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9:30 am, Apr 29, 2009

Alameda County  
Environmental Health



76 Broadway  
Sacramento, California 95818

April 22, 2009

Barbara Jakub  
Alameda County Health Agency  
1131 Harbor Bay parkway, Suite250  
Alameda, California 94502-577

Re: **Quarterly Summary Report (QSR)—First Quarter 2009**  
**76 Service Station # 5781 RO # 253**  
**3535 Pierson Street**  
**Oakland, CA**

Dear Ms. Jakub:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call me at (916) 558-7666.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry L. Grayson". The signature is fluid and cursive, with a large loop at the end.

Terry L. Grayson  
Site Manager  
Risk Management & Remediation

April 21, 2009

Ms. Barbara Jakub  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577

**Re: Annual Summary Report – First Quarter 2009**  
76 Service Station No. 5781  
3535 Pierson Street  
Oakland, California  
Case No. RO253  
Delta Project C1Q5781604



Dear Ms. Jakub:

On behalf of ConocoPhillips (COP), Delta Consultants (Delta) is forwarding the annual summary report for the following location:

**Service Station**

ConocoPhillips Site No. 5781

**Location**

3535 Pierson Street.  
Oakland, California

Sincerely,  
**Delta Consultants**

A handwritten signature in blue ink that reads "Nadine Periat".

Nadine Periat  
Staff Geologist

A handwritten signature in blue ink that reads "Lia Holden".

Lia Holden, PG #8584  
Geologist—Project Manager



cc: Mr. Terry Grayson, ConocoPhillips (electronic copy only)

## PREVIOUS SITE ACTIVITY

The subject site is an active service station located on the northwest corner of San Leandro Street and 66<sup>th</sup> Avenue in Oakland, California. Station facilities currently include two gasoline underground storage tanks (USTs), a 550-gallon waste oil UST, three dispenser islands under canopies, and a service station building. The product dispensers utilize a balanced vapor recovery system.

Historical data indicate that the site has been a service station since 1947. Renovation of the site first occurred in 1967, when the size of the site expanded to its current configuration.

1989 Two 10,000- gallon gasoline USTs, one 280-gallon waste oil UST and product piping were removed from the site. Confirmation soil samples collected from the UST pit indicated low residual maximum concentrations of total petroleum hydrocarbons as gasoline (TPH-G), benzene, and total oil and grease (TOG). After confirmation soil sampling, approximately 5,000 gallons of groundwater were removed from the UST pit and disposed offsite. A groundwater sample was collected and analyzed after recharge of the UST pit and contained TPH-G at 7,900 parts per billion (ppb) and benzene at 850 ppb. Confirmation soil samples collected from the product piping trench indicated low maximum residual concentrations of TPH-G and benzene.

April 1990 Three exploratory borings (MW-1, MW-2, MW-3) were advanced onsite with the intention that they would be converted into monitoring wells, however no groundwater was encountered down to a depth of 40-50 feet below ground surface (bgs). The borings were backfilled.

July 1990 Two exploratory borings (EB-1, EB-2) were advanced onsite to 34.5 and 38ft bgs, near the location of the former waste oil UST pit. Groundwater was encountered at 33.5 and 36.7 feet bgs. Groundwater was sampled from both borings, and then the borings were backfilled with neat cement. TPH-D was detected only in the in groundwater sample from EB-1 at 6.7 ppb, benzene was detected only in the groundwater sample from EB-1 at 0.61 ppb, toluene (1.5 ppb) and xylenes (1.0 ppb) were detected at equal concentrations in groundwater from both borings.

December 1990 A 2" diameter monitoring well was installed onsite (MW-A) to a depth of 45 feet. Groundwater was encountered at 33 feet bgs during the well installation.

December 1990 – March 2008 Well MW-A was sampled on a semi-annual/annual schedule. Groundwater samples were analyzed for TPH-G, TPH-D, Benzene, Toluene, Ethyl-benzene, Total Xylenes (BTEX), MTBE (MTBE since 1997). TPH-G, Benzene, and Ethyl-benzene have not been detected in MW-A since its construction.

TPH-D, toluene, total xylenes and MTBE have been primarily non-detect since the well's construction, except for detections up to 120 µg/L, 1.01 µg/L, 2.1 µg/L and 0.54 µg/L respectively.

October 2003 Site environmental consulting responsibilities were transferred to TRC. TRC performed a baseline site assessment, advancing five soil borings onsite (SB-1 through SB-5). Four of the soil borings were clustered around the location of the dispenser islands and USTs, and one near the waste oil tank. Maximum boring depth ranged from 24ft to 54ft bgs. Groundwater was encountered at depths ranging from 19.5ft to 39ft bgs in 3 wells, and was not encountered in 2 wells to a total depth of 54ft. Soil samples collected from the borings indicated up to 1,100 mg/kg of total purgeable petroleum hydrocarbons (TPPH). The only detection from groundwater samples (three borings and MW-A) was lead at 0.18 mg/L.

April 2008. The second generation waste oil tank (WOT) was removed in A total of four soil samples were collected from the WOT cavity (WO1 - WO4). One base sample was collected from beneath the WOT at a depth of 9.0 feet bg, and three sidewall samples were collected at a depth of either 6.5 or 7.0 feet bg. A fourth sidewall sample, from the southeast wall of the pit, was unable to be collected due to proximity of the station building. A composite soil sample (Composite) was also collected from materials stockpiled during removal and sampling activities. (Delta, 2008)

No petroleum hydrocarbons (including TPH-D) or fuel oxygenates, total oil and grease, VOCs, SVOCs, or PCBs were detected in any of the four soil samples, or the composite sample. Samples were also analyzed for CAM 17 metals, and each of the five samples contained arsenic at a concentration above the RWQCB ESL of 1.5 mg/kg (commercial). Concentrations ranged from 3.2 mg/kg to 6.2 mg/kg, and appear to represent background conditions at the site. All other CAM 17 metal detections were below the commercial ESLs set by the RWQCB. (Delta, 2008)

No over-excavation activities were conducted, the WOT was not replaced, and the stockpiled materials were backfilled into the remaining cavity following receipt of laboratory results. (Delta, 2008)

### **SENSITIVE RECEPTORS**

The California Department of Water Resources database indicates the presence of four active water wells nearby the site. The four active wells are reported to be located in East Bay Regional Park District land, located approximately 2,193 feet northeast of the site.

### **MONITORING AND SAMPLING**

Currently, one onsite well is monitored annually during the first quarter.

During the most recent groundwater monitoring and sampling event conducted on March 27, 2009, depth to groundwater was 14.35 feet below top of casing (TOC) in (MW-A). At least three data points are necessary to calculate groundwater flow direction and gradient; therefore, the groundwater flow direction was not reported for the current sampling event or for the previous sampling event (March 22, 2008).

Analytical results from the First Quarter 2009 event are discussed below. Groundwater samples were analyzed for TPH-G by EPA Method 8015M, benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8021B, total oil and grease (TOG) and volatile organic compounds by EPA Method 8260. Analysis for MTBE was by EPA Method 8021B and 8260B.

**Liquid Phase Hydrocarbon (LPH):** LPH was not observed in monitoring well MW-A this quarter. This is consistent with the previous sampling event.

**Total Petroleum Hydrocarbons as Gasoline (TPH-G):** TPH-G was not present in the sample from well MW-A this quarter. This is consistent with the previous sampling event.

Total Petroleum Hydrocarbons as Diesel (TPH-D). TPH-D was detected in MW-A during the latest sampling event at a concentration of 53 ug/l. TPH-D has been detected sporadically since 1990 in well MW-A at concentrations ranging from 53 µg/l to 131 µg/l.

**Benzene:** Benzene was not present in the sample from monitoring well MW-A this quarter. This is consistent with the previous sampling event.

**Methyl tertiary Butyl Ether (MTBE):** MTBE was not present in the sample from well MW-A this quarter. This is consistent with the previous sampling event.

### REMEDIATION STATUS

Remediation is not currently being conducted at the site.

### RECENT CORRESPONDENCE

Delta submitted a Site Conceptual Model dated September 15, 2008, in which Delta recommended case closure.

### CONCLUSIONS AND RECOMMENDATIONS

One monitoring well (MW-A) is present at the site. For seven consecutive sampling events, with the exception of MTBE detected at 0.54 µg/l (March 2006) and a

maximum TPH-D detection of 131 µg/l (March 2001), petroleum hydrocarbons have not been detected in groundwater samples collected from this well.

Currently, groundwater samples are analyzed for TPH-G by EPA Method 8015M, BTEX by EPA Method 8021B, VOCs by EPA Method 8260, TOG by EPA method 1664, and MTBE by EPA Method 8021B and 8260B.

With the exception of sporadic detections of toluene (0.25 µg/l, February 1994), total xylenes (maximum concentration of 2.1 µg/l detected in February of 1996) and TPH-D, analytes have been not been reported above the laboratory reporting limit in the site's monitoring history.

Historically, analyte concentrations in MW-A have been either low or not detected. With the exception of two sampling events (February of 1996 and March of 2001), where TPH-D was detected at respective concentrations of 120 µg/l and 131 µg/l, all constituent concentrations detected in MW-A have been below the California Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs). (RWQCB, May 2008)

Delta continues to recommend case closure for the site. Additionally, Delta recommends reducing groundwater sample analyses to only TPH-D by EPA method 8015 with silica gel cleanup, and BTEX compounds by EPA method 8260B until case closure is granted.

#### **THIS QUARTER ACTIVITIES (First Quarter 2009)**

- TRC monitored and sampled the groundwater monitoring well network on March 27, 2009.
- TRC prepared an *Annual Monitoring Report*, dated April 14, 2009.
- Delta submitted the First Quarter 2009 Annual Summary Report.
- Delta submitted the *Site Conceptual Model*, dated September 15, 2008.

#### **PLANNED ACTIVITIES**

- Discussions with the regulator regarding closure will be continued.
- If closure is not granted by the next scheduled sampling event, TRC will conduct the annual groundwater monitoring and sampling event in 2010.

## **REMARKS**

The descriptions, conclusions, and recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. For any reports cited that were not generated by Delta, the data from those reports is used "as is" and is assumed to be accurate. Delta does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were conducted. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

**CONSULTANT: Delta Consultants**

## REFERENCES

- Kaprealian Engineering Incorporated, *Preliminary Subsurface Investigation at Unocal Service Station #5781, 3535 Pierson Street, Oakland, California*, May 21, 1990.
- Kaprealian Engineering Incorporated, *Supplementary Subsurface Investigation at Unocal Service Station #5781, 3535 Pierson Street, Oakland, California*, August 23, 1990
- Kaprealian Engineering Incorporated, *Quarterly Summary Report, First Quarter—1991 (December 1991 – February 1992) Unocal Service Station #5781, 3535 Pierson Street, Oakland, California*, date unknown.
- 76 Products Company, *Baseline Due Diligence Data, Store #255781*, February 10, 1997.
- Kaprealian Engineering Incorporated, *Preliminary Ground Water Investigation at Unocal Service Station #5781, 3535 Pierson Street, Oakland, California*, January 21, 1991.
- TRC, *Baseline Site Assessment Report, 76 Station #5781, 3535 Pierson Street, Oakland, California*, December 3, 2003.
- California Regional Quality Control Board, San Francisco Bay Region. *Screening For Environmental Concerns at Site with Contaminated Soil and Groundwater*, May 2008.
- Delta Consultants, *Site Conceptual Model, 76 Station #5781, 3535 Pierson Street, Oakland, California*, November 20, 2008.
- TRC, *Annual Monitoring Report, 76 Station #5781, 3535 Pierson Street, Oakland, California, April 2008 through March 2009*, April 14, 2009.





21 Technology Drive  
Irvine, CA 92618

949 727 9336 PHONE  
949 727 7399 FAX

www TRCsolutions.com

DATE: April 14, 2009

TO: ConocoPhillips Company  
76 Broadway  
Sacramento, CA 95818

ATTN: MR. TERRY GRAYSON

SITE: 76 STATION 5781  
3535 PIERSON STREET  
OAKLAND, CALIFORNIA

RE: ANNUAL MONITORING REPORT  
APRIL 2008 THROUGH MARCH 2009

Dear Mr. Grayson:

Please find enclosed our Annual Monitoring Report for 76 Station 5781, located at 3535 Pierson Street, Oakland, California. If you have any questions regarding this report, please call us at (949) 727-9336.

Sincerely,

TRC

A handwritten signature in black ink, appearing to read "Anju Farfan".

Anju Farfan  
Groundwater Program Operations Manager

CC: Ms. Lia Holden, Delta Consultants (2 copies)

Enclosures  
20-0400/5781R07.QMS

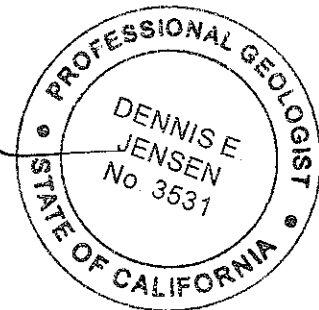
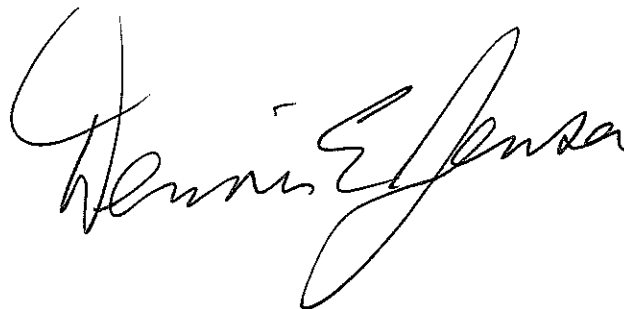
**ANNUAL MONITORING REPORT  
APRIL 2008 THROUGH MARCH 2009**

76 STATION 5781  
3535 Pierson Street  
Oakland, California

Prepared For:

Mr. Terry Grayson  
CONOCOPHILLIPS COMPANY  
76 Broadway  
Sacramento, California 95818

By:



Senior Project Geologist, Irvine Operations

Date: 4/14/09



## LIST OF ATTACHMENTS

Summary Sheet	Summary of Gauging and Sampling Activities
Tables	<p>Table Key</p> <p>Contents of Tables</p> <p>Table 1: Current Fluid Levels and Selected Analytical Results</p> <p>Table 1a: Additional Current Analytical Results</p> <p>Table 1b: Additional Current Analytical Results</p> <p>Table 1c: Additional Current Analytical Results</p> <p>Table 1d: Additional Current Analytical Results</p> <p>Table 2: Historic Fluid Levels and Selected Analytical Results</p> <p>Table 2a: Additional Historic Analytical Results</p> <p>Table 2b: Additional Historic Analytical Results</p> <p>Table 2c: Additional Historic Analytical Results</p> <p>Table 2d: Additional Historic Analytical Results</p>
Figures	<p>Figure 1: Vicinity Map</p> <p>Figure 2: Groundwater Elevation Map</p> <p>Figure 3: Dissolved-Phase TPH-G Concentration Map</p> <p>Figure 4: Dissolved-Phase Benzene Concentration Map</p> <p>Figure 5: Dissolved-Phase TPH-D Concentration Map</p>
Graphs	<p>Groundwater Elevation vs. Time</p> <p>Benzene Concentrations vs. Time</p>
Field Activities	<p>General Field Procedures</p> <p>Field Monitoring Data Sheet – 03/27/09</p> <p>Groundwater Sampling Field Notes – 03/27/09</p>
Laboratory Reports	<p>Official Laboratory Reports</p> <p>Quality Control Reports</p> <p>Chain of Custody Records</p>
Statements	<p>Purge Water Disposal</p> <p>Limitations</p>

**Summary of Gauging and Sampling Activities**  
**April 2008 through March 2009**  
**76 Station 5781**  
**3535 Pierson Street**  
**Oakland, CA**

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Project Coordinator: **Terry Grayson**  
Telephone: **916-558-7666**

Water Sampling Contractor: **TRC**  
Compiled by: **Christina Carrillo**

Date(s) of Gauging/Sampling Event: **03/27/09**

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**Sample Points**

Groundwater wells: **1** onsite, **0** offsite      Points gauged: **1**      Points sampled: **1**  
Purging method: **Submersible pump**  
Purge water disposal: **Veolia/Rodeo Unit 100**  
Other Sample Points: **0**      Type: **--**

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**Liquid Phase Hydrocarbons (LPH)**

Sample Points with LPH: **0**      Maximum thickness (feet): **--**  
LPH removal frequency: **--**      Method: **--**  
Treatment or disposal of water/LPH: **--**

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**Hydrogeologic Parameters**

Depth to groundwater (below TOC):      Minimum: **14.35 feet**      Maximum: **14.35 feet**  
Average groundwater elevation (relative to available local datum): **137.45 feet**  
Average change in groundwater elevation since previous event: **-1.67 feet**  
Interpreted groundwater gradient and flow direction:  
    Current event: **n/a**  
    Previous event: **n/a (03/22/08)**

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**Selected Laboratory Results**

Sample Points with detected **Benzene**: **0**      Sample Points above MCL (1.0 µg/l): **--**  
    Maximum reported benzene concentration: **--**  
  
Sample Points with **TPH-G**      **0**  
Sample Points with **MTBE 8260B**      **0**

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**Notes:**

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# TABLES

## TABLE KEY

### STANDARD ABBREVIATIONS

--	=	not analyzed, measured, or collected
LPH	=	liquid-phase hydrocarbons
Trace	=	less than 0.01 foot of LPH in well
µg/l	=	micrograms per liter (approx. equivalent to parts per billion, ppb)
mg/l	=	milligrams per liter (approx. equivalent to parts per million, ppm)
ND<	=	not detected at or above laboratory detection limit
TOC	=	top of casing (surveyed reference elevation)
D	=	duplicate
P	=	no-purge sample

### ANALYTES

BTEX	=	benzene, toluene, ethylbenzene, and (total) xylenes
DIPE	=	di-isopropyl ether
ETBE	=	ethyl tertiary butyl ether
MTBE	=	methyl tertiary butyl ether
PCB	=	polychlorinated biphenyls
PCE	=	tetrachloroethene
TBA	=	tertiary butyl alcohol
TCA	=	trichloroethane
TCE	=	trichloroethene
IPH-G	=	total petroleum hydrocarbons with gasoline distinction
IPH-D	=	total petroleum hydrocarbons with diesel distinction
IPPH	=	total purgeable petroleum hydrocarbons
IRPH	=	total recoverable petroleum hydrocarbons
IAME	=	tertiary amyl methyl ether
1,1-DCA	=	1,1-dichloroethane
1,2-DCA	=	1,2-dichloroethane (same as EDC, ethylene dichloride)
1,1-DCE	=	1,1-dichloroethene
1,2-DCE	=	1,2-dichloroethene (cis- and trans-)

### NOTES

1. Elevations are in feet above mean sea level. Depths are in feet below surveyed top-of-casing.
2. Groundwater elevations for wells with LPH are calculated as: Surface Elevation - Measured Depth to Water + (Dp x LPH Thickness), where Dp is the density of the LPH, if known. A value of 0.75 is used for gasoline and when the density is not known. A value of 0.83 is used for diesel.
3. Wells with LPH are generally not sampled for laboratory analysis (see General Field Procedures).
4. Comments shown on tables are general. Additional explanations may be included in field notes and laboratory reports, both of which are included as part of this report.
5. A "J" flag indicates that a reported analytical result is an estimated concentration value between the method detection limit (MDL) and the practical quantification limit (PQL) specified by the laboratory.
6. Other laboratory flags (qualifiers) may have been reported. See the official laboratory report (attached) for a complete list of laboratory flags.
7. Concentration graphs based on tables (presented following Figures) show non-detect results prior to the Second Quarter 2000 plotted at fixed values for graphical display. Non-detect results reported since that time are plotted at reporting limits stated in the official laboratory report.

### REFERENCE

TRC began groundwater monitoring and sampling for 76 Station 5781 in October 2003. Historical data compiled prior to that time were provided by Gettler-Ryan Inc.

## Contents of Tables 1 and 2

### Site: 76 Station 5781

#### Current Event

Table 1	Well/ Date	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G 8015 (Luft)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8021B)	MTBE (8260B)	
<b>Table 1a</b>	Well/ Date	TPH-D	TBA	Ethanol (8260B)	Ethylene- dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	Total Oil and Grease	Bromo- dichloro- methane	Bromo- form	Bromo- methane
<b>Table 1b</b>	Well/ Date	Carbon Tetra- chloride	Chloro- benzene	Chloro- ethane	Chloroform	Chloro- methane	Dibromo- chloro- methane	1,2- Dichloro- benzene	1,3- Dichloro- benzene	1,4- Dichloro- benzene	Dichloro- difluoro- methane	1,1-DCA	1,1-DCE
<b>Table 1c</b>	Well/ Date	cis- 1,2-DCE	trans- 1,2-DCE	1,2- Dichloro- propane	cis-1,3- Dichloro- propene	trans-1,3- Dichloro- propene	Methylene chloride	1,1,2,2- Tetrachloro- ethane	Tetrachloro- ethene (PCE)	Trichloro- trifluoro- ethane	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethene (TCE)
<b>Table 1d</b>	Well/ Date	Trichloro- fluoro- methane	Vinyl chloride										

#### Historic Data

Table 2	Well/ Date	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G 8015 (Luft)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8021B)	MTBE (8260B)	
<b>Table 2a</b>	Well/ Date	TPH-D	TPH-G (GC/MS)	TBA	Ethanol (8260B)	Ethylene- dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	Total Oil and Grease	TRPH	Bromo- dichloro- methane
<b>Table 2b</b>	Well/ Date	Bromo- form	Bromo- methane	Carbon Tetra- chloride	Chloro- benzene	Chloro- ethane	2- Chloroethyl vinyl ether	Chloroform	Chloro- methane	Dibromo- chloro- methane	1,2- Dichloro- benzene	1,3- Dichloro- benzene	1,4- Dichloro- benzene
<b>Table 2c</b>	Well/ Date	Dichloro- difluoro- methane	1,1-DCA	1,1-DCE	cis- 1,2-DCE	trans- 1,2-DCE	1,2- Dichloro- propane	cis-1,3- Dichloro- propene	trans-1,3- Dichloro- propene	Methylene chloride	1,1,2,2- Tetrachloro- ethane	Tetrachloro- ethene (PCE)	Trichloro- trifluoro- ethane
<b>Table 2d</b>	Well/ Date	1,1,1- Trichloro- ethane	1,1,2- Trichloro- ethane	Trichloro- ethene (TCE)	Trichloro- fluoro- methane	Vinyl chloride							

**Table 1**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**March 27, 2009**  
**76 Station 5781**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
MW-A 03/27/09	151.80	14.35	0.00	137.45	-1.67	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	ND<0.50	



**Table 1 a**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**  
**76 Station 5781**

Date Sampled	TPH-D (µg/l)	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene- dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Total Oil and Grease (mg/l)	Bromo- dichloro- methane (µg/l)	Bromo- form (µg/l)	Bromo- methane (µg/l)
<b>MW-A</b> 03/27/09	53	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<1.0

**Table 1 b**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**  
**76 Station 5781**

Date Sampled	Carbon Tetra-chloride (µg/l)	Chloro-benzene (µg/l)	Chloro-ethane (µg/l)	Chloroform (µg/l)	Chloro-methane (µg/l)	Dibromo-chloro-methane (µg/l)	1,2-Dichloro-benzene (µg/l)	1,3-Dichloro-benzene (µg/l)	1,4-Dichloro-benzene (µg/l)	Dichloro-difluoro-methane (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)
<b>MW-A</b> 03/27/09	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

**Table 1 c**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**  
**76 Station 5781**

Date Sampled	cis- 1,2-DCE (µg/l)	trans- 1,2-DCE (µg/l)	1,2- Dichloro- propane (µg/l)	cis-1,3- Dichloro- propene (µg/l)	trans-1,3- Dichloro- propene (µg/l)	Methylene chloride (µg/l)	1,1,2,2- Tetrachloro- ethane (µg/l)	Tetrachloro- ethene (PCE) (µg/l)	Trichloro- trifluoro- ethane (µg/l)	1,1,1- Trichloro- ethane (µg/l)	1,1,2- Trichloro- ethane (µg/l)	Trichloro- ethene (TCE) (µg/l)
<b>MW-A</b> 03/27/09	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

**Table 1 d**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**  
**76 Station 5781**

Date Sampled	Trichloro- fluoro- methane (µg/l)	Vinyl chloride (µg/l)
MW-A 03/27/09	ND<0.50	ND<0.50

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**December 1990 Through March 2009**  
**76 Station 5781**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (Luft) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
<b>MW-A</b>													
12/18/90	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
05/03/91	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
08/07/91	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
11/08/91	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
02/06/92	151.80	19.88	0.00	131.92	--	ND	ND	ND	ND	ND	--	--	
08/04/92	151.80	18.95	0.00	132.85	0.93	ND	ND	ND	ND	0.51	--	--	
02/10/93	151.80	17.71	0.00	134.09	1.24	ND	ND	ND	ND	ND	--	--	
02/10/94	151.80	15.25	0.00	136.55	2.46	ND	ND	0.52	ND	0.92	--	--	
02/09/95	151.80	15.68	0.00	136.12	-0.43	ND	ND	ND	ND	ND	--	--	
02/06/96	151.80	12.52	0.00	139.28	3.16	ND	ND	ND	ND	2.1	--	--	
02/05/97	151.80	13.01	0.00	138.79	-0.49	ND	ND	ND	ND	ND	--	ND	
02/02/98	151.80	11.91	0.00	139.89	1.10	ND	ND	ND	ND	ND	--	ND	
02/22/99	151.80	11.24	0.00	140.56	0.67	ND	ND	ND	ND	ND	--	ND	
02/26/00	151.80	12.16	0.00	139.64	-0.92	ND	ND	1.01	ND	ND	--	ND	
03/07/01	151.80	11.91	0.00	139.89	0.25	ND	ND	ND	ND	ND	ND	ND	
02/22/02	151.80	14.08	0.00	137.72	-2.17	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<5.0	
02/22/03	151.80	14.41	0.00	137.39	-0.33	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<2.0	
02/03/04	151.80	14.32	0.00	137.48	0.09	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<2.0	
02/18/05	151.80	14.21	0.00	137.59	0.11	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<0.50	
03/29/06	151.80	12.72	0.00	139.08	1.49	ND<0.50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	0.54	
03/28/07	151.80	13.98	0.00	137.82	-1.26	ND<0.50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	ND<0.50	
03/22/08	151.80	12.68	0.00	139.12	1.30	ND<0.50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	ND<0.50	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**December 1990 Through March 2009**  
**76 Station 5781**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (Luft) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
<b>MW-A continued</b>													
03/27/09	151.80	14.35	0.00	137.45	-1.67	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	ND<0.50	

**Table 2 a**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 5781**

Date Sampled	TPH-D	TPH-G	TBA	Ethanol	Ethylene-	1,2-DCA	DIPE	ETBE	TAME	Total Oil	TRPH	Bromo-
	(µg/l)	(GC/MS) (µg/l)	(µg/l)	(8260B) (µg/l)	dibromide (EDB) (µg/l)	(EDC) (µg/l)	(µg/l)	(µg/l)	(µg/l)	and Grease (mg/l)	(mg/l)	dichloro- methane (µg/l)
<b>MW-A</b>												
12/18/90	73	--	--	--	--	--	--	--	--	--	--	--
05/03/91	ND	--	--	--	--	--	--	--	--	--	--	--
08/07/91	ND	--	--	--	--	--	--	--	--	--	--	--
11/08/91	ND	--	--	--	--	--	--	--	--	--	--	--
02/06/92	ND	--	--	--	--	--	--	--	--	--	--	--
08/04/92	ND	--	--	--	--	--	--	--	--	--	--	--
02/10/93	ND	--	--	--	--	--	--	--	--	--	--	--
02/10/94	ND	--	--	--	--	--	--	--	--	--	--	--
02/09/95	ND	--	--	--	--	--	--	--	--	--	--	--
02/06/96	120	--	--	--	--	--	--	--	--	--	--	--
02/05/97	61	--	--	--	--	--	--	--	--	--	--	--
02/02/98	ND	--	--	--	--	--	--	--	--	--	--	--
02/22/99	ND	--	--	--	--	--	--	--	--	--	--	--
02/26/00	ND	--	--	--	--	--	--	--	--	--	--	--
03/07/01	131		ND	ND	ND	ND	ND	ND	ND	--	--	--
02/22/02	ND<50	--	--	--	--	--	--	--	--	--	--	--
02/22/03	93	--	ND<100	ND<500	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	--	--	--
02/03/04	60	--	ND<100	ND<500	ND<2.0	ND<0.50	ND<2.0	ND<2.0	ND<2.0	--	ND<1.0	ND<0.50
02/18/05	ND<50	--	ND<5.0	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	--	ND<0.50
03/29/06	ND<200	--	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	ND<0.50
03/28/07	92	--	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	ND<0.50
03/22/08	ND<50	--	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	ND<0.50
03/27/09	53	--	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	ND<0.50

**Table 2 b**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 5781**

Date Sampled	Bromoform (µg/l)	Bromomethane (µg/l)	Carbon Tetra-chloride (µg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	2-Chloroethyl vinyl ether (µg/l)	Chloroform (µg/l)	Chloromethane (µg/l)	Dibromochloromethane (µg/l)	1,2-Dichlorobenzene (µg/l)	1,3-Dichlorobenzene (µg/l)	1,4-Dichlorobenzene (µg/l)
<b>MW-A</b>												
02/03/04	ND<2.0	ND<1.0	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50
02/18/05	ND<2.0	ND<1.0	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/29/06	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/28/07	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/22/08	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/27/09	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50



**Table 2 c**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 5781**

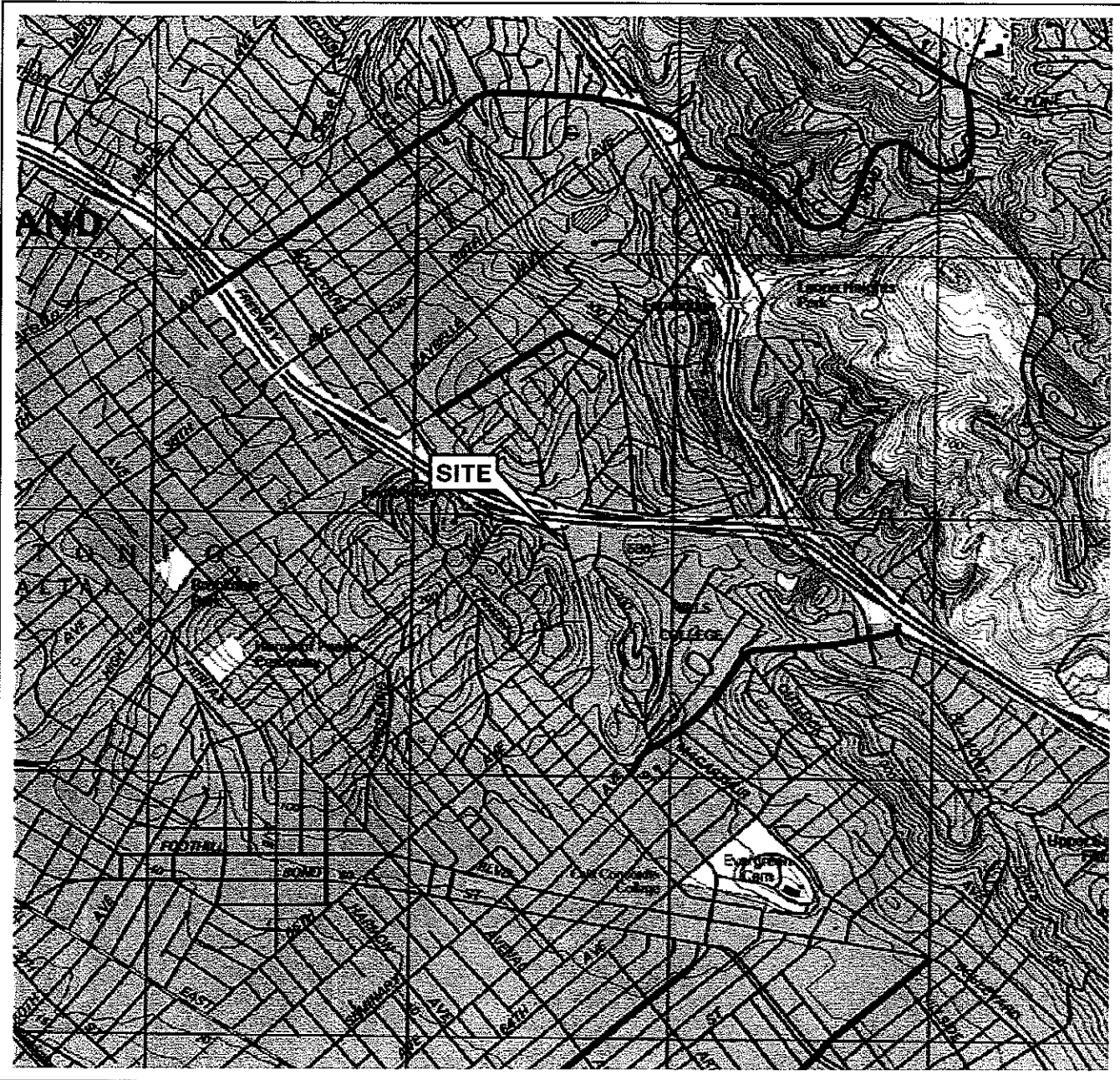
Date Sampled	Dichloro-difluoro-methane (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)	cis-1,2-DCE (µg/l)	trans-1,2-DCE (µg/l)	1,2-Dichloro-propane (µg/l)	cis-1,3-Dichloro-propene (µg/l)	trans-1,3-Dichloro-propene (µg/l)	Methylene chloride (µg/l)	1,1,2,2-Tetrachloro-ethane (µg/l)	Tetrachloro-ethene (PCE) (µg/l)	Trichloro-trifluoro-ethane (µg/l)
<b>MW-A</b>												
02/03/04	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50
02/18/05	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50
03/29/06	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50
03/28/07	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50
03/22/08	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50
03/27/09	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50

**Table 2 d**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 5781**

Date Sampled	1,1,1-Trichloroethane (µg/l)	1,1,2-Trichloroethane (µg/l)	Trichloroethene (TCE) (µg/l)	Trichloro-fluoro-methane (µg/l)	Vinyl chloride (µg/l)
<b>MW-A</b>					
02/03/04	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50
02/18/05	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50
03/29/06	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/28/07	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/22/08	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/27/09	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

# FIGURES

PS-1:1 L:\QMS VICINITY MAP S\5781vm.dwg Jan 20, 2009 - 12:48pm cdkers



SOURCE:

United States Geological Survey  
7.5 Minute Topographic Map:  
Oakland East Quadrangle

0 1/4 1/2 3/4 1 MILE



SCALE 1:24,000




FACILITY:

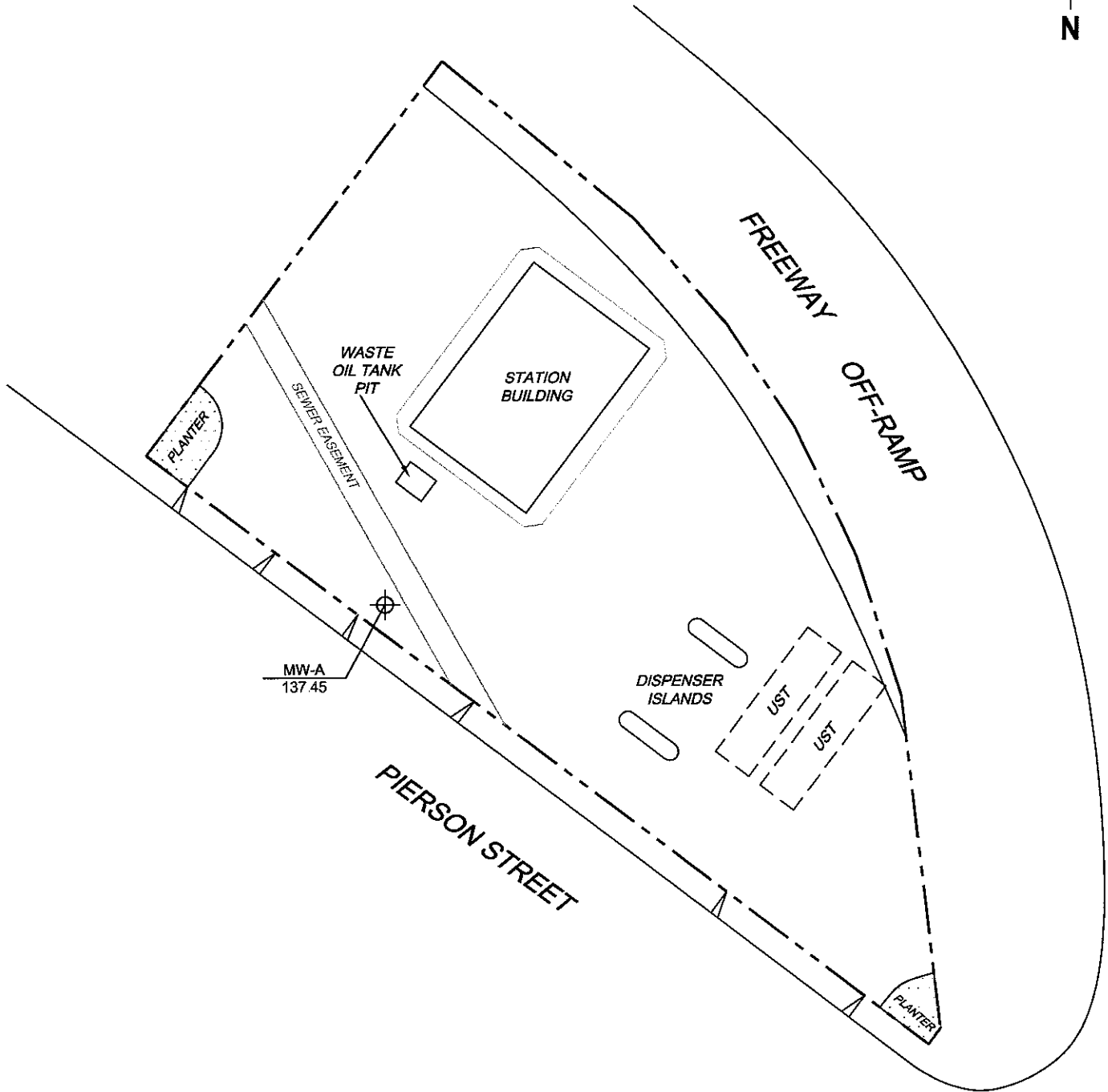
76 STATION 5781  
3535 PIERSON STREET  
OAKLAND, CALIFORNIA

VICINITY MAP

FIGURE 1

**LEGEND**

MW-A  Monitoring Well with Groundwater Elevation (feet)



**NOTES:**

Elevations are in feet above mean sea level. UST = underground storage tank.

SCALE (FEET)



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MS=1:1 5781-003




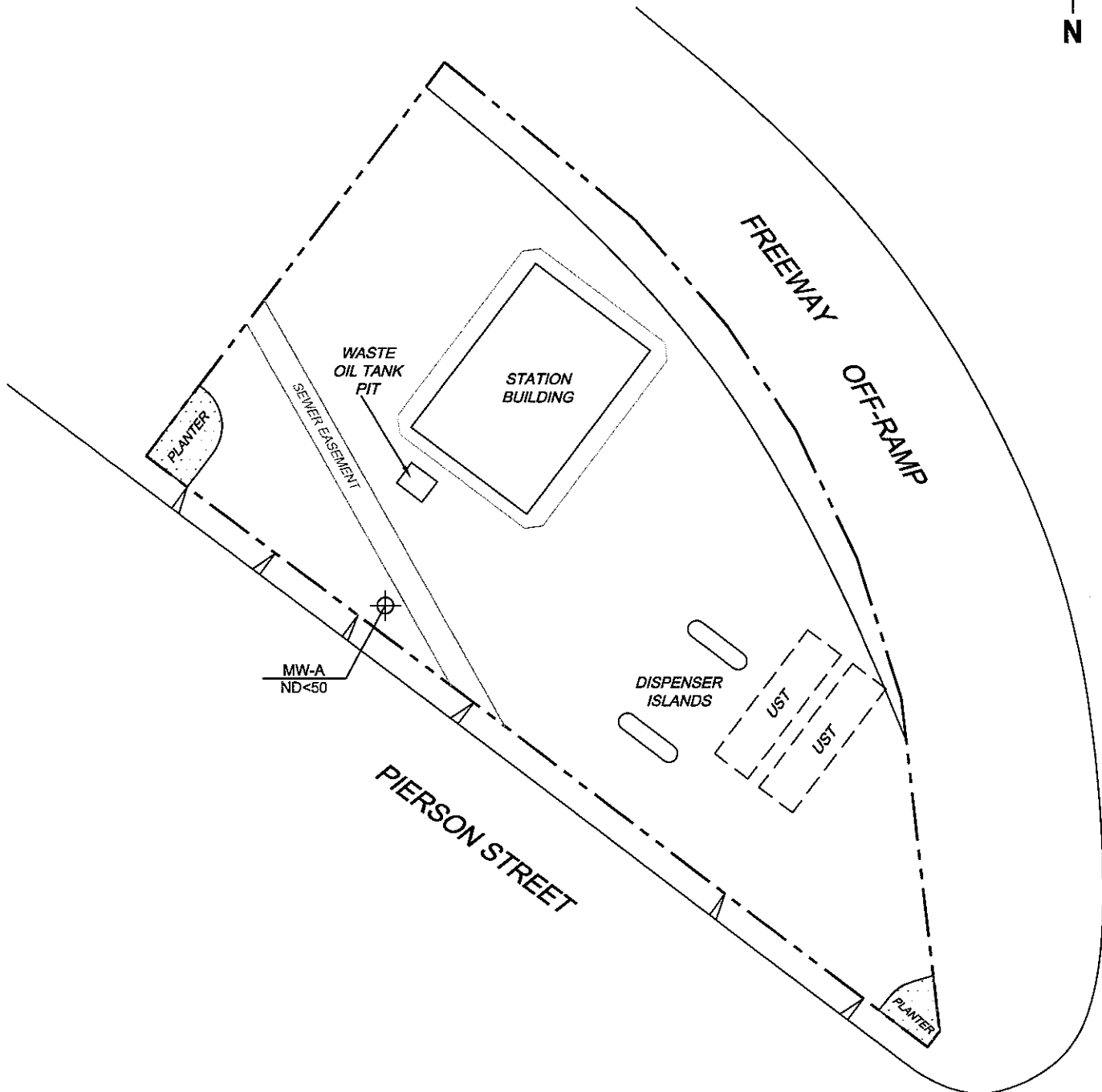
PROJECT: 165521  
 FACILITY:  
 76 STATION 5781  
 3535 PIERSON STREET  
 OAKLAND, CALIFORNIA

**GROUNDWATER ELEVATION  
 MAP**  
 March 27, 2009

**FIGURE 2**

**LEGEND**

MW-A  Monitoring Well with Dissolved-Phase TPH-G Concentration ( $\mu\text{g/l}$ )



**NOTES:**

TPH-G = total petroleum hydrocarbons with gasoline.  $\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. Results obtained using EPA Method 8015.

SCALE (FEET)



MS=1:1 5781-003 L:\Graphics\CMS NORTH-SOUTH\5000\5781-15781\CMS(NEW)\.dwg Apr 13, 2009 - 2:20pm bschmidt




PROJECT: 165521

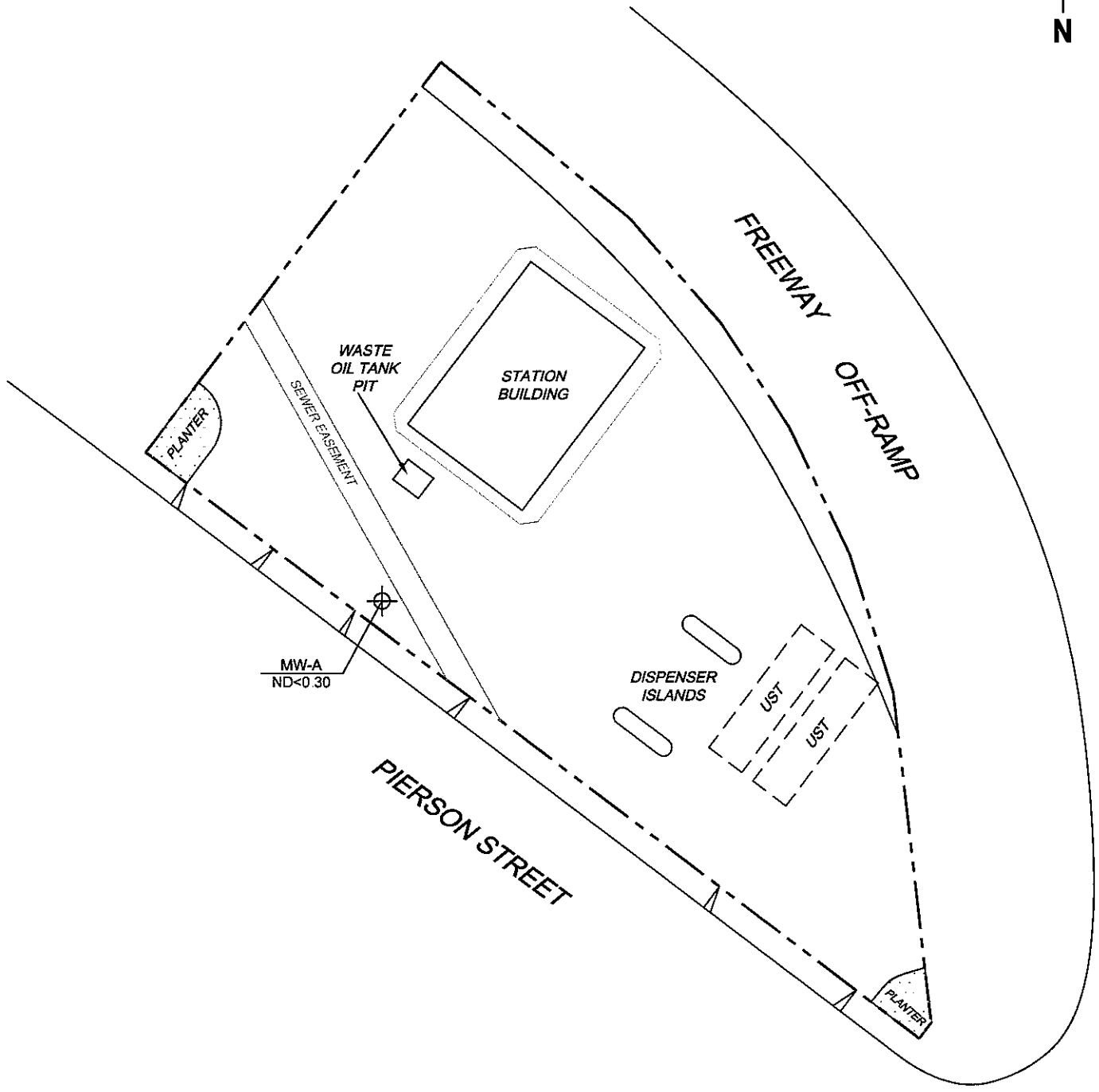
FACILITY:  
76 STATION 5781  
3535 PIERSON STREET  
OAKLAND, CALIFORNIA

**DISSOLVED-PHASE TPH-G  
CONCENTRATION MAP  
March 27, 2009**

**FIGURE 3**

**LEGEND**

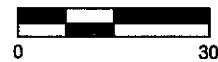
MW-A  Monitoring Well with Dissolved-Phase Benzene Concentration ( $\mu\text{g/l}$ )



**NOTES:**

$\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report.  
 UST = underground storage tank

SCALE (FEET)



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MS=1:1 5781-003



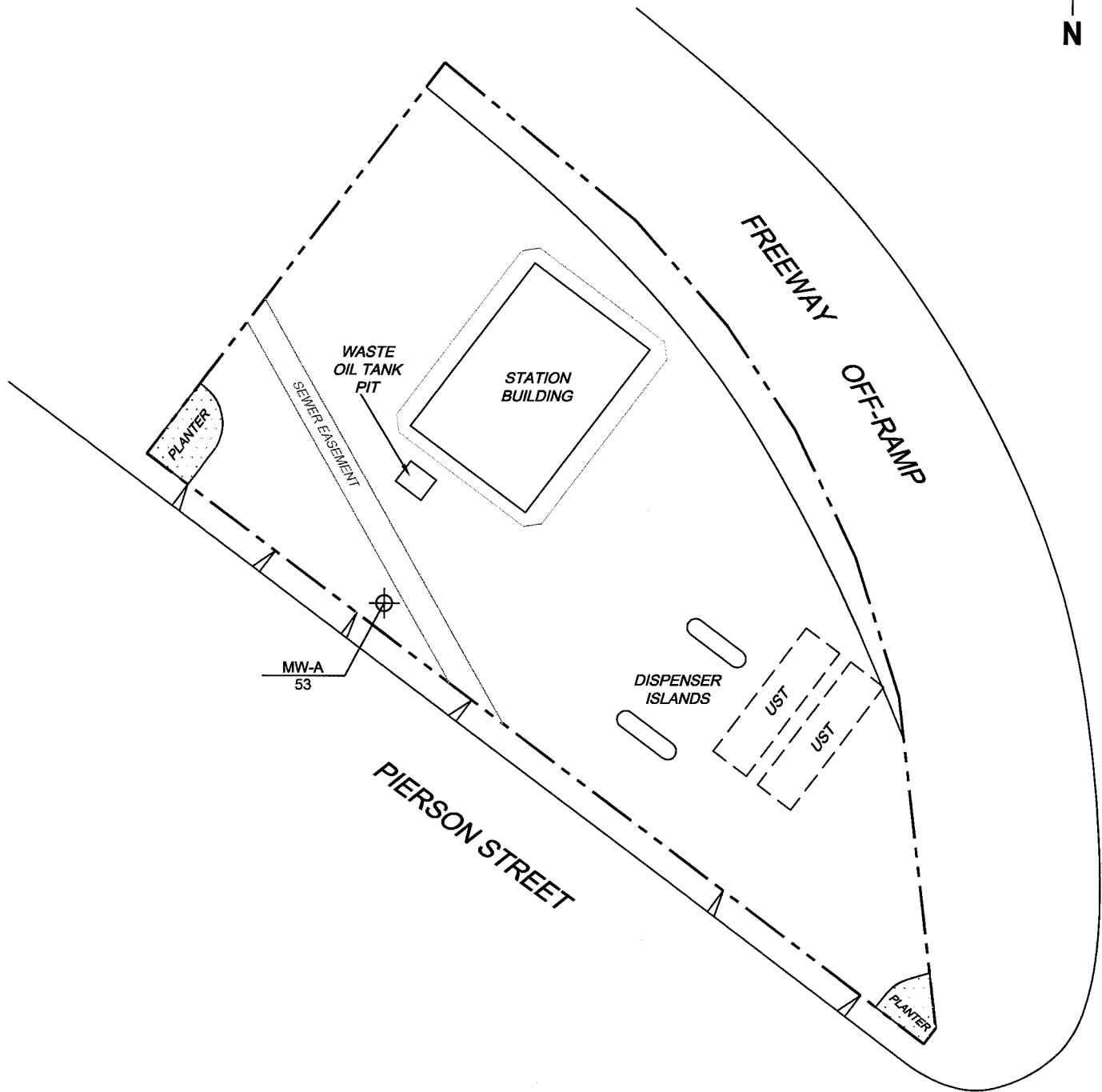
PROJECT: 165521  
 FACILITY:  
 76 STATION 5781  
 3535 PIERSON STREET  
 OAKLAND, CALIFORNIA

**DISSOLVED-PHASE BENZENE  
 CONCENTRATION MAP**  
 March 27, 2009

**FIGURE 4**

**LEGEND**

MW-A  Monitoring Well with Dissolved-Phase TPH-D Concentration ( $\mu\text{g/l}$ )



**NOTES:**

TPH-D = total petroleum hydrocarbons as diesel.  $\mu\text{g/l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank. Results obtained using EPA Method 8015.

SCALE (FEET)



L:\Graphics\QMS NORTH-SOUTH\15781\QMS(NEW).dwg Apr 15, 2009 - 8:04am bschmidt

MS=1:1 5781-003



PROJECT: 165521  
 FACILITY:  
 76 STATION 5781  
 3535 PIERSON STREET  
 OAKLAND, CALIFORNIA

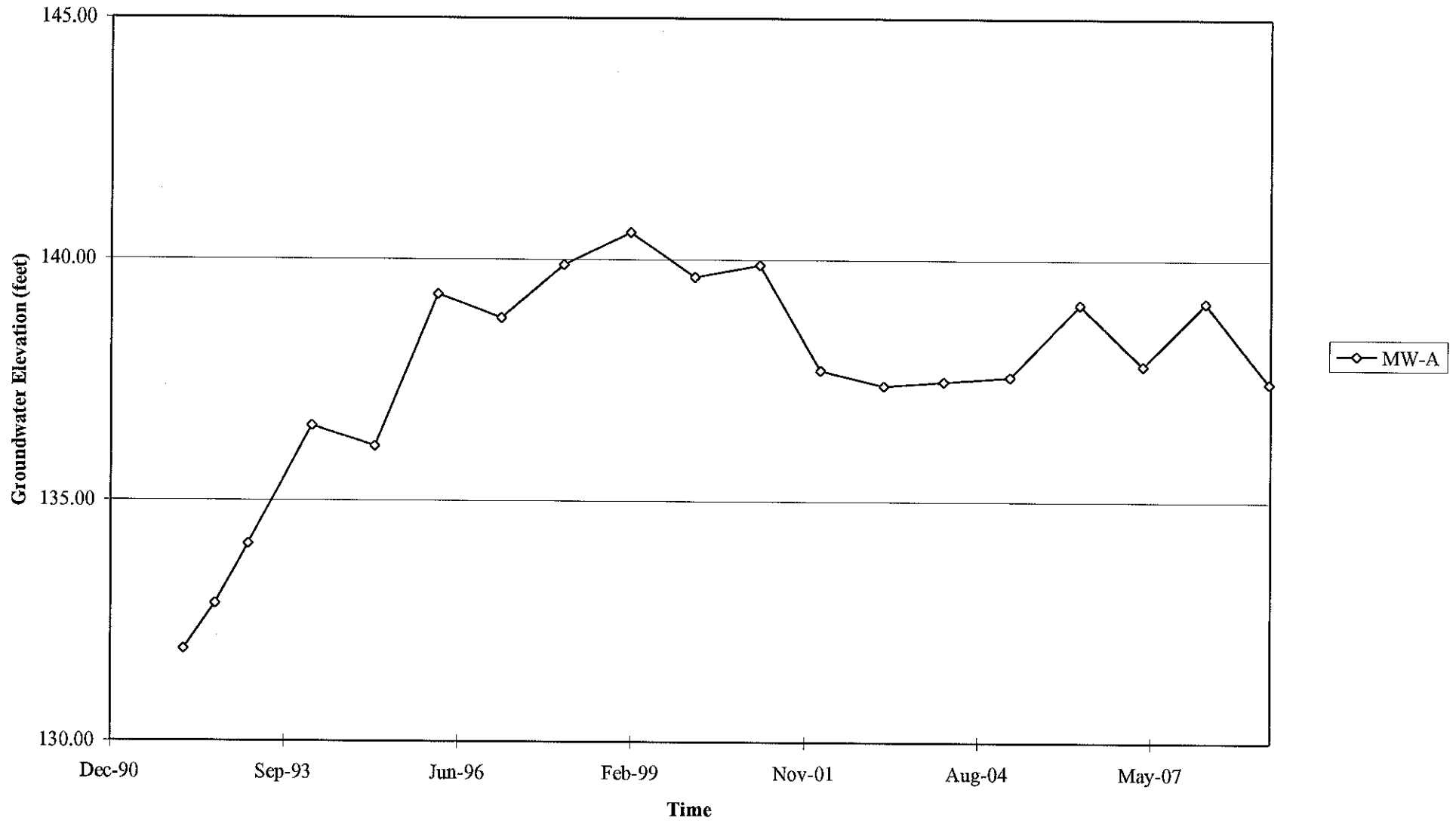
**DISSOLVED-PHASE TPH-D  
 CONCENTRATION MAP**  
 March 27, 2009

**FIGURE 5**



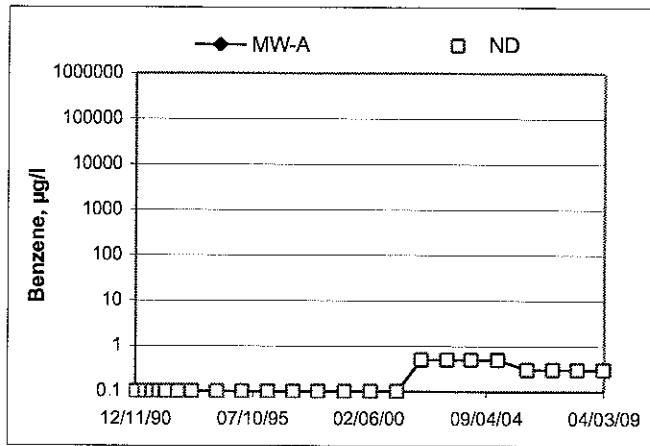
# GRAPHS

Groundwater Elevations vs. Time  
76 Station 5781



Elevations may have been corrected for apparent changes due to resurvey

**Benzene Concentrations vs Time**  
76 Station 5781



## GENERAL FIELD PROCEDURES

### **Groundwater Monitoring and Sampling Assignments**

For each site, IRC technicians are provided with a Technical Service Request (TSR) that specifies activities required to complete the groundwater monitoring and sampling assignment for the site. TSRs are based on client directives, instructions from the primary environmental consultant for the site, regulatory requirements, and IRC's previous experience with the site.

### **Fluid Level Measurements**

Initial site activities include determination of well locations based on a site map provided with the TSR. Well boxes are opened and caps are removed. Indications of well or well box damage or of pressure buildup in the well are noted.

Fluid levels in each well are measured using a coated cloth tape equipped with an electronic interface probe, which distinguishes between liquid phase hydrocarbon (LPH) and water. The depth to LPH (if it is present), to water, and to the bottom of the well are measured from the top of the well casing (surveyors mark or notch if present) to the nearest 0.01 foot. Unless otherwise instructed, a well with less than 0.67 foot between the measured top of water and the measured bottom of the well casing is considered dry, and is not sampled. If the well contains 0.67 foot or more of water, an attempt is made to bail and/or sample as specified on the TSR.

Wells that are found to contain LPH are not purged or sampled. Instead, one casing volume of fluid is bailed from the well and the well is re-sealed. Bailed fluids are placed in a container separate from normal purge water, and properly disposed.

### **Purging and Groundwater Parameter Measurement**

TSR instructions may specify that a well not be purged (no-purge sampling), be purged using low-flow methods, or be purged using conventional pump and/or bail methods. Conventional purging generally consists of pumping or bailing until a minimum of three casing volumes of water have been removed or until the well has been pumped dry. Pumping is generally accomplished using submersible electric or pneumatic diaphragm pumps.

During conventional purging, three groundwater parameters (temperature, pH, and conductivity) are measured after removal of each casing volume. Stabilization of these parameters, to within 10 percent, confirm that sufficient purging has been completed. In some cases, the TSR indicates that other parameters are also to be measured during purging. IRC commonly measures dissolved oxygen (DO), oxidation-reduction potential (ORP), and/or turbidity. Instruments used for groundwater parameter measurements are calibrated daily according to manufacturer's instructions.

Low-flow purging utilizes a bladder or peristaltic pump to remove water from the well at a low rate. Groundwater parameters specified by the TSR are measured continuously until they become stable in general accordance with EPA guidelines.

Purge water is generally collected in labeled drums for disposal. Drums may be left on site for disposal by others, or transported to a collection location for eventual transfer to a licensed treatment or recycling facility. In some cases, purge water may be collected directly from the site by a licensed vacuum truck company, or may be treated on site by an active remediation system, if so directed.

## **Groundwater Sample Collection**

After wells are purged, or not purged, according to TSR instructions, samples are collected for laboratory analysis. For wells that have been purged using conventional pump or bail methods, sampling is conducted after the well has recovered to 80 percent of its original volume or after two hours if the well does not recover to at least 80 percent. If there is insufficient recharge of water in the well after two hours, the well is not sampled.

Samples are collected by lowering a new, disposable, ½-inch to 4-inch polyethylene bottom-fill bailer to just below the water level in the well. The bailer is retrieved and the water sample is carefully transferred to containers specified for the laboratory analytical methods indicated by the TSR. Particular care is given to containers for volatile organic analysis (VOAs) which require filling to zero headspace and fitting with Teflon-sealed caps.

After filling, all containers are labeled with project number (or site number), well designation, sample date, sample time, and the sampler's initials, and placed in an insulated chest with ice. Samples remain chilled prior to and during transport to a state-certified laboratory for analysis. Sample container descriptions and requested analyses are entered onto a chain-of-custody form in order to provide instructions to the laboratory. The chain-of-custody form accompanies the samples during transportation to provide a continuous record of possession from the field to the laboratory. If a freight or overnight carrier transports the samples, the carrier is noted on the form.

For wells that have been purged using low-flow methods, sample containers are filled from the effluent stream of the bladder or peristaltic pump. In some cases, if so specified by the TSR, samples are taken from the sample ports of actively pumping remediation wells.

## **Sequence of Gauging, Purging and Sampling**

The sequence in which monitoring activities are conducted is specified on the TSR. In general, wells are gauged beginning with the least affected well and ending with the well that has the highest concentration based on previous analytic results. After all gauging for the site is completed, wells are purged and/or sampled from the least-affected to the most-affected well.

## **Decontamination**

In order to reduce the possibility of cross contamination between wells, strict isolation and decontamination procedures are observed. Portable pumps are not used in wells with LPH. Technicians wear nitrile gloves during all gauging, purging, and sampling activities. Gloves are changed between wells and more often if warranted. Any equipment that could come in contact with fluids are either dedicated a particular well, decontaminated prior to each use, or discarded after a single use. Decontamination consists of washing in a solution of Liqui-nox and water and rinsing twice. The final rinse is in deionized water.

## **Exceptions**

Additional tasks or non-standard procedures, if any, that may be requested or required for a particular site, and noted on the site TSR, are documented in field notes on the following pages.



## GROUNDWATER SAMPLING FIELD NOTES

Technician: Basilio

Site: 5781

Project No: 165521

Date: 3-27-08

Well No. MW-A

Purge Method: Sub

Depth to Water (feet): 14.35

Depth to Product (feet):         

Total Depth (feet): 44.84

LPH & Water Recovered (gallons):         

Water Column (feet): 30.49

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 20.44

1 Well Volume (gallons): 6

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D O (mg/L)	ORP	Turbidity
<b>Pre-Purge</b>									
<u>0814</u>			<u>6</u>	<u>732.1</u>	<u>18.2</u>	<u>7.50</u>			
	<u>0820</u>		<u>12</u>	<u>1530</u>	<u>19.4</u>	<u>6.85</u>			
<u>0823</u>	<u>0828</u>		<u>18</u>	<u>1535</u>	<u>19.5</u>	<u>6.59</u>			
Static at Time Sampled			Total Gallons Purged			Sample Time			
<u>27.75</u>			<u>18</u>			<u>1028</u>			
<b>Comments:</b> <u>Did not recover in 2 hrs.</u>									

Well No. \_\_\_\_\_

Purge Method: \_\_\_\_\_

Depth to Water (feet): \_\_\_\_\_

Depth to Product (feet): \_\_\_\_\_

Total Depth (feet): \_\_\_\_\_

LPH & Water Recovered (gallons): \_\_\_\_\_

Water Column (feet): \_\_\_\_\_

Casing Diameter (Inches): \_\_\_\_\_

80% Recharge Depth(feet): \_\_\_\_\_

1 Well Volume (gallons): \_\_\_\_\_

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D O (mg/L)	ORP	Turbidity
<b>Pre-Purge</b>									
Static at Time Sampled			Total Gallons Purged			Sample Time			
<b>Comments:</b>									



**BC Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 04/09/2009

Anju Farfan

TRC

21 Technology Drive  
Irvine, CA 92618

RE: 5781  
BC Work Order: 0904120  
Invoice ID: B060079

Enclosed are the results of analyses for samples received by the laboratory on 3/30/2009. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Authorized Signature





**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



TRC  
21 Technology Drive  
Irvine, CA 92618

Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Fartan

Reported: 04/09/2009 12:27

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
0904120-01	<b>COC Number:</b>	---	<b>Receive Date:</b> 03/30/2009 22:15
	<b>Project Number:</b>	5781	<b>Sampling Date:</b> 03/27/2009 10:28
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	MW-A	<b>Sample Matrix:</b> Water
	<b>Sampled By:</b>	TRCI	<b>Delivery Work Order:</b>
			Global ID: T0600101467
			Location ID (FieldPoint): MW-A
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

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Environmental Testing Laboratory Since 1949

TRC  
21 Technology Drive  
Irvine, CA 92618

Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

### Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0904120-01		Client Sample Name: 5781, MW-A, 3/27/2009 10:28:00AM											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Bromodichloromethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Bromoform	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Bromomethane	ND	ug/L	1.0		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Carbon tetrachloride	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Chlorobenzene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
Chloroethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Chloroform	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Chloromethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
Dibromochloromethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,2-Dichlorobenzene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,3-Dichlorobenzene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,4-Dichlorobenzene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Dichlorodifluoromethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,1-Dichloroethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,1-Dichloroethene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
cis-1,2-Dichloroethene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
trans-1,2-Dichloroethene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,2-Dichloropropane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
cis-1,3-Dichloropropene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
trans-1,3-Dichloropropene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
Methylene chloride	ND	ug/L	1.0		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	

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Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

### Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0904120-01		Client Sample Name: 5781, MVV-A, 3/27/2009 10:28:00AM											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Tetrachloroethene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,1,1-Trichloroethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
1,1,2-Trichloroethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Trichloroethene	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Trichlorofluoromethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
Vinyl chloride	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
t-Butyl alcohol	ND	ug/L	10		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Diisopropyl ether	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108	ND	
Ethanol	ND	ug/L	250		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108	ND	
1,2-Dichloroethane-d4 (Surrogate)	103	%	76 - 114 (LCL - UCL)		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108		
Toluene-d8 (Surrogate)	97.0	%	88 - 110 (LCL - UCL)		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	i	BSD0108		
4-Bromofluorobenzene (Surrogate)	100	%	86 - 115 (LCL - UCL)		EPA-8260	04/02/09	04/03/09 13:30	MGC	MS-V5	1	BSD0108		

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Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

### Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 0904120-01		Client Sample Name: 5781, MW-A, 3/27/2009 10:28:00AM											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Benzene	ND	ug/L	0.30		EPA-8021	04/02/09	04/07/09 01:44	JJH	GC-V4	1	BSD0149	ND	
Toluene	ND	ug/L	0.30		EPA-8021	04/02/09	04/07/09 01:44	JJH	GC-V4	i	BSD0149	ND	
Ethylbenzene	ND	ug/L	0.30		EPA-8021	04/02/09	04/07/09 01:44	JJH	GC-V4	1	BSD0149	ND	
Methyl t-butyl ether	ND	ug/L	1.0		EPA-8021	04/02/09	04/07/09 01:44	JJH	GC-V4	1	BSD0149	ND	
Total Xylenes	ND	ug/L	0.60		EPA-8021	04/02/09	04/07/09 01:44	JJH	GC-V4	1	BSD0149	ND	
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		Luft	04/02/09	04/07/09 01:44	JJH	GC-V4	i	BSD0149	ND	
a,a,a-Trifluorotoluene (PID Surrogate)	94.0	%	70 - 130 (LCL - UCL)		EPA-8021	04/02/09	04/07/09 01:44	JJH	GC-V4	1	BSD0149		
a,a,a-Trifluorotoluene (FID Surrogate)	83.6	%	70 - 130 (LCL - UCL)		Luft	04/02/09	04/07/09 01:44	JJH	GC-V4	1	BSD0149		

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Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

### Total Petroleum Hydrocarbons

BCL Sample ID: 0904120-01		Client Sample Name: 5781, MW-A, 3/27/2009 10:28:00AM											
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Diesel Range Organics (C12 - C24)	53	ug/L	50		Luf/TPHd	04/06/09	04/08/09 18:01	CKD	GC-5	1	BSD0514	ND	M02
Tetracosane (Surrogate)	95.6	%	28 - 139 (LCL - UCL)		Luf/TPHd	04/06/09	04/08/09 18:01	CKD	GC-5	i	BSD0514		

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Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

### EPA Method 1664

<b>BCL Sample ID:</b> 0904120-01	<b>Client Sample Name:</b> 5781, MW-A, 3/27/2009 10:28:00AM												
<b>Constituent</b>	<b>Result</b>	<b>Units</b>	<b>PQL</b>	<b>MDL</b>	<b>Method</b>	<b>Prep Date</b>	<b>Run Date/Time</b>	<b>Analyst</b>	<b>Instru-ment ID</b>	<b>Dilution</b>	<b>QC Batch ID</b>	<b>MB Bias</b>	<b>Lab Quals</b>
Oil and Grease	ND	mg/L	5.0		EPA-1664HE	04/01/09	04/01/09 13:00	JAK	MAN-SV	i	BSD0178	ND	

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Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
										RPD	Percent Recovery	
Bromodichloromethane	BSD0108	Matrix Spike	0904067-01	0	29.050	25.000	ug/L		116		70 - 130	
		Matrix Spike Duplicate	0904067-01	0	26.940	25.000	ug/L	7.1	108	20	70 - 130	
Chlorobenzene	BSD0108	Matrix Spike	0904067-01	0	23.390	25.000	ug/L		93.6		70 - 130	
		Matrix Spike Duplicate	0904067-01	0	24.250	25.000	ug/L	3.6	97.0	20	70 - 130	
Chloroethane	BSD0108	Matrix Spike	0904067-01	0	24.890	25.000	ug/L		99.6		70 - 130	
		Matrix Spike Duplicate	0904067-01	0	24.760	25.000	ug/L	0.6	99.0	20	70 - 130	
1,4-Dichlorobenzene	BSD0108	Matrix Spike	0904067-01	0	25.840	25.000	ug/L		103		70 - 130	
		Matrix Spike Duplicate	0904067-01	0	26.680	25.000	ug/L	3.8	107	20	70 - 130	
1,1-Dichloroethane	BSD0108	Matrix Spike	0904067-01	0	24.150	25.000	ug/L		96.6		70 - 130	
		Matrix Spike Duplicate	0904067-01	0	24.600	25.000	ug/L	1.8	98.4	20	70 - 130	
1,1-Dichloroethene	BSD0108	Matrix Spike	0904067-01	0	24.290	25.000	ug/L		97.2		70 - 130	
		Matrix Spike Duplicate	0904067-01	0	24.720	25.000	ug/L	1.7	98.9	20	70 - 130	
Trichloroethene	BSD0108	Matrix Spike	0904067-01	0	24.390	25.000	ug/L		97.6		70 - 130	
		Matrix Spike Duplicate	0904067-01	0	23.160	25.000	ug/L	5.3	92.6	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	BSD0108	Matrix Spike	0904067-01	ND	10.210	10.000	ug/L		102		76 - 114	
		Matrix Spike Duplicate	0904067-01	ND	10.030	10.000	ug/L		100		76 - 114	
Toluene-d8 (Surrogate)	BSD0108	Matrix Spike	0904067-01	ND	10.540	10.000	ug/L		105		88 - 110	
		Matrix Spike Duplicate	0904067-01	ND	10.220	10.000	ug/L		102		88 - 110	
4-Bromofluorobenzene (Surrogate)	BSD0108	Matrix Spike	0904067-01	ND	10.090	10.000	ug/L		101		86 - 115	
		Matrix Spike Duplicate	0904067-01	ND	10.270	10.000	ug/L		103		86 - 115	



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## Purgeable Aromatics and Total Petroleum Hydrocarbons Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
										RPD	Percent Recovery	
Benzene	BSD0149	Matrix Spike	0903406-53	0	37.008	40.000	ug/L		92.5		70 - 130	
		Matrix Spike Duplicate	0903406-53	0	37.042	40.000	ug/L	0.1	92.6	20	70 - 130	
Toluene	BSD0149	Matrix Spike	0903406-53	0	36.536	40.000	ug/L		91.3		70 - 130	
		Matrix Spike Duplicate	0903406-53	0	36.708	40.000	ug/L	0.5	91.8	20	70 - 130	
Ethylbenzene	BSD0149	Matrix Spike	0903406-53	0	34.993	40.000	ug/L		87.5		70 - 130	
		Matrix Spike Duplicate	0903406-53	0	35.245	40.000	ug/L	0.7	88.1	20	70 - 130	
Methyl t-butyl ether	BSD0149	Matrix Spike	0903406-53	0	38.583	40.000	ug/L		96.5		70 - 130	
		Matrix Spike Duplicate	0903406-53	0	38.904	40.000	ug/L	0.8	97.3	20	70 - 130	
Total Xylenes	BSD0149	Matrix Spike	0903406-53	0	106.44	120.00	ug/L		88.7		70 - 130	
		Matrix Spike Duplicate	0903406-53	0	107.51	120.00	ug/L	1.0	89.6	20	70 - 130	
Gasoline Range Organics (C4 - C12)	BSD0149	Matrix Spike	0903406-53	0	863.14	1000.0	ug/L		86.3		70 - 130	
		Matrix Spike Duplicate	0903406-53	0	867.40	1000.0	ug/L	0.5	86.7	20	70 - 130	
a,a,a-Trifluorotoluene (PID Surrogate)	BSD0149	Matrix Spike	0903406-53	ND	35.483	40.000	ug/L		88.7		70 - 130	
		Matrix Spike Duplicate	0903406-53	ND	35.326	40.000	ug/L		88.3		70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	BSD0149	Matrix Spike	0903406-53	ND	35.617	40.000	ug/L		89.0		70 - 130	
		Matrix Spike Duplicate	0903406-53	ND	35.902	40.000	ug/L		89.8		70 - 130	

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Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

## Total Petroleum Hydrocarbons Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
										RPD	Percent Recovery	
Diesel Range Organics (C12 - C24)	BSD0514	Matrix Spike	0903406-38	29.530	499.49	500.00	ug/L		94.0		36 - 130	
		Matrix Spike Duplicate	0903406-38	29.530	477.27	500.00	ug/L	4.9	89.5	30	36 - 130	
Tetracosane (Surrogate)	BSD0514	Matrix Spike	0903406-38	ND	20.259	20.000	ug/L		101		28 - 139	
		Matrix Spike Duplicate	0903406-38	ND	19.429	20.000	ug/L		97.1		28 - 139	



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### EPA Method 1664

#### Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
										RPD	Percent Recovery	
Oil and Grease	BSD0178	Duplicate	0904134-04	0.50000	ND					18		
		Matrix Spike	0903406-61	1.0000	33.750	38.700	mg/L		84.6		78 - 114	
		Matrix Spike Duplicate	0903406-61	1.0000	35.100	38.700	mg/L	4.1	88.1	18	78 - 114	



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Reported: 04/09/2009 12:27

## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Percent Recovery	RPD	Control Limits		Lab Quals
										Percent Recovery	RPD	
Bromodichloromethane	BSD0108	BSD0108-BS1	LCS	25.840	25.000	0.50	ug/L	103		70 - 130		
Chlorobenzene	BSD0108	BSD0108-BS1	LCS	22.490	25.000	0.50	ug/L	90.0		70 - 130		
Chloroethane	BSD0108	BSD0108-BS1	LCS	25.590	25.000	0.50	ug/L	102		70 - 130		
1,4-Dichlorobenzene	BSD0108	BSD0108-BS1	LCS	24.040	25.000	0.50	ug/L	96.2		70 - 130		
1,1-Dichloroethane	BSD0108	BSD0108-BS1	LCS	23.910	25.000	0.50	ug/L	95.6		70 - 130		
1,1-Dichloroethene	BSD0108	BSD0108-BS1	LCS	24.230	25.000	0.50	ug/L	96.9		70 - 130		
Trichloroethene	BSD0108	BSD0108-BS1	LCS	27.560	25.000	0.50	ug/L	110		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BSD0108	BSD0108-BS1	LCS	10.000	10.000		ug/L	100		76 - 114		
Toluene-d8 (Surrogate)	BSD0108	BSD0108-BS1	LCS	10.130	10.000		ug/L	101		88 - 110		
4-Bromofluorobenzene (Surrogate)	BSD0108	BSD0108-BS1	LCS	9.8600	10.000		ug/L	98.6		86 - 115		



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Irvine, CA 92618

Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

## Purgeable Aromatics and Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Percent Recovery	RPD	Control Limits		Lab Quals
										Percent Recovery	RPD	
Benzene	BSD0149	BSD0149-BS1	LCS	36.944	40.000	0.30	ug/L	92.4		85 - 115		
Toluene	BSD0149	BSD0149-BS1	LCS	36.580	40.000	0.30	ug/L	91.4		85 - 115		
Ethylbenzene	BSD0149	BSD0149-BS1	LCS	34.595	40.000	0.30	ug/L	86.5		85 - 115		
Methyl t-butyl ether	BSD0149	BSD0149-BS1	LCS	39.000	40.000	1.0	ug/L	97.5		85 - 115		
Total Xylenes	BSD0149	BSD0149-BS1	LCS	107.02	120.00	0.60	ug/L	89.2		85 - 115		
Gasoline Range Organics (C4 - C12)	BSD0149	BSD0149-BS1	LCS	885.14	1000.0	50	ug/L	88.5		85 - 115		
a,a,a-Trifluorotoluene (PID Surrogate)	BSD0149	BSD0149-BS1	LCS	35.484	40.000		ug/L	88.7		70 - 130		
a,a,a-Trifluorotoluene (FID Surrogate)	BSD0149	BSD0149-BS1	LCS	36.090	40.000		ug/L	90.2		70 - 130		

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Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Percent Recovery	RPD	Control Limits		Lab Quals
										Percent Recovery	RPD	
Diesel Range Organics (C12 - C24)	BSD0514	BSD0514-BS1	LCS	528.37	500.00	50	ug/L	106		48 - 125		
Tetracosane (Surrogate)	BSD0514	BSD0514-BS1	LCS	20.576	20.000		ug/L	103		28 - 139		



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### EPA Method 1664

### Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Percent Recovery	RPD	Control Limits		Lab Quals
										Percent Recovery	RPD	
Oil and Grease	BSD0178	BSD0178-BS1	LCS	32.600	38.700	5.0	mg/L	84.2		78 - 114		

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Reported: 04/09/2009 12:27

## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Bromodichloromethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Bromoform	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Bromomethane	BSD0108	BSD0108-BLK1	ND	ug/L	1.0		
Carbon tetrachloride	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Chlorobenzene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Chloroethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Chlorotorm	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Chloromethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Dibromochloromethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,2-Dichlorobenzene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,3-Dichlorobenzene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,4-Dichlorobenzene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Dichlorodifluoromethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,1-Dichloroethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,1-Dichloroethene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
cis-1,2-Dichloroethene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
trans-1,2-Dichloroethene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,2-Dichloropropane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
cis-1,3-Dichloropropene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
trans-1,3-Dichloropropene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Methylene chloride	BSD0108	BSD0108-BLK1	ND	ug/L	1.0		
Methyl t-butyl ether	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		

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## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
1,1,2,2-Tetrachloroethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Tetrachloroethene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,1,1-Trichloroethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,1,2-Trichloroethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Trichloroethene	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Trichlorofluoromethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,1,2-Trichloro-1,2,2-trifluoroethane	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Vinyl chloride	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
t-Amyl Methyl ether	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BSD0108	BSD0108-BLK1	ND	ug/L	10		
Diisopropyl ether	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
Ethanol	BSD0108	BSD0108-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BSD0108	BSD0108-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	BSD0108	BSD0108-BLK1	103	%		76 - 114 (LCL - UCL)	
Toluene-d8 (Surrogate)	BSD0108	BSD0108-BLK1	103	%		88 - 110 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BSD0108	BSD0108-BLK1	98.5	%		86 - 115 (LCL - UCL)	

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Reported: 04/09/2009 12:27

## Purgeable Aromatics and Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Benzene	BSD0149	BSD0149-BLK1	ND	ug/L	0.30		
Toluene	BSD0149	BSD0149-BLK1	ND	ug/L	0.30		
Ethylbenzene	BSD0149	BSD0149-BLK1	ND	ug/L	0.30		
Methyl t-butyl ether	BSD0149	BSD0149-BLK1	ND	ug/L	1.0		
Total Xylenes	BSD0149	BSD0149-BLK1	ND	ug/L	0.60		
Gasoline Range Organics (C4 - C12)	BSD0149	BSD0149-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (PID Surrogate)	BSD0149	BSD0149-BLK1	71.7	%		70 - 130 (LCL - UCL)	
a,a,a-Trifluorotoluene (FID Surrogate)	BSD0149	BSD0149-BLK1	73.5	%		70 - 130 (LCL - UCL)	

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## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Diesel Range Organics (C12 - C24)	BSD0514	BSD0514-BLK1	ND	ug/L	50		M02
Tetracosane (Surrogate)	BSD0514	BSD0514-BLK1	91.1	%	28 - 139 (LCL - UCL)		

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**EC Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

TRC  
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Irvine, CA 92618

Project: 5781  
Project Number: 4510943404  
Project Manager: Anju Farfan

Reported: 04/09/2009 12:27

## EPA Method 1664

### Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Oil and Grease	BSD0178	BSD0178-BLK1	ND	mg/L	5.0		



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**Notes And Definitions**

- MDL Method Detection Limit
- ND Analyte Not Detected at or above the reporting limit
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference
- M02 Analyte detected in the Method Blank at a level between the PQL and 1/2 the PQL.

Submission #: 0904120

SHIPPING INFORMATION

Federal Express  UPS  Hand Delivery   
 BC Lab Field Service  Other  (Specify) \_\_\_\_\_

SHIPPING CONTAINER

Ice Chest  None   
 Box  Other  (Specify) \_\_\_\_\_

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals: Ice Chest  Containers  None  Comments: \_\_\_\_\_

Intact? Yes  No

Intact? Yes  No

All samples received? Yes  No  All samples containers intact? Yes  No

Description(s) match COC? Yes  No

COC Received  
 YES  NO

Emissivity: 0.98 Container: VOA Thermometer ID: TN103

Date/Time 3-30-09

Temperature: A 0.9 °C / C 0.7 °C

Analyst Init JLW

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz NITRATE/NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PLA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413, 413.1, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.3										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FEROUS IRON										
ENCORE										

A 16  
BC

DE

Comments:

Sample Numbering Completed By: AMVB Date/Time: 3/31/09-850

A = Actual / C = Corrected

**BC LABORATORIES, INC.**

4100 Atlas Court Bakersfield, CA 93308  
 (661) 327-4911 FAX (661) 327-1918

**CHAIN OF CUSTODY**

**Analysis Requested**

09104120

Bill to: Conoco Phillips/ TRC		Consultant Firm: TRC		MATRIX (GW) Ground-water (S) Soil (WW) Waste-water (SL) Sludge	BTEX/MTBE by 8021 TPH GAS by 8015M TPH DIESEL by 8015M 8260 full list w/ oxygenates BTEX/MTBE/IOXYS BY 8260B ETHANOL by 8260B, MTBE/IOXYS by 8260B TPH - G by GC/MS EDB/EDC by 8260B, TO 6 HVOC's (8010 list) by 8260B	Turnaround Time Requested
Address: 3535 Person street		21 Technology Drive Irvine, CA 92618-2302 Attn: Anju Farfan				
City: Oakland		4-digit site#: 5781	Workorder #: 01470-45109434/04			
State: CA	Zip:	Project #: 165521				
Conoco Phillips Mgr: Terry Brayson		Sampler Name: Basilio Del Real				
Lab#	Sample Description	Field Point Name	Date & Time Sampled			
-1		MW-A	3-27-09 1028	GW	X	X

CHK BY *[Signature]* DISTRIBUTION   
 SUB-OUT

Comments:  GLOBAL ID: T0600101467	Relinquished by: (Signature) <i>[Signature]</i> Date & Time: 3-27-09 1200	Received by: stored in refrigerator Date & Time: 3/30/09 1338
	Relinquished by: (Signature) <i>[Signature]</i> Date & Time: 3/30/09 1338	Received by: <i>[Signature]</i> Date & Time: 3.30.09 1921
	Relinquished by: (Signature) <i>[Signature]</i> Date & Time: 3.30.09 2215	Received by: <i>[Signature]</i> Date & Time: 3.30.09 2215

## **STATEMENTS**

### **Purge Water Disposal**

Non-hazardous groundwater produced during purging and sampling of monitoring was accumulated at TRC's groundwater monitoring facility at Concord, California, for transportation by a licensed carrier, to the ConocoPhillips Refinery at Rodeo, California. Disposal at the Rodeo facility was authorized by ConocoPhillips in accordance with "ESD Standard Operating Procedures – Water Quality and Compliance", as revised on February 7, 2003. Documentation of compliance with ConocoPhillips requirements is provided by an ESD Form R-149, which is on file at TRC's Concord Office. Purge water suspected of containing potentially hazardous material, such as liquid-phase hydrocarbons, was accumulated separately in a drum for transportation and disposal by others.

### **Limitations**

The fluid level monitoring and groundwater sampling activities summarized in this report have been performed under the responsible charge of a California Registered Geologist or Registered Civil Engineer and have been conducted in accordance with current practice and the standard of care exercised by geologists and engineers performing similar tasks in this area. No warranty, express or implied, is made regarding the conclusions and professional opinions presented in this report. The conclusions are based solely upon an analysis of the observed conditions. If actual conditions differ from those described in this report, our office should be notified.