

Note: (BAG) denotes bag sample

4.1.2 Soil and Grab Groundwater Analytical Results

Laboratory reports containing analytical results for samples collected on March 15, 2007 are presented in Appendix B, and are summarized in Table 2 and Figure 4 for soil samples and in Table 3 and Figure 5 for water samples.

Soil sample analytical results (Table 2 and Figure 4) indicate the following:

- Soil samples collected from 3 of the 10 borings contained non-detect levels of all tested analytes;
- No MTBE was detected in any of the 19 soil samples collected from the 10 borings;
- BTEX constituents were detected in only 1 of the 19 soil samples (i.e., sample collected from Boring RM-5 at an approximate depth of 5 ft); this sample contained toluene, ethylbenzene, and xylenes at fairly low concentrations of 0.067, 0.036, and 0.18 mg/kg, respectively; benzene was not detected in any of the samples;
- TPH-g was detected in only 2 of the 19 soil samples (samples from 4-ft depth in Boring RM-3 and from 10-ft depth in Boring RM-6 that contained 2.2 mg/kg and 36 mg/kg of TPH-g, respectively); and
- Low levels of TPH-d, ranging from 3.1 mg/kg to 150 mg/kg were detected in 10 of the 19 soil samples, with samples from 5-ft depth in Boring RM-5 and from 4-ft depth in Boring RM-3 exhibiting the highest values (150 mg/kg and 49 mg/kg, respectively).

The grab groundwater sample analytical results are presented in Figure 5 and in Table 3. These results indicate that only the grab groundwater sample from Boring RM-5 had detectable concentrations of TPH-g, TPH-d, toluene, ethylbenzene, xylenes, and MTBE. Benzene was not detected in any of the water samples, including the sample from RM-5.

4.2 MW-1 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Table 4 presents the analytical results for the groundwater sample collected from MW-1 on April 12, 2007 as well as the data collected by others on previous monitoring occasions. The April 12, 2007 data indicate TPH-g and TPH-d concentrations of 62 µg/L and 4,800 µg/L, respectively, fairly low levels of BTEX compounds, and non-detect level of MTBE.

The historical monitoring data presented in Table 4 indicate that, with the exception of TPH-d values, there appears to be a general consistency in reported values for the listed analytes. The reported TPH-d values, however, have fluctuated widely over the past 11 years of monitoring, with values being very low or less than detectable from 1997 through 2002 and being fairly high in several other years. The four quarterly monitoring values in 1997 also vary widely (from 19 µg/L to 3,000 µg/L).

4.3 QUALITY ASSURANCE AND QUALITY CONTROL OF DATA

A summary review of the quality control and quality assurance ("QA/QC") analyses performed by the laboratories is presented in Appendix B. The QA/QC analyses indicate that the analytical results provided by the laboratories are accurate and fall within laboratory acceptance criteria. Comments made by the laboratories on chromatograms for the samples listed below are as follows:

- Oil range compounds are significant: RM-5-5, RM-3-4, RM-9-8, RM-11-5, RM-8-11, RM-4-6, RM-4-11, RM-10-11, RM-3-11 and RM-6-10;
- Diesel range compounds are significant; no recognizable pattern: RM-5-5, RM-3-4, RM-9-8, RM-11-5, RM-8-11, RM-4-6, RM-4-11, RM-10-11, RM-3-11 and RM-6-10;
- Unmodified or weakly modified gasoline is significant: RM-5 and RM-3-4; and
- No recognizable pattern: RM-5-5.

5.0 RECOMMENDATIONS

The fluctuation in TPH-d values justifies further monitoring of groundwater at and in the vicinity of MW-1 and Boring RM-5. Figure 3 shows proposed locations for the installation of two additional monitoring wells (to be designated MW-2 and MW-3) to supplement MW-1 for further investigation of groundwater contamination which likely has its source as the former USTs, located immediately upgradient of these monitoring wells.

6.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTES

As noted in Section 3.1.3, soil cuttings and equipment decontamination wastewater were contained in a sealed, dated, and labeled 55-gallon drum and is temporarily stored on site pending removal by the Port of Oakland.

Table 2: Summary of Soil Sample Analytical Results
Port of Oakland
801 Maritime street, Oakland, CA
Soil Sampling Anlytical Results for RM-1 through RM-10; Sampling performed March 15, 2007

Results are in mg/Kg												
Soil Sample	RM-1-8	RM-2-7	RM-2-10	RM-3-4	RM-3-11	RM-4-6	RM-4-11	RM-5-5	RM-6-7	RM-6-10	RM-7-6	RM-7-10
TPH												
Gasoline (C7-C12)	ND<1	ND<1	ND<1	2.2,g	ND<1	ND<1	ND<1	36,g,m	ND<1	ND<1	ND<1	ND<1
Diesel (C10-C24)	ND<1	ND<1	ND<1	49,a	6.4,g,b	5.1,g,b	9.7,g,b	150,g,b	ND<1	16,g,b	ND<1	ND<1
BTEX and MTBE												
Benzene	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015
Toluene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.067	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Ethylbenzene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.036	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Xylenes	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.18	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MTBE	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05

Results are in mg/Kg							
Soil Sample	RM-8-5	RM-8-11	RM-9-5	RM-9-8	RM-9-11.5	RM-10-6	RM-10-11
TPH							
Gasoline (C7-C12)	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
Diesel (C10-C24)	ND<1	6.2,g,b	ND<1	4.9,g,b	9.1,g,b	ND<1	3.1,g,b
BTEX and MTBE							
Benzene	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015
Toluene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Ethylbenzene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Xylenes	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MTBE	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05

See Appendix B for laboratory report
See Figure 3 for boring locations
RM = Boring
1 = Boring #
8 = sample depth, ft
TPH-g = Total Petroleum Hydrocarbons as Gasoline
TPH-d = Total Petroleum Hydrocarbons as Diesel
BTEX = Benzene, toluene, ethylbenzene, and xylenes
MTBE = Mthyl tert-butyl ether
ND = Not detected
a = Unmodified or weakly modified diesel is significant
b = Diesel range compounds are significant; no recognizable pattern
g = Strongly aged gasoline or diesel range compounds are significant
m = No recognizable pattern

Table 3: Summary of Grab Groundwater Sample Analytical Results
Port of Oakland
801 Maritime street, Oakland, CA
Ground Water Sampling Anlytical Results for RM-1 through RM-10; Sampling performed March 15, 2007

Results are in μg/L										
Water Sample	RM-1	RM-2	RM-3	RM-4	RM-5	RM-6	RM-7	RM-8	RM-9	RM-10
TPH										
Gasoline (C7-C12)	ND<50	ND<50	ND<50	ND<50	73,a	ND<50	ND<50	ND<50	ND<50	ND<50
Diesel (C10-C24)	ND<50	ND<50	ND<50	ND<50	57,b	ND<50	ND<50	ND<50	ND<50	ND<50
BTEX and MTBE										
Benzene	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Toluene	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Ethylbenzene	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Xylenes	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTBE	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Sample Designation: Example RM-10
RM = Boring
10 = Boring #
TPH-g = Total Petroleum Hydrocarbons as Gasoline
TPH-d = Total Petroleum Hydrocarbons as Diesel
BTEX = Benzene, toluene, ethylbenzene, and xylenes
MTBE = Mthyl tert-butyl ether
ND = Not detected
a = Unmodified or weakly modified gasline is significant
b = Diesel range compounds are significant; no recogniable pattern
See Appendix B for laboratory report
See Figure 3 for boring locations

TABLE 4
4/12/07 and Previous Groundwater Monitoring Results for MW-1

Sampling Date	DTW (feet)	GW Elevation (feet)	TPHg (ug/L)	TPHd (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	TDS (mg/L)
7/10/1996	7.36	6.45	**180**	**7,100**	**27**	**14**	**5.4**	**23**	NA	NA
12/27/1996	7.55	6.26	**180**	**670**	**30**	**15**	**5.8**	**26**	NA	NA
3/25/1997	7.31	6.50	**180**	**19**	**21**	**11**	**4**	**17**	NA	**1,840**
6/23/1997	7.55	6.26	**170**	**3,000**	**20**	**11**	**4.1**	**18**	NA	**1,320**
9/30/1997	7.46	6.09	**190**	**830**	**35**	**17**	**5.2**	**22**	NA	**2,020**
12/31/1997	7.17	6.38	**130**	<48	**26**	**14**	**4.3**	**18**	NA	**1,880**
4/17/2001	7.59	6.59	**160**	**59**	**11**	**6.2**	**2.6**	**11.2**	<2.0	**1,860**
7/26/2001	7.65	6.53	**130**	<50	**17**	**8.7**	**3.2**	**14.2**	<2.0	**1,880**
12/21/2001	7.71	6.47	**160**	<100	**14**	**6.9**	**2.6**	**11.5**	<2.0	**1,860**
3/13/2002	6.66	7.52	**110**	<50	**8.5**	**4.2**	**1.3**	**7.3**	<5.0	**1,100**
4/12/2007	7.60	6.58	**62**	**4,800**	**3.5**	**2.2**	**1.2**	**3.1**	<2.0	**1,560**

Notes:
See laboratory analytical report in Appendix B for water sample collected on 4/12/07
Groundwater elevations referenced to the Port Datum
Port Datum = Mean Sea Level -3.20 feet.
NA = Not Analyzed
DTW = Depth to Water
TPH-g = Total Petroleum Hydrocarbons as Gasoline
TPH-d = Total Petroleum Hydrocarbons as Diesel
MTBE = Mthyl tert-butyl ether
TDS = Total Dissolved Solids
H = Heavier hydrocarbons contribued to the quantitation
GW Elevation for 4/12/2007 calculated based on 2001 surveyed top-of-casing elevation of 14.18 feet (Port of Oakland Datum)

APPENDIX A

PHOTOGRAPHS OF SITE ACTIVITIES

Photo #1 (2/15/07) - General site location (Berth 24) as it appears today (facing southwest)

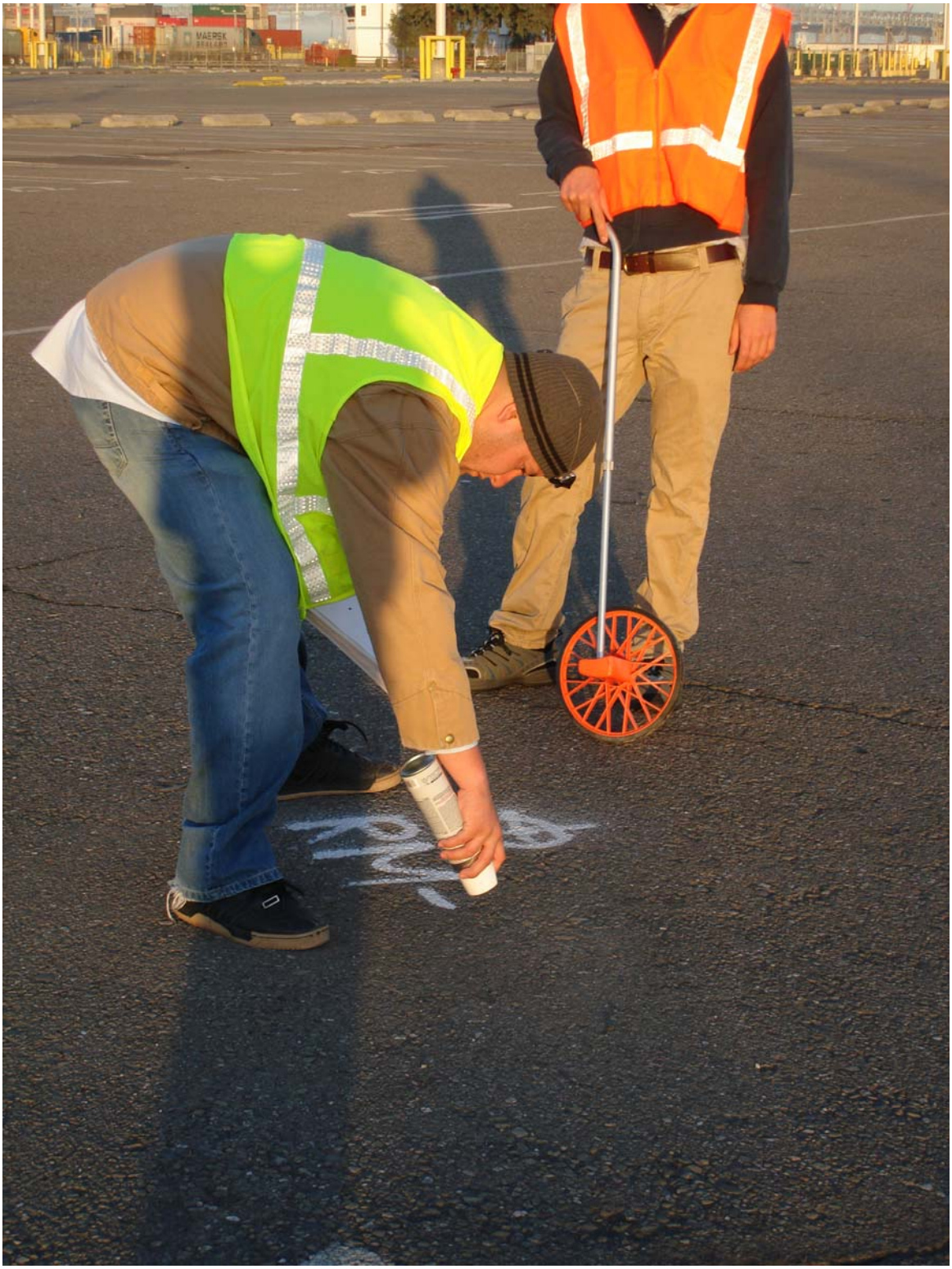

Photo #2 (3/13/07) - Marking location of borehole RM-2 with survey paint

Photo #3 (3/13/07) - Subsurface utility locator clearing proposed borehole locations of subsurface piping with metal detector

Photo #4 (3/15/07) - Driller using hollow-stem auger to break through pavement prior to hand auguring to 5 ft in RM-3

Photo #5 (3/15/07) - Hand auguring initial 5 ft before using the Geoprobe

Photo #6 (3/15/07) - Obtaining PID readings for initial 5-9 ft soil sample from RM-3

Photo #7 (3/15/07) - Soil sample RM-3-4 capped and labeled before being placed in the cooler with ice for delivery to laboratory

Photo #8 (3/15/07) - Purging 1-2 gallons from RM-3 using a peristaltic pump, prior to collection of groundwater sample

Photo #9 (3/15/07) - Collecting groundwater sample in 40-ml VOAs preserved with HCL

Photo #10a (3/15/07) - RM-3, backfilled and awaiting cement cap

Photo #10b (3/15/07) - Completed surface finish of boring RM-2, note the color of the dyed concrete cap

Photo #11 (3/15/07) - 55-gallon drum used for storage of IDW

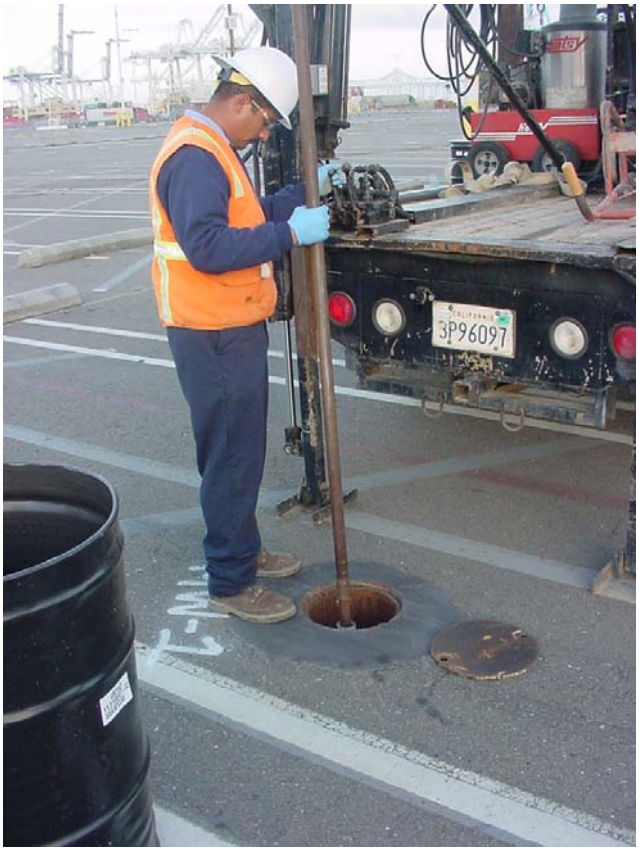

Photo #12 (4/9/2007) – RSI Drilling redeveloping existing monitoring well MW-1

Photo #13 (4/12/2007) – Pumping 3 casing volumes of water before collecting groundwater samples from well MW-1

APPENDIX B

QA/QC SUMMARY REVIEW, CERTIFIED ANALYTICAL REPORT FOR SOIL/GROUNDWATER SAMPLING AND CHAIN-OFCUSTODY DOCUMENTATION

Analytical Report laboratory numbers:

- 3/15/07 – McCampbell Analytic, Inc., #0703368
- 4/12/07 – Curtis & Tompkins, Ltd., #194111

Date: July 31, 2007

To: Masood Ghassemi

From: Cameron Adams

Re: QA/QC Review of Analytical Data
March 2007 and April 2007 Sampling Events
Project Number (4009 – 801 Maritime street, Oakland, CA)

Ten groundwater samples (including one duplicate) and 19 soil samples were collected on March 15, 2007 from Berth 24, 801 Maritime Street, Oakland, CA. Samples were analyzed by McCampbell Analytical (Pittsburg, CA) for the following parameters:

Analysis Methods

- Total petroleum hydrocarbon as gasoline (TPH-g) via EPA Method 8015M
- Total petroleum hydrocarbon as diesel (TPH-d) via EPA Method 8015M with silica gel clean-up via EPA Method 3630C
- Benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tert-butyl ether (MTBE) via EPA Method 8020.

The following data sets were reviewed in support of this investigation:

Data Sets	Dates Sampled	Matrix
0703368	03/15/2007	Groundwater and soil

Additionally, one groundwater sample was collected on April 12, 2007 from a monitoring well (MW-1) located at the Berth 24 site. The sample was analyzed by Curtis and Tompkins, Ltd (Berkeley, CA) for the following parameters:

Analysis Methods

- Total petroleum hydrocarbon as gasoline (TPH-g) via EPA Method 8015B
- Total petroleum hydrocarbon as diesel (TPH-d) via EPA Methods 8015B with silica gel clean-up via EPA Method 3630C
- Benzene, toluene, ethylbenzene and xylenes (BTEX) and Methyl tert-butyl ether (MTBE) via EPA Method 8021B.
- Total dissolved solids (TDS) via EPA Method 160.1

The following data sets were reviewed in support of this investigation:

Data Sets	Dates Sampled	Matrix
194111	04/12/2007	Groundwater

The quality assurance/quality control (QA/QC) analytical results in association with the analytical results for groundwater samples were evaluated for achievement of any method-specific QA/QC criteria. The QA/QC review results are discussed below.

1. Chain-of-Custody – No problems were noted with the chain-of-custody (COC) forms.

2. Requested Analyses Completed – All analyses were performed as requested on the COC. The following requests were noted on the COCs and performed by the laboratory as requested:

    - Silica gel cleanup (SGCU) analysis was performed for all samples collected on March 15, 2007 with detections of TPH-d

3. Holding Times – All samples were extracted and/or analyzed within the appropriate holding times.

4. Sample Preservation – No problems were noted with sample preservation.

5. Laboratory Method Blanks – Method blanks were reviewed to determine the potential for sample cross contamination due to handling within the laboratory. No detections of target compounds were noted in the method blanks.

6. Surrogates – Surrogates are added for organic analyses. Surrogates are compounds not normally found in the environment (?) that are added (spiked) into samples and analyzed for percent recovery (REC). Maximum and minimum limits on the REC are set by the laboratory for the method used.

    All surrogate RECs were within control limits.

7. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) – The LCS and LCSD are analyte-free, lab-created samples that are spiked with a known amount of target analyte(s) and analyzed to verify the extraction process. As a measure of analytical accuracy, the results of the LCS are compared against the known analyte concentrations in the spike to determine REC. The purpose of the LCS is to determine the performance of the laboratory with respect to analyte recovery, independent of field sample matrix interference. The LCSD is a duplicate preparation and analysis of the LCS. Results of the LCS and LCSD are compared to each other to determine analytical precision using the relative percent difference (RPD). Curtis and Tompkins provided blind spike (BS) and Blind Spike Duplicate (BSD) samples in their analytical report (# 194111), which are also prepared and analyzed similarly to LCS/LCSD samples.

    All LCS/LCSD and BS/BSD results were within QC limits.

8. Matrix Spike and Matrix Spike Duplicate (MS/MSD) – MS and MSDs are typically run for inorganic and/or organic analyses. A sample is split into three portions (original, MS, and MSD), and a known amount of a target analyte is added (spiked) to two portions (MS and MSD) of the sample. The results are compared against the

un-spiked portion of the sample for REC of the spike. Additionally, the results are compared against each other using a RPD to determine reproducibility.

All MS/MSD results were within QC limits.

9. Field Duplicate Results – Table 1 provides a summary of the field duplicate results. The following field duplicate sample was collected:

    - 1DUP: All results were replicated.

10. Detection and Quantitation Limits – No dilutions were required for the analyses.

11. Conclusion – No data were rejected (R) as a result of this data review. The data are usable, as qualified, in reporting the results of this sampling event.

Table 1: Field Duplicate Results

Results in µg/L		
Water Sample	RM-9	1DUP
TPH		
Gasoline (C7-C12)	ND<50	ND<50
Diesel (C10-C24)	ND<50	ND<50
BTEX, MTBE		
Benzene	ND<50	ND<50
Toluene	ND<50	ND<50
Ethylbenzene	ND<50	ND<50
Xylenes	ND<50	ND<50
MTBE	ND<50	ND<50

1DUP is a duplicate of groundwater sample RM-9

Sample Designation: Example RM-9
RM = Boring
9 = Boring #
TPH-g = Total petroleum hydrocarbons as gasoline
TPH-d = Total petroleum hydrocarbons as diesel
BTEX = Benzene, toluene, ethylbenzene and xylenes
MTBE = Methyl tert-butyl ether
ND = Not detected

McCampbell Analytical, Inc.
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Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

R&M Environmental 7996 Capwell Dr. Oakland, CA 94621	Client Project ID: #4009; Additional Site Inv.	Date Sampled: 03/15/07
		Date Received: 03/15/07
	Client Contact: Rafael Carranza	Date Reported: 03/22/07
	Client P.O.:	Date Completed: 03/22/07

WorkOrder: 0703368

March 22, 2007

Dear Rafael:

Enclosed are:

1). the results of **30** analyzed samples from your **#4009; Additional Site Inv. project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

R&M Environmental
and Infrastructure Engineering, Inc.
7996 Capwell Drive
Oakland, CA 94621-2015
(510) 553-2146 • FAX (510) 553-2145

CHAIN OF CUSTODY RECORD

DATE	CHAIN OF CUSTODY NUMBER
3/15/07	Nº 1011
LABORATORY NUMBER	PAGE 1 OF 23

PROJECT NAME	PROJECT MANAGER
Additional Site Inv.	R. Carranza
PROJECT NUMBER	TELEPHONE NUMBER
4009	(510) 364-4431
PROJECT LOCATION	DESTINATION LABORATORY
801 Maritime	McCampbell
SAMPLER(S)	ADDRESS
R. Carranza, C. Adams	RMO 0703368
SAMPLER SIGNATURE(S)	CITY / STATE / ZIP
[signature]	Pittsburg CA 94565
SITE CONTACT/TELEPHONE NUMBER	LABORATORY TELEPHONE NUMBER
(510) 364-4431	

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION	DATE	TIME	MATRIX TYPE	NO. / TYPE OF CONTAINERS	TURN AROUND TIME	TPH-g & TPH-d via EPA Method 8015M w/silica cleanup for TPH-d	BTEX & MTBE via EPA Method 8020	REMARKS (GRAB, COMPOSITE, ETC.)
RM-1	3/15/07	9:24	[illegible]	[illegible]	Standard	X	X	
RM-2		8:49						
RM-3		8:10						
1DUP			water	6x40_mL VOAs w/HCl				
RM-4		11:00	[illegible]	[illegible]				
RM-5		12:00						
RM-6		1:37						
RM-7		10:29						
RM-8		12:20						
RM-9		12:40						
RM-10		9:57						

SHIPPED VIA: AIRBILL #:

SPECIAL INSTRUCTIONS:

RELINQUISHED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME	RECEIVED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME
[signature]	Rafael Carranza / R&M	3/15/07	342	[signature]	[illegible]	3/15/07	342

DISTRIBUTION: WHITE=LABORATORY YELLOW=PROJECT MANAGER PINK=FILE

R&M Environmental
and Infrastructure Engineering, Inc.
7996 Capwell Drive
Oakland, CA 94621-2015
(510) 553-2146 • FAX (510) 553-2145

CHAIN OF CUSTODY RECORD

DATE	CHAIN OF CUSTODY NUMBER
3/15/07	№ 1012
LABORATORY NUMBER	PAGE 2 OF 3

PROJECT NAME	PROJECT MANAGER
Additional Site Inv.	R. Carranza
PROJECT NUMBER	TELEPHONE NUMBER
4009	(510) ~~[illegible]~~ 364-4431
PROJECT LOCATION	DESTINATION LABORATORY
801 Maritime	McCampbell
SAMPLER(S)	ADDRESS
R. Carranza, C. Adams	Willow Pass Rd.
SAMPLER SIGNATURE(S)	CITY / STATE / ZIP
	Pittsburg CA 94565
SITE CONTACT/TELEPHONE NUMBER	LABORATORY TELEPHONE NUMBER
(510) 364-4431	RMO 0703368

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION	DATE	TIME	MATRIX TYPE	NO. / TYPE OF CONTAINERS	TURN AROUND TIME	TPH-g & TPH-d via EPA method 8015M w/ silica cleanup for TPH-d	BTEX & MTBE via EPA method 8020	REMARKS (GRAB, COMPOSITE, ETC.)
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~			
RM-9-8	3/15/07	12:48	soil	6" tube	standard	X	X	
RM-9-11.5	"	12:50	"	"	"	"	"	
RM-8-5	"	12:12	"	"	"	"	"	
RM-8-11	"	12:15	"	"	"	"	"	
RM-5-5	"	11:46	"	"	"	"	"	
RM-4-6	"	10:55	"	"	"	"	"	
RM-4-11	"	11:00	"	"	"	"	"	
RM-10-6	"	9:47	"	"	"	"	"	
RM-10-11	"	9:51	"	"	"	"	"	
RM-9-5	"	12:45	↓	↓	↓	↓	↓	

SHIPPED VIA: AIRBILL #:

SPECIAL INSTRUCTIONS:

RELINQUISHED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME	RECEIVED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME
	Rafael Carranza/R&M	3/15/07	342		MAI	3/15/07	342

DISTRIBUTION: WHITE=LABORATORY YELLOW=PROJECT MANAGER PINK=FILE

R&M Environmental
and Infrastructure Engineering, Inc.
7996 Capwell Drive
Oakland, CA 94621-2015
(510) 553-2146 • FAX (510) 553-2145

CHAIN OF CUSTODY RECORD

DATE	CHAIN OF CUSTODY NUMBER
3/15/07	Nº 1013
LABORATORY NUMBER	PAGE 3 OF 3

PROJECT NAME	PROJECT MANAGER
Additional Site Inv.	R. Carranza
PROJECT NUMBER: 4009	TELEPHONE NUMBER: (510) 364-4431
PROJECT LOCATION: 801 Maritime	DESTINATION LABORATORY: McCampbell
SAMPLER(S): R. Carranza, C. Adams	ADDRESS: Willow Pass Rd.
SAMPLER SIGNATURE(S)	CITY: Pittsburg STATE: CA ZIP: 94565
SITE CONTACT/TELEPHONE NUMBER: (510) 364-4451	LABORATORY TELEPHONE NUMBER: RMO 0703368

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION	DATE	TIME	MATRIX TYPE	NO. / TYPE OF CONTAINERS	TURN AROUND TIME	TPH-g & TPH-d via EPA Method 8015M w/ silica gel cleanup & TPH-d	BTEX & MTBE via EPA Method 8020	REMARKS (GRAB, COMPOSITE, ETC.)
RM-1-8	3/15/07	9:19	soil	6" tube	standard	X	X	
RM-7-6		10:24						
RM-7-10		10:28						
RM-2-7		8:39						
RM-2-10		8:44						
RM-3-4		7:47						
RM-3-11		8:04						
RM-6-7		13:25						
RM-6-10		13:30						

SHIPPED VIA: AIRBILL #:

SPECIAL INSTRUCTIONS:

RELINQUISHED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME	RECEIVED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME
	Rafael Carranza / RAM	3/15/07	342		RIA	3/15/07	345

DISTRIBUTION: WHITE=LABORATORY YELLOW=PROJECT MANAGER PINK=FILE

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0703368 **ClientID: RMO**

☐ EDF ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty

Report to:
Rafael Carranza
R&M Environmental
7996 Capwell Dr.
Oakland, CA 94621

Email: rcarranza@randmenvironmental.com
TEL: (510) 553-214 FAX: (510) 553-214
ProjectNo: #4009; Additional Site Inv.
PO:

Bill t
Accounts Payable
R&M Environmental & Infrastructure
7996 Capwell Dr.
Oakland, CA 94621

Requested TAT: 5 days

Date Received **03/15/2007**
Date Printed: **03/21/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0703368-001	RM-1	Water	3/15/2007 9:24:00	☐		A		B								
0703368-002	RM-2	Water	3/15/2007 8:49:00	☐		A		B								
0703368-003	RM-3	Water	3/15/2007 8:10:00	☐		A		B								
0703368-004	1DUP	Water	3/15/2007	☐		A		B								
0703368-005	RM-4	Water	3/15/2007	☐		A		B								
0703368-006	RM-5	Water	3/15/2007	☐		A		B								
0703368-007	RM-6	Water	3/15/2007 1:37:00	☐		A		B								
0703368-008	RM-7	Water	3/15/2007	☐		A		B								
0703368-009	RM-8	Water	3/15/2007	☐		A		B								
0703368-010	RM-9	Water	3/15/2007	☐		A		B								
0703368-011	RM-10	Water	3/15/2007 9:57:00	☐		A		B								
0703368-012	RM-9-8	Soil	3/15/2007	☐	A		A									
0703368-013	RM-9-11.5	Soil	3/15/2007	☐	A		A									
0703368-014	RM-8-5	Soil	3/15/2007	☐	A		A									
0703368-015	RM-8-11	Soil	3/15/2007	☐	A		A									

Test Legend:

1	G-MBTEX_S	2	G-MBTEX_W	3	TPH(D)WSG_S	4	TPH(D)WSG_W	5	
6		7		8		9		10	
11		12							

Prepared by: Nickole White

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0703368 **ClientID: RMO**

☐ EDF ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty

Report to:
Rafael Carranza
R&M Environmental
7996 Capwell Dr.
Oakland, CA 94621

Email: rcarranza@randmenvironmental.com
TEL: (510) 553-214 FAX: (510) 553-214
ProjectNo: #4009; Additional Site Inv.
PO:

Bill t
Accounts Payable
R&M Environmental & Infrastructure
7996 Capwell Dr.
Oakland, CA 94621

Requested TAT: 5 days

Date Received **03/15/2007**
Date Printed: **03/21/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0703368-016	RM-5-5	Soil	3/15/2007	☐	A		A									
0703368-017	RM-4-6	Soil	3/15/2007	☐	A		A									
0703368-018	RM-4-11	Soil	3/15/2007	☐	A		A									
0703368-019	RM-10-6	Soil	3/15/2007 9:47:00	☐	A		A									
0703368-020	RM-10-11	Soil	3/15/2007 9:51:00	☐	A		A									
0703368-021	RM-9-5	Soil	3/15/2007	☐	A		A									
0703368-022	RM-1-8	Soil	3/15/2007 9:19:00	☐	A		A									
0703368-023	RM-7-6	Soil	3/15/2007	☐	A		A									
0703368-024	RM-7-10	Soil	3/15/2007	☐	A		A									
0703368-025	RM-2-7	Soil	3/15/2007 8:39:00	☐	A		A									
0703368-026	RM-2-10	Soil	3/15/2007 8:44:00	☐	A		A									
0703368-027	RM-3-4	Soil	3/15/2007 7:47:00	☐	A		A									
0703368-028	RM-3-11	Soil	3/15/2007 8:04:00	☐	A		A									
0703368-029	RM-6-7	Soil	3/15/2007 1:25:00	☐	A		A									
0703368-030	RM-6-10	Soil	3/15/2007 1:30:00	☐	A		A									

Test Legend:

1	G-MBTEX_S	2	G-MBTEX_W	3	TPH(D)WSG_S	4	TPH(D)WSG_W	5	
6		7		8		9		10	
11		12							

Prepared by: Nickole White

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

R&M Environmental	Client Project ID: #4009; Additional Site Inv.	Date Sampled: 03/15/07
7996 Capwell Dr.		Date Received: 03/15/07
Oakland, CA 94621	Client Contact: Rafael Carranza	Date Extracted: 03/15/07-03/19/07
	Client P.O.:	Date Analyzed 03/17/07-03/19/07

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0703368

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	RM-1	W	ND	ND	ND	ND	ND	ND	1	98
002A	RM-2	W	ND	ND	ND	ND	ND	ND	1	101
003A	RM-3	W	ND	ND	ND	ND	ND	ND	1	100
004A	1DUP	W	ND	ND	ND	ND	ND	ND	1	101
005A	RM-4	W	ND	ND	ND	ND	ND	ND	1	105
006A	RM-5	W	73,a	ND	3.0	1.8	1.0	4.0	1	107
007A	RM-6	W	ND	ND	ND	ND	ND	ND	1	105
008A	RM-7	W	ND	ND	ND	ND	ND	ND	1	109
009A	RM-8	W	ND	ND	ND	ND	ND	ND	1	114
010A	RM-9	W	ND	ND	ND	ND	ND	ND	1	113
011A	RM-10	W	ND	ND	ND	ND	ND	ND	1	115
012A	RM-9-8	S	ND	ND	ND	ND	ND	ND	1	84
013A	RM-9-11.5	S	ND	ND	ND	ND	ND	ND	1	86
014A	RM-8-5	S	ND	ND	ND	ND	ND	ND	1	93
015A	RM-8-11	S	ND	ND	ND	ND	ND	ND	1	82
016A	RM-5-5	S	36,g,m	ND	ND	0.067	0.036	0.18	1	98
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) value derived using a client specified carbon range; o) results are reported on a dry weight basis; p) see attached narrative.

DHS ELAP Certification N° 1644

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R&M Environmental	Client Project ID: #4009; Additional Site Inv.	Date Sampled: 03/15/07
7996 Capwell Dr.		Date Received: 03/15/07
Oakland, CA 94621	Client Contact: Rafael Carranza	Date Extracted: 03/15/07-03/19/07
	Client P.O.:	Date Analyzed 03/17/07-03/19/07

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0703368

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
017A	RM-4-6	S	ND	ND	ND	ND	ND	ND	1	88
018A	RM-4-11	S	ND	ND	ND	ND	ND	ND	1	85
019A	RM-10-6	S	ND	ND	ND	ND	ND	ND	1	93
020A	RM-10-11	S	ND	ND	ND	ND	ND	ND	1	82
021A	RM-9-5	S	ND	ND	ND	ND	ND	ND	1	79
022A	RM-1-8	S	ND	ND	ND	ND	ND	ND	1	88
023A	RM-7-6	S	ND	ND	ND	ND	ND	ND	1	103
024A	RM-7-10	S	ND	ND	ND	ND	ND	ND	1	88
025A	RM-2-7	S	ND	ND	ND	ND	ND	ND	1	98
026A	RM-2-10	S	ND	ND	ND	ND	ND	ND	1	92
027A	RM-3-4	S	2.2,g	ND	ND	ND	ND	ND	1	93
028A	RM-3-11	S	ND	ND	ND	ND	ND	ND	1	81
029A	RM-6-7	S	ND	ND	ND	ND	ND	ND	1	99
030A	RM-6-10	S	ND	ND	ND	ND	ND	ND	1	96
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) value derived using a client specified carbon range; o) results are reported on a dry weight basis; p) see attached narrative.

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R&M Environmental	Client Project ID: #4009; Additional Site Inv.	Date Sampled: 03/15/07
7996 Capwell Dr.		Date Received: 03/15/07
Oakland, CA 94621	Client Contact: Rafael Carranza	Date Extracted: 03/15/07
	Client P.O.:	Date Analyzed 03/16/07-03/21/07

Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method SW3510C/3630C/SW3550C/3630C Analytical methods SW8015C Work Order: 0703368

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0703368-001B	RM-1	W	ND	1	95
0703368-002B	RM-2	W	ND	1	101
0703368-003B	RM-3	W	ND	1	103
0703368-004B	1DUP	W	ND	1	100
0703368-005B	RM-4	W	ND	1	98
0703368-006B	RM-5	W	57,b	1	106
0703368-007B	RM-6	W	ND	1	94
0703368-008B	RM-7	W	ND	1	96
0703368-009B	RM-8	W	ND	1	97
0703368-010B	RM-9	W	ND	1	105
0703368-011B	RM-10	W	ND	1	100
0703368-012A	RM-9-8	S	4.9,g,b	1	97
0703368-013A	RM-9-11.5	S	9.1,g,b	1	98
0703368-014A	RM-8-5	S	ND	1	97
0703368-015A	RM-8-11	S	6.2,g,b	1	100
0703368-016A	RM-5-5	S	150,g,b	1	100

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	1.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS ELAP Certification N° 1644

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R&M Environmental	Client Project ID: #4009; Additional Site Inv.	Date Sampled: 03/15/07
7996 Capwell Dr.		Date Received: 03/15/07
Oakland, CA 94621	Client Contact: Rafael Carranza	Date Extracted: 03/15/07
	Client P.O.:	Date Analyzed 03/16/07-03/21/07

Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method SW3510C/3630C/SW3550C/3630C Analytical methods SW8015C Work Order: 0703368

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0703368-017A	RM-4-6	S	5.1,g,b	1	98
0703368-018A	RM-4-11	S	9.7,g,b	1	101
0703368-019A	RM-10-6	S	ND	1	100
0703368-020A	RM-10-11	S	3.1,g,b	1	100
0703368-021A	RM-9-5	S	ND	1	104
0703368-022A	RM-1-8	S	ND	1	96
0703368-023A	RM-7-6	S	ND	1	95
0703368-024A	RM-7-10	S	ND	1	92
0703368-025A	RM-2-7	S	ND	1	92
0703368-026A	RM-2-10	S	ND	1	96
0703368-027A	RM-3-4	S	49,a	1	101
0703368-028A	RM-3-11	S	6.4,g,b	1	96
0703368-029A	RM-6-7	S	ND	1	100
0703368-030A	RM-6-10	S	16,g,b	1	100

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	1.0	mg/Kg

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0703368

EPA Method SW8021B/8015Cm	Extraction SW5030B				BatchID: 26822				Spiked Sample ID: 0703351-016A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	0.60	101	115	13.1	103	110	6.63	70 - 130	30	70 - 130	30
MTBE	ND	0.10	106	96.8	8.97	97.4	103	5.96	70 - 130	30	70 - 130	30
Benzene	ND	0.10	90.6	92.9	2.48	86.9	94.4	8.20	70 - 130	30	70 - 130	30
Toluene	ND	0.10	83.8	87.1	3.89	82.3	88.2	6.94	70 - 130	30	70 - 130	30
Ethylbenzene	ND	0.10	95.5	92	3.75	93.8	99.6	6.05	70 - 130	30	70 - 130	30
Xylenes	ND	0.30	91.7	92.3	0.725	92	96.7	4.95	70 - 130	30	70 - 130	30
%SS:	80	0.10	99	107	7.77	99	104	4.93	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26822 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703368-012A	03/15/07 12:48 PM	03/15/07	03/17/07 9:01 AM	0703368-013A	03/15/07 12:50 PM	03/15/07	03/17/07 9:31 AM
0703368-014A	03/15/07 12:12 PM	03/15/07	03/17/07 3:35 PM	0703368-015A	03/15/07 12:15 PM	03/15/07	03/17/07 4:44 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0703368

EPA Method SW8021B/8015Cm	Extraction SW5030B				BatchID: 26853				Spiked Sample ID: 0703368-030A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	0.60	99.4	102	2.76	106	113	6.72	70 - 130	30	70 - 130	30
MTBE	ND	0.10	88.7	103	14.5	99.5	80.7	20.8	70 - 130	30	70 - 130	30
Benzene	ND	0.10	101	109	7.64	96.9	92.4	4.73	70 - 130	30	70 - 130	30
Toluene	ND	0.10	93.1	99.9	7.06	87.7	102	14.6	70 - 130	30	70 - 130	30
Ethylbenzene	ND	0.10	84.4	105	22.2	99.1	99.1	0	70 - 130	30	70 - 130	30
Xylenes	ND	0.30	103	100	3.28	95.7	110	13.9	70 - 130	30	70 - 130	30
%SS:	96	0.10	93.9	107	12.8	93.7	95.4	1.81	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26853 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703368-016A	03/15/07 11:46 AM	03/15/07	03/17/07 5:18 PM	0703368-017A	03/15/07 10:55 AM	03/15/07	03/17/07 7:00 PM
0703368-018A	03/15/07 11:00 AM	03/15/07	03/17/07 7:34 PM	0703368-019A	03/15/07 9:47 AM	03/15/07	03/17/07 8:07 PM
0703368-020A	03/15/07 9:51 AM	03/15/07	03/17/07 8:40 PM	0703368-021A	03/15/07 12:45 PM	03/15/07	03/17/07 10:19 PM
0703368-022A	03/15/07 9:19 AM	03/15/07	03/17/07 10:51 PM	0703368-023A	03/15/07 10:24 AM	03/15/07	03/17/07 11:24 PM
0703368-024A	03/15/07 10:28 AM	03/15/07	03/17/07 11:56 PM	0703368-025A	03/15/07 8:39 AM	03/15/07	03/18/07 12:28 AM
0703368-026A	03/15/07 8:44 AM	03/15/07	03/18/07 2:05 AM	0703368-027A	03/15/07 7:47 AM	03/15/07	03/18/07 3:42 AM
0703368-028A	03/15/07 8:04 AM	03/15/07	03/18/07 4:14 AM	0703368-029A	03/15/07 1:25 PM	03/15/07	03/18/07 4:46 AM
0703368-030A	03/15/07 1:30 PM	03/15/07	03/18/07 5:18 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0703368

EPA Method SW8021B/8015Cm **Extraction SW5030B** **BatchID: 26849** **Spiked Sample ID: 0703366-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	94.1	98.4	4.41	95.3	94.5	0.929	70 - 130	30	70 - 130	30
MTBE	ND	10	96.9	105	7.70	82.7	85.4	3.17	70 - 130	30	70 - 130	30
Benzene	ND	10	98.9	106	7.25	107	119	11.0	70 - 130	30	70 - 130	30
Toluene	ND	10	96.8	105	7.69	99.3	109	9.22	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	96.5	101	5.02	110	120	8.49	70 - 130	30	70 - 130	30
Xylenes	ND	30	90	91.7	1.83	107	117	8.96	70 - 130	30	70 - 130	30
%SS:	99	10	110	116	5.47	104	115	9.88	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26849 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703368-001A	03/15/07 9:24 AM	03/18/07	03/18/07 4:20 PM	0703368-002A	03/15/07 8:49 AM	03/18/07	03/18/07 4:51 PM
0703368-003A	03/15/07 8:10 AM	03/18/07	03/18/07 5:21 PM	0703368-004A	03/15/07	03/18/07	03/18/07 5:51 PM
0703368-005A	03/15/07 11:00 AM	03/18/07	03/18/07 6:51 PM	0703368-006A	03/15/07 12:00 PM	03/18/07	03/18/07 9:20 PM
0703368-007A	03/15/07 1:37 PM	03/18/07	03/18/07 10:49 PM	0703368-008A	03/15/07 10:29 AM	03/18/07	03/18/07 11:18 PM
0703368-009A	03/15/07 12:20 PM	03/18/07	03/18/07 11:48 PM	0703368-010A	03/15/07 12:40 PM	03/19/07	03/19/07 12:17 AM
0703368-011A	03/15/07 9:57 AM	03/19/07	03/19/07 12:47 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0703368

EPA Method SW8015C	Extraction SW3550C/3630C	BatchID: 26823	Spiked Sample ID: 0703351-016A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	ND	20	107	106	0.973	108	108	0	70 - 130	30	70 - 130	30
%SS:	97	50	110	109	0.805	110	110	0	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26823 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703368-012A	03/15/07 12:48 PM	03/15/07	03/17/07 4:24 AM	0703368-013A	03/15/07 12:50 PM	03/15/07	03/17/07 9:44 PM
0703368-014A	03/15/07 12:12 PM	03/15/07	03/17/07 10:52 PM	0703368-015A	03/15/07 12:15 PM	03/15/07	03/18/07 4:27 AM
0703368-016A	03/15/07 11:46 AM	03/15/07	03/18/07 5:33 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644


QA/QC Officer

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder 0703368

EPA Method SW8015C	Extraction SW3550C/3630C	BatchID: 26854	Spiked Sample ID: 0703368-030A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	16	20	111	113	0.589	78.4	101	25.1	70 - 130	30	70 - 130	30
%SS:	100	50	101	101	0	104	103	1.19	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26854 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703368-017A	03/15/07 10:55 AM	03/15/07	03/20/07 6:52 AM	0703368-018A	03/15/07 11:00 AM	03/15/07	03/18/07 7:46 AM
0703368-019A	03/15/07 9:47 AM	03/15/07	03/18/07 8:53 AM	0703368-020A	03/15/07 9:51 AM	03/15/07	03/18/07 10:01 AM
0703368-021A	03/15/07 12:45 PM	03/15/07	03/20/07 1:10 AM	0703368-022A	03/15/07 9:19 AM	03/15/07	03/18/07 12:18 PM
0703368-023A	03/15/07 10:24 AM	03/15/07	03/18/07 1:28 PM	0703368-024A	03/15/07 10:28 AM	03/15/07	03/18/07 6:11 AM
0703368-025A	03/15/07 8:39 AM	03/15/07	03/18/07 5:06 AM	0703368-026A	03/15/07 8:44 AM	03/15/07	03/18/07 4:00 AM
0703368-027A	03/15/07 7:47 AM	03/15/07	03/21/07 1:16 PM	0703368-028A	03/15/07 8:04 AM	03/15/07	03/21/07 1:22 PM
0703368-029A	03/15/07 1:25 PM	03/15/07	03/21/07 6:59 PM	0703368-030A	03/15/07 1:30 PM	03/15/07	03/21/07 2:25 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0703368

EPA Method SW8015C	Extraction SW3510C/3630C	BatchID: 26852	Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	N/A	1000	N/A	N/A	N/A	113	110	2.79	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	111	106	4.59	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 26852 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703368-001B	03/15/07 9:24 AM	03/15/07	03/18/07 5:02 PM	0703368-002B	03/15/07 8:49 AM	03/15/07	03/18/07 5:02 PM
0703368-003B	03/15/07 8:10 AM	03/15/07	03/18/07 6:12 PM	0703368-004B	03/15/07	03/15/07	03/18/07 7:22 PM
0703368-005B	03/15/07 11:00 AM	03/15/07	03/18/07 6:12 PM	0703368-006B	03/15/07 12:00 PM	03/15/07	03/17/07 12:12 AM
0703368-007B	03/15/07 1:37 PM	03/15/07	03/16/07 8:16 PM	0703368-008B	03/15/07 10:29 AM	03/15/07	03/16/07 9:29 PM
0703368-009B	03/15/07 12:20 PM	03/15/07	03/17/07 3:16 AM	0703368-010B	03/15/07 12:40 PM	03/15/07	03/16/07 11:05 PM
0703368-011B	03/15/07 9:57 AM	03/15/07	03/18/07 7:22 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

R&M Environmental
and Infrastructure Engineering, Inc.
7996 Capwell Drive
Oakland, CA 94621-2015
(510) 553-2146 • FAX (510) 553-2145

CHAIN OF CUSTODY RECORD

DATE: 4/12/07
CHAIN OF CUSTODY NUMBER: № 1010
LABORATORY NUMBER: 194111
PAGE 1 OF 1

PROJECT NAME: Additional Site Inv.	PROJECT MANAGER: R. Carranza
PROJECT NUMBER: 4009	TELEPHONE NUMBER: (510) 364-4431
PROJECT LOCATION: 801 Maritime St., Oakland	DESTINATION LABORATORY: Curtis & Tompkins
SAMPLER(S): R. Carranza & C. Adams	ADDRESS: 2323 Fifth Street
SAMPLER SIGNATURE(S):	CITY: Berkeley STATE: CA ZIP: 94710
SITE CONTACT/TELEPHONE NUMBER: (510) 364-4431	LABORATORY TELEPHONE NUMBER: (510) 486-0900

REQUESTED ANALYSIS

SAMPLE IDENTIFICATION	DATE	TIME	MATRIX TYPE	NO. / TYPE OF CONTAINERS	TURN AROUND TIME	TPH-g (8015 B)	TPH-d (8015B)	BTEX (8021B)	MTBE (8021B)	TDS	REMARKS (GRAB, COMPOSITE, ETC.)
-1 MW-1	4/12/07		water	4x40mL VOA w/HCl 1x1L amber	standard	X	X	X	X		
-2 TRIP	4/12/07		water	6x40mL VOA w/HCl	Standard	X		X	X		
-1 MW-1	4/12/07		water	1x250mL Poly	Standard					X	

SPECIAL INSTRUCTIONS:

SHIPPED VIA: AIRBILL #:

RELINQUISHED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME	RECEIVED BY (SIGNATURE)	PRINT NAME / COMPANY	DATE	TIME
	Cameron Adams / R&M	4/12/07	4:30		LaVanna Curtis	4/12/07	4:30

DISTRIBUTION: WHITE=LABORATORY YELLOW=PROJECT MANAGER PINK=FILE

REC'D on ice

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

CASE NARRATIVE

Laboratory number: **194111**
Client: **R&M Environmental**
Location: **Additional Site Inv.**
Request Date: **04/12/07**
Samples Received: **04/12/07**

This hardcopy data package contains sample and QC results for two water samples, requested for the above referenced project on 04/12/07. 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.

Total Dissolved Solids (TDS) (EPA 160.1):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins Laboratories Analytical Report

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	STANDARD		
Matrix:	Water	Sampled:	04/12/07
Units:	ug/L	Received:	04/12/07
Diln Fac:	1.000	Analyzed:	04/17/07
Batch#:	124264		

Field ID: MW-1 Lab ID: 194111-001
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	62	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	3.5	0.50	EPA 8021B
Toluene	2.2	0.50	EPA 8021B
Ethylbenzene	1.2	0.50	EPA 8021B
m,p-Xylenes	3.1	0.50	EPA 8021B
o-Xylene	2.1	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	101	72-136	EPA 8015B
Bromofluorobenzene (FID)	113	78-131	EPA 8015B
Trifluorotoluene (PID)	102	63-140	EPA 8021B
Bromofluorobenzene (PID)	113	78-121	EPA 8021B

Field ID: TRIP Lab ID: 194111-002
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	2.5	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)	102	72-136	EPA 8015B
Bromofluorobenzene (FID)	115	78-131	EPA 8015B
Trifluorotoluene (PID)	103	63-140	EPA 8021B
Bromofluorobenzene (PID)	114	78-121	EPA 8021B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins Laboratories Analytical Report

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	STANDARD		
Matrix:	Water	Sampled:	04/12/07
Units:	ug/L	Received:	04/12/07
Diln Fac:	1.000	Analyzed:	04/17/07
Batch#:	124264		

Type: BLANK Lab ID: QC384039

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)	98	72-136	EPA 8015B
Bromofluorobenzene (FID)	98	78-131	EPA 8015B
Trifluorotoluene (PID)	94	63-140	EPA 8021B
Bromofluorobenzene (PID)	96	78-121	EPA 8021B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC384040	Batch#:	124264
Matrix:	Water	Analyzed:	04/17/07
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.82	94	73-125
Benzene	20.00	20.07	100	79-120
Toluene	20.00	19.25	96	80-120
Ethylbenzene	20.00	19.66	98	80-120
m,p-Xylenes	20.00	20.64	103	80-120
o-Xylene	20.00	20.24	101	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	100	63-140
Bromofluorobenzene (PID)	106	78-121

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC384041	Batch#:	124264
Matrix:	Water	Analyzed:	04/17/07
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,905	95	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	72-136
Bromofluorobenzene (FID)	125	78-131

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	124264
MSS Lab ID:	194166-001	Sampled:	04/16/07
Matrix:	Water	Received:	04/16/07
Units:	ug/L	Analyzed:	04/18/07
Diln Fac:	1.000		

Type: MS Lab ID: QC384042

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	12.59	2,000	1,763	88	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	72-136
Bromofluorobenzene (FID)	129	78-131

Type: MSD Lab ID: QC384043

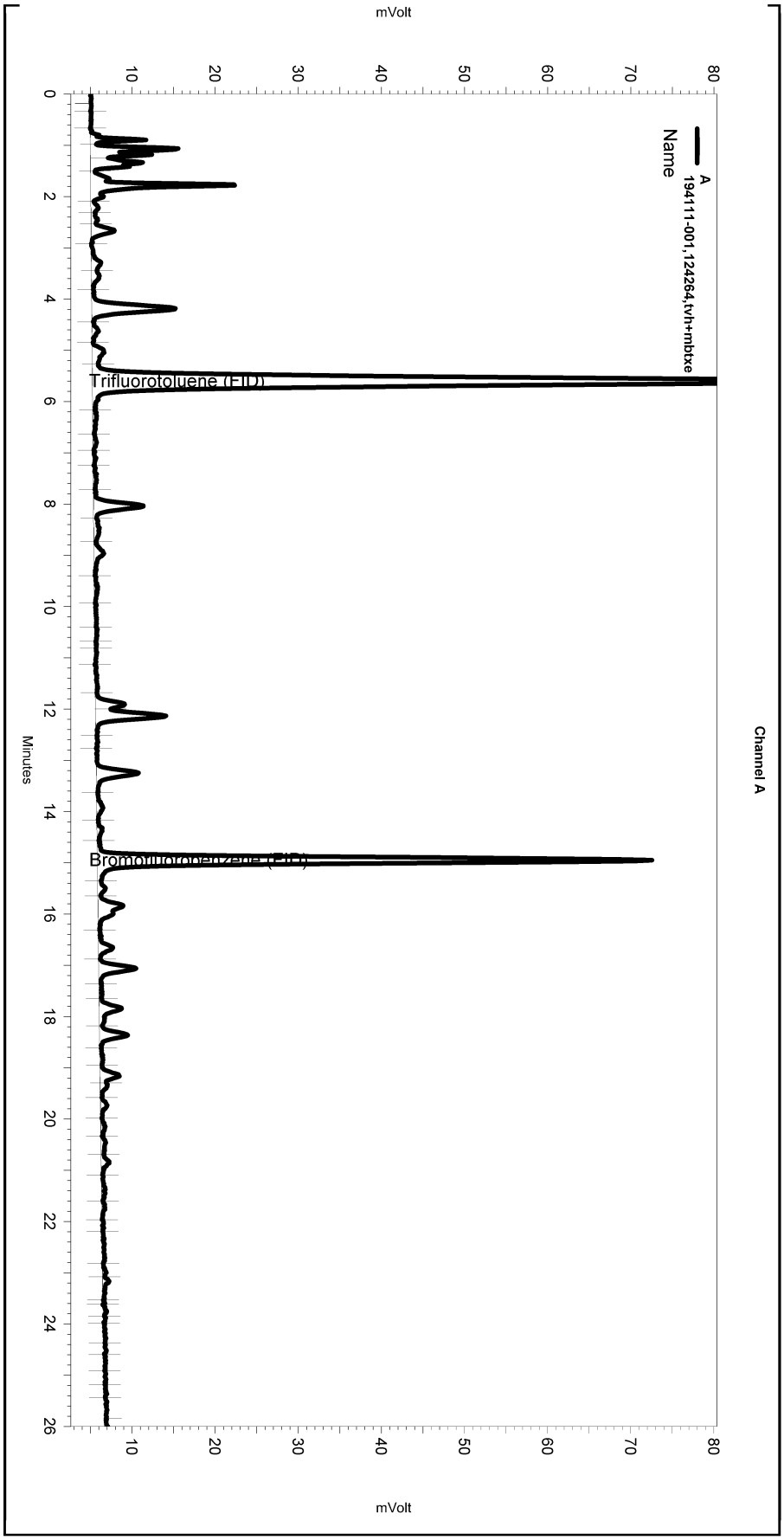
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,770	88	79-120	0	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	72-136
Bromofluorobenzene (FID)	125	78-131

RPD= Relative Percent Difference

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\107.seq**
Sample Name: **194111-001,124264,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\107_007**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe106.met

Software Version 3.1.7
Run Date: 4/17/2007 5:33:29 PM
Analysis Date: 4/18/2007 9:23:56 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: A1.3



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No items selected for this section

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No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

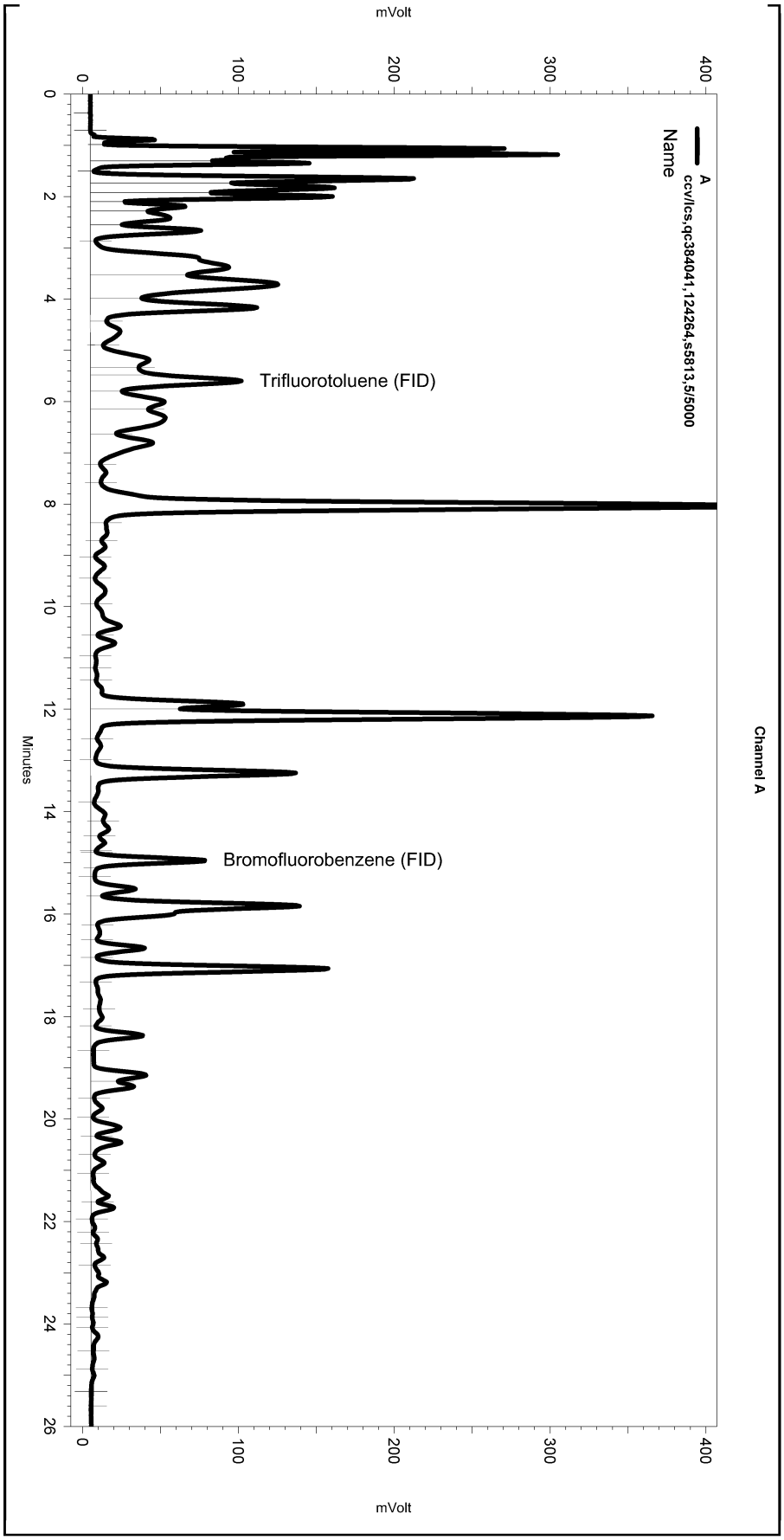
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\107_007

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\107.seq**
Sample Name: **ccv/lcs,qc384041,124264,s5813,5/5000**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\107_003**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe106.met

Software Version 3.1.7
Run Date: 4/17/2007 2:02:43 PM
Analysis Date: 4/18/2007 9:23:36 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: {Data Description}



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No items selected for this section

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No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\107_003

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.482	0	0
Yes	Split Peak	14.806	0	0
Yes	Split Peak	15.101	0	0

Total Extractable Hydrocarbons

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	MW-1	Sampled:	04/12/07
Matrix:	Water	Received:	04/12/07
Units:	ug/L	Prepared:	04/14/07
Diln Fac:	1.000	Analyzed:	04/17/07
Batch#:	124180		

Type: SAMPLE Lab ID: 194111-001

Analyte	Result	RL
Diesel C10-C24	4,800 H	50

Surrogate	%REC	Limits
Hexacosane	93	61-134

Type: BLANK Lab ID: QC383697

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	88	61-134

H= Heavier hydrocarbons contributed to the quantitation
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	124180
Units:	ug/L	Prepared:	04/14/07
Diln Fac:	1.000	Analyzed:	04/17/07

Type: BS
Lab ID: QC383698
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,310	92	58-130

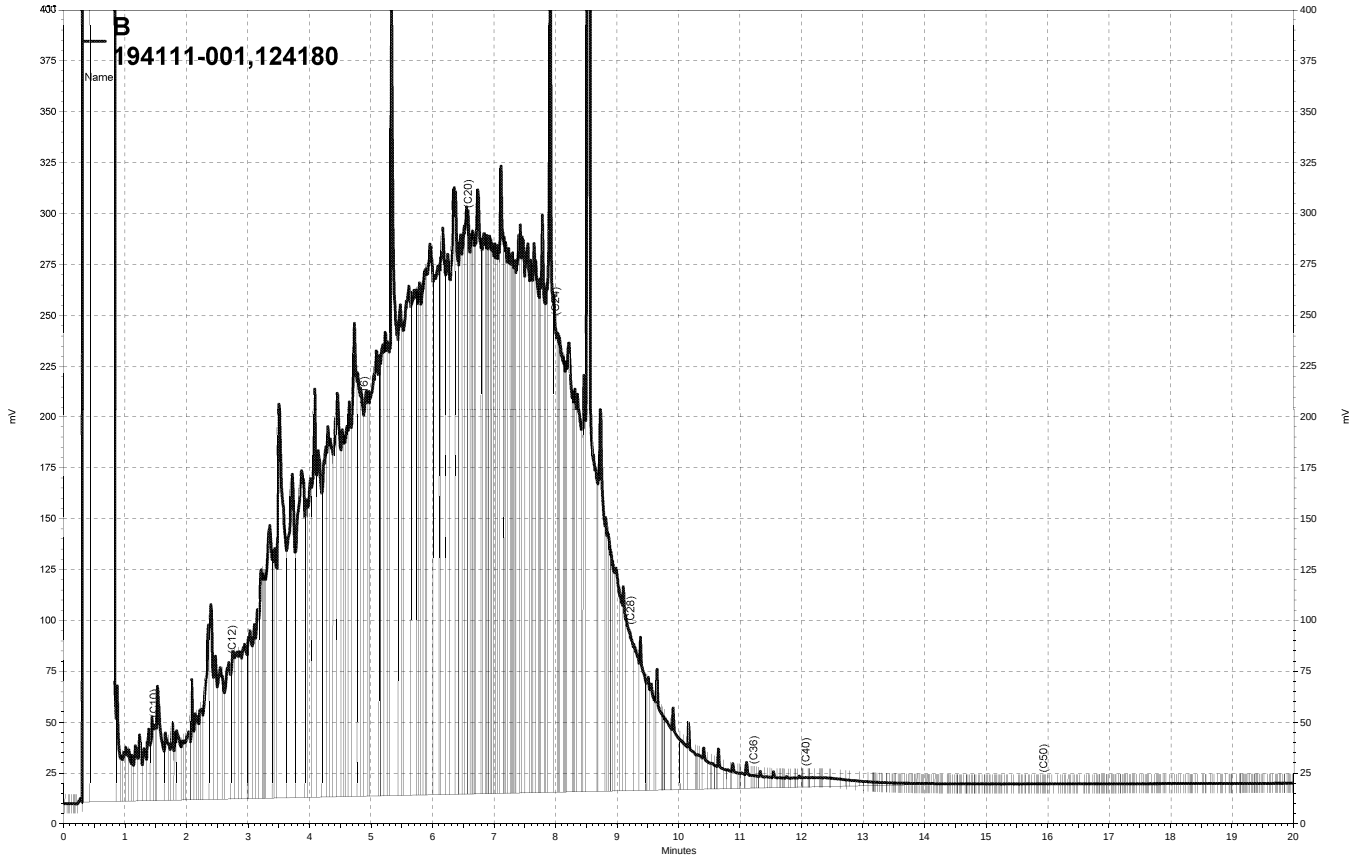
Surrogate	%REC	Limits
Hexacosane	85	61-134

Type: BSD
Lab ID: QC383699
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,295	92	58-130	1	27

Surrogate	%REC	Limits
Hexacosane	85	61-134

RPD= Relative Percent Difference



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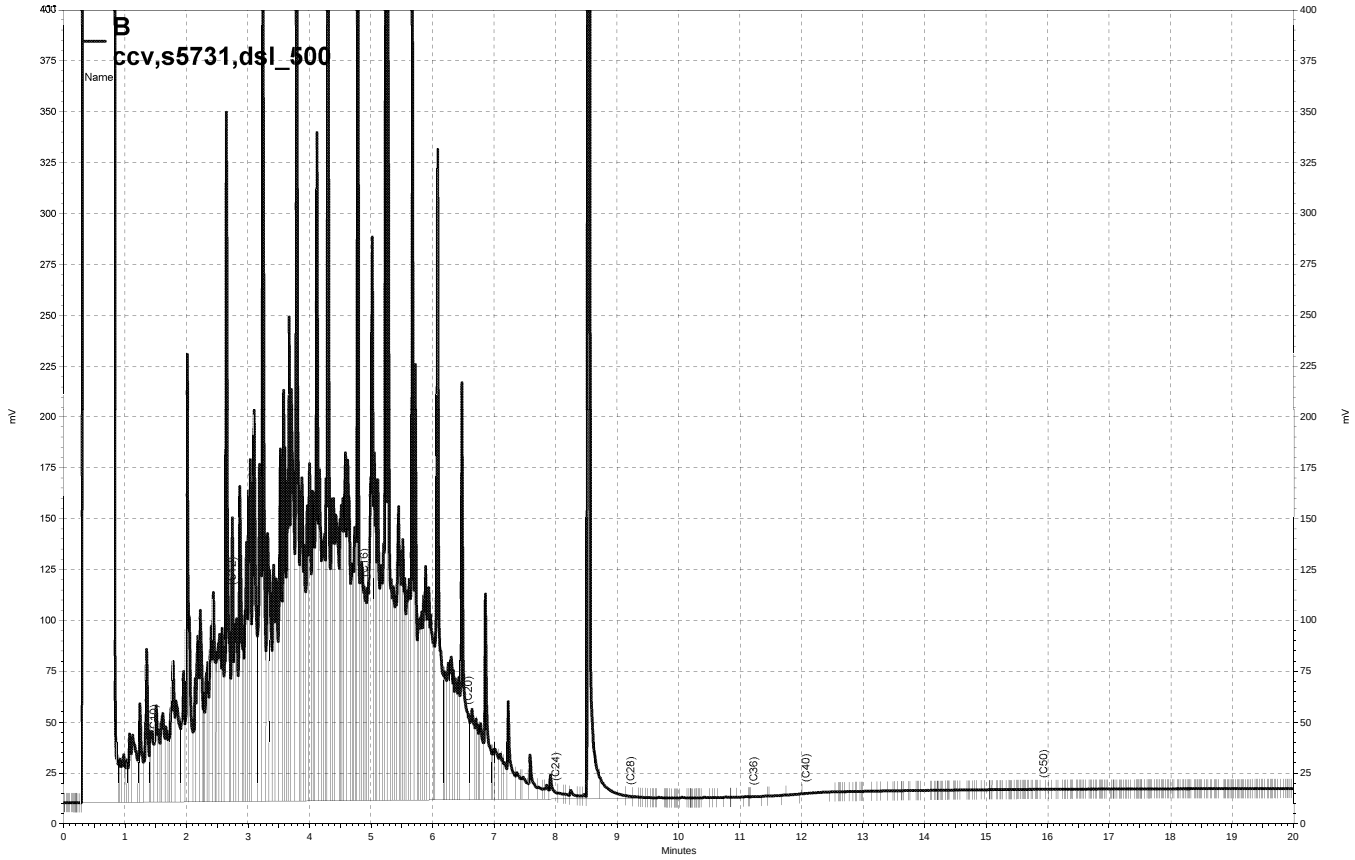

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Total Dissolved Solids (TDS)

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	124217
Field ID:	MW-1	Sampled:	04/12/07
Matrix:	Water	Received:	04/12/07
Units:	mg/L	Analyzed:	04/16/07
Diln Fac:	1.000		

Type	Lab ID	Result	RL
SAMPLE	194111-001	1,560	10
BLANK	QC383822	ND	10

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Batch QC Report

Total Dissolved Solids (TDS)

Lab #:	194111	Location:	Additional Site Inv.
Client:	R&M Environmental	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	124217
Field ID:	ZZZZZZZZZZ	Sampled:	04/11/07
MSS Lab ID:	194043-001	Received:	04/11/07
Matrix:	Water	Analyzed:	04/16/07
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim	Diln Fac
BS	QC383823		100.0	76.00		76	75-126			1.000
BSD	QC383824		100.0	82.00		82	75-126	8	21	1.000
SDUP	QC383825	16,120		15,980	100.0			1	24	10.00

RL= Reporting Limit
RPD= Relative Percent Difference

APPENDIX C

DRILLING PERMIT DOCUMENTATION

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 03/09/2007 By jamesy

Permit Numbers: W2007-0286
Permits Valid from 03/14/2007 to 03/21/2007

Application Id:	1173311217441	**City of Project Site:**	Oakland
Site Location:	801 Maritime St, Oakland, CA		
Project Start Date:	03/14/2007	**Completion Date:**	03/21/2007
Applicant:	R&M Environmental - Dr. Masood Ghassemi 7996 Capwell Dr., Oakland, CA 94621	**Phone:**	510-553-2144
Property Owner:	Port of Oakland 530 Water St., Oakland, CA 94607	**Phone:**	510-627-1373
Client:	** same as Property Owner **		

	Total Due:	$200.00
Receipt Number: WR2007-0117	**Total Amount Paid:**	$200.00
Payer Name : Dr Masood Ghassemi	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 10 Boreholes
Driller: Gregg drilling - Lic #: 485165 - Method: DP **Work Total: $200.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2007-0286	03/09/2007	06/12/2007	10	2.00 in.	12.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

5. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

7. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX D

BORING LOGS AND NOTES

Boring Notes

Boring ID	Date	Notes
RM-1	3/15/2007	- 1 layer asphalt - soil sampling at 8 ft. - purged 3 gallons of waters, sampled at 9:24
RM-2	3/15/2007	- 1 layer asphalt before hand auguring - asphaltic layer @ 5 ft. - purged 2 gallons of water, sampled at 8:49, water was clear to slightly turbid
RM-3	3/15/2007	- purged 2 gallons before sampling @ 11:00, water was clear
RM-4	3/15/2007	- additional concrete layer before the asphalt - rock at 2 ft, used truck mounted auger to breakthrough - at 3 ft had to use probe to get through - purged 1 gallon before water sampling at 8:10, sample = clear
RM-5	3/15/2007	- purged 1 gallon before sampling @ 12:00pm, sample was clear
RM-6	3/13/2007	- moved location 18.6 feet to the South of Old location @ 8:45
	3/15/2007	- has a double layer, asphalt --> concrete. Initial direct push couldn't go through 4', location moved 2 ft south - purged 2 gal @1:37pm, water was turbid, silty
RM-7	3/15/2007	- purged 2 gal. before sampling @ 10:29, water was slightly turbid
RM-8	3/13/2007	metal detector picked up readings to the east, moved NW by 5.0 ft @ 8:31
	3/15/2007	purged 1 gal. before sampling @ 12:20 water was slightly turbid
RM-9	3/15/2007	- QCTB sampled at 12:40, 1 DUP = RM-9 - purged 2 gal @ 12;54, water was clear to slightly turbid
RM-10	3/15/2007	- purged 4 gallons before water sampling @ 9:57, water was clear.
MW-1	3/13/2007	- PID: 0.0ppm DTW: 7.56 ft DTB: 14.58 ft No odor @ 8:03

BORING LOG

R&M EIE, Inc.

Borehole No: RM-1

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C. Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				0-1' Asphalt + rock base		
		-2				1-4' dark yellowish brown, sandy gravel loose	10yR/4/6	
		-3						
		-4						
		-5				4-5' Asphalt + clay		
		-6	0			5-7.5' dark green grey Sand, very fine to fine well sorted, moist, no odor, no stain		
		-7						
		-8		7.4' dtw		7.5-12' dark green grey sand, very fine to fine, well sorted Boring was terminated at 12 ft bgs Depth to Water: 7.4 ft	1 gley 4/1	
RM-1-8	9:19	-9						
		-10						
		-11				purged 3 gal. before sampling at 9:24		
		-12				Bag Sample RM-1-11 = 0.0 ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-2

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C.Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				0 - 1' Asphalt		
		-2				1-2' dark yellowish- brn, sdy gravel, loose, s'ang clasts to 1 1/2 in	10yR/4/6	
		-3					2.5yR3/4	
		-4				2-4.5' red brn gravelly sand, fN-med, loose moist, NO O/S		
		-5				4.5-5.5' ~6" asphaltic, 6" sandbase		
		-6				5.5'-8' - sand light yellowish brn fN-vfN well sorted, NO O/S Depth to Water: 7.2 ft		
RM-2-7	8:39	-7						
		-8		7.2' dtw			2.5 y/6/9	
		-9				8 - 12' blue black sand, very fine to fine, silty wet no odor no stain Boring	grey 2/5pb	
RM-2-10	8:44	-10				terminated at 12 ft bgs		
		-11				burged 2 gal water prior to to sampling @8:49, clear - slightly turbi		
		-12				Bag Sample RM-2-8 - 0.0 ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-3

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C.Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				4" Asphalt 6" concrete		
		-2				1 - 2' greenish black sandy gravel, loose, moist, MOD HC, odor	2.5/10y	
		-3	31.8			2-3' dark reddish born sandy gravel, clayey	2.5yR/3/4	
RM-3-4	7:47	-4	7.3			3-4' greenish black sandy gravel, loose, moist, MOD HC odor	2.5/10y	
		-5				5-12' olive brown; sand, loose well sorted, moist (wet 9-12'), slight Hydrocarbon odor Boring terminated at 12 ft bgs Depth to Water: 8.05 ft	2.5y/4/4	
		-6						
		-7						
		-8						
	7:54	-9	1.4	8.05' dtw				
		-10						
RM-3-11	8:04	-11				purged 1 gal prior to sampling water, water was clear, sampled at 8:10		
		-12				Bag Sample RM-3-1 = 10.7 ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-4

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C.Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1]			Backfill Material [3]
					Group Symbol	SOIL DESCRIPTION	Color [2]	
		-1				0-1' Asphalt + base rock		
		-2				1' - 10.5' gravel, brown, reddish brown, yellow brown, sandy, loose firm, Depth to Water: 8.4 ft		
		-3						
		-4						
		-5						
RM-4-6	10:55	-6						
		-7						
		-8						
		-9		8.4' dtw				
		-10				10.5-12' dark green grey sand, very fine to fine, loose wet no odor no stain, Boring terminated at 12 ft bgs		
RM-4-11	11:00	-11				- purged 2 gal before sampling at 11:00 water was clear.		
		-12				Bag Sample RM-4-11 = 0.0 ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-5

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C.Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				0-1' Asphalt		
		-2				1' - 6' olive brown gravelly sand, loose-firm, moist gravel-sub angular to 1", slight hydrocarbon odor		
		-3						
		-4						
RM-5-5	11:46	-5						
		-6						
		-7				6'-12' grey gravel, loose, large sub angular, sub rounded clasts to 2", wet at 8', no odor, no stain; soil sample not feasible below 7 feet due to large gravel clasts and no silt no sand and no clay Boring terminated at 12 ft bgs Depth to Water: 7.6 ft		
	11:48	-8		7.6' DTW				
		-9						
		-10						
		-11				purged 1 gallon at 12:00pm before sampling, water was clear		
		-12				Bag Sample RM-5-6 = 11.6ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-6

Date: 3/15/07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): Paul Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi (PG), R. Carranza, C.Adams	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				0-1': asphalt and base rock		
		-2				1-5': light orange brown sandy/silty gravel, loose-firm, moist, no odor/staining		
		-3						
		-4						
		-5						
		-6				5-6': black sand and asphalt chips		
RM-6-7	13:25	-7				6-10': light yellow brown sand, very fine-fine grained, loose, moist, no hydrocarbon odor or staining Depth to Water: 8.23 ft		
		-8						
	13:35	-9		8.23' DTW				
RM-6-10 (BAG)	13:30	-10	0.0					
		-11				10-12': dark grey-green silty sand, very fine-fine grained, loose, wet, no hydrocarbon odor or staining, locally clayey, Boring terminated at 12 ft bgs Bag Sample RM-6-10 = 0.0 ppm		
		-12						

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-7

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C. Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1]			Backfill Material [3]
					Group Symbol	SOIL DESCRIPTION	Color [2]	
		-1				0-1' Asphalt + rock base		
		-2				1-6' - dark yellowish brown, sandy gravel, loose	10yR/4/6	
		-3						
		-4						
		-5						
RM-7-6	10:24	-6						
		-7				6-7' sand, light yellowish brown, loose moist, fine grain no odor, no stain		
	10:23	-8		7.41' DTW		7-12' dark green grey sand, very fine to fine, loose wet, slightly clayey from 11-12'		
		-9				Boring Terminated at 12 ft bgs		
RM-7-10	10:28	-10				Depth to Water: 7.41 ft		
		-11				purged 2 gal. before sampling @ 10:29		
		-12				Bag Sample RM-7-9 = 0.0ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-8

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C. Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				0-1' Asphalt + rock base		
		-2				1-5' red brown- grey brown sandy gravel, loose, moist no odor no stain		
		-3						
		-4						
RM-8-5	12:12	-5						
		-6				5-6' dark grey-black sandy, very fine to med fine, loose moist, no odor, no stain		
		-7				6-11' yellow brown sand, very fine to fine, loose, moist no odor no stain		
		-8				Depth to Water: 8.48 ft		
		-9		8.48' DTW				
		-10				11-12' dark olive grey sandy very fine to fine, wet loose no odor, no stain, Boring Terminated at 12 ft bgs		
RM-8-11	12:15	-11				purged 1 gal. before sampling @ 12:20, water was slightly turbid		
		-12				Bag Sample RM-8-10 = 0.0ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-9

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C. Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				0-1' Asphalt + rock base		
		-2				1-4.5' grey brown-sandy gravel, loose moist no hydrocarbon odor, no stain		
		-3						
		-4						
RM-9-5	12:45	-5				4.5-8.5' light yellow brown sand, very fine to fine grained, loose, moist no odor, no stain Depth to Water: 7.6 ft		
RM-8-8	12:48	-6						
		-7						
		-8		7.6' DTW				
		-9				8.5-12' greenish grey SAND, very fine to fine, wet loose, clay from 11.5-12' ~ slight hydrocarbon odor Boring terminated at 12 ft bgs		
		-10						
RM-8-11.5	12:50	-11				purged 2 gal. before sampling @ 12:54, water was clear to slightly turbid 1 DUP = RM-9		
		-12				Bag Sample RM-9-8.5 = 0.0ppm		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc.

Borehole No: RM-10

Date: 3-15-07

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): P. Rogers
Project No: 4009	Coring Equipment: Geoprobe
Logged By: J. Gribi, P.G., C. Adams, R. Carranza	Sampler (Type/Diameter): 2" dual-tube liners
Reviewed By:	Borehole Diameter: 5"

Sample ID	Time	Depth (ft)	PID (ppm)	Water Level	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Color [2]	Backfill Material [3]
		-1				0-1' Asphalt + rock base		
		-2				1-3' dark yellowish brown, sandy gravel loose	10yR/4/6	
		-3						
		-4				3-5' black gravely sandy, loose (possible asphalt)	10yR/2/1	
		-5				5-9' Sand light yellowish brown, loose, fine grain, moist, no odor, no stain	2.5y/6/4	
RM-10-6	9:47	-6				Depth to Water: 7.48 ft		
		-7						
		-8		7.48 DTW				
		-9				9-12' Sand dark green grey, very fine to fine, loose, wet no Hydrocarbon odor/stain Boring	1 gley/4/1	
		-10				terminated at 12 ft bgs		
RM-10-11	9:51	-11				purged 4 gal. before sampling water @9:24, water was clear		
		-12				Bag Sample RM-10-9 = 0.0 ppm,		

1. Referencing USCS Chart
2. Referencing Munsell Chart
3. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

APPENDIX E

WORK PLAN FOR ADDITIONAL SITE INVESTIGATION

WORK PLAN
For
ADDITIONAL SITE INVESTIGATION
At
Underground Storage Tank Site
801 Maritime Street
Port of Oakland, Oakland, California
Fuel Leak Case RO0000019

Prepared for

Port of Oakland
Environmental Health & Safety Compliance Department
530 Water Street
Oakland, CA 94607

Prepared by

R&M Environmental and Infrastructure Engineering, Inc.
7996 Capwell Drive
Oakland, CA 94621-2015

R&M Project No. 4009

James E. Gribi. P.G.
Rafael Carranza and Cameron Adams

Masood Ghassemi, Ph.D., P.E., Project Manager

February 26, 2007

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ACRONYMS

ACHCSA	Alameda County Health Care Services Agency
BTEX	Benzene, toluene, ethylbenzene, and xylenes
EPA	Environmental Protection Agency
IDW	Investigative-derived Waste
MTBE	Methy tertiary-butylether
PID	Photoionization Detector
PPE	Personal Protection Equipment
QA	Quality Assurance
QC	Quality Control
TPH-D	Total Petroleum Hydrocarbons as Diesel
TPH-G	Total Petroleum Hydrocarbons as Gasoline
USA	Underground Service Alert
UST	Underground Storage Tank

1.0 INTRODUCTION

This work plan is for additional site characterization and installation and sampling of groundwater monitoring wells at a Port of Oakland's property that formerly contained three underground storage tanks (UST) which were removed in February 1989. Removal of the USTs and subsequent sampling of an on-site monitoring well revealed evidence of fuel releases to the soil and groundwater[1]. The Alameda County Health Care Services Agency (ACHCSA) has requested the Port to undertake additional site characterization and groundwater monitoring to generate supplementary data needed for site closure consideration[2]. This work plan describes the additional site investigation and monitoring that is herein proposed.

2.0 SITE DESCRIPTION AND OPERATION HISTORY[3]

2.1 LOCATION

Figure 1 is a vicinity map for the project site. Even though the site is identified as 801 Maritime Street, such an address no longer exists. Prior to 1989, the USTs at this site lay adjacent to a large warehouse used by a tenant for temporary storage of bailed cotton. The warehouse and yard were separate from the nearby Berth 24 maritime shipping terminal, see Figure 2. Since 1989, the warehouse has been demolished, fences have been removed, and the local streets have been abandoned or reconfigured until the earlier land usage has been completely obliterated. Today, the 801 Maritime Street site is part of an expanded Berth 24 container terminal and the only trace of the former land use is in reports and old aerial photographs. The current street address of the Berth 24 terminal is 909 Maritime Street. Photograph #1 shows the general site location as it appears today.

The site does not have a unique Assessor Parcel Number (APN). It is part of a much larger assessor tax parcel (APN 000-0320-001-00) that includes 445 acres of land about evenly split between dry land and submerged land.

2.2 OPERATION HISTORY

801 Maritime Street was the site of a warehouse and a fueling dispenser. Three USTs that supplied the dispenser were installed circa 1959 and were designated by the Port as CF-06, CF-07, and CF-35. All three USTs were of single wall steel construction and each was strapped to a concrete slab (due to shallow groundwater conditions). CF-06 had a capacity of 10,000 gallons and was used to store diesel fuel. Tanks CF-07 and CF-35 had capacities of 20,000 and 10,000 gallons, respectively, and were used to store diesel fuel although both tanks had been configured to also store gasoline. All three tanks were removed from the ground on February 16, 1989. All of the tank removal and related field activities at the time were conducted under the lead of

[1] "Report on Tank Removal and Remediation Activities, 801 Maritime Street", prepared for the Port of Oakland by Baseline Environmental Consulting, April 1989.
[2] Letter from Mr. Barney M. Chen of Alameda County Health Care Services Agency to Mr. John Prall of Port of Oakland, December 20, 2006.
[3] Much of the information in this section has been excerpted from a 31 May 2006 letter from Ms. Roberta Reinstein, Manager, Port Environmental and Safety Department, to Mr. Barney Chan of Alameda County Health Care Services Agency.

ACHCSA. Originally this site was assigned a site identification number STID #3780 and is now assigned a new identification as RO0000019.

3.0 PREVIOUS SITE CHARACTERIZATION AND REMEDIATION[4]

3.1 FIELD OBSERVATIONS AND ANALYTICAL RESULTS FOR SAMPLES COLLECTED IN CONNECTION WITH TANK REMOVAL

Visual examination of the tanks after removal from the ground did not yield any evidence of corrosion, punctures or leaks. During tank removal, however, discolored soils and petroleum odors were noted. Groundwater accumulated in the excavation contained oil and exhibited sheen. Floating product was not present. The impacted groundwater was pumped out of the pit and hauled away for proper disposal. Soil excavation then continued until a final pit dimension of approximately 52 by 64 by 12 feet deep was achieved. The impacted soils (approximately 1,500 cubic yards) were stockpiled near the excavation and bioremediated on site.

Immediately after removal of the three USTs, 10 soil samples and one water sample were collected in the former tank area (See Figure 3 for soil sampling locations); after completion of excavation, six soil samples were collected in the former product line trenches. Analytical results for soil and water samples taken from the former tank area are presented in Table 1. These data indicated that a) release of petroleum hydrocarbons had occurred; b) primarily diesel hydrocarbons had been released; c) the soil under the fill ends for two of the tanks contained the highest diesel hydrocarbon concentrations (1,600 and 3,600 mg/kg); and d) volatile hydrocarbons (gasoline, and BTEX were present in two of the ten soil samples in low concentrations. Petroleum hydrocarbons were detected in soil samples collected from product line trenches at depths of less than 1.5 ft. The concentrations ranged from non-detected to 17.8 mg/kg and aromatic hydrocarbons at concentrations not exceeding 0.02 mg/kg.

The soils containing concentrations of hydrocarbons in excess of 1,000 mg/kg were subsequently removed and stockpiled for on-site bioremediation. Analysis of samples of excavated soil indicated the presence of diesel hydrocarbons ranging from 110 mg/kg to 920 mg/kg.

Analysis of the sample of water in the excavation pit indicated the presence of 0.48 mg/L of gasoline, 21 mg/L of diesel, 0.019 mg/L benzene, 0.026 mg/L of toluene, 0.078 mg/L of xylenes, and 0.017 mg/L of ethylbenzene.

3.2 INSTALLATION AND SAMPLING OF MONITORING WELL MW-1

In 1996, the Port installed a solitary monitoring well, MW-1(See Photographs #2 and #3 and Figure #5), at the site, located downgradient of former USTs. This well is one of the 54 wells located in Berth 23 and 24 area; the 53 other wells (See Photograph #4 for a typical well) are the groundwater monitoring network for the former Mobil Oil and Ashland Oil Bulk Fuel Facilities (i.e., tank farms). Both facilities are petroleum release sites that have a large and combined dissolved phase plume located in the shallow water-bearing unit (the same unit MW-1 is constructed in). Figure 4 shows the locations of the 54 wells in Berth 23 and 24, including MW-1. Based on water level measurements in these wells over several different time frames, the local groundwater flow has been estimated to be predominantly toward the west, with MW-1 being located downgradient of the former location of the three USTs.

[4] Based on information contained in documents cited in Footnotes 1 and 3.

Quarterly monitoring of MW-1 was performed until December 2001, with the results shown in Table 2. The data in Table 2 indicate detection of diesel and gasoline petroleum hydrocarbons (TPH-d ranging from <48 µg/L to 7,100 µg/L and TPH-g being in the 130-190 µg/L range) and BTEX (ranging from 31 µg/L to 79.2 µg/L). The data also suggest a gradual decrease in the contaminant concentrations

Table 1: Analytical Results for Soil and Groundwater Samples Collected in February 1989 in Conjunction with UST Removal (See Figure 3 for sampling locations)*

Sample ID	Depth, ft.	Total Volatile HC	Total Extractable HC	Benzene	Toluene	Ethylbenzene	Xylenes
Tank Area Soil Samples (mg/kg							
A-1	8	ND	27	ND	ND	ND	ND
A-2	8	ND	ND	ND	0.017	ND	0.029
A-3	8	ND	ND	ND	ND	ND	ND
B-1	9.5	ND	ND	ND	ND	ND	ND
B-2	9.5	ND	3,600	ND	ND	ND	ND
C-1	6	ND	ND	0.025	0.035	0.025	0.045
C-2	6	25	1,600	<0.5	<0.5	<0.5	<0.5
C-3	6	ND	ND	ND	ND	ND	ND
M-1	10	ND	ND	ND	0.1	ND	0.145
M-2	10	10	ND	ND	0.26	0.08	0.4
Tank Area Water Sample (mg/L)							
W-1,2,3		0.48	21	0.019	0.026	0.017	0.078
Product Line Trench Soil Samples							
T-1	1.5	ND	6.6	0.0063	ND	0.0051	ND
T-2	1	ND	17.8	0.0167	ND	ND	ND
T-3	1	ND	ND	ND	ND	ND	ND
T-4	0.25	ND	ND	ND	ND	ND	ND
T-5	0.5	ND	ND	ND	ND	ND	ND
T-6	0.5	2.6	ND	0.0165	0.0051	ND	ND
Detection Limits and EPA Method							
(mg/kg)	10	10	0.005	0.005	0.005	0.005	0.005
(mg/L)	0.05	500	0.001	0.001	0.001	0.001	0.001
Method	8015/5030	8015	8015	8020/602	8020/602	8020/602	8020/602

* Source: “Report on Tank Removal and Remediation Activities, 801 Maritime Street”, prepared for the Port of Oakland by Baseline Environmental Consulting, April 1989.

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TABLE 2: QUARTERLY MONITORING OF MW-1
(July 1996 – December 2001)

Sample Date	Groundwater Elevation (feet)	TPH-diesel (µg/L)	TPH-gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TDS (mg/L)
07/10/1996	6.45	7,100	180	27	14	5.4	23	69.4	NA	NA
12/27/1996	6.26	670	180	30	15	5.8	26	76.8	NA	NA
03/25.1997	6.50	19	180	21	11	4	17	53.0	NA	1,840
06/23/1997	6.26	3,000	170	20	11	4.1	18	53.1	NA	1,320
09/30/1997	6.09	830	190	35	17	5.2	22	79.2	NA	2,020
12/31/1997	6.38	<48	130	26	14	4.3	18	62.3	NA	1,880
04/17/2001	6.59	59	160	11	6.2	2.6	11.2	31.0	<2.0	1,860
07/26/2001	6.53	<50	130	17	8.7	3.2	14.2	43.1	<2.0	1,880
12/21/2001	6.47	<100	160	14	6.9	2.6	11.5	35.0	<2.0	1,860

Notes:
- Groundwater elevation data are referenced to Port of Oakland Datum (Port Datum = Mean Sea Level – 3.20 feet)
- Laboratory analyses are by Curtis and Tompkins, Ltd., Berkeley, CA
- BTEX = Sum of benzene, toluene, ethylbenzene, and xylenes in preceding columns
- MTBE = Methyl tertiary-butylether
- TDS = Total dissolved solids
- NA = Not analyzed

4.0 DESCRIPTION OF PLANNED FIELD ACTIVITIES

4.1 BASIS FOR PROPOSED ACTIVITIES

ACHCSA has reviewed the available site information and has provided the following rationale for requesting additional site characterization and monitoring work that is to be performed to generate data needed for site closure consideration[5]

- Installation of monitoring wells – Although one monitoring well was installed downgradient of the former USTs, this lone well is insufficient to assess potential releases from the former tanks. Therefore, a minimum of two additional wells should be installed to determine site-specific gradient and for quarterly groundwater monitoring.

- The limit of soil contamination was not determined during the tank removal. TPH-d values of 3,600 ppm and 1,600 ppm were reported for soil samples from two locations. Additional borings should be advanced and soil samples collected and analyzed to delineate the extent of soil contamination.

4.2 TASKS TO BE PERFORMED

The implementation of the 8 tasks described below should generate the additional site characterization and monitoring data requested by ACHCS.

4.2.1 Task 1 – Work Plan Preparation

This task consists of preparation of this work plan and a job hazard analysis, included as an appendix to this document, for addressing the site-specific health and safety issues associated with working in marine terminals in general and at Berth 24 in Port of Oakland, in particular.

4.2.2 Task 2 – Site Characterization

This task will consist of advancing 10 borings and collecting and analyzing soil and grab groundwater samples from each boring. The following specific activities are contemplated:

- Using the drawings contained in the UST removal documents, locate Well MW-1 and the general boundary of the former UST area, including the sampling locations "B-2" and "C-2" where TPH-d values of 3,600 ppm and 1,600 ppm had been previously measured in soil samples.

- Based on the assumed westerly direction of groundwater flow, select a total of 10 locations to advance borings to collect soil and groundwater samples; mark the locations with spray paint for subsequent subsurface utility clearance. The selected locations to represent upgradient, downgradient, and transgradient locations. Figure 3 shows tentatively proposed boring locations, subject to adjustment in the field based on subsurface utility clearance and access logistics.

[5] Letter dated December 20, 2006, from Mr. Barney Chan of ACHCSA to Mr. john Prall of the Port of Oakland; Subject: "Fuel leak Case RO0000019, Port of Oakland, 801 Maritime Street, Oakland, CA 94607".

- Secure permit from Alameda County Public Works Agency (ACPWA) for advancing soil borings.

- Review site utility plan drawings and perform subsurface utility clearance at each location marked for advancing borings. The utility clearance for each location to include an area of approximately 10 ft by 10 ft to allow adjustments of boring locations based on field observations during hand augering of the first 5 feet. (Note: Some of the utilities, such as Transite or plastic pipes, may be hard to detect instrumentally).

- Use direct push technology ("Geoprobe") to advance ~ 2-inch diameter borings to a maximum depth of approximately 12 ft. The drilling and collection of samples to follow the following protocol:

    - Hand auger all boreholes to a depth of 5 ft before employing the "direct push" method.

    - Examine the initial opening in the pavement for presence of methane gas using a field instrument.

    - Geologist to log the borehole that is hand augered (as well as the remainder of the borehole which will be subsequently advanced via Geoprobe).

    - Collect soil samples at depth intervals of approximately 5 ft; use butyrate tubes measuring approximately 2 inches in diameter by 4 feet in length to retrieve the samples; later, cut these tubes into 6-inch long sections, with the sections selected for analysis capped, labeled, and placed in a sampling cooler with ice for shipment to laboratory for analysis under proper chain-of-custody protocol.

    - Visually inspect and describe soil samples according to Unified Soil Classification System (USCS), note any distinct petroleum or gasoline odor or coloration; collect a portion of the soil samples in Ziploc bags, seal the bags, and place them in the sun for release of hydrocarbons, if any; at the end of the day obtain PID readings for each bagged sample and note them on the boring logs.

    - Install temporary piezometers with 3/4-inch diameter PVC screen and riser pipes in each borehole. Close each well screen at the bottom with PVC plugs (bottom caps). Use a peristaltic pump to purge 1-2 gallons of water from each piezometer, if the yield is adequate. Collect a single water sample from each piezometer for analysis. Collect the water samples in glass containers for volatile organic analysis (VOA). After sample collection, allow some time for water recovery and then measure and record depth-to-water.

    - Backfill the boreholes from total depth to surface with cement grout. Top off any settlement with cement slurry or asphalt patch to match the surrounding surface.

    - Label sample containers with borehole number, sample depth (for soil samples), project number, and date and time of sample collection, and place in a cooler with ice. Deliver samples to a state-certified laboratory for analysis under proper chain-of-custody protocol.

- Use a steam cleaner to decontaminate the drilling and sampling equipment before use and between each borehole location.

- Place the soil cuttings and decontamination water in 55-gallon containers and leave them on site for subsequent profiling and disposal by Port of Oakland.

4.2.3 Task 3 – Analysis of Soil and Grab Water Samples from Borings

The soil and grab groundwater samples collected in Task 2 will be analyzed for the following analytes via indicated methods:

- Total petroleum hydrocarbons as gasoline (TPH-g) and as diesel (TPH-d); EPA Method 8015M with preliminary silica gel cleanup for TPH-d.

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary-butylether (MTBE); EPA Method 8020.

4.2.4 Task 4 - Installation of Two Monitoring Wells

This task would involve selection of locations for and installation of two additional monitoring wells to supplement the one currently existing at the site (MW-1). Specifically, the following activities are entailed:

- Review the site characterization results and, based on the results and the existing location of MW-1, select two locations for installation of monitoring wells, taking into account the following access consideration: if wells are placed in the container or trailer slots, it is likely that the locations will always be difficult to get into; the isleways seem to be best as long as proper safety precautions are taken when wells are being accessed for work.

- Perform subsurface utility clearance at selected well locations; adjust locations as necessary.

- Complete well drilling permit application and secure such permits from ACPWA; wells to be constructed with 2-inch PVC casing, to a total depth of 15 ft, with a screen interval extending from 5 to 15 feet from top of the casing. The well construction will follow the following protocol:

    - After coring to penetrate the pavement, hand auger the first 5 feet of the boring before employing the hollow-stem auger method.

    - Examine the initial opening in the pavement for presence of methane gas using a field instrument.

    - Geologist to log the borehole that is hand augered (as well as the remainder of the borehole which will be subsequently advanced via hollow-stem augering).

    - Use a hollow-stem auger, with 8-inch O.D. auger to drill the boreholes.

    - Geologist to collect soil samples for examination and subsequent analysis.

- Construct wells with 2-inch inside diameter flush joint-threaded, Schedule 40 PVC casing with 0.010-inch machine-slotted screens 10 feet in length. Total well depth will be approximately 15 ft.

- Place a filter pack of #12 sized sand from the bottom of the boring to approximately 1 to 2 feet above the slotted screen section.

- Place 1 to 2 feet of bentonite pellets atop the sand packs and hydrate with water to act as seals

- Seal the remaining portion of the annular space with neat Portland Type I/II cement to approximately 1 foot below the ground surface.

- Complete well tops with expandable caps and a heavy-duty flush well box, per the following specifications:

    - Heavy-duty well box set in reinforced concrete collars, with top of box flush with the pavement surface

    - Steel lids and collars

    - Annular space to be wide enough to allow insertion of a simple cage of number 4 rebars.

    - The annular space containing the rebar to be filled with concrete

4.2.5 Task 5 – Analysis of Soil Samples Collected During Well Installation

The soil samples collected in Task 4 will be analyzed for the following analytes via indicated methods:

- Total petroleum hydrocarbons as gasoline (TPH-g) and as diesel (TPH-d); EPA Method 8015M with preliminary silica gel cleanup for TPH-d.

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary-butylether (MTBE); EPA Method 8020.

4.2.6 Task 6 – Monitoring Well Development

This task involves the development of the two newly installed monitoring wells and re-development/rehabilitation of the one existing monitoring well (MW-1). Development and redevelopment of wells will follow the following protocol:

- Before development, measure depths to water and depths to bottom from top of casings; based on these measured values, calculate the approximate wet well volumes (i.e., volume of water standing in well casing)

- Develop the wells by surging and pumping using a 1-inch diameter PVC pipe with a plunger on the end and a purge pump; purge several wetted well casing volumes while collecting water quality data (temperature, pH, conductivity, turbidity, D.O. and

oxidation-reduction potential). Continue development until water appears clean and clear of entrained sediment and water quality parameters are stabilized.

- Collect extracted water and soil cuttings in 55-gallon drums and leave them on site for subsequent profiling and disposal by Port of Oakland.

4.2.7 Task 7 – Surveying of Boring and Monitoring Well Locations

Using the services of a licensed land surveyor, all soil boring and monitoring well locations will be surveyed to determine horizontal coordinates for all locations as well as elevation data for the top of the casings for the monitoring wells. Surveyor to provide X-Y coordinates in NAD83 and Z coordinates in NAVD88 system for uploading to GeoTracker. Elevation data will also be provided in Port Datum (which is 3.20 ft below mean sea level).

4.2.8 Task 8 – Quarterly Groundwater Monitoring

Following well installation and development, a program of quarterly groundwater monitoring will be implemented. The three monitoring wells will be sampled once every three months for one year. Each monitoring event will follow the standard protocol (i.e., measurements of depth to water and depth to bottom in each well, purging of wells, field measurement of certain water quality parameters, such as temperature, D.O., conductivity, pH, and oxidation-reduction potential, and collection of water samples for analysis by a state-certified laboratory.

The water samples collected in each quarterly monitoring event will be analyzed for the following analytes via indicated methods:

- Total petroleum hydrocarbons as gasoline (TPH-g) and as diesel (TPH-d); EPA Method 8015M with preliminary silica gel cleanup for TPH-d.

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary-butylether (MTBE); EPA Method 8020.

Collect purge water and equipment decontamination water in 55-gallon drums for subsequent profiling and disposal by Port of Oakland.

Because the monitoring wells are located in areas of heavy truck traffic and loading and unloading of large containers, the well surface structures are subject to enormous stress and wear and tear. Each visit to the site for quarterly groundwater monitoring will include inspection of the condition of well surface structure for evidence of damage, documentation of, and implantation of appropriate corrective action.

5.0 PROJECT REPORTS AND REPORTING

Field observations and data resulting from site characterization and monitoring well installation and quarterly groundwater monitoring will be presented and discussed in the following reports that will be submitted in electronic format to the County's "FTP" site and uploaded to the State's GeoTracker database:

- Site Characterization and Well Installation Report. This report will describe all field activities involving site characterization (advancing borings, sampling, etc.) and installation and development of monitoring wells. The report will discuss results, provide

conclusions regarding lateral and vertical extent of contamination, and offer recommendations for follow-up actions. As required, well construction forms will also be completed and submitted to the State Department of Water Resources.

- Quarterly Groundwater Monitoring Reports. These reports will include discussions of analytical results, groundwater flow direction and gradient, water quality trends, and recommendations for follow-up actions.

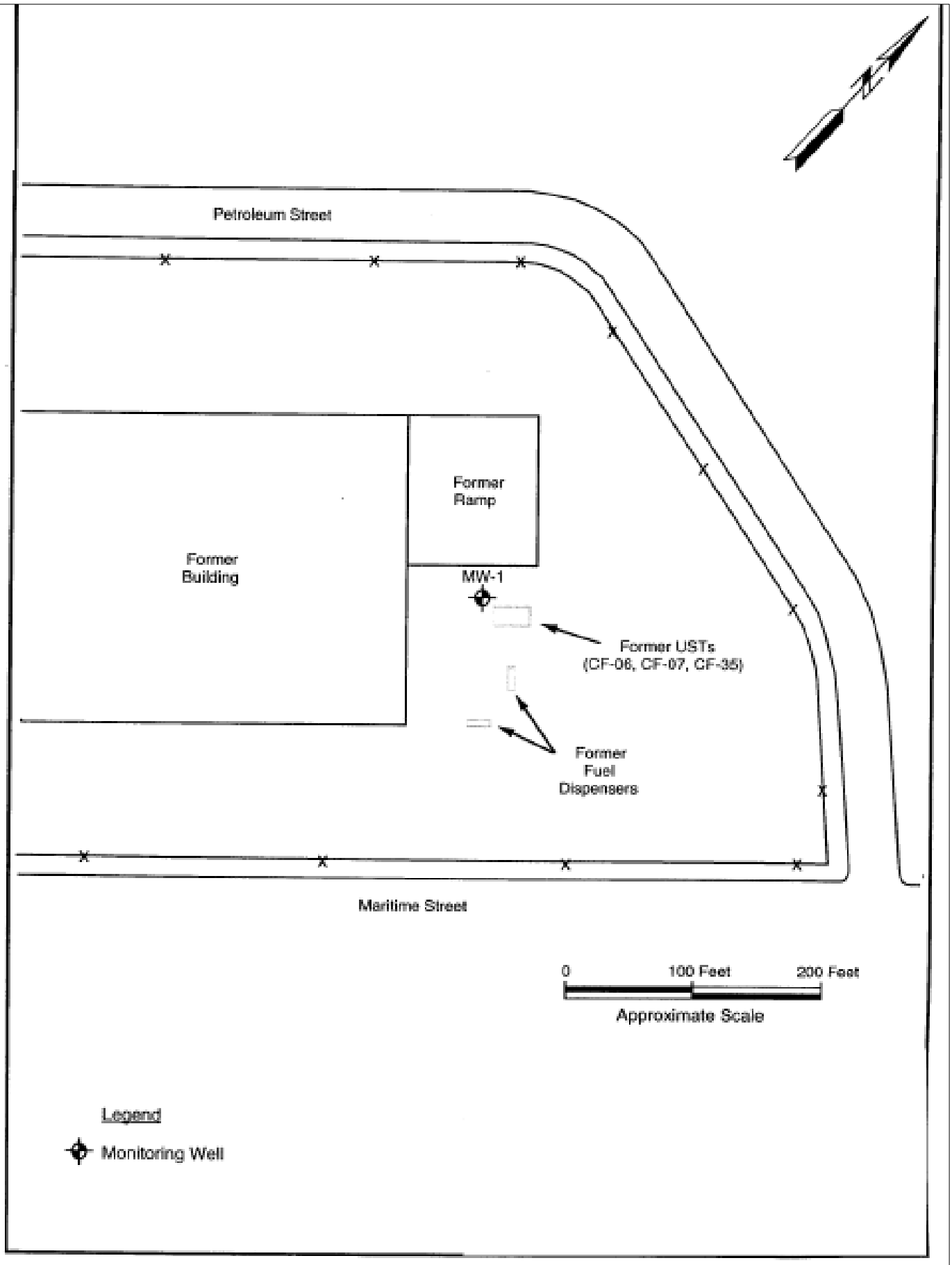
6.0 PROJECT SCHEDULE

Site characterization and installation and development of monitoring wells are expected to be completed within 3 months of work plan approval. Quarterly groundwater monitoring and submittal of associated reports should span a period of 13 months thereafter.

7.0 PROJECT ORGANIZATION

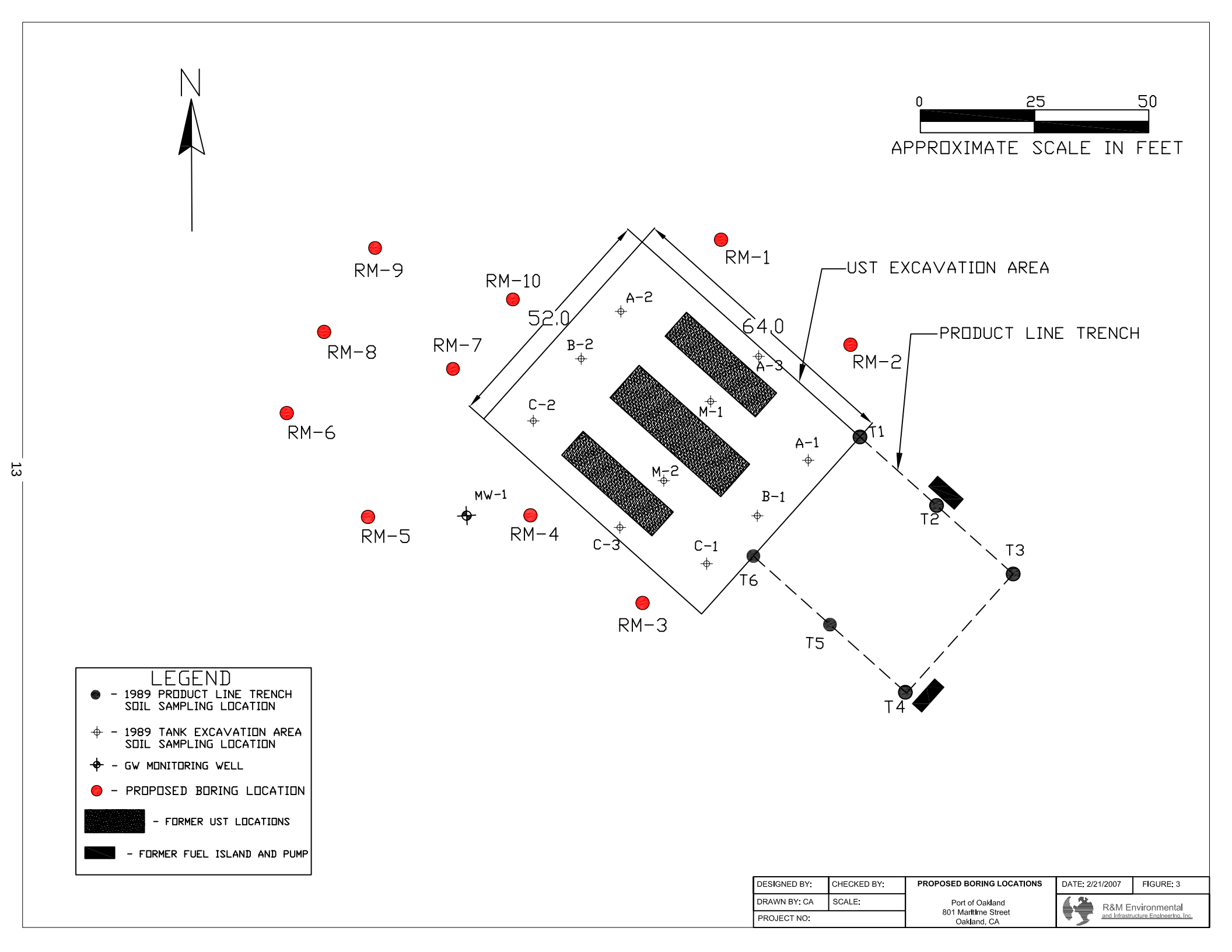
Mr. John Prall of the Port of Oakland will be the interface with and report to the ACHCSA on all aspects of the project. The work will be performed by R&M Environmental and Infrastructure Engineering, Inc. (R&M), which is one of the Port's environmental support contractors. Dr. Ghassemi will be the R&M's Project Manger and accountable to Mr. Prall for project performance.

DESIGNED BY:	CHECKED BY:	**VICINITY MAP** PORT OF OAKLAND 801 MARITIME STREET OAKLAND, CA	DATE: 02/21/2007	FIGURE: 1
DRAWN BY: CA	SCALE:		R&M Environmental and Infrastructure Engineering, Inc.	
PROJECT NO:				

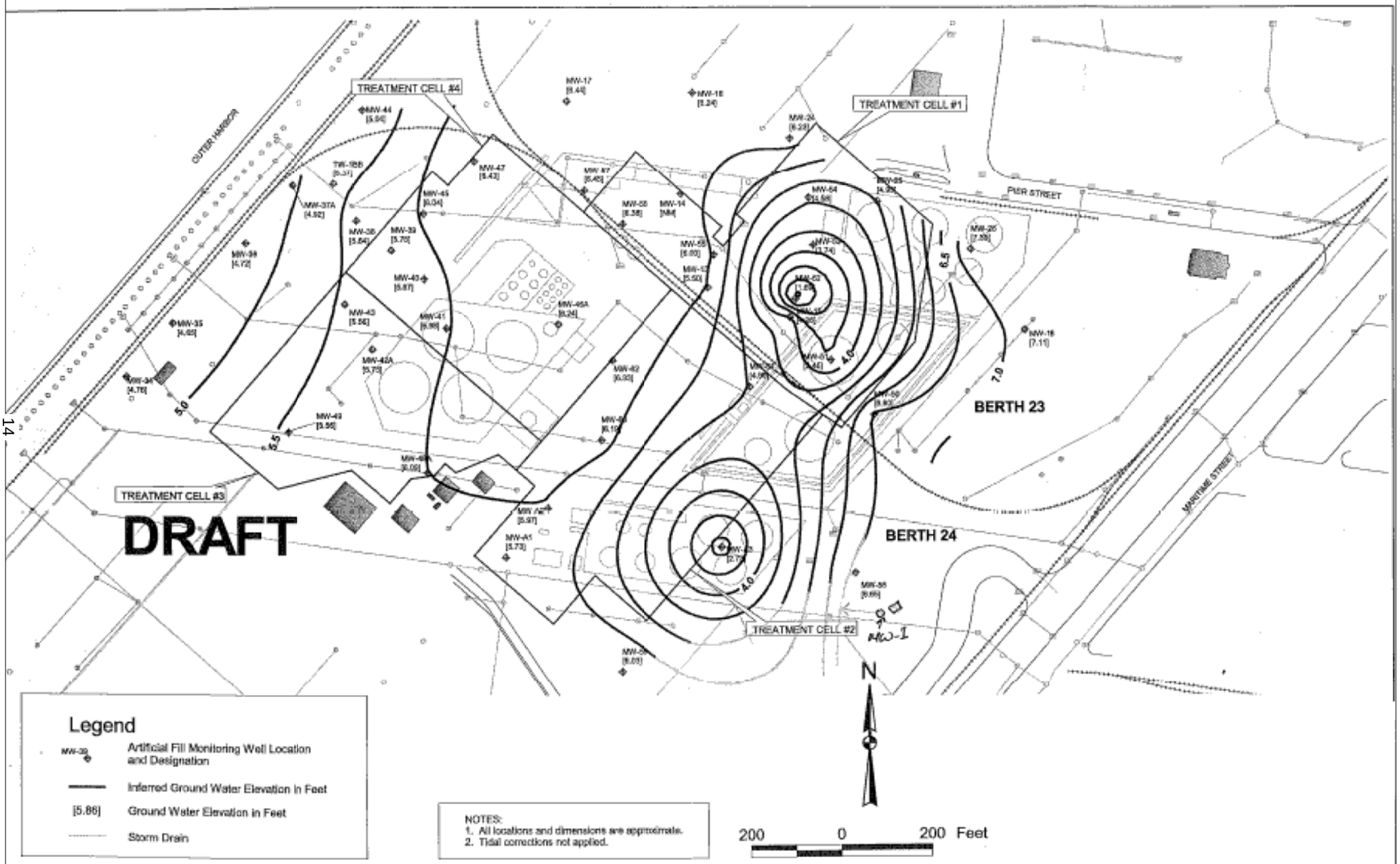


DESIGNED BY:	CHECKED BY:	**PROJECT SITE PLAN** PORT OF OAKLAND 801 MARITIME STREET OAKLAND, CA	DATE: 02/21/2007	FIGURE: 2
DRAWN BY: CA	SCALE:		R&M Environmental	
PROJECT NO:				

Source: Adapted from, Figure 2, Site Plan, 801 Maritime, Alisto Engineering Group, 8/5/1996



DESIGNED BY:	CHECKED BY:	**PROPOSED BORING LOCATIONS**	DATE: 2/21/2007	FIGURE: 3
DRAWN BY: CA	SCALE:	Port of Oakland 801 Maritime Street Oakland, CA	R&M Environmental and Infrastructure Engineering, Inc.	
PROJECT NO:				



Source: Adapted from Figure 4, Groundwater Elevation Countor Map, 801 Maritime street, Acton Mickelson Environmental, Inc, March 21, 2005

DESIGNED BY:	CHECKED BY:	Locations of the 54 monitoring wells in Berth 23 and 24	DATE: 02/21/2007	FIGURE: 4
DRAWN BY: CA	SCALE:	PORT OF OAKLAND 801 MARITIME STREET OAKLAND, CA	R&M Environmental and Infrastructure Engineering, Inc.	
PROJECT NO:				

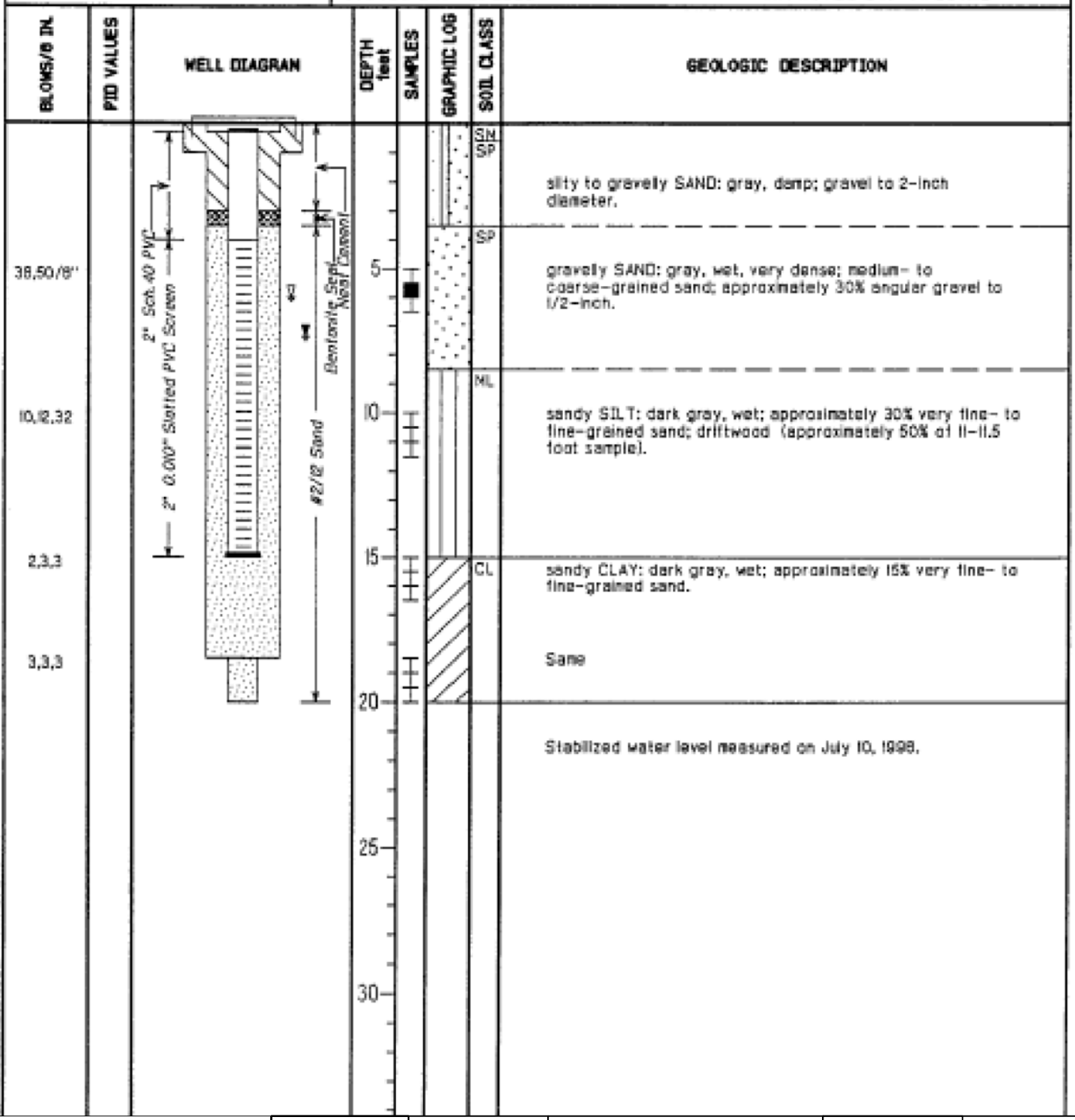
ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING MW-1

Page 1 of 1

SEE SITE PLAN

ALISTO PROJECT NO: 10-339-01 DATE DRILLED: 07/03/98
CLIENT: Port of Oakland
LOCATION: 801 Maritime Street, Oakland, California
DRILLING METHOD: Hollow-Stem Auger (8")
DRILLING COMPANY: V & W Drilling CASING ELEVATION: 10.81 MSL
LOGGED BY: C. Ladd APPROVED BY: Al Sevilla



DESIGNED BY:	CHECKED BY:	LOG OF BORING MW-1 PORT OF OAKLAND 801 MARITIME STREET OAKLAND, CA	DATE: 02/21/2007	FIGURE: 5
DRAWN BY: CA	SCALE:		R&M Environmental	
PROJECT NO:				

Source: Log of Boring MW-1, 801 Maritime Street, Port of Oakland, Alisto Engineering Group, 7/03/98.

Photograph #1: The general area where the USTs were located, as it appears today. View towards the Southwest, Berth 24 truck lanes on the left side of the photograph. (Photos taken on 02/15/07)

Photograph #2: Monitoring well MW-1, located within the parking stall marked as “28”, approximately 45 ft from the nearest pole marked as “803/804”; See Photograph #3 (Photo taken on 02/15/07))

Photograph #3: The pole nearest to well “MW-1” referenced in Photo #2 (Photo taken on 2/15/07)

Photograph #4: One of the wells (Monitoring Well MW-58, located north of “MW-1”) that comprise the 53-well groundwater monitoring network for the former Mobil Oil and Ashland Oil Bulk Fuel Facilities

APPENDIX

JOB HAZARD ANALYSIS

JOB HAZARD ANALYSIS

Project Location: Berth 24 Terminal, Port of Oakland (909 Maritime Street, Oakland, CA 94607)
Contract ("Resolution" No): 5135, On-call Environmental Compliance Consulting Services, Technical Service Order 9
Project Title: Additional Site Investigation at Underground Storage Tank Site, 801 Maritime Street
Activities: Advance borings and collect and analyze soil and grab groundwater samples; install and develop monitoring wells; and perform 4 rounds of quarterly groundwater monitoring
Prime Contractor: R&M Environmental and Infrastructure Engineering, Inc. (R&M); Oakland, CA 94621
Analysis by: Cameron Adams
Reviewed by: Masood Ghassemi, P.E.

Principal Step	Potential Safety/Health Hazards	Recommended Controls
1). General hazards and safety considerations associated with working in an active marine terminal (applied to all steps)	Worker/work vehicles being struck by large trucks carrying heavy containers and moving in an out of various cargo isles	Follow the Port of Oakland Contractor Safety Guidelines for working in active marine terminals (included at the end of this appendix), including the following pertaining to vehicles and site of operations: Vehicles - Vehicles brought into the terminal must be equipped with identifying signs on each side. - Limit on-terminal vehicles to those necessary to perform the work. Park others outside. - Minimize the need to drive around the terminal. Stage operations and remain there. Enter and exit the terminal only via company vehicle. - Obey terminal driving rules, including speed limits. Terminal equipment has the right-of-way. Site of Operations: - The area of operations shall encumber no more space than is required to perform the work safely. - Delineate the area of operation using traffic cones, K-rail, caution tape, or other high-visibility method. Park vehicles to form a protective barrier. - Workers must wear hard hats, hard-toed shoes, and high visibility clothing (with reflective elements at night). - Individuals must remain in the area of operations. - Use a "spotter" where workers are exposed to traffic.
	Exposure to dust via inhalation and ingestion through breathing, dermal contact, smoking, and eating	Use personal protection equipment (PPE). Prohibit eating, drinking, smoking, or chewing. Wear work gloves. Wash hands after work or when taking breaks away from the work site for refreshment.

	Injuries, mishaps, and trips, slips, and fall hazards when using or carrying tools and equipment to different locations	Use proper body mechanics when lifting or carrying tools. Obey sensible lifting limits (60 lb. maximum per person manual lifting). Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads. Obtain help when lifting heavy or bulky items. Avoid carrying heavy objects above shoulder level. Keep walkways clear of all obstacles and non-essential items that can pose trip and fall hazards. Use proper/safe tools (e.g., wire dykes instead of razors for cutting wire, tape, rope, etc.). Use appropriate PPEs.
	Working with and around heavy equipment (Geoprobe, hollow-stem auger, etc.)	Make sure all equipments are in good working condition and operated by trained personnel and in accordance with the manufacturers' specifications. A competent mechanic shall go over equipment to certify that it is in good and safe operating condition prior to being delivered to job site. Operator shall inspect equipment before each day's use. Equipment must be shut/turned off when not attended or during service. Always maintain eye and verbal contact with operator before approaching equipment; understand and review hand signals. All equipment should have backup alarms. Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period). All heavy equipment operations shall require use of hearing protection.
	Thermal Stress	Wear appropriate clothing for the weather conditions and keep hydrated. If weather conditions are dangerous, postpone fieldwork.
	Fire	Shut off all motors during any fuel transfer (e.g., refueling of the generator). No smoking should be allowed in the work area. An A-B-C fire extinguisher must be available in the work area. Fuel containers should not be stored within 10 feet of the drilling rig motor. Fuel should be stored in UL approved safety containers with contents clearly labeled.
2) Subsurface Utility Clearance	See Step 1	See Step 1
3) Saw cutting or pushing through and removing the surface pavement with Geoprobe	Hitting of underground utilities	Make sure target area has been cleared by an underground utility survey and that the Underground Service Alert (USA) has been notified.
	Hazardous atmospheres: possible subsurface methane gas build-up/explosion	Use water to cool the cutting edge and suppress spark generation; operate machine slowly; use a PID to check methane concentration.
4) Hand augering the first 5 feet below the pavement	Same as for Step 3	Same for Step 3
	Muscle strain if hard soil or rocky material	Seek assistance in operating the auger.

	is to be augered through	
	Exposure to elevated concentrations of hazardous constituents	Wear proper PPE (hard hats, steel toe boots, work clothes, safety glasses), observe all posted warning signs.
	Pinching of body part or dropping on body part during assembly /disassembly	Train personnel to assemble/disassemble equipment, wear leather gloves, and use wrench supplied for equipment assembly/disassembly. Do no use “cheaters” or other improper leverage devices. Wear proper PPE (Level D).
	Breakage of extensions (if used) at joints	Inspect extensions to ensure structural integrity before assembling, ensure proper and secure assembly of extensions.
5) Use of Geoprobe to collect soil and grab groundwater samples	Same as Step 3	Same as Step 3
	Cuts and injury while cutting butyrate tubes for soil examination and sample collection	Use work gloves and employ proper cutting tools
6) Cement grout preparation, transfer, and use	Inhalation of dust and skin irritation due to contact	Avoid dust generation; keep mixing away from breathing zone; use proper PPE (respiratory protection and work gloves).
7) Hollow-stem drilling and construction and development of monitoring wells	Same as Steps 3 and 6	Same as Steps 3 and 6
8) Groundwater monitoring	Hazardous Atmospheres: possible methane and other hazardous gases accumulated in the well	Use a PID to check for hazardous atmosphere when first opening the well; leave the well open for gases to escape before working on a well.
9) Preparing		Handle sample containers carefully; clean up any broken glass or spilled ice or water

packaging, shipping soil and water samples	Cuts and bruises and/or exposure to elevated concentrations of hazardous constituents or chemical preservatives (acids)	immediately; wear proper PPE (eye and skin protection).
EQUIPMENT TO BE USED: Hand auger, Geoprobe, saw cutter, hollow-stem auger drill, small tools, and field vehicles		
INSPECTION REQUIREMENTS: Inspecting all heavy equipment to ensure good operating condition prior to admitting them on to the site and on a daily basis. Equipment shall be operated, inspected, and maintained as specified in the manufacturer's operating manual. A copy of the manual will be available at the job site.		
TRAINING REQUIREMENTS: 40-hour Hazardous Waste Operation and Emergency Response (HAZWOPER) training, health and safety kickoff meeting, daily safety tailgate meeting. All individuals operating the Geoprobe or the hollow-stem auger shall be trained in (1) the operation, inspection, and maintenance of the equipment; (2) the safety features and procedures to be used during operation, inspection, and maintenance of the equipment; and (3) overhead electrical line and underground hazards.		
Personal Protective Equipment: Minimum: hard hat, steel toe boots, hearing protection, safety vests		

TABLE A-2
TOXICOLOGICAL PROPERTIES OF
REPRESENTATIVE CONTAMINANTS OF CONCERN

Compound/Class	Principle Routes of Entry	Acute Exposure Effects and Symptoms	Chronic Exposure Effects/Symptoms
Petroleum products such as: Unleaded gasoline Kerosene Naphthalene Xylenes Toluene Ethylbenzene Benzene Diesel fuel Petroleum distillates Motor Oil	Inhalation Ingestion Absorption	Depending on the compound and exposure level, symptoms/effects can include the following: Irritation of body tissues (particularly, eye, skin, and respiratory system); disturbance of the central nervous system	Depending on the compound, concentration, and duration of exposure, symptoms/effects can include the following: Blood disorders ranging from anemia to leukemia; redness and irritation of the eyes; blurred vision; irritation, defatting, and dermatitis of skin; nasal/respiratory gastrointestinal irritation; nausea, vomiting, and diarrhea if inhaled; and liver, kidney, and cardiac disorder. Some compounds or compound classes are listed carcinogens (e.g., unleaded gasoline) or classified as a suspected human carcinogen (e.g., benzene).
Lead (Example of Heavy Metals)	Inhalation Ingestion	Gastrointestinal distress, kidney failure	Memory and concentration problems, nerve disorders, sleep disturbances, mood changes, muscle or joint pain, high blood pressure, difficulties during pregnancy, and other reproductive problems (in both men and women)
Chromium (Example of Heavy Metals)	Inhalation Ingestion Absorption	Local irritation and skin lesion (direct contact); pulmonary edema or circulatory or respiratory failure; gastrointestinal symptoms	Pneumoconiosis, liver damage, gastrointestinal ulcers, heart disease
Methane Gas	Inhalation	Depending on the exposure level, symptoms/effects can include the following: Headache, lightheadedness, tiredness.	Depending on the exposure level, symptoms/effects can include the following: Fainting, asphyxiation, death

EMERGENCY TELEPHONE NUMBERS

Fire Department	911
Ambulance	911

The following telephone numbers are in addition to 911:

Alta Bates Medical Center	(510) 204-4444
Regional Poison Control	(800) 346-5922
National Emergency Response Center	(800) 424-8802
California State Office of Emergency Services	(800) 852-7550

KEY PROJECT MANAGEMENT PERSONNEL

R&M Project Manager	Masood Ghassemi: (510) 553-2146 Cell Phone: (510) 364-2249
R&M Site Supervisor and Safety Officer	Rafael Carranza: (510) 553-2149 Cell Phone: (510) 364-4431
Site Owner	Port of Oakland
Port of Oakland Project Manager/Contact	John Prall: (510) 627-1373 Cell Phone: (510) 772-9398

DIRECTIONS TO HOSPITAL

Alta Bates Medical Center is located at 2450 Ashby Avenue in Berkeley. Directions and Map attached.

ACCIDENT REPORTING

In the event of an emergency, contact the following:

R&M Site Supervisor and Safety Officer	Rafael Carranza: (510) 553-2149 Cell Phone: (510) 364-4431
R&M Project Manager	Masood Ghassemi: (510) 553-2146 Cell Phone: (510) 364-2249
Port of Oakland Project Manager/Contact	John Prall: (510) 627-1373 Cell Phone: (510) 772-9398

If an exposure or injury occurs, work shall be temporary halted until the Site Health and Safety Officer decides it is safe to continue work

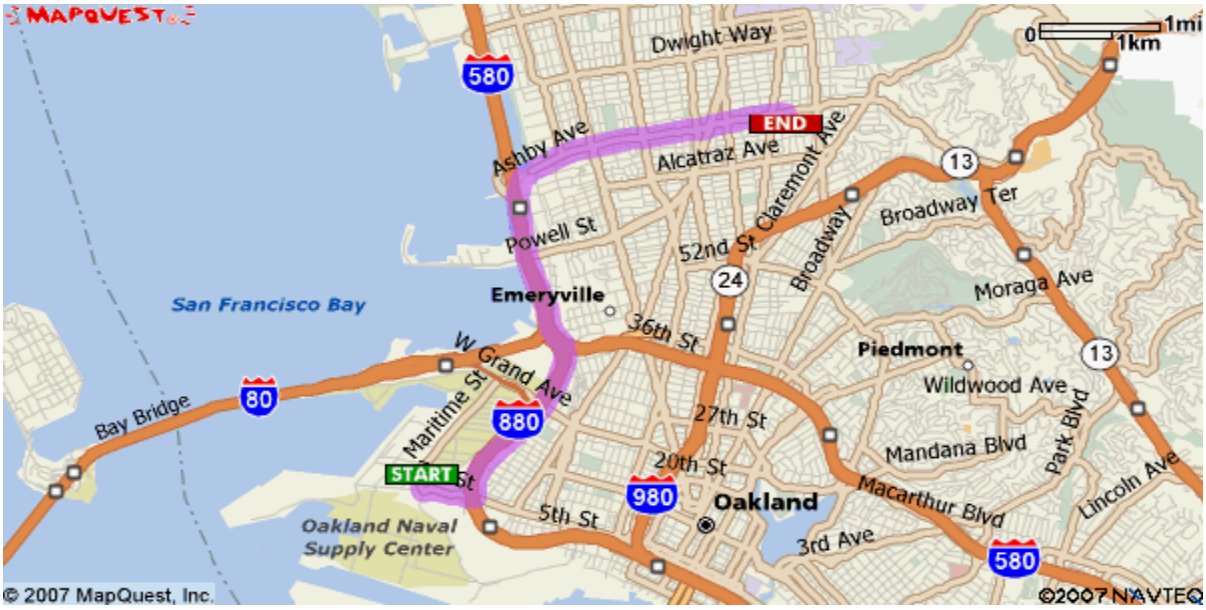
Directions

From: 801 Maritime St Oakland, CA 94607
To: Alta Bates Medical Center 2450 Ashby Ave Berkeley, CA 94705-2067

Total Est. Time: 14 minutes **Total Est. Distance:** 5.91 miles

START	**1:**	Start out going SOUTH on MARITIME ST toward 7TH ST.	<0.1 miles
	2:	Turn LEFT onto 7TH ST.	0.4 miles
	3:	Turn LEFT onto FRONTAGE RD.	1.0 miles
	4:	Stay STRAIGHT to go onto ramp.	0.2 miles
	5:	Merge onto I-880 N.	1.0 miles
	6:	I-880 N becomes I-580 W / I-80 E.	0.4 miles
EXIT	**7:**	Take the ASHBY AVE / CA-13 / SHELLMOUND ST exit.	0.1 miles
	8:	Merge onto ASHBY AVE / CA-13.	2.3 miles
END	**9:**	End at **2450 Ashby Ave** Berkeley, CA 94705-2067, US	

Total Est. Time: 14 minutes **Total Est. Distance:** 5.91 miles



http://www.mapquest.com/directions/main.adp?...0+Ashby+Ave&2c=Berkeley&2s=ca&2z=&panelbtn=2

http://www.mapquest.com/directions/main.adp?...0+Ashby+Ave&2c=Berkeley&2s=ca&2z=&panelbtn=2

PORT OF OAKLAND
CONTRACTOR SAFETY
WORKING IN ACTIVE MARINE TERMINALS

The Port Wharfinger Department coordinates Port-sponsored access to the marine terminals. Before entering terminals, contact the appropriate Wharfinger. Any deviation from established procedures or work schedules should be cleared at least 24 hours in advance (or as soon as feasible).

The primary issues when working in marine terminals are:

- The safety of contractor, terminal, trucking, terminal employees, and Port employees.
- Minimizing interference with terminal and vessel operations.
- Security: Vehicle inspection & personnel identification (valid California Driver's license or equal).

VEHICLES

Vehicles brought into the terminal must be equipped with identifying signs on each side. Vehicles not so equipped will not be admitted.

Limit on-terminal vehicles to those necessary to perform the work. Park others outside.

Minimize the need to drive around the terminal. Stage operations and remain there. Enter and exit the terminal only via company vehicle.

Obey terminal driving rules, including speed limits. Terminal equipment has the right-of-way.

SITE OF OPERATIONS

The area of operations shall encumber no more space than is required to perform the work safely.

Delineate the area of operation using traffic cones, K-rail, caution tape, or other high-visibility method. Park vehicles to form a protective barrier.

Workers must wear hard hats, hard-toed shoes, and high visibility clothing (with reflective elements at night).

Individuals must remain in the area of operations.

Use a "spotter" where workers are exposed to traffic.

APPENDIX F

LETTER FROM PORT OF OAKLAND E&SD TOO ALAMEDA COUNY HEALTH CARE SERVICES AGENCY (MAY 2006)

PORT OF OAKLAND

May 31, 2006

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency,
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **UST Site, 801 Maritime Street**
Port of Oakland, Oakland, CA
Fuel Leak Case RO0000019

Dear Mr. Chan:

The Port of Oakland (Port) is in receipt of your March 27th letter regarding the former underground storage tank (UST) site, known as 801 Maritime Street ("Site"). We appreciate your effort in naming this site as a candidate for regulatory closure and the time extension for completing this letter report.

Before responding to the information requested by the County, we briefly recapitulate the site history. 801 Maritime Street was the site of a warehouse and a fueling dispenser. Three underground storage tanks that supplied the dispenser were installed circa 1959 and were designated by the Port as CF-06, CF-07, and CF-35. All three tanks were of single wall steel construction and each tank was strapped to a concrete slab (due to shallow groundwater conditions). CF-06 had a capacity of 10,000 gallons and was used to store diesel fuel. Tanks CF-07 and CF-35 had capacities of 20, 000 and 10,000 gallons respectively and both were also used to store diesel fuel although both tanks were configured for the storage of gasoline. The three tanks were removed from the ground on February 16, 1989 and no evidence of corrosion, punctures or leaks was noted.

During the tank removal, discolored soils and petroleum odors were noted. Groundwater accumulated in the excavation contained oil and exhibited sheen. Floating product was not present. The impacted groundwater was pumped out of the pit and hauled away for proper disposal. Soil excavation then continued until a final pit dimension of approximately 52 by 64 by 12 feet deep was achieved. The impacted soils were stockpiled near to the excavation (approximately 1,500 cubic yards) and bioremediated on site. All of the tank removal and bioremediation activities at the time were conducted under the lead of Alameda County Health Care Services Agency. Originally this site was assigned a site identification number STID #3780 and is now assigned a new identification as #RO0000019.

530 Water Street ■ Jack London Square ■ P.O. Box 2064 ■ Oakland, California 94604–2064
Telephone: (510) 627-1100 ■ Facsimile: (510) 627-1826 ■ Web Page: *www.portofoakland.com*

The information requested is presented below following the County's question noted in italics:

1. Please clarify the address and APN (Assessor Parcel Number) for this site. Please provide a copy of the Assessor map indicating both the parcel number and the address of this site as requested below.

The Site is identified as 801 Maritime Street; an address that no longer exists. Prior to 1989, the underground storage tanks at this site lay adjacent to a large warehouse used by a tenant for the temporary storage of bailed cotton. The warehouse and yard were separate from the nearby Berth 24 maritime shipping terminal, see Figure 1. Since 1989, the warehouse has been demolished, fences have been removed, and the local streets have been abandoned or reconfigured until the earlier land usage has been completely obliterated. Today, the 801 Maritime site is now part of an expanded Berth 24 container terminal and the only trace of the former land use is in reports and old aerial photographs. The current street address of the Berth 24 terminal is 909 Maritime Street.

The Assessors Parcel Number (APN) for the 801 Maritime Site: the Site does not have a unique APN. The 801 Maritime Site is part of a much larger tax assessor parcel that includes approximately 445 acres of land about evenly split between dry land and submerged land. The APN is 000-0320-001-00, see Figure 2.

2. It appears that only one monitoring well was required for this investigation. This was based upon the abundance of wells and information at the neighboring Berth 24 (Mobil/Ashland) site. Please provide a gradient rose diagram for this site, a site map showing well locations, and a summary of the groundwater data for this site as requested below. We are aware that the SFRWQCB is now the lead on this site.

In 1996, the Port installed a solitary monitoring well, MW-1, located downgradient of the former under ground storage tanks at the Site. This well is one of approximately 54 wells located in Berths 23 and 24 area; the 53 other wells are the groundwater monitoring network for the former Mobil Oil and Ashland Oil Bulk Fuel Facilities (i.e., tank farms). Both Facilities are petroleum release sites that have a large and combined dissolved phase plume located in the shallow water-bearing unit (the same unit MW-1 is constructed in). The attached Map (Figure 3) and Table (Table 5) contain the information requested.

The determination of ground water flow directions normally are not possible using a single well. In this situation, the numerous down gradient wells can be used in conjunction with MW-1 to determine the local flow direction at the 801 Maritime Site. The local hydraulic gradients, however, could not be determined because the past

groundwater monitoring activities at the tank farm and at 801 Maritime have been conducted at significantly different calendar dates. The attached Figure 4 depicts the groundwater flow directions for seven time periods. It is noted that the local flow direction is uniformly toward the west and that the 801 Maritime Site well was placed down gradient of the former USTs.

3. We understand that approximately 1,500 cy of spoils was generated during the tank removal activities. The soil was bio-remediated and approximately 400 cy reused as fill on this site. Was the remaining remediated soil reused elsewhere on Port properties? We understand that groundwater from the tank pit was removed by H&H Ship Services. How much groundwater was disposed?

Some additional information was found on the disposition of soil and groundwater generated during the removal of the underground storage tanks. Baseline Environmental Consulting prepared a brief report in March 1990 that indicated the petroleum impacted soils were subjected to on site bioremediation. After the remediation work was completed, the soil was transported by truck to the Oakland Airport, North Field to the site of former building, L-615. At this location, the soils were used as fill material at the ground surface.

The amount of water that was removed by H&H Ship Services from the UST excavation and hauled away for disposal is unknown. Both the Port and Baseline have searched their files for a record of the removal and/or disposal but nothing was found.

4. The limits of soil contamination were unable to be determined during the tank removal. Soil boring contamination in B-2 reported 3,600 ppm and C-2 reported 1,600 ppm TPH-d. Is there additional data, which defines the limit of TPH-d in these areas?

There are no additional data.

I declare under penalty of perjury, that the information and/or recommendations contained in this letter report and attachments are true and correct to the best of my knowledge. Please contact me at 627-1176 or the Port Project Manager, Mr. John Prall at 6271373 or at jprall@portoakland.com regarding any questions or clarifications.

Sincerely,

Roberta Reinstein
Manager, Port Environment and Safety Department

Cc: Jeffrey Jones
John Prall

Bcc: Michele Heffes
Deborah Ballati

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-13	4/16/2003	64	810	330 J	<0.5	<0.5	0.95	0.5	<2.5	<100
	7/31/2003	63	1400 j	800 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	190	110 Jj	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	290	200 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/22/2004	<50	36 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21 uj
	8/17/2004	<50	<34	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	94	95 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004(Duplicate)	<50	110	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	31 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-14	4/15/2003	<50	91	<490	<0.5	<0.5	<0.5	<0.5	<2.5	17 J
	7/31/2003	<50	110 j	<480 uj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/21/2003	<50	340	300 J	<0.5	<0.5 uj	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	94 u	<76	<0.5	<0.5	<0.5	<0.5	<0.5	11 J
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/16/2004	<50	170	<53	<0.5	<0.5	<0.5	<0.5	<0.5	24 J
	8/16/2004 (Duplicate)	58	190	62 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/17/2004	<50	220	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS

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CHEMICALS OF POTENTIAL CONCERN
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Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-15	4/16/2003	100	490	170 J	<0.5	0.81	0.91	<0.5	<2.5	<100
	6/23/2003	79	390	160 Jj	2.4 j	<0.5	<0.5	0.53	<0.5	NA
	6/24/2003	72	370	170 Jj	1 j	<0.5	<0.5	<0.5	<0.5	NA
	8/1/2003	<50	440 j	400 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	310	200 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	200	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004	<50	140	95 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	37 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	21 J
	12/16/2004	<50	40 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	82	1600	470 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
	3/21/2005 (Duplicate)	76	1600	460 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-16	4/15/2003	<50	88	87 J	<0.5	<0.5	<0.5	<0.5	<2.5	16 J
	4/15/2003 (Duplicate)	<50	64	<490	<0.5	<0.5	<0.5	<0.5	<2.5	9.8 J
	7/30/2003	<50	83 u	<480	<0.5	<0.5	<0.5	<0.5	0.62	NA
	11/24/2003	<50	83	<74	<0.5 uj	0.8 j	<0.5	<0.5	<0.081	<8
	2/18/2004	<50	140	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/22/2004	<50	41 J	<53	<0.5	<0.5	<0.5	0.81	<0.5	<21 uj
	8/18/2004	<50	45 J	<56	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/17/2004	<50	44 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	<50	120	100 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

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GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-17	4/15/2003	<50	120	110 J	<0.5	<0.5	<0.5	<0.5	<2.5	9.1 J
	7/30/2003	<50	210	210 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/18/2004	<50	79	<75	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/16/2004	<50	95	93 J	<0.5	<0.5	<0.5	<0.5	<0.5	21 J
	12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/21/2005	<50	310	270 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-18	4/15/2003	<50	170	300 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	8/1/2003	<50	110 uj	140 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	270	290 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	52 u	<77	<0.5	<0.5	<0.5	<0.5	<0.5	8.8 Jj
	4/21/2004	<50	130	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	11 Ju
	8/18/2004	<50	44 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	47	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	140	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-24	4/15/2003	<50	88	82 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/30/2003	<50	100	89 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	71	<73 uj	<0.5	<0.5	<0.5	<0.5	<0.081	15 Jj
	2/17/2004	<50	30 Ju	<75	<0.5	<0.5	<0.5	<0.5	<0.5	39 J
	4/22/2004	<50	<33	<53	<0.5	<0.5	<0.5	0.72	<0.5	<21 uj
	8/17/2004	<50	42 J	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	110	96 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	<50	43 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	15 J

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(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-25	4/15/2003	<500	590	320 J	<5	<5	<5	<5	<25	33 J
	7/31/2003	<50	550 j	340 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/17/2004	<50	110 u	<77	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	2/17/2004 (Duplicate)	<50	97 u	<74	<0.5	<0.5	<0.5	<0.5	<0.5	9.1 J
	4/21/2004	<50	1000	680	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/17/2004	<50	230	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	22 J
	12/14/2004	<50	770	500	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	<50	410	310 J	<0.5	<0.5	<0.5	<0.5	0.7	20 J
MW-26	4/15/2003	<50	100 u	96 J	<0.5	<0.5	<0.5	<0.5	<2.5	21 J
	7/31/2003	<50 uj	110 j	140 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	140	130 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	46 Ju	<77	<0.5	<0.5	<0.5	<0.5	<0.5	8.1 Jj
	4/20/2004	<50	49	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	63	<470	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/15/2004	<50	150	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	<50	63	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<15

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Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-2B	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	<50	110	200 J	<0.5 uj	1.5 j	<0.5	<0.5	<0.081	<48
	2/19/2004	<50	140	390 J	<0.5	0.78	<0.5	<0.5	<0.5	14 J
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/17/2004	<50	38 J	84 J	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/16/2004	<50	97	280 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/23/2005	<50	180	490	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-34	6/25/2003	140	42 Juj	<470	13 j	<10 uj	<10	<10	<10	18 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	<50	76	95 J	3.2	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/20/2004	60	76 u	<74	<2.5	<2.5	<2.5	<2.5	<2.5	22 J
	4/20/2004	<50	84	59 J	3.3	<2.5	<2.5	<2.5	<2.5	<8
	8/16/2004	57	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	8/16/2004 (Duplicate)	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	21 J
	12/13/2004	55	61	<91	3.8	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	80	92	<92	2.2 j	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

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CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-35	6/25/2003	87	57 u	<480	13 j	1.2 j	2.8	12	<0.5	<2000
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	100	240	170 J	3.3	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/19/2004	58	360	210 J	0.92	<0.5	<0.5	0.59	<0.5	<8
	4/20/2004	69	270	170 J	1.8	<0.5	<0.5	<0.5	<0.5	8.5 J
	8/16/2004	96	96	<53	3.6	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	120	410	250 J	2.7	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	300	320	220 J	2.7	<0.5	<0.5	<0.5	<0.5	<15
MW-36	6/25/2003	380	210 j	<480	26 j	2 j	4.8	18	<0.5	40 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	600	210	120 J	100	0.65	1.8	<0.5	<0.081	<8 uj
	2/19/2004	190	370	170 J	4.8	<0.5	<0.5	0.51	<0.5	<8
	4/20/2004	430	410	190 J	30	<0.5	1.2	<0.5	<0.5	<8
	8/16/2004	610	170	<53	23	<0.5	1.2	<0.5	<0.5	<21
	12/13/2004	480	640	320 J	15	<0.5	0.76	<0.5	<0.5	<21
	3/22/2005	620	370	210 J	30	<0.5	1.2	<0.5	<0.5	17 J

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Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-37A	6/23/2003	4000	680	330 J	1100	<25	<25	66	<25	41 J
	6/23/2003 (Duplicate)	4700	920	420 j	1100	<25	<25	68	<25	26 Jj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	6700	1300	970	1100 j	34	84	100	<0.81	16 Jj
	2/20/2004	3800	860 j	1400 j	81	3.6	5.2	14	<2.5	14 J
	4/20/2004	2400	2700 j	3500 j	470	9.5	12	20	<2.5	<8
	8/16/2004	5100	470	550	900	<50	<50	<50	<50	37000
	12/13/2004	130	650	1500	4.5	<0.5	<0.5	0.55	<0.5	<21
	3/24/2005	1800	430 j	1000 j	57	1.9	8.3	14	<0.5	<15
MW-37B	6/23/2003	89	140	210	28	0.75	<0.5	2.2	<0.5	240 j
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	79	<74	<0.5 uj	<0.5	<0.5	<0.5	<0.081	46 Jj
	2/20/2004	<50	99	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	26 J
	4/22/2004	<50	42 J	<53	<0.5	0.58	<0.5	0.57	<0.5	<130
	4/22/2004 (Duplicate)	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/16/2004	<50	<33	<54	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<100
	12/13/2004	<50	100	150 J	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	3/24/2005	<50	450 j	1300 j	<0.5	<0.5	<0.5	<0.5	<0.5	<15
	3/24/2005 (Duplicate)	<50	330	900	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-37C	6/23/2003	<50	18 Ju	<470	5.5	<0.5	<0.5	<0.5	0.5	110 j
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	19 J	<73	<0.5 uj	<0.5	<0.5	<0.5	<0.081	73 Jj
	2/19/2004	<50	46 Ju	<74	<0.5	<0.5	<0.5	0.5	<0.5	53 J
	4/22/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	190 J
	8/16/2004	<50	68	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	<50	31 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	3/24/2005	<50	38 J	<96	<0.5	<0.5	<0.5	<0.5	<0.5	160 J
MW-38	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/19/2004	1300	1100	280 J	310	5.3	<5	5.2	<5	<8
	4/20/2004	1600	1100	290 J	560	<10	<10	<10	<10	<8
	8/17/2004	1200	790	170 J	440	<5	<5	<5	<5	<21
	8/17/2004 (Duplicate)	1200	830	180 J	370	<5	<5	<5	<5	<42
	12/14/2004	310	760	240 J	62	0.63	<0.5	<0.5	<0.5	<21
	3/22/2005	280	700	240 J	60 j	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-39	6/25/2003	5200	1100 j	290 J	2000 j	<50 uj	<50	<50	<8.1	25 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/20/2004	1500	850	310 J	330	13	<5	12	<5	<8
	8/17/2004	540	350	97 J	390	13	<5	15	<5	22 J
	12/14/2004	89	490	370 J	3.9	<0.5	<0.5	<0.5	<0.5	<21
	3/22/2005	870	750	350 J	130 j	1.2	1.7	2.4	<0.5	16 J
MW-40	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/20/2004	9900	5100 j	1800 Jj	3900	<50	140	68	<50	16 J
	8/17/2004	4700	2300	960	1900	11	47	24	<10	<21
	12/14/2004	1100	6000	4500 J	410	<5	6.8	5	<5	<21
	3/23/2005	3100	17000 j	11000 Jj	17	0.81	12	60	<0.5	28 J
MW-41	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/18/2004	3800	3800	2000	490	27	11	300	<5	22 Jj
	4/21/2004	5500	6100 j	3600 j	1900	25	<25	38	<25	15 Ju
	8/17/2004	2000	2000	740 J	280	15	<5	27	<5	<21
	12/14/2004	2500	2000	830 J	510	12	<5	28	<0.5	<21
	3/23/2005	230	520	420 J	14	1.2	<0.5	4.3 j	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-42A	6/25/2003	11000	830 j	230 J	2800 j	140 j	220	1200	<50	14 J
	6/25/2003 (Duplicate)	8200	2100 j	280 J	2200	100	170	890	<50	17 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2003	6800	2300	690 J	2000	90	92	580	5.5 J	<8 uj
	2/18/2004	11000	2800	830 J	2400	65	220	1300	<50	<8 uj
	4/22/2004	2700	1100	130 J	550	13	18	88	<10	<21 uj
	8/17/2004	2400	840	170 J	360	6.4	<5	52	<5	<21
	12/14/2004	2100	1000	410 J	520	<10	11	58	<2.5	<21
	3/22/2005	310	630	440 J	6.7	1	1.6	31	<0.5	56 J
MW-42B	6/25/2003	310	1500 j	170 J	50 j	4.3 j	6.6	32	<0.5	38 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2003	160	590	360 J	0.58 j	<0.5 uj	1.6	<0.5	<0.081	<8 uj
	11/21/2003(Duplicate)	160	670	420 J	0.51	<0.5	1.5	0.58	<0.081	<8 uj
	2/18/2004	55	270	140 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	2/18/2004 (Duplicate)	100	240	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	11 Jj
	4/22/2004	110	110	<53	<0.5	<0.5	<0.5	0.66	<0.5	<21 uj
	8/17/2004	220	480	220 J	<1	<1	<1	<1	<1	<21
	12/14/2004	130	570	300 J	<0.5	<0.5	0.83	0.66	<0.5	<21
	3/22/2005	140	470	280 J	<0.5	<0.5	1	0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-42C	6/25/2003	88 u	50 u	<470	19 j	1.8 j	3.1	14	<0.5	420 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2003	<50	140	<75	0.52 j	<0.5 uj	<0.5	<0.5	<0.081	<48 uj
	2/18/2004	<50	54	89 J	<0.5	<0.5	<0.5	<0.5	<0.5	31 Jj
	4/22/2004	<50	35 Jj	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	4/22/2004 (Duplicate)	<50	140 j	310 J	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/17/2004	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/14/2004	<50	60	96 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	69	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<45
	3/22/2005 (Duplicate)	<50	48 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<45
MW-43	6/25/2003	920	1200 j	350 J	160 j	6.9 j	<2.5	13	<2.5	25 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	680	1000	470 J	70	4.6	<0.5	8.9	<0.081	<8 uj
	2/19/2004	1100	1400	700 J	280	13	<5	15	<5	<8
	4/21/2004	1900	1000	260 J	300	16	<5	23	<5	<8
	8/17/2004	1600	1300	300 J	48	17	1.4	38	<0.5	<21
	12/15/2004	2200	1400	440 J	140	15	2.1	29	<0.5	<210
	3/22/2005	<50	480	400 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-44	6/24/2003	<50	67 u	<490	3.6 j	<0.5	<0.5 uj	<0.5 uj	<0.5	30 Ju
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	48	<73	<0.5 uj	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/19/2004	<50	58 u	<74	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	11 Ju
	8/16/2004	<50	<35	<56	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	<50	59	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004(Duplicate)	<50	120	92 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/22/2005	<50	42 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-45	6/24/2003	4300	1100 j	220 J	2200 j	<50	<50 uj	<50 uj	<50	<100 uj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	3200	1900	360 J	1200	<25	34	82	<4	<8 uj
	2/19/2004	150	770	180 J	33	0.51	1.3	1.6	<0.5	<16
	4/22/2004	3100	1800	290 J	1600	<25	32	<25	<25	<21 uj
	8/17/2004	630	1000	300 J	220	<5	<5	<5	<5	<21
	12/16/2004	250	390	180 J	52	<0.5	0.8	0.65	<0.5	<210
	3/22/2005	3200	2600	500 J	1600 j	12 j	29	19	<0.5	22 J

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-46A	6/24/2003	9900	1300 j	370 J	4100 j	57	270 j	340 j	<50	<100 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	17000	2200	930 J	6500	<50	310	330	<8.1	<8
	2/19/2004	20000	3000	1200 J	6300	<50	370	400	<50	14 J
	4/21/2004	4100	1700	350 J	1500	<50	<50	72	<50	<21
	8/17/2004	730	810	160 J	190	<5	8.3	9.1	<5	<21
	12/15/2004	3300	860	180 J	970	9.1	30	60	<0.5 uj	<210
	3/23/2005	450	290	140 J	95	1.3	2.3	14 j	<0.5	<15
MW-46B	6/24/2003	110	100	<480	46 j	0.66	3.6 j	4.1 j	<0.5	<100
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	49	<73	<0.5	<0.5	<0.5	<0.5	<0.081	<16 uj
	2/19/2004	<50	95 u	75 J	<0.5	<0.5	<0.5	<0.5	<0.5	16 J
	4/21/2004	<50	41 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	4/21/2004 (Duplicate)	<50	43 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	25 J
	8/17/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	39 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	12/15/2004(Duplicate)	<50	51	<93	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/23/2005	<50	40 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<90

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GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-46C	6/24/2003	53	63 u	<470	24 j	<0.5	2.2 j	2.4 j	<0.5	<200 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	22 J	<73	<0.5	<0.5	<0.5	<0.5	<0.081	38 Juj
	2/19/2004	<50	46 Ju	<74	6.5	<0.5	<0.5	<0.5	<0.5	76 J
	4/21/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/17/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	8/17/2004 (Duplicate)	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/15/2004	<50	<20	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/23/2005	<50	24 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<90
MW-47	6/24/2003	350	290 j	120 J	26 j	1.8	<0.5 uj	1.1 j	<0.5	<100 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	460	400	150 J	26 j	2.3	<0.5	1.6	0.1 J	21 Jj
	2/18/2004	51	310	210 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/21/2004	110	380	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	13 Ju
	8/17/2004	260	360	150 J	1	1.2	<0.5	0.72	<0.5	<21
	12/16/2004	69	170	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	110	740	490	<0.5	<0.5	<0.5	<0.5	<0.5	<15

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CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
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WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-48A	6/24/2003	4600	1500 j	220 J	470 j	26	<5 uj	28 j	<5	<100
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	250	2000	750 J	1000	30	<25	26	<4	<8 uj
	2/19/2004	3100	1600	640 J	92	14	<5	17	<5	<8
	4/22/2004	5400	1300	94 J	220	32	11	36	<10	<21 uj
	8/18/2004	4100	1200	140 J	310	23	6.59	27	<2.5	<21
	12/15/2004	3600	1100	150 J	92	15	2.4	18	<1	<210
	3/21/2005	4900	2100	820 J	240	31	6.8	42	<0.5	<15
MW-48B	6/24/2003	150	100 u	<490	8.5 j	0.57	0.52 j	0.52 j	<0.5	<100 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	130	130	<74	<0.5	<0.5	1.2	<0.5	0.17 J	<8 uj
	11/20/2003(Duplicate)	130	150	<75	<0.5	<0.5	1	<0.5	0.18 J	<8 uj
	2/19/2004	140	290	120 J	<0.5	<0.5	1	0.66	<0.5	<8
	2/19/2004 (Duplicate)	150	300	130 J	<0.5	<0.5	<0.5	0.6	<0.5	<16
	4/22/2004	52	69	<53	<0.5	<0.5	<0.5	0.59	<0.5	<21
	8/18/2004	190	97	<54	<0.5	<0.5	<0.5	0.57	<0.5	<21
	12/15/2004	120	91	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	110	300	150 J	<0.5	<0.5	0.96	<0.5	<0.5	22 J

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CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
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WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-48C	6/24/2003	<50	63 u	<480	4.6 j	<0.5	<0.5 uj	<0.5 uj	<0.5	<200 uj
	6/24/2003 (Duplicate)	<50	<48	<480	2.1	<0.5	<0.5	<0.5	<0.5	<1000 uj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	<50	24 J	<74	<0.5	<0.5	<0.5	<0.5	<0.081	<24 uj
	2/19/2004	<50	25 Ju	<74	0.59	<0.5	<0.5	0.6	<0.5	<24
	4/22/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/18/2004	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/15/2004	<50	36 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	12/15/2004(Duplicate)	<50	43 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	<50	25 J	<93	<0.5	<0.5	<0.5	<0.5	<0.5	200 J
MW-49	6/25/2003	2200	760 j	190 J	430 j	15 j	31	40	<10	20 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	3900 j	1800 j	660 Jj	410 j	27 j	31	29 j	<1.6	<8 uj
	2/18/2004	1500	540	720	60	3.4	<2.5	<2.5	<2.5	<8 uj
	4/21/2004	4800 j	1100	190 J	1800	81	79	95	<50	<21
	8/17/2004	2600	540	170 J	250	16	12	27	<5	<21
	12/15/2004	3800	710	210 J	770	44	44	46	<0.5	<210
	3/21/2005	2100	1200	280 J	100	2.3	6.8	3.1	<1	25 J

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WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-50	4/16/2003	<50	270	170 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	8/1/2003	<50	200 j	190 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	210	170 J	<0.5	<0.5	<0.5	<0.5	<0.081	15 Jj
	2/18/2004	<50	130	89 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/20/2004	<50	130	80 J	<0.5	<0.5	<0.5	<0.5	<0.5	12 Ju
	8/18/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	93	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	170	140 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-51	4/16/2003	260	2200	710 J	8	1.6	0.56	<0.5	<2.5	<100
	8/1/2003	300	3000 j	1900 j	6 j	<0.5	<0.5	0.66	<0.5	NA
	11/18/2003	63	900	480	1.4	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	220	160 J	<0.5	<0.5	<0.5	<0.5	<0.5	22 J
	4/21/2004	120 j	440	86 J	1.4	<0.5	<0.5	0.57	<0.5	<21
	8/18/2004	<50	53	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	63	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	140	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-52	4/16/2003	160	800	330 J	0.98	1.1	1.3	<0.5	<2.5	<100
	6/23/2003	120	670	300 Jj	1.5 j	<0.5	<0.5	0.61	<0.5	NA
	6/24/2003	86	290	87 Jj	0.89 j	<0.5	<0.5	<0.5	<0.5	NA
	8/1/2003	53	480 j	350 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	730	450 J	<0.5	<0.5	<0.5	<0.5	<0.081	23 Jj
	2/18/2004	<50	630	300 J	<0.5	<0.5	<0.5	<0.5	<0.5	18 J
	4/20/2004	<50	190	71 J	<0.5	0.5	<0.5	0.66	<0.5	<8
	8/18/2004	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	59	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	160	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-53	4/16/2003	<50	470	290 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/31/2003	<50	190 j	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	380	220 Jj	<0.5	<0.5	<0.5	<0.5	<0.081	18 Jj
	11/20/2003(Duplicate)	<50	300	160 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	430	320 J	<0.5	<0.5	<0.5	<0.5	<0.5	15 J
	4/20/2004	<50	270	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	64	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	63	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	160	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-54	4/16/2003	63	750	300 J	1.6	<0.5	0.56	<0.5	<2.5	<100
	4/16/2003 (Duplicate)	<50	570	260 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/31/2003	<50	420 j	210 Jj	0.62 j	<0.5	<0.5	<0.5	<0.5	NA
	7/31/2003 (Duplicate)	<50 uj	620	470 Jj	0.52 j	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	1500 j	1500 j	0.52	<0.5 uj	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	340	310 J	<0.5	<0.5	<0.5	<0.5	<0.5	10 J
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/18/2004	<50	220	220 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/21/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	4/15/2003	<50	380	270 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/31/2003	<50	330 j	140 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	170	<74 uj	<0.5	<0.5	<0.5	<0.5	0.09 J	12 Jj
	2/18/2004	<50	240	170 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004	<50	210	91 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004 (Duplicate)	<50	210	88 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/17/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	140	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	40 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-56	4/16/2003	93	490	210 J	<0.5	<0.5	1.4	<0.5	<2.5	32 J
	7/31/2003	<50 uj	320 j	250 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	320	200 Jj	<0.5	<0.5	<0.5	<0.5	<0.081	13 Jj
	2/18/2004	<50	100	84 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/20/2004	<50	700	370 J	<0.5	<0.5	<0.5	<0.5	<0.5	9.1 Ju
	8/17/2004	<50	48	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	230	150 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	79	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<90
MW-57	4/16/2003	94	170	110 J	1.6	<0.5	<0.5	<0.5	<2.5	<100
	7/30/2003	<50	360	310 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	7/30/2003 (Duplicate)	<50	350	300 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/24/2003	<50	180	150 J	<0.5 uj	<0.5 uj	<0.5	<0.5	0.09 J	36 J
	2/19/2004	<50	150	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	27 J
	2/19/2004 (Duplicate)	<50	160	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	24 J
	4/20/2004	<50	250	200 J	<0.5	<0.5	<0.5	<0.5	<0.5	8.3 Ju
	8/17/2004	<50	50	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	260	180 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	77	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-58	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	<50	87 j	<470	<0.5	<0.5	<0.5	<0.5	0.62 j	<100
	11/21/2003	<50	120	95 J	<0.5	<0.5 uj	<0.5	<0.5	0.45	<8 uj
	2/18/2004	<50	150	<73	<0.5	<0.5	<0.5	<0.5	<0.5	17 J
	4/21/2004	<50	39 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/21/2004 (Duplicate)	<50	57	77 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	<33	<53	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<21
	12/15/2004	<50	36 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	62	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-59	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	<50	210 uj	200 Juj	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	8/7/2003 (Duplicate)	<50	250 j	200 Juj	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	11/21/2003	<50	380	360 J	<0.5	<0.5 uj	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	83 u	<74	<0.5	<0.5	<0.5	<0.5	<0.5	17 J
	4/21/2004	<50	140	76 J	<0.5	0.54	<0.5	0.61	<0.5	<8
	8/18/2004	<50	150	99 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/16/2004	<50	180	98 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	180	150 J	2 j	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-60	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	58	1700 j	1000	1.4 j	<0.5	<0.5	<0.5	<0.5	<100
	11/24/2003	290 j	2300 j	1600 j	12 j	11 j	<0.5	0.97 j	<0.081	<8 uj
	2/17/2004	62	200	110 J	<0.5	3.5	0.57	<0.5	<0.5	8.6 J
	4/21/2004	85	960	650	<0.5	0.69	<0.5	<0.5	<0.5	17 Ju
	8/17/2004	60	590	290 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	8/17/2004 (Duplicate)	54	610	310 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/16/2004	77	540	280 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	83	<91	<0.5	<0.5	<0.5	<0.5	<0.5	17 J
MW-61	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	230	990 j	570	29 j	<0.5	2.2	7	<0.5	<100
	11/24/2003	64	1200	930	<0.5 uj	<0.5 uj	<0.5	<0.5	<0.081	<8
	2/17/2004	160	600	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/21/2004	270 j	2500 j	1300 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	270	140 J	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<21
	12/16/2004	<50	240	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	110	1400	370 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-62	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	9400	2000 j	700 Jj	2400 j	<50	86	680	<50	<100
	11/24/2003	10000 j	2500 j	1100 j	4200 j	<50 uj	540	700 j	<8.1	<8 uj
	2/17/2004	15000	1400	150 J	2800	<50	370	690	<50	74 Jj
	4/21/2004	15000	3100	830 J	7000	<50	750	240	<50	17 Ju
	8/17/2004	7200	1200	360 J	3500	<50	350	<50	<50	<21
	12/16/2004	2800	620	220 J	520	6.5	180	18	<0.5	<210
	3/23/2005	9600	7600	<1800	1100	<25	520	1300 j	<25	<15
	3/23/2005 (Duplicate)	9500	7800	<1800	1100	30	550	1300	<25	24 J
MW-A1	6/25/2003	570	1900 j	690 J	7.6	2.6 j	2	10	<0.5	34 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	690	2200	890 J	2.8 j	4 j	<0.5	6.3	<0.081	<8
	2/17/2004	810	880	120 J	3	2.9	<0.5	6	<0.5	<8 uj
	4/21/2004	1500 j	1300	240 J	19	5.9	0.74	9.1	<0.5	<8
	8/18/2004	1400	1300	330 J	16	2.7	0.51	5.1	<0.5	<21
	12/16/2004	820	920 j	280 J	<0.5	0.69	<0.5	1.6	<0.5	<210
	12/16/2004(Duplicate)	780	510 j	120 J	<0.5	0.65	<0.5	1.7	<0.5	<210
	3/23/2005	65	110	96 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
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(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-A2	6/25/2003	1100	1500 j	460 J	78	15 j	5.2	22	<5	21 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	490	960	490 J	16 j	15 j	0.96	5.3	<0.081	<8
	2/17/2004	<50	90 u	130 J	0.75	2	<0.5	<0.5	<0.5	<8 uj
	4/21/2004	150	320 j	310 Jj	7.5	1.6	0.76	1.2	<0.5	<8
	8/18/2004	490	1000	1200	67	12	6.6	7.5	<0.5	<21
	12/16/2004	51	280	290 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/24/2005	150	520	180 J	<0.5	<0.5	<0.5	0.57	<0.5	<15
	3/24/2005 (Duplicate)	140	470	150 J	<0.5	<0.5	<0.5	0.58	<0.5	<15
MW-A3	6/25/2003	210	1300 j	560 J	13	0.98 j	1.3	5.8	<0.5	47 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	91 j	1200 j	320 Jj	0.97 j	<0.5 uj	<0.5	<0.5 uj	0.1 J	9.4 Jj
	11/24/2003(Duplicate)	280 j	1200 j	520 j	11 j	3.2 j	<0.5	1.5 j	<0.081	<8 uj
	2/17/2004	130	290	<73	3.9	0.93	<0.5	1.1	<0.5	<8 uj
	2/17/2004 (Duplicate)	120	310	84 J	3.8	1.1	<0.5	0.91	<0.5	<8 uj
	4/21/2004	210	550	160 J	3.1	0.79	<0.5	1.1	<0.5	13 J
	8/18/2004	220	500	240 J	2.1	<0.5	<0.5	1	<0.5	<21
	12/16/2004	170	460	200 J	1.2	<0.5	<0.5	0.73	<0.5	<210
	3/23/2005	<50	150	<91	<0.5	<0.5	<0.5	<0.5	<0.5	48 J

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

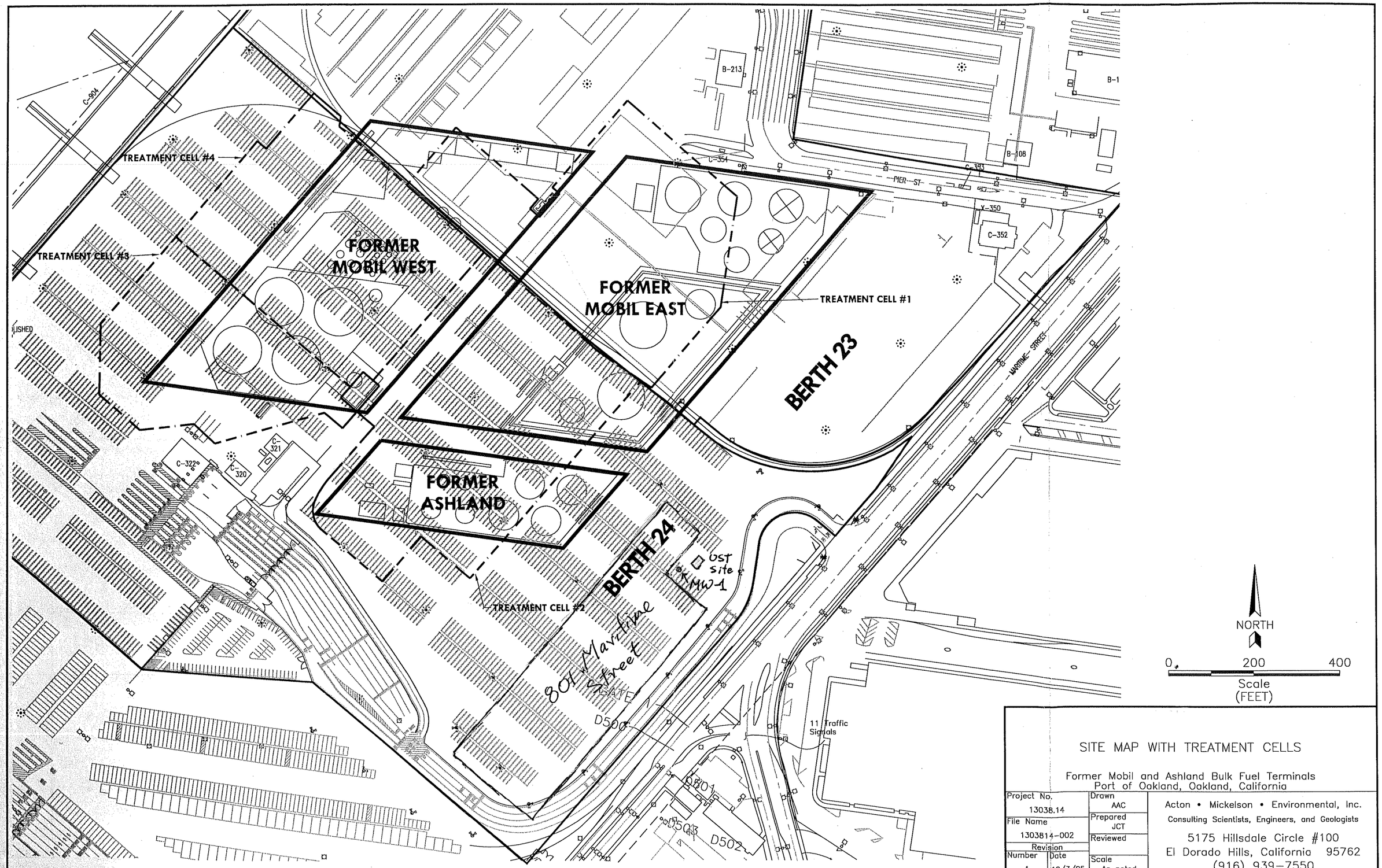
WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
TW-1BB	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	400	450	87 J	12 j	0.67	1.7	0.88	0.12 J	23 Jj
	2/18/2004	350	490	120 J	25	1.1	2.7	1.8	<0.5	<24 uj
	4/20/2004	380 j	510	160 J	0.8	<0.5	<0.5	<0.5	<0.5	<8
	8/16/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2004	2600	3800	<910	13	3.1	60	26	<0.5	24 J
	3/22/2005	1600 j	1800	810 J	15 j	0.85	16	8.6	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD

Excludes samples collected after air sparging tests from a series of samples collected from monitoring wells MW-15 and MW-52 on June 24 and 25, 2003.
Analyte abbreviations:
TPH = Total petroleum hydrocarbons.
MTBE = Methyl tertiary butyl ether.
< = Concentration as reported by the analytical laboratory is less than the Method Detection Limit (MDL) or the Practical Quantitation Limit (PQL). MDL or PQL listed in micrograms per liter.
NA = Not analyzed.
NS = Not sampled.
Data qualifiers, beginning with 2003 data (analytical laboratory data qualifiers in upper case, data validation qualifiers in lower case):
J or j = Estimated value. The analyte was positively identified, but the associated numerical result is an estimate.
u = Not detected (data validation qualifier only).
uj = Not detected. The associated numerical value is an estimate of the PQL or the MDL (data validation qualifier only).
r = Data rejected. The presence or absence of the analyte cannot be verified (data validation qualifier only).
Analysis Methods:
TPHg analyzed by EPA Method 8015V. Quantified over carbon range C6-C12 before April 2004, C4-C12 beginning with April 2004 samples.
TPHd and TPHo analyzed by EPA Method 8015D with silica gel cleanup by EPA Method 3630.
Benzene, toluene, ethylbenzene, xylenes, and MTBE analyzed by EPA Method 8021B during the April 2003 sampling event.
Benzene, toluene, ethylbenzene, xylenes, and MTBE analyzed by EPA Method 8260B after April 2003.
Lead analyzed by EPA Method 6010A or 6010B.



SITE MAP WITH TREATMENT CELLS

Former Mobil and Ashland Bulk Fuel Terminals
Port of Oakland, Oakland, California

Project No. 13038.14		Drawn AAC	Acton • Mickelson • Environmental, Inc.
File Name 1303814-002		Prepared JCT	Consulting Scientists, Engineers, and Geologists
Revision		Reviewed	5175 Hillsdale Circle #100
Number	Date	Scale	El Dorado Hills, California 95762
1	10/3/05	As noted	(916) 939-7550

Figure 1

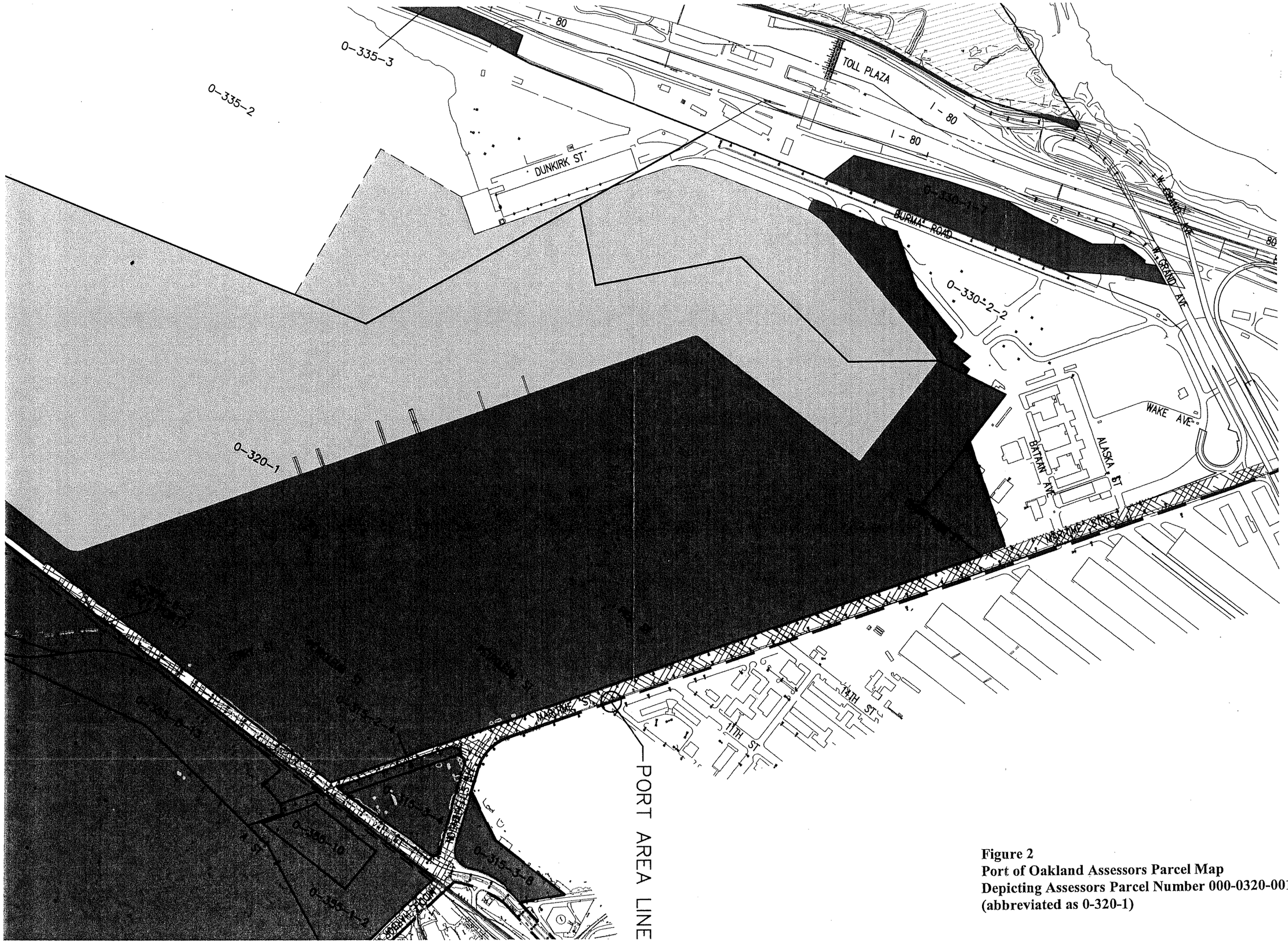
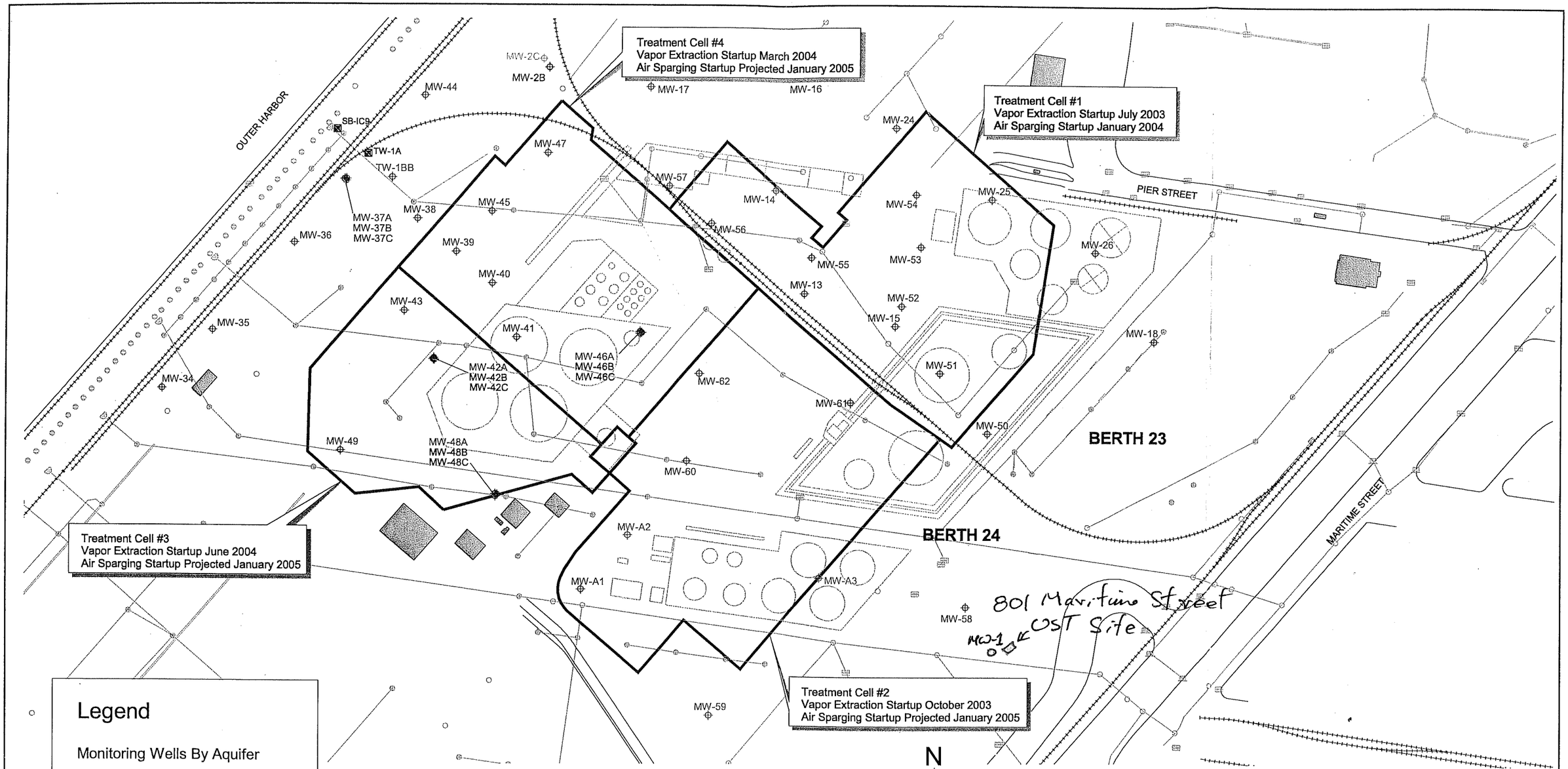


Figure 2
Port of Oakland Assessors Parcel Map
Depicting Assessors Parcel Number 000-0320-001-00
(abbreviated as 0-320-1)



Legend

Monitoring Wells By Aquifer

- Artifical Fill
- Artifical Fill/Young Bay Mud
- San Antonio FM
- Alameda FM
- Historical Sample Location in Artificial Fill
- Storm Drain

Notes:
1. All locations and dimensions are approximate.
2. At monitoring well clusters MW-37, MW-42, MW-46, and MW-48, A denotes Artificial Fill, B denotes upper San Antonio Formation, and C denotes lower San Antonio Formation.

FIGURE 3

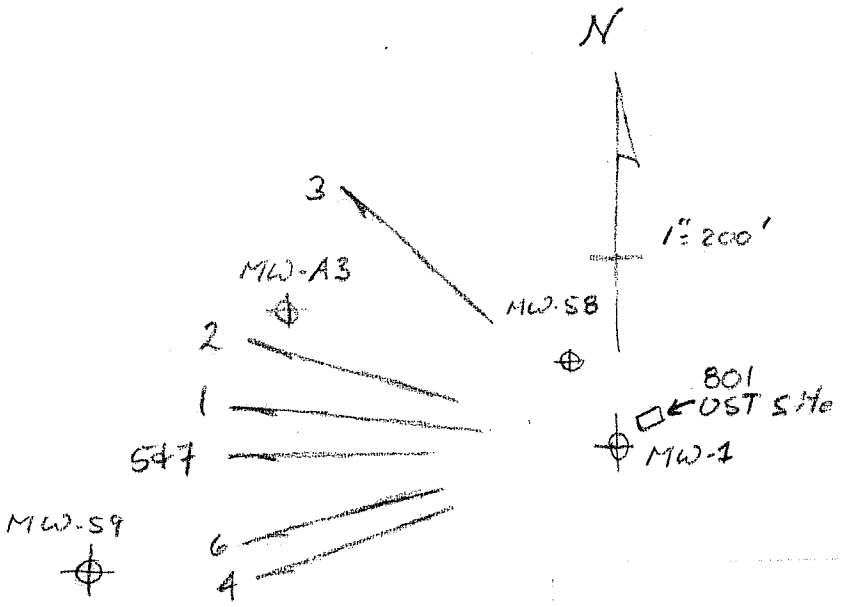
GROUND WATER MONITORING WELL LOCATIONS

Former Mobil and Ashland Bulk Fuel Terminals
Port of Oakland, Oakland, California

Project No. 13038.14	Drawn By AAC
Layout existing	Prepared By JRH
Arcview Project existingwells	Reviewed By
	Scale As Noted

Acton Mickelson Environmental, Inc.
Consulting Scientists, Engineers, and Geologists
5175 Hillsdale Circle #100
El Dorado Hills, California 95762
(916) 939-7550

Figure 4
Groundwater Flow Directions
801 Maritime Street UST Site



Vector No.	Map Date
1	March 21, 2005
2	December 13, 2004
3	August 20, 2004
4	April 19, 2004
5	February 13,2004
6	November 12, 2003
7	August 7, 2003

APPENDIX G

WELL MW-1 DEVELOPMENT DATA SHEET

R&M Environmental

WELL DEVELOPMENT DATA SHEET

BORING NO. _____ WELL NO. MW-1

Project Additional Site Investigation
Project No. 4009
Date(s) of Installation _____
Date(s) of Development 4/9/07
Personnel/Company Rafael Guillen (RSI); Rafael Carranza and Cameron Adams (R&M)
Type of Rig Used _____

Casing Diameter/Type 2" PVC
Borehole Diameter _____
Screened Interval(s) 4' to 15'
Total Length of Well Casing 15'
Measured Total Depth (TOC) Initial 14.58' @ 6:52
Final 15.10' @ 9:46
Initial Depth to Water (TOC) 7.60' Date 4/9/07 Time 6:51
Stabilized Depth to Water (TOC) 7.60' Date 4/9/07 Time 9:45

TECHNIQUE(S)	DEVELOPMENT EQUIPMENT TYPE/CAPACITY
___ Jetting (Airlift)	_____
_X_ Surge Block	_____
_X_ Bailing	½ gallon per withdraw
_X_ Pumping	1 gallon per minute
___ Other	_____

Pump set 6 inches off the bottom

Development Criteria: until water appears clean and clear of entrained sediment and water quality parameters are stabilized (less than 10% change in three consecutive readings)

Time	Volume of Water Discharge (gal.)	Total Volume Discharged (gal.)	Temp (C)	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/L),	ORP (mV), Clarity, Odor, Other:
7:05	Initial swabbing;	Stop at 7:07						
7:11	½ (bailed)	½	16.02	12.14	4.63	5999	2.86	Murky, no odor
7:13	Start swabbing;	Stop at 7:28						
7:44	6 (bailed)	6.5	16.63	12.22	4.69	145	4.70	-150, turbid, no odor
8:02	Start pumping							
8:07	5	11.5	17.41	12.28	4.63	9.2	0.95	-178, clear, no odor
8:12	5	16.5	17.55	12.27	4.59	11.0	0.62	-185, clear, no odor
8:17	5	21.5	17.51	12.27	4.70	11.1	0.46	-190, clear, no odor
8:22	5	26.5	17.54	12.27	4.65	10.2	0.37	-194, clear, no odor
8:27	5	31.5	17.52	12.27	4.64	11.1	0.31	-197, clear, no odor

Development Completed at 31.5 Gallons Discharged. Date: 4/9/07 Time: 8:32

Personnel: R. Carranza, C. Adams, R. Guillen

Additional Comments: