

  
76 Broadway  
Sacramento, California 95818

**RECEIVED**

10:17 am, Jul 17, 2008

Alameda County  
Environmental Health

October 19, 2007

Ms. Donna Drogos  
Alameda County Health Agency  
1131 Harbor Bay Parkway  
Alameda, California 94502

Re: **Quarterly Summary Report – Third Quarter 2007  
And Sensitive Receptor Survey**

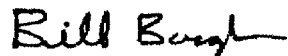
76 Service Station No. 6129  
3420 35<sup>th</sup> Avenue  
Oakland, California

Dear Ms. Drogos:

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 contact me at (916) 558-7612.

Sincerely,



Bill Borgh  
Site Manager – Risk Management and Remediation

Attachment

October 22, 2007

Ms. Donna Drogos  
Alameda County Health Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**Re: Quarterly Summary Report – Third Quarter 2007  
And Sensitive Receptor Survey**  
Delta Project Number: C1Q-6129-603

Dear Ms. Drogos:



On behalf of ConocoPhillips Company (COP), Delta Environmental Consultants, Inc. (Delta) is submitting the Quarterly Summary Report – Third Quarter 2007 and forwarding a copy of TRC's *Quarterly Monitoring Report, July through September 2007*, dated October 10, 2007, for the following location:

**Service Station**

76 Service Station No. 6129

**Location**

3420 35<sup>th</sup> Avenue  
Oakland, California

Sincerely,  
**Delta Consultants, Inc.**

Dennis S. Dettloff, P.G.  
Senior Project Manager  
California Registered Professional Geologist No. 7480



cc: Mr. William Borgh, ConocoPhillips (electronic copy)

**QUARTERLY SUMMARY REPORT**  
**Sensitive Receptor Survey**  
**Third Quarter 2007**  
**76 Service Station No. 6129**  
**3420 35<sup>th</sup> Avenue**  
**Oakland, California**

**SITE DESCRIPTION**

The site is currently an operating 76 Service Station that dispenses gasoline stored in two 12,000-gallon underground storage tanks (USTs) from two dispenser islands. An automotive repair facility is present at the site which contains three service bays. Additionally, there is one used-oil UST, three hydraulic lifts, and three groundwater monitoring wells (MW-1 through MW-3) present at the site. There was previously one used-oil UST, one clarifier beneath the central hydraulic lift, and two floor drains, all of which have been removed.

**PREVIOUS ASSESSMENT**

According to Kaprealian Engineering, Inc. (KEI), in 1989 two 10,000-gallon gasoline USTs and one 550-gallon waste oil UST were removed from the site. Analytical data from soil samples collected beneath the former gasoline USTs, used-oil UST, and product piping indicated that low concentrations of petroleum hydrocarbons were present in each of the sampling areas. Three groundwater monitoring wells (MW-1 through MW-3) were installed in 1989 to depths of approximately 44 feet below ground surface (bgs).

In 1990, four soil borings (EB1 through EB4) were advanced at the site in the vicinity of MW-3 in an attempt to define the hydrocarbon impact to soil. Based on the analytical data from the soil sampling, approximately 230 cubic yards of soil were excavated from an area between the dispenser islands and around monitoring well MW-3 in 1991. The excavation was completed as to not destroy monitoring well MW-3. Analytical data from confirmation soil samples indicated that the majority of the impacted soil had been removed.

On November 12 and 13, 2003, as part of a due diligence investigation, four soil borings (SB-1 and SB-3 through SB-5) were advanced to total depths of approximately 31.5 to 36.5 feet bgs. Proposed boring SB-2 was unable to be advanced due to the presence of subsurface utilities and/or structures. Groundwater was encountered in the borings at a depth of approximately 35 feet bgs. Methyl tertiary butyl ether (MTBE) was reported at concentrations ranging from 0.37 to 0.41 milligrams per kilogram (mg/kg) in the soil samples collected at depths ranging from 26 and 31 feet bgs. All other constituents were reported below the laboratories indicated reporting limits for the soil samples analyzed. The three existing groundwater monitoring wells were sampled on November 13, 2003. Analytical data indicated that MTBE was present at concentrations ranging from 240 and 3,700 micrograms per liter ( $\mu\text{g/L}$ ), with the most elevated concentrations found in monitoring wells MW-2 (2,100  $\mu\text{g/L}$ ) and MW-3 (3,700  $\mu\text{g/L}$ ).

On September 13, 2006, Delta observed the advancement of six boreholes by a licensed contractor using CPT technology. The CPT borings provided accurate continuous records of the subsurface lithology and stratigraphy and measured depth to first groundwater. Groundwater and soil samples were not collected from the CPT borings.

On November 7 and 8, 2006, Delta observed the advancement of five soil borings (B-2, B-7, B-8, B-9, and B-14) by a licensed contractor using hollow stem auger technology. Four of these soil borings were advanced adjacent to the previously advanced CPT borings. On December 27, 2006, four soil borings (B-10, B-12, B15, and B-16) were advanced using hollow stem auger technology. Soil samples were collected every five feet for lithologic descriptions, field hydrocarbon screening, and laboratory analysis. A description of this work is presented in the *Soil Boring Site Assessment Report* dated February 19, 2007.

### **SENSITIVE RECEPTORS**

2004 - A 1,000-foot radius well search was completed by the request of the Alameda County Public Works Agency (ACPWA). The search indicated that a six-inch diameter irrigation well was located at 3397 Arkansas Street, approximately 800 feet west-northwest of the site. The well was installed in August 1977 to total depth 62 feet bgs with depth to water reported at 18 feet bgs. Alameda County Health Care Services update of July 30, 1984 reported the well owner as Arthur Smith.

2006 – A survey entailing a visit to the DWR office in Sacramento was conducted to examine well log records and to identify domestic wells within the survey area. The DWR survey indicated three potential receptors were located within one mile of the site; two irrigation wells located 0.5 mile and 0.8 mile north (up-gradient) of the site and one domestic/irrigation well located 0.8 mile northeast (up-gradient) of the site. Two additional potential receptors were identified although the specific addresses could not be located. Based on groundwater gradient information and distance to the receptors from the site, identified receptors do not appear to be at risk due to gasoline constituents in groundwater at the site.

The 2006 sensitive receptor survey data are presented in Attachment A.

### **MONITORING AND SAMPLING**

Groundwater monitoring and sampling activities were conducted at the site from January 1990 through May 1991. Sampling activities were re-initiated during the third quarter 2004. The monitoring well network is currently sampled on a quarterly basis.

During the most recent groundwater monitoring event, conducted on September 22, 2007, the depth to groundwater ranged from 29.57 feet (MW-3) to 30.61 feet (MW-1) below top of casing (TOC). The groundwater flow direction was interpreted to be to the southwest at a gradient of 0.01 foot per foot (ft/ft) as compared to the previous quarterly sampling event when the groundwater flow direction was interpreted to be to the northwest at a gradient of 0.03 ft/ft. Historic groundwater flow directions presented as a rose diagram included as Attachment B.

**Contaminants of Concern:**

- **TPHg:** TPHg was reported above the laboratories indicated reporting limit in monitoring well MW-2 and MW-3 at 400 µg/L and 500 µg/L, respectively. However, the notes in the analytical report indicate that the total purgeable petroleum hydrocarbons (TPPH) in monitoring wells MW-2 and MW-3 does not exhibit a "gasoline" pattern and that the TPPH is entirely due to MTBE.
- **Benzene:** Benzene was below the laboratories indicated reporting limit in all three of the monitoring in wells.
- **MTBE:** MTBE was reported above the laboratories indicated reporting limits in monitoring wells MW-1, MW-2, and MW-3 at 4.1 µg/L, 530 µg/L, and 980 µg/L, respectively.

With the exception of di-isopropyl ether (DIPE) found in the groundwater sample collected from monitoring well MW-2 at 35 µg/L and the constituents listed above, all other constituents tested were below the laboratories indicated reporting limits during this recent quarterly sampling event.

**REMEDIATION STATUS**

Remediation has not been required by the lead regulatory agency for this site.

**CHARACTERIZATION STATUS**

Recent site assessment data has been submitted to the agency for review. Groundwater monitoring is ongoing.

**RECENT CORRESPONDENCE**

No recent correspondence was documented during this reporting period.

**THIS QUARTER ACTIVITIES (Third Quarter 2007)**

1. TRC conducted the quarterly monitoring and sampling event at the site.

**WASTE DISPOSAL SUMMARY**

In 1991, based on the analytical results of soil samples from borings EB1 through EB4, approximately 230 cubic yards of soil were excavated from the area between the dispensers and the pump islands in the area around MW-3.

Thirty three (33) drums of non-hazardous soil and water produced during recent field activities were transported off-site for disposal on 10/19/06 and 12/29/06.

**NEXT QUARTER ACTIVITIES (Fourth Quarter 2007)**

1. TRC will conduct the quarterly groundwater monitoring and sampling event at the site.

**CONSULTANT:** Delta Consultants, Inc.

Attachment A – Sensitive Receptor Survey Data

Attachment B – Historic Groundwater Flow Directions

**Attachment A**  
**Sensitive Receptor Survey Data**

**Attachment B**  
**Historic Groundwater Flow Directions**

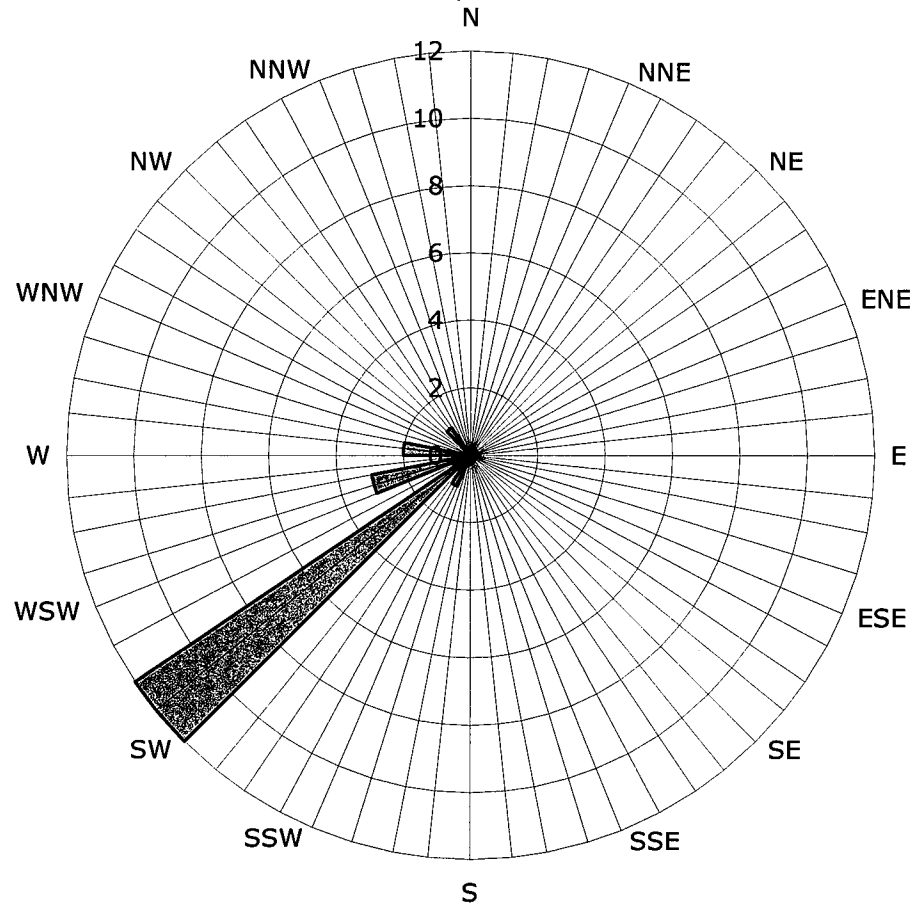


### Historic Groundwater Flow Directions

ConocoPhillips Site No. 6129

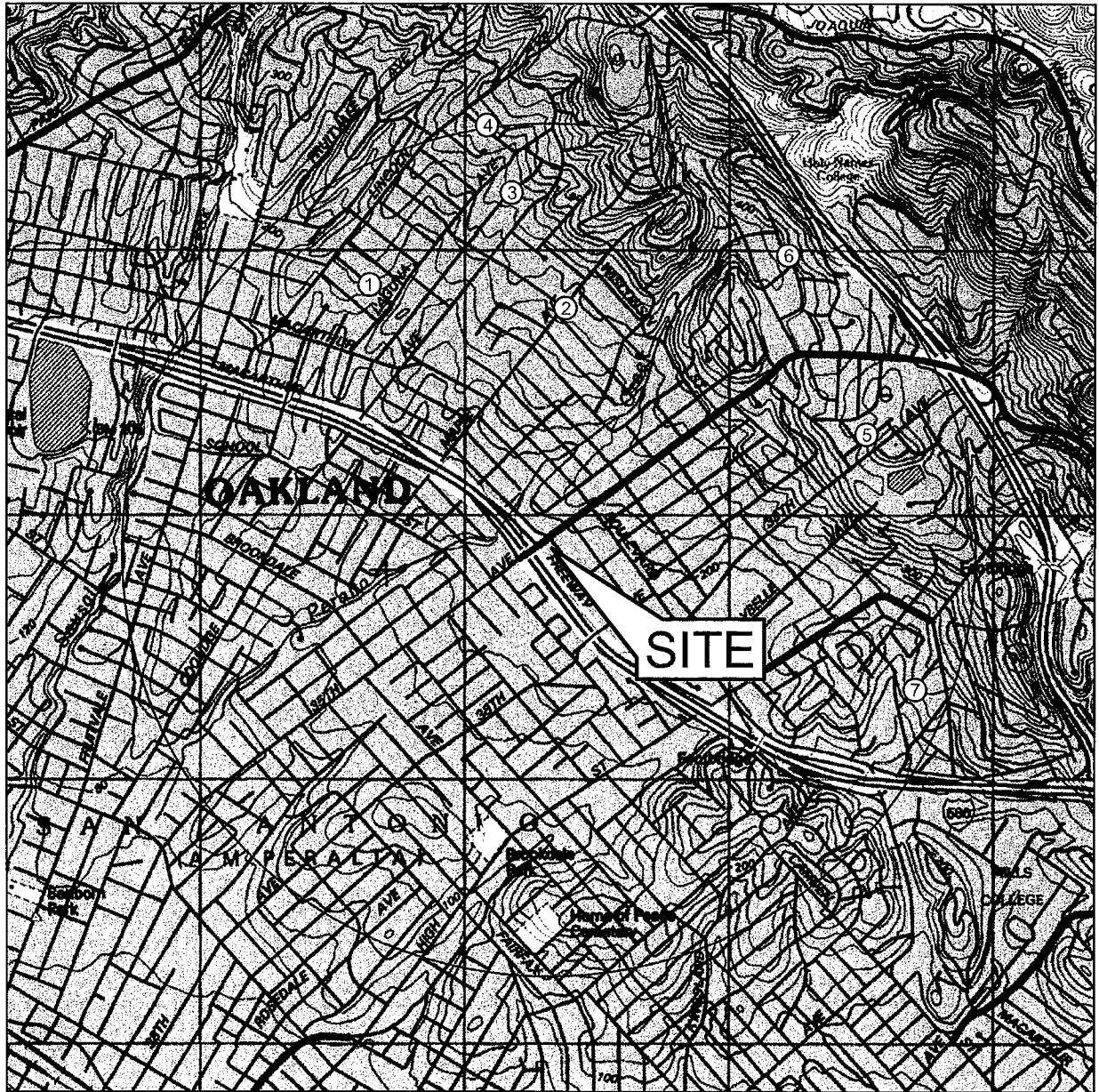
3420 35th Avenue

Oakland, California



Legend  
Concentric circles represent  
quarterly monitoring  
events  
First Quarter 1990 through  
Second  
Quarter 2007  
19 data points shown

Groundwater Flow Direction



0 1000 FT 2000 FT  
 SCALE: 1 : 24,000



FIGURE 1  
 SITE LOCATOR SENSITIVE RECEPTOR  
 MAP

76 STATION NO. 6129  
 3420 35th AVENUE  
 OAKLAND, CA

PROJECT NO. C106-129	DRAWN BY JH 12/12/06
FILE NO.	PREPARED BY JH
REVISION NO.	REVIEWED BY



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND EAST QUADRANGLE, 1983

**Table 1**  
 One-Mile Agency Receptor Survey  
 ConocoPhillips Station No.6129  
 3420 35th Avenue, Oakland, California

	<b>DWR<sup>1</sup> Well No.</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Owner</b>	<b>Well Type</b>	<b>Distance from Site (miles)</b>	<b>Direction Relative to Site</b>
1-	1S/3W- 32H1	Scenic Ave. at Laguna Ave.	Oakland	CA		PG&E	Cathodic protection	0.7	NW
2-	1S/3W-33L1	3062 Arizona St.	Oakland	CA	94602	Steven C. Olsen	Irrigation	0.5	N
3-	1S/3W-33E2	4010 Coolidge Ave.	Oakland	CA		Herman Volz	Irrigation	0.8	N
4-	1S/3W-33D80	Alida St., 35' south of Lincoln Ave	Oakland	CA		PG&E	Cathodic protection	1.0	NW
5-	1S/3W-33R1	Monterey Blvd. west of Dunsmuir Ave	Oakland	CA		PG&E	Cathodic protection	0.8	NE
6-	1S/3W-33G1	4374 Norton Ave	Oakland	CA		Zeber Zel	Domestic/Irrigation	0.8	NE
7-	2S/3W-3E1	Steele St. 160' east of Enos Ave	Oakland	CA		PG&E	Cathodic protection	0.9	SE
<sup>2</sup> 8-	1S/3W-33F1	2051 W. . . ?	Oakland	CA					
<sup>2</sup> 9-	2S/3W-3N?	Mills College on 64th Ave	Oakland	CA					

DWR: Department of Water Resources

<sup>1</sup> Well Locations shown on Figure 1.

<sup>2</sup> Specific address cannot be located on map.



21 Technology Drive  
Irvine, CA 92618

949.727.9336 PHONE  
949.727.7399 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

DATE: October 12, 2007

TO: ConocoPhillips Company  
76 Broadway  
Sacramento, CA 94563

ATTN: MR. BILL BORGH

SITE: 76 STATION 6129  
3420 35<sup>TH</sup> AVENUE  
OAKLAND, CALIFORNIA

RE: QUARTERLY MONITORING REPORT  
JULY THROUGH SEPTEMBER 2007

Dear Mr. Borgh:

Please find enclosed our Quarterly Monitoring Report for 76 Station 6129, located at 3420 35<sup>th</sup> Avenue, 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: Mr. Dennis Dettloff, Delta Environmental Consultants, Inc. (1 copy)

Enclosures:  
20-0400/6129R016.QMS

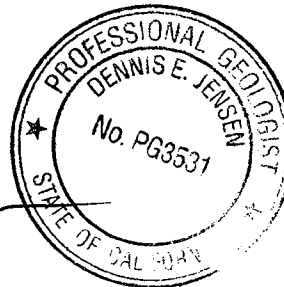
**QUARTERLY MONITORING REPORT  
JULY THROUGH SEPTEMBER 2007**

76 STATION 6129  
3420 35<sup>th</sup> Avenue  
Oakland, California

Prepared For:

Mr. Bill Borgh  
CONOCOPHILLIPS COMPANY  
76 Broadway  
Sacramento, CA 94563

By:



Senior Project Geologist, Irvine Operations

Date: 10/11/07



## LIST OF ATTACHMENTS

Summary Sheet	Summary of Gauging and Sampling Activities
Tables	Table Key Contents of Tables Table 1: Current Fluid Levels and Selected Analytical Results Table 1a: Additional Current Analytical Results Table 2: Historic Fluid Levels and Selected Analytical Results Table 2a: Additional Historic Analytical Results
Figures	Figure 1: Vicinity Map Figure 2: Groundwater Elevation Contour Map Figure 3: Dissolved-Phase TPH-G (GC/MS) Concentration Map Figure 4: Dissolved-Phase Benzene Concentration Map Figure 5: Dissolved-Phase MTBE Concentration Map
Graphs	Groundwater Elevations vs. Time Benzene Concentrations vs. Time MTBE 8260B Concentrations vs. Time
Field Activities	General Field Procedures Field Monitoring Data Sheet – 9/22/07 Groundwater Sampling Field Notes – 9/22/07
Laboratory Reports	Official Laboratory Reports Quality Control Reports Chain of Custody Records
Statements	Purge Water Disposal Limitations

**Summary of Gauging and Sampling Activities**  
**July 2007 through September 2007**  
**76 Station 6129**  
**3420 35th Ave.**  
**Oakland, CA**

Project Coordinator: **Bill Borgh**  
Telephone: **916-558-7612**

Water Sampling Contractor: **TRC**  
Compiled by: **Daniel Lee**

Date(s) of Gauging/Sampling Event: **9/22/07**

**Sample Points**

Groundwater wells: **3** onsite, **0** offsite      Wells gauged: **3**      Wells sampled: **3**  
Purging method: **Submersible pump**  
Purge water disposal: **Onyx/Rodeo Unit 100**  
Other Sample Points: **0**      Type: **n/a**

**Liquid Phase Hydrocarbons (LPH)**

Wells with LPH: **0**      Maximum thickness (feet): **n/a**  
LPH removal frequency: **n/a**      Method: **n/a**  
Treatment or disposal of water/LPH: **n/a**

**Hydrogeologic Parameters**

Depth to groundwater (below TOC):      Minimum: **29.57 feet**      Maximum: **30.61 feet**  
Average groundwater elevation (relative to available local datum): **71.35 feet**  
Average change in groundwater elevation since previous event: **-3.14 feet**  
Interpreted groundwater gradient and flow direction:  
    Current event: **0.01 ft/ft, southwest**  
    Previous event: **0.03 ft/ft, northwest (6/25/07)**

**Selected Laboratory Results**

Wells with detected **Benzene**: **0**      Wells above MCL (1.0 µg/l): **n/a**  
    Maximum reported benzene concentration: **n/a**

Wells with **TPH-G by GC/MS**      **2**      Maximum: **500 µg/l (MW-3)**  
Wells with **MTBE 8260B**      **3**      Maximum: **980 µg/l (MW-3)**

**Notes:**

# TABLES



## TABLE KEY

### STANDARD ABBREVIATIONS

--	=	not analyzed, measured, or collected
LPH	=	liquid-phase hydrocarbons
Trace	=	less than 0.01 foot of LPH in well
ug/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)

### 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
TPH-G	=	total petroleum hydrocarbons with gasoline distinction
TPH-G (GC/MS)	=	total petroleum hydrocarbons with gasoline distinction utilizing EPA Method 8260B
TPH-D	=	total petroleum hydrocarbons with diesel distinction
TRPH	=	total recoverable petroleum hydrocarbons
TAME	=	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:  $\text{Surface Elevation} - \text{Measured Depth to Water} + (D_p \times \text{LPH Thickness})$ , where  $D_p$  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.
8. Groundwater vs. Time graphs may be corrected for apparent level changes due to re-survey.

### REFERENCE

TRC began groundwater monitoring and sampling 76 Station 6129 in August 2004.

# Contents of Tables 1 and 2

## Site: 76 Station 6129

### Current Event

Table 1	Well/ Date	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G (8015M)	TPH-G (GC/MS)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8021B)	MTBE (8260B)	Comments
Table 1a	Well/ Date	TBA	Ethanol (8260B)	Ethylene- dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME						

### Historic Data

Table 2	Well/ Date	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G (8015M)	TPH-G (GC/MS)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8021B)	MTBE (8260B)	Comments
Table 2a	Well/ Date	TBA	Ethanol (8260B)	Ethylene- dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME						

**Table 1**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**September 22, 2007**  
**76 Station 6129**

Date Sampled	TOC Elevation  (feet)	Depth to Water  (feet)	LPH Thickness  (feet)	Ground- water Elevation  (feet)	Change in Elevation  (feet)	TPH-G (8015M)  (µg/l)	TPH-G (GC/MS)  (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-1</b>														
9/22/07	102.24	30.61	0.00	71.63	-2.31	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	4.1	
<b>MW-2</b>														
9/22/07	102.16	30.18	0.00	71.98	-4.27	--	400	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	530	
<b>MW-3</b>														
9/22/07	100.00	29.57	0.00	70.43	-2.83	--	500	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	980	

**Table 1 a**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**  
**76 Station 6129**

Date Sampled	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
<b>MW-1</b>							
9/22/07	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
<b>MW-2</b>							
9/22/07	ND<10	ND<250	ND<0.50	ND<0.50	35	ND<0.50	ND<0.50
<b>MW-3</b>							
9/22/07	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**January 1990 Through September 2007**  
**76 Station 6129**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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-1</b>														
1/5/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
5/11/90	--	--	--	--	--	ND	--	ND	7.1	ND	ND	--	--	
8/9/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/14/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/12/91	--	--	--	--	--	ND	--	0.32	ND	ND	ND	--	--	
5/9/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/13/03	--	--	--	--	--	--	180	ND<1.0	ND<1.0	ND<1.0	ND<2.0	--	240	
8/27/04	102.24	30.65	0.00	71.59	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
11/23/04	102.24	29.35	0.00	72.89	1.30	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
2/9/05	102.24	26.89	0.00	75.35	2.46	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	9.3	
5/17/05	102.24	26.56	0.00	75.68	0.33	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1.9	
7/27/05	102.24	27.33	0.00	74.91	-0.77	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
12/6/05	102.24	29.59	0.00	72.65	-2.26	--	ND<50	ND<0.50	0.93	ND<0.50	1.8	--	ND<0.50	
2/21/06	102.24	28.27	0.00	73.97	1.32	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.6	
6/8/06	102.24	26.07	0.00	76.17	2.20	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	11	
9/15/06	102.24	28.86	0.00	73.38	-2.79	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	1.4	
12/14/06	102.24	29.49	0.00	72.75	-0.63	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	3.5	
3/28/07	102.24	27.24	0.00	75.00	2.25	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	0.64	
6/25/07	102.24	28.30	0.00	73.94	-1.06	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	
9/22/07	102.24	30.61	0.00	71.63	-2.31	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	4.1	
<b>MW-2</b>														
1/5/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
5/11/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**January 1990 Through September 2007**  
**76 Station 6129**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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-2 continued</b>														
8/9/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/14/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/12/91	--	--	--	--	--	ND	--	ND	0.42	ND	0.51	--	--	
5/9/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/13/03	--	--	--	--	--	--	ND<2000	ND<20	ND<20	ND<20	ND<40	--	2100	
8/27/04	102.16	30.28	0.00	71.88	--	--	950	ND<5.0	ND<5.0	ND<5.0	ND<10	--	1400	
11/23/04	102.16	28.75	0.00	73.41	1.53	--	53	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	4.2	
2/9/05	102.16	26.08	0.00	76.08	2.67	--	ND<500	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	400	
5/17/05	102.16	24.53	0.00	77.63	1.55	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	330	
7/27/05	102.16	27.51	0.00	74.65	-2.98	--	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<10	--	580	
12/6/05	102.16	29.13	0.00	73.03	-1.62	--	340	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	780	
2/21/06	102.16	29.23	0.00	72.93	-0.10	--	190	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	340	
6/8/06	102.16	25.76	0.00	76.40	3.47	--	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<10	--	440	
9/15/06	102.16	29.17	0.00	72.99	-3.41	--	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	570	
12/14/06	102.16	29.11	0.00	73.05	0.06	--	520	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	770	
3/28/07	102.16	26.68	0.00	75.48	2.43	--	290	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	460	
6/25/07	102.16	25.91	0.00	76.25	0.77	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	1.2	
9/22/07	102.16	30.18	0.00	71.98	-4.27	--	400	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	530	
<b>MW-3</b>														
1/5/90	--	--	0.00	--	--	ND	--	ND	ND	ND	ND	--	--	
5/11/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
8/9/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/14/90	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/12/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	

**Table 2**  
**HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**  
**January 1990 Through September 2007**  
**76 Station 6129**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	TPH-G (GC/MS) (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-3 continued</b>														
5/9/91	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/13/03	--	--	--	--	--	--	2600	ND<20	ND<20	ND<20	ND<40	--	3700	
8/27/04	100.00	29.61	0.00	70.39	--	--	1700	ND<10	ND<10	ND<10	ND<20	--	2600	
11/23/04	100.00	28.48	0.00	71.52	1.13	--	1500	ND<10	ND<10	ND<10	ND<20	--	1800	
2/9/05	100.00	26.45	0.00	73.55	2.03	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2100	
5/17/05	100.00	25.61	0.00	74.39	0.84	--	ND<1000	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1200	
7/27/05	100.00	27.35	0.00	72.65	-1.74	--	ND<1000	ND<10	ND<10	ND<10	ND<20	--	1400	
12/6/05	100.00	28.78	0.00	71.22	-1.43	--	430	ND<0.50	1.6	ND<0.50	3.6	--	1800	
2/21/06	100.00	28.91	0.00	71.09	-0.13	--	420	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1100	
6/8/06	100.00	25.97	0.00	74.03	2.94	--	ND<1200	ND<12	ND<12	ND<12	ND<25	--	1000	
9/15/06	100.00	28.73	0.00	71.27	-2.76	--	ND<1200	ND<12	ND<12	ND<12	ND<12	--	1200	
12/14/06	100.00	28.62	0.00	71.38	0.11	--	ND<1000	ND<10	ND<10	ND<10	ND<10	--	1300	
3/28/07	100.00	26.69	0.00	73.31	1.93	--	500	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	860	
6/25/07	100.00	26.74	0.00	73.26	-0.05	--	270	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	570	
9/22/07	100.00	29.57	0.00	70.43	-2.83	--	500	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	980	

**Table 2 a**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 6129**

Date Sampled	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
<b>MW-1</b>							
11/13/03	ND<200	ND<1000	ND<4.0	ND<4.0	ND<4.0	ND<4.0	ND<4.0
8/27/04	ND<5.0	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50
11/23/04	ND<5.0	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50
2/9/05	ND<5.0	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
5/17/05	ND<5.0	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
7/27/05	ND<5.0	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
12/6/05	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
2/21/06	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
6/8/06	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
9/15/06	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
12/14/06	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
3/28/07	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
6/25/07	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
9/22/07	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
<b>MW-2</b>							
11/13/03	ND<4000	ND<20000	ND<80	ND<80	ND<80	ND<80	ND<80
8/27/04	ND<50	ND<500	ND<5.0	ND<5.0	24	ND<5.0	ND<5.0
11/23/04	ND<5.0	ND<50	ND<0.50	ND<0.50	18	ND<0.50	ND<0.50
2/9/05	ND<50	ND<500	ND<5.0	ND<5.0	19	ND<5.0	ND<5.0
5/17/05	ND<5.0	ND<50	ND<0.50	ND<0.50	12	ND<0.50	ND<0.50
7/27/05	140	ND<500	ND<5.0	ND<5.0	16	ND<5.0	ND<5.0
12/6/05	61	ND<250	ND<0.50	ND<0.50	15	ND<0.50	ND<0.50
2/21/06	ND<10	ND<250	ND<0.50	ND<0.50	18	ND<0.50	ND<0.50
6/8/06	ND<100	ND<2500	ND<5.0	ND<5.0	14	ND<5.0	ND<5.0
9/15/06	ND<100	ND<2500	ND<5.0	ND<5.0	17	ND<5.0	ND<5.0
12/14/06	27	ND<250	ND<0.50	ND<0.50	20	ND<0.50	ND<0.50

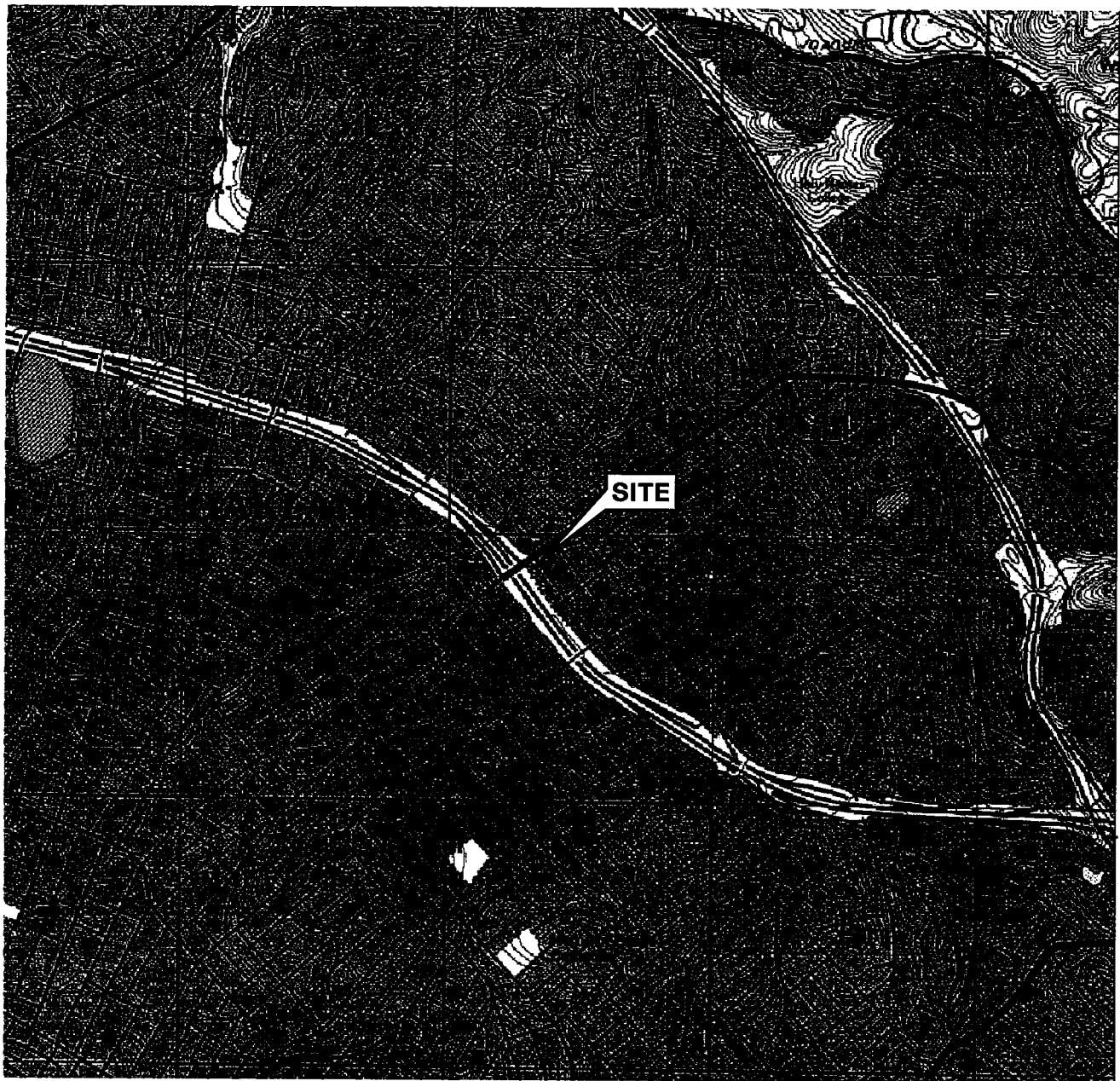


**Table 2 a**  
**ADDITIONAL HISTORIC ANALYTICAL RESULTS**  
**76 Station 6129**

Date Sampled	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
<b>MW-2 continued</b>							
3/28/07	260	ND<250	ND<0.50	ND<0.50	23	ND<0.50	ND<0.50
6/25/07	ND<10	ND<250	ND<0.50	ND<0.50	23	ND<0.50	ND<0.50
9/22/07	ND<10	ND<250	ND<0.50	ND<0.50	35	ND<0.50	ND<0.50
<b>MW-3</b>							
11/13/03	ND<4000	ND<20000	ND<80	ND<80	ND<80	ND<80	ND<80
8/27/04	ND<100	ND<1000	ND<10	ND<10	ND<20	ND<10	ND<10
11/23/04	ND<100	ND<1000	ND<10	ND<10	ND<20	ND<10	ND<10
2/9/05	130	ND<1000	ND<10	ND<10	ND<10	ND<10	ND<10
5/17/05	ND<100	ND<1000	ND<10	ND<10	ND<10	ND<10	ND<10
7/27/05	360	ND<1000	ND<10	ND<10	ND<10	ND<10	ND<10
12/6/05	160	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
2/21/06	88	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.58
6/8/06	ND<250	ND<6200	ND<12	ND<12	ND<12	ND<12	ND<12
9/15/06	ND<250	ND<6200	ND<12	ND<12	ND<12	ND<12	ND<12
12/14/06	ND<200	ND<5000	ND<10	ND<10	ND<10	ND<10	ND<10
3/28/07	500	ND<500	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
6/25/07	11	ND<250	ND<0.50	0.65	ND<0.50	ND<0.50	ND<0.50
9/22/07	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

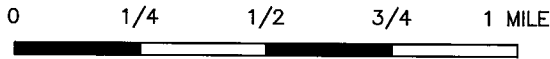
# FIGURES

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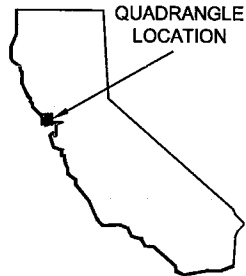


SOURCE:

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



SCALE 1:24,000




PROJECT: 125703

FACILITY:  
76 STATION 6129  
3420 35TH AVENUE  
OAKLAND, CALIFORNIA

VICINITY MAP

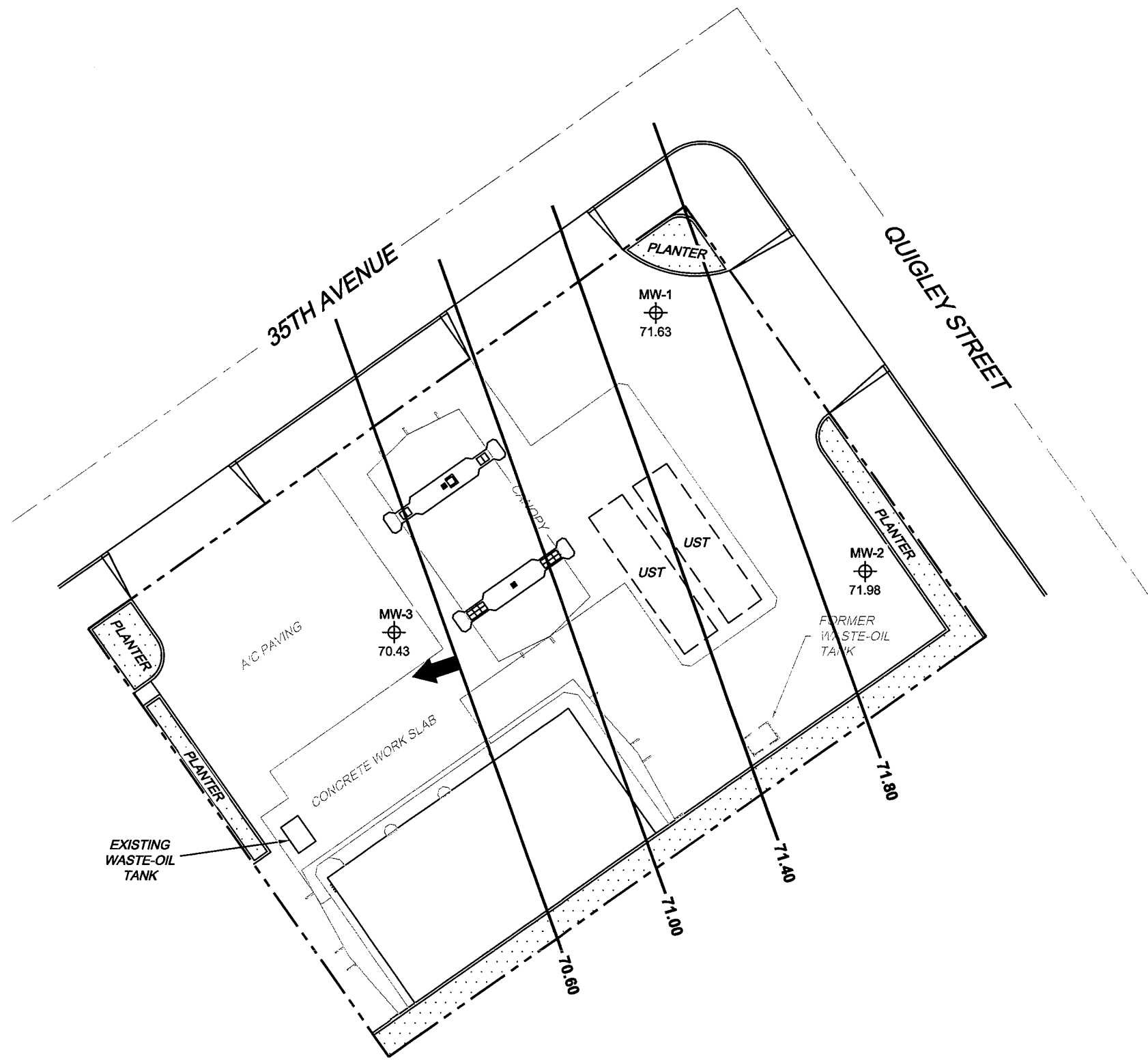
FIGURE 1

**LEGEND**

MW-3  Monitoring Well with Groundwater Elevation (feet)

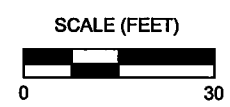
71.80  Groundwater Elevation Contour

 General Direction of Groundwater Flow



MS=1:1 6129-003 L:\Graphics\QMS NORTH-SOUTH\6129-000\6129-06129\_QMS(NEW).dwg Oct 09, 2007 - 1:49pm exwang

**NOTES:**  
 Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.




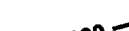
PROJECT: 125703  
 FACILITY:  
 76 STATION 6129  
 3420 35TH AVENUE  
 OAKLAND, CALIFORNIA

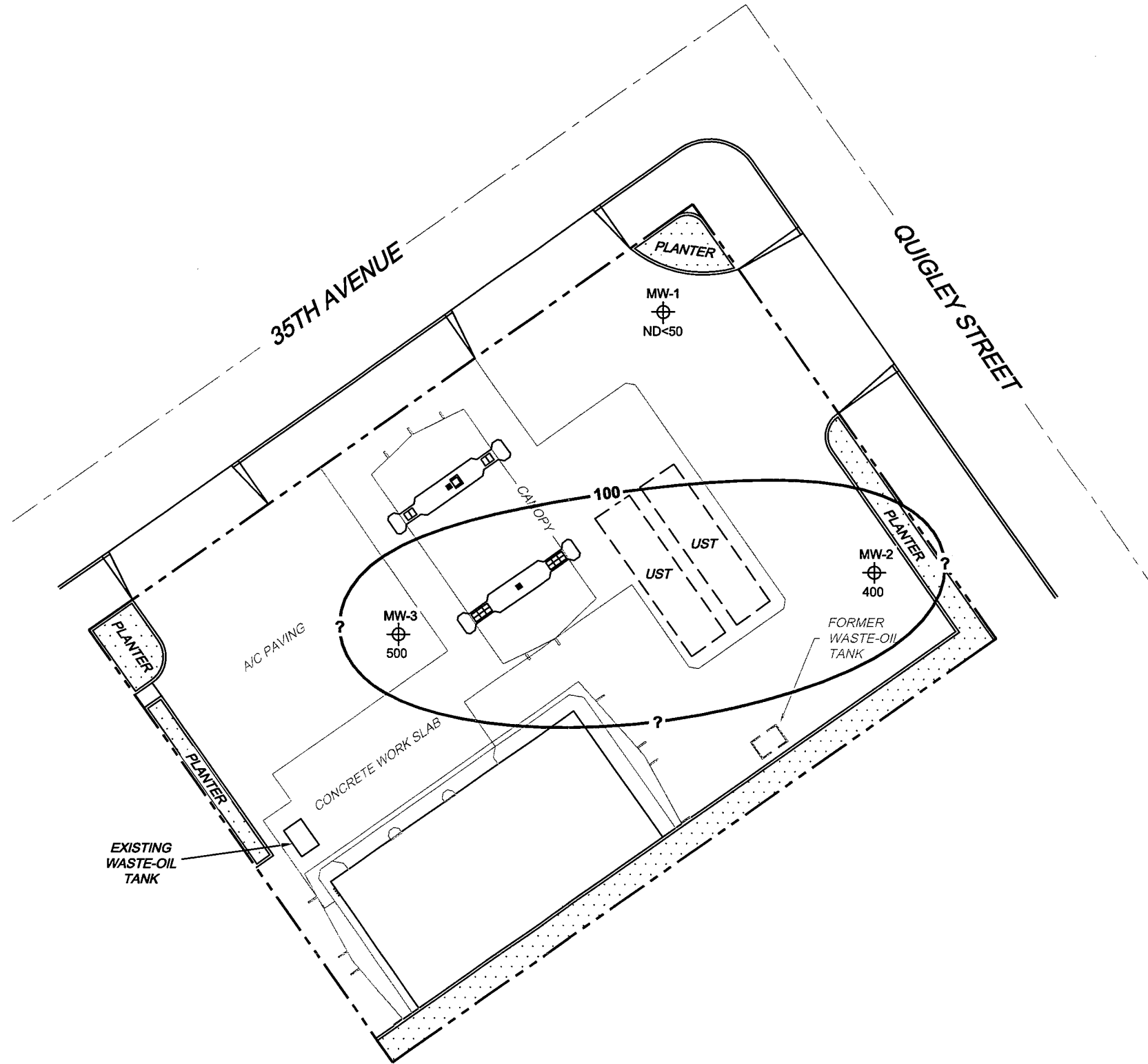
**GROUNDWATER ELEVATION  
 CONTOUR MAP**  
 September 22, 2007

**FIGURE 2**

**LEGEND**

MW-3  Monitoring Well with Dissolved-Phase TPH-G (GC/MS) Concentration (µg/l)

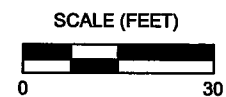
 100 Dissolved-Phase TPH-G (GC/MS) Contour (µg/l)



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**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. Laboratory report indicates that TPPH (TPH-G (GC/MS) ) results for this site are entirely due to MTBE. TPH-G (GC/MS) = total petroleum hydrocarbons with gasoline distinction utilizing EPA Method 8260B. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank.




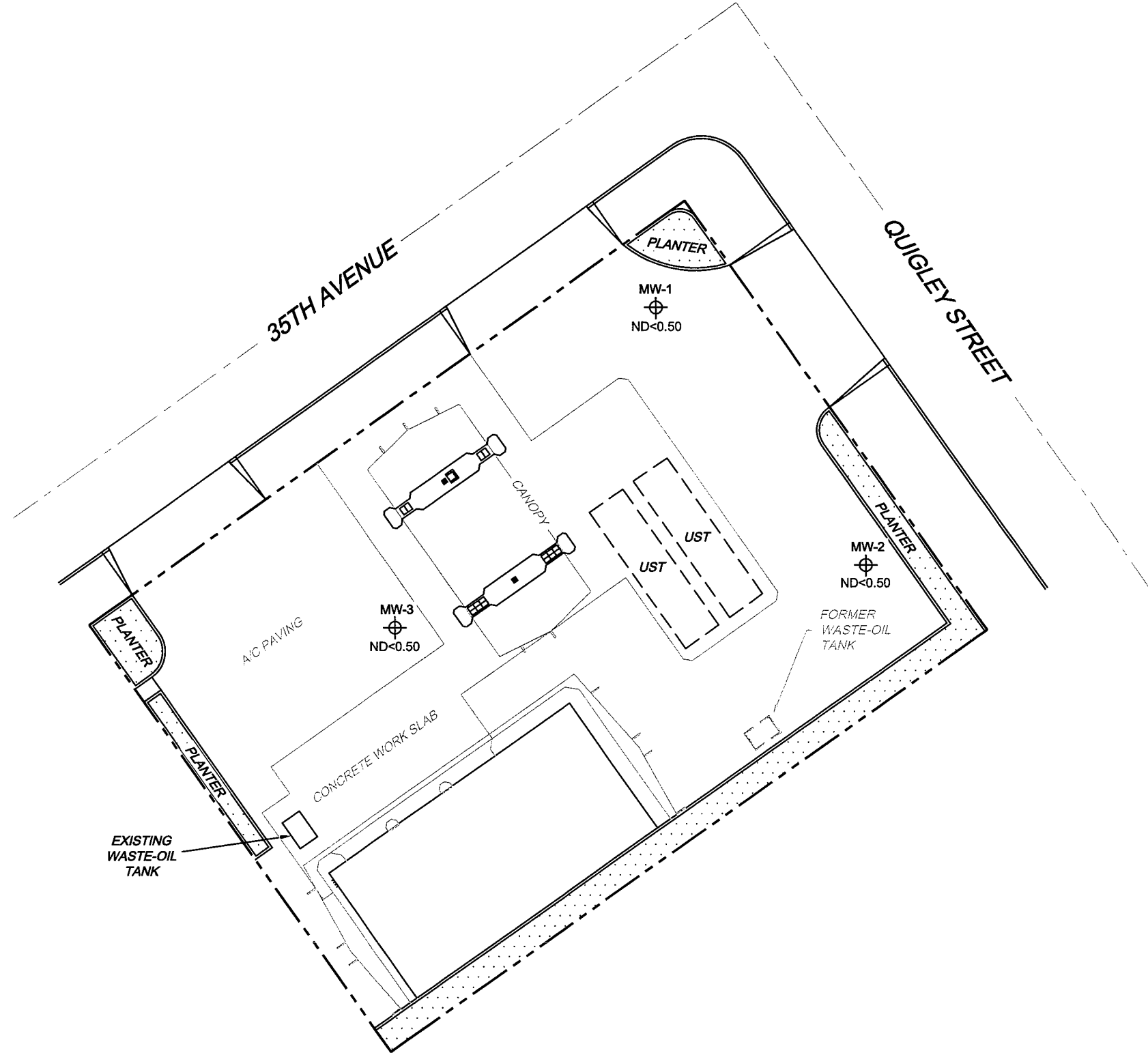
PROJECT: 125703  
FACILITY:  
76 STATION 6129  
3420 35TH AVENUE  
OAKLAND, CALIFORNIA

**DISSOLVED-PHASE TPH-G (GC/MS)  
CONCENTRATION MAP**  
September 22, 2007

**FIGURE 3**

**LEGEND**

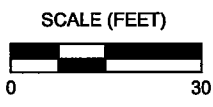
MW-3  Monitoring Well with Dissolved-Phase Benzene Concentration ( $\mu\text{g/l}$ )



MS-1-1 6129-003 L:\Graphics\GIS NORTH-SOUTH\6129-003-CMS(NEW).dwg Oct 09, 2007 - 1:49pm cvuang

**NOTES:**

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



PROJECT: 125703  
FACILITY:  
76 STATION 6129  
3420 35TH AVENUE  
OAKLAND, CALIFORNIA

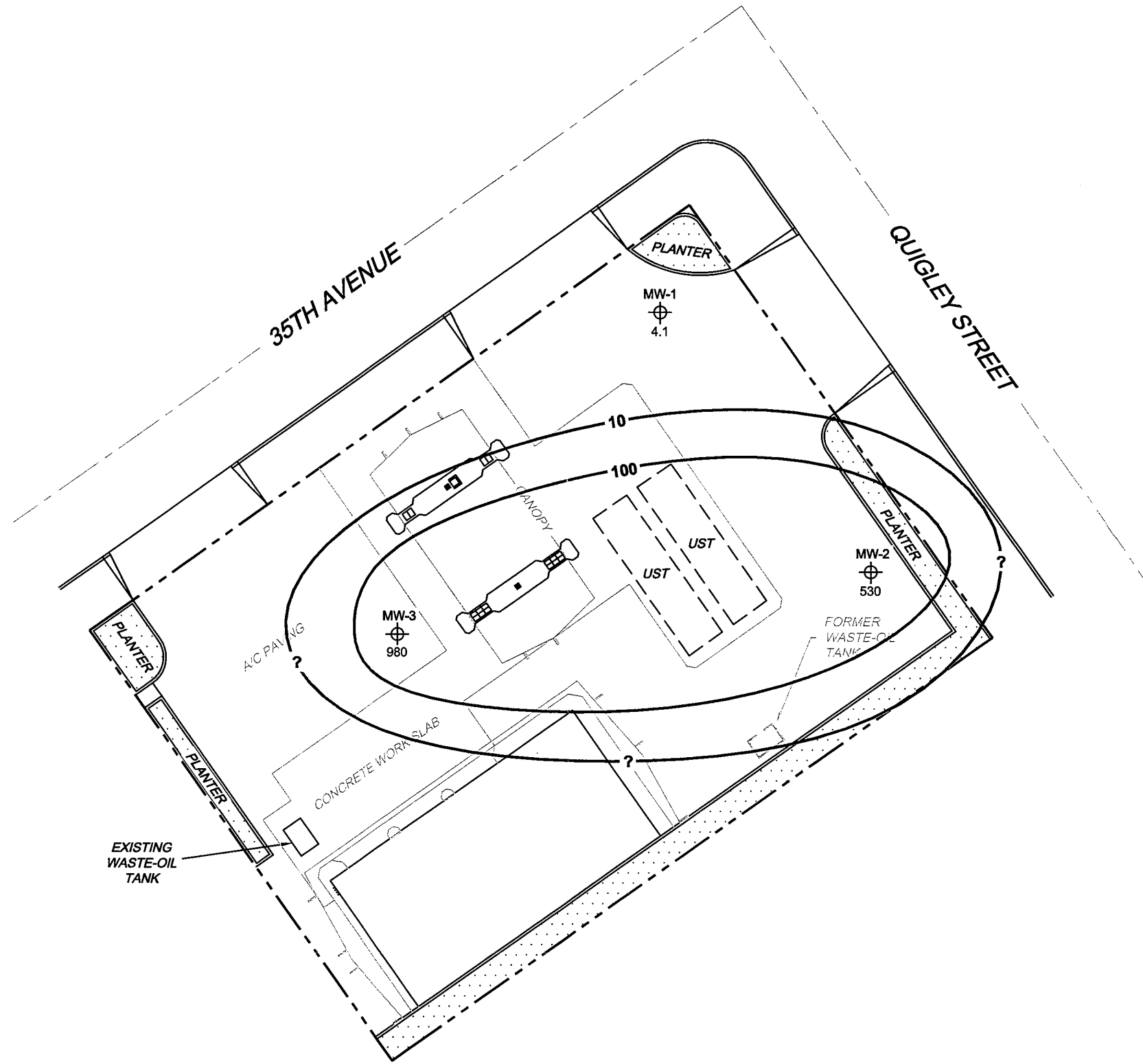
**DISSOLVED-PHASE BENZENE  
CONCENTRATION MAP**  
September 22, 2007

**FIGURE 4**

**LEGEND**

MW-3  Monitoring Well with Dissolved-Phase MTBE Concentration ( $\mu\text{g/l}$ )

 100 Dissolved-Phase MTBE Contour ( $\mu\text{g/l}$ )



L:\Graphics\QIMS NORTH-SOUTH\EX-6000\6129+06129\_QIMS(NEW).dwg Oct 09, 2007 - 1:49pm evuang  
MS=1:1 6129-003

**NOTES:**

Contour lines are interpretive and based on laboratory analysis results of groundwater samples.  
 MTBE = methyl tertiary butyl ether.  $\mu\text{g/l}$  = micrograms per liter. UST = underground storage tank.  
 Results obtained using EPA Method 8260B.



PROJECT: 125703  
 FACILITY:  
 76 STATION 6129  
 3420 35TH AVENUE  
 OAKLAND, CALIFORNIA

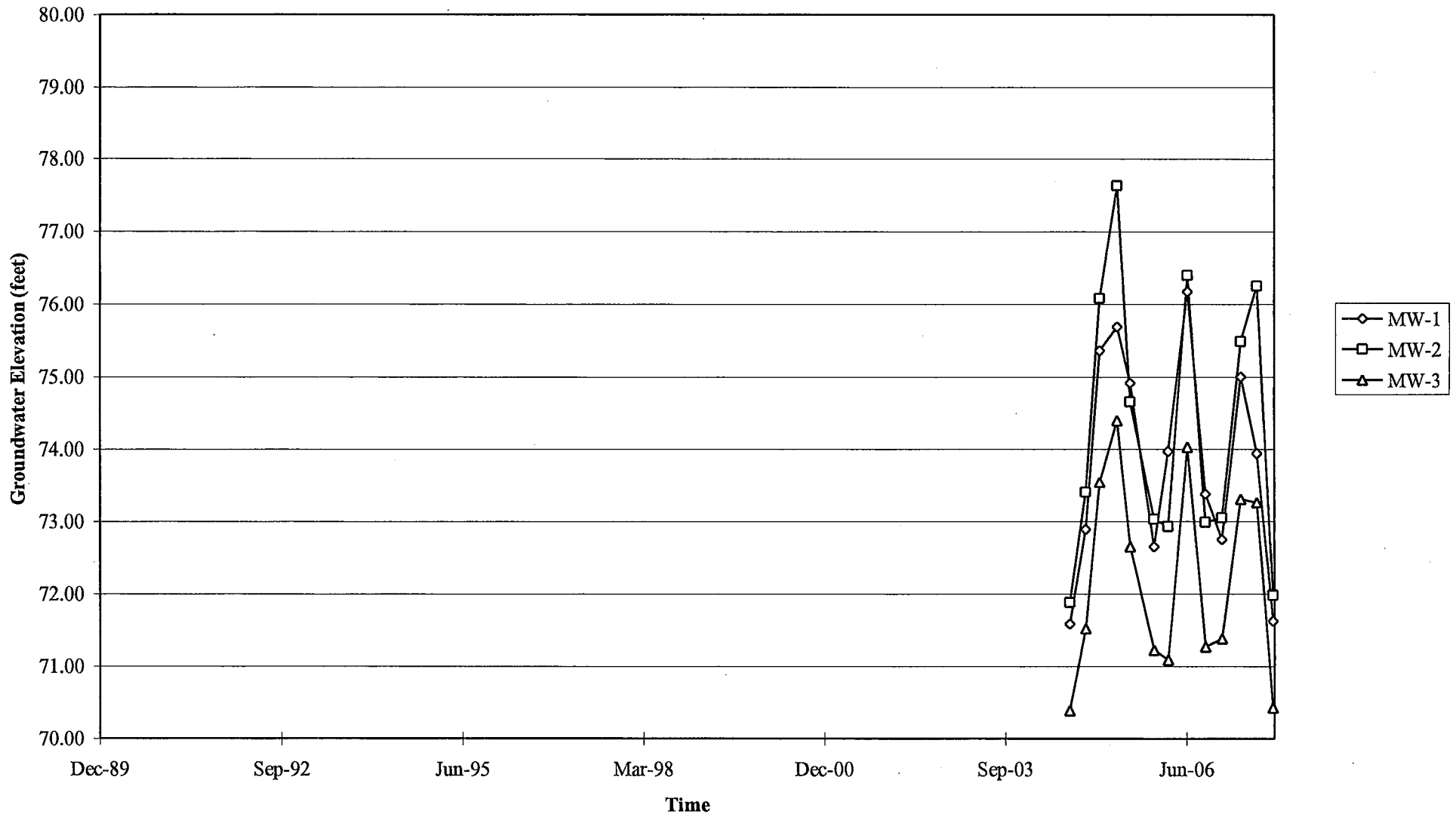
**DISSOLVED-PHASE MTBE  
 CONCENTRATION MAP**  
 September 22, 2007

**FIGURE 5**

# GRAPHS

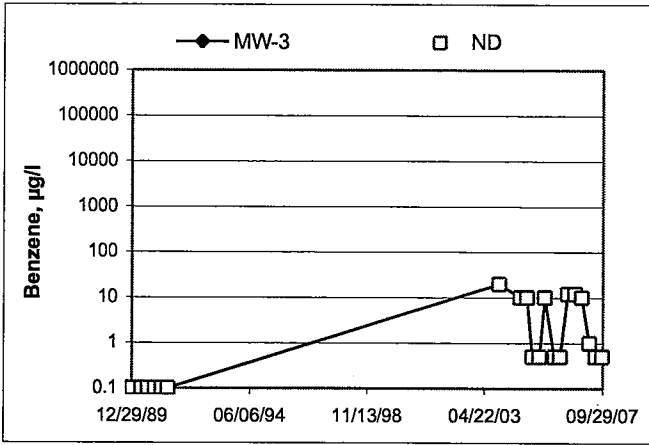
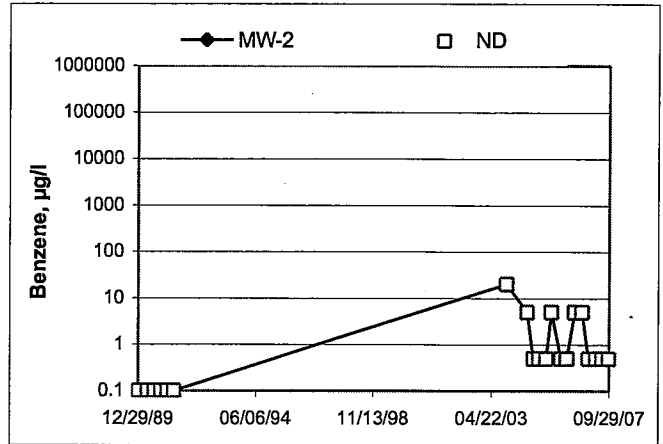
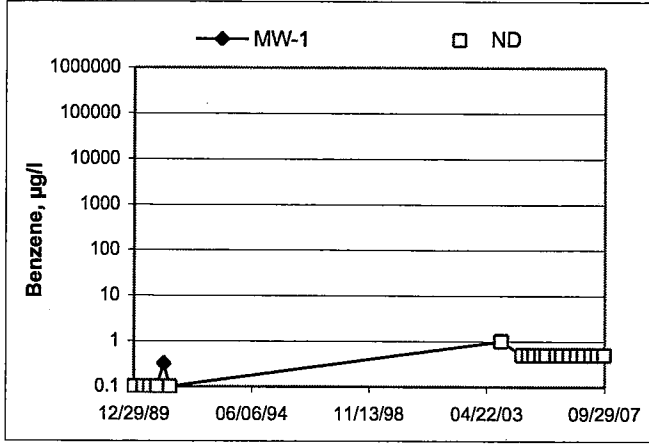


Groundwater Elevations vs. Time  
76 Station 6129

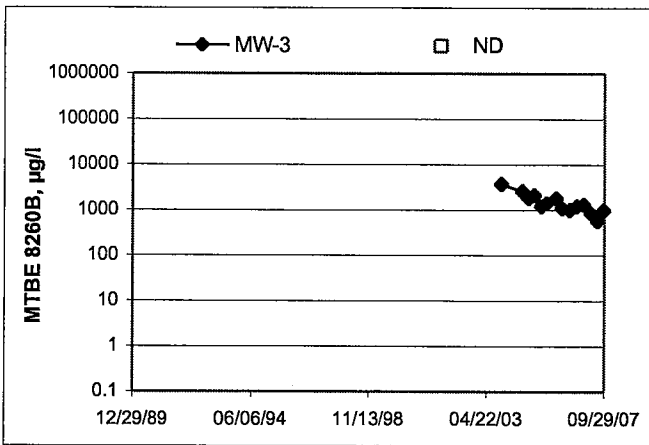
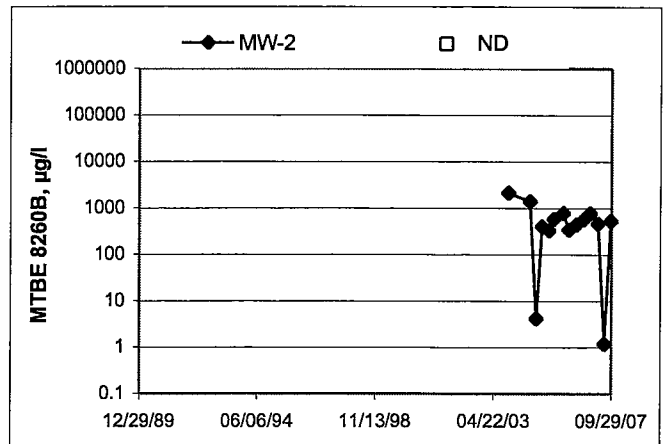
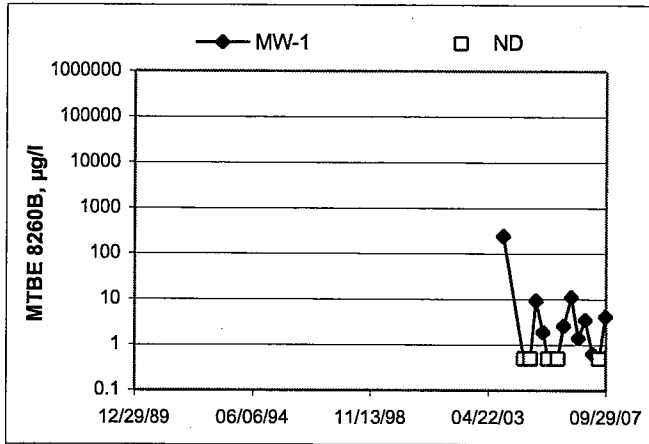


Elevations may have been corrected for apparent changes due to resurvey

**Benzene Concentrations vs Time**  
76 Station 6129



MTBE 8260B Concentrations vs Time  
76 Station 6129



# GENERAL FIELD PROCEDURES

## **Groundwater Monitoring and Sampling Assignments**

For each site, TRC 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 TRC'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. TRC 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 are 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 to a particular wells, 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: JOE

Site: 6129

Project No.: 125703

Date: 07-22-07

Well No. MW-1

Purge Method: SUB

Depth to Water (feet): 30.61

Depth to Product (feet):           

Total Depth (feet): 43.47

LPH & Water Recovered (gallons):           

Water Column (feet): 12.86

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 33.18

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F/C)	pH	D.O.	ORP	Turbidity
0651			2	858.9	19.6	6.99			
			4	820.0	19.7	6.70			
	0655		6	820.8	19.7	6.68			
Static at Time Sampled			Total Gallons Purged			Sample Time			
33.18			6			0706			
Comments:									

Well No. MW-2

Purge Method: SUB

Depth to Water (feet): 30.18

Depth to Product (feet):           

Total Depth (feet): 43.58

LPH & Water Recovered (gallons):           

Water Column (feet): 13.40

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 32.86

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F/C)	pH	D.O.	ORP	Turbidity
0714			2	820.8	18.6	6.97			
			4	869.5	18.7	6.72			
	0718		6	900.8	18.9	6.63			
Static at Time Sampled			Total Gallons Purged			Sample Time			
32.86			6			0726			
Comments:									

## GROUNDWATER SAMPLING FIELD NOTES

Technician: JOE

Site: 6129

Project No.: 125703

Date: 092207

Well No. MW-3

Purge Method: SUB

Depth to Water (feet): 29.57

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

Total Depth (feet): 39.39

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

Water Column (feet): 9.82

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 31.53

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	D.O.	ORP	Turbidity
0735			2	608.9	18.5	7.46			
			4	670.8	18.5	7.04			
	0741		6	665.4	18.0	7.08			
Static at Time Sampled			Total Gallons Purged			Sample Time			
31.53			6			0800			
Comments:									

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 (uS/cm)	Temperature (F, C)	pH	D.O.	ORP	Turbidity
Static at Time Sampled			Total Gallons Purged			Sample Time			
Comments:									



Date of Report: 10/04/2007

Anju Farfan

TRC Alton Geoscience  
21 Technology Drive  
Irvine, CA 92618-2302

RE: 6129  
BC Work Order: 0711154

Enclosed are the results of analyses for samples received by the laboratory on 09/24/2007 21:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Contact Person: Molly Meyers  
Client Service Rep



Authorized Signature



TRC Alton Geoscience  
21 Technology Drive  
Irvine, CA 92618-2302

Project: 6129  
Project Number: [none]  
Project Manager: Anju Farfan

Reported: 10/04/2007 17:01

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information					
0711154-01	COC Number:	---		Receive Date:	09/24/2007 21:00	Delivery Work Order:
	Project Number:	6129		Sampling Date:	09/22/2007 07:06	Global ID: T0600101465
	Sampling Location:	MW-1		Sample Depth:	---	Matrix: W
	Sampling Point:	MW-1		Sample Matrix:	Water	Samle QC Type (SACode): CS
	Sampled By:	TRCI				Cooler ID:
0711154-02	COC Number:	---		Receive Date:	09/24/2007 21:00	Delivery Work Order:
	Project Number:	6129		Sampling Date:	09/22/2007 07:26	Global ID: T0600101465
	Sampling Location:	MW-2		Sample Depth:	---	Matrix: W
	Sampling Point:	MW-2		Sample Matrix:	Water	Samle QC Type (SACode): CS
	Sampled By:	TRCI				Cooler ID:
0711154-03	COC Number:	---		Receive Date:	09/24/2007 21:00	Delivery Work Order:
	Project Number:	6129		Sampling Date:	09/22/2007 08:00	Global ID: T0600101465
	Sampling Location:	MW-3		Sample Depth:	---	Matrix: W
	Sampling Point:	MW-3		Sample Matrix:	Water	Samle QC Type (SACode): CS
	Sampled By:	TRCI				Cooler ID:

TRC Alton Geoscience  
 21 Technology Drive  
 Irvine, CA 92618-2302

 Project: 6129  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 10/04/2007 17:01

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	0711154-01												
Client Sample Name:	6129, MW-1, MW-1, 9/22/2007 7:06:00AM												
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	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Methyl t-butyl ether	4.1	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Toluene	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Total Xylenes	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
t-Butyl alcohol	ND	ug/L	10		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Diisopropyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Ethanol	ND	ug/L	250		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
Total Purgeable Petroleum Hydrocarbons	ND	ug/L	50		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527	ND	
1,2-Dichloroethane-d4 (Surrogate)	103	%	76 - 114 (LCL - UCL)		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527		
Toluene-d8 (Surrogate)	94.7	%	88 - 110 (LCL - UCL)		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527		
4-Bromofluorobenzene (Surrogate)	100	%	86 - 115 (LCL - UCL)		EPA-8260	10/01/07	10/01/07 23:56	SDU	MS-V10	1	BQI1527		

TRC Alton Geoscience  
 21 Technology Drive  
 Irvine, CA 92618-2302

 Project: 6129  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 10/04/2007 17:01

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0711154-02		Client Sample Name: 6129, MW-2, MW-2, 9/22/2007 7:26:00AM											
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	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
Methyl t-butyl ether	530	ug/L	5.0		EPA-8260	10/01/07	10/03/07 13:18	SDU	MS-V10	10	BQI1527	ND	A01
Toluene	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
Total Xylenes	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
t-Butyl alcohol	ND	ug/L	10		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
Diisopropyl ether	35	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
Ethanol	ND	ug/L	250		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	
Total Purgeable Petroleum Hydrocarbons	400	ug/L	50		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527	ND	A90
1,2-Dichloroethane-d4 (Surrogate)	96.5	%	76 - 114 (LCL - UCL)		EPA-8260	10/01/07	10/03/07 13:18	SDU	MS-V10	10	BQI1527		
1,2-Dichloroethane-d4 (Surrogate)	102	%	76 - 114 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527		
Toluene-d8 (Surrogate)	95.1	%	88 - 110 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527		
Toluene-d8 (Surrogate)	95.1	%	88 - 110 (LCL - UCL)		EPA-8260	10/01/07	10/03/07 13:18	SDU	MS-V10	10	BQI1527		
4-Bromofluorobenzene (Surrogate)	104	%	86 - 115 (LCL - UCL)		EPA-8260	10/01/07	10/03/07 13:18	SDU	MS-V10	10	BQI1527		
4-Bromofluorobenzene (Surrogate)	101	%	86 - 115 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 00:14	SDU	MS-V10	1	BQI1527		

TRC Alton Geoscience  
 21 Technology Drive  
 Irvine, CA 92618-2302

 Project: 6129  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 10/04/2007 17:01

## Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0711154-03	Client Sample Name: 6129, MW-3, MW-3, 9/22/2007 8:00:00AM
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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	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
Methyl t-butyl ether	980	ug/L	5.0		EPA-8260	10/01/07	10/02/07 15:27	SDU	MS-V10	10	BQI1527	ND	A01
Toluene	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
Total Xylenes	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
t-Butyl alcohol	ND	ug/L	10		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
Diisopropyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
Ethanol	ND	ug/L	250		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	
Total Purgeable Petroleum Hydrocarbons	500	ug/L	50		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527	ND	A90
1,2-Dichloroethane-d4 (Surrogate)	102	%	76 - 114 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527		
1,2-Dichloroethane-d4 (Surrogate)	99.5	%	76 - 114 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 15:27	SDU	MS-V10	10	BQI1527		
Toluene-d8 (Surrogate)	95.6	%	88 - 110 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527		
Toluene-d8 (Surrogate)	95.4	%	88 - 110 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 15:27	SDU	MS-V10	10	BQI1527		
4-Bromofluorobenzene (Surrogate)	102	%	86 - 115 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 15:27	SDU	MS-V10	10	BQI1527		
4-Bromofluorobenzene (Surrogate)	99.4	%	86 - 115 (LCL - UCL)		EPA-8260	10/01/07	10/02/07 00:32	SDU	MS-V10	1	BQI1527		

TRC Alton Geoscience  
 21 Technology Drive  
 Irvine, CA 92618-2302

Project: 6129  
 Project Number: [none]  
 Project Manager: Anju Farfan

Reported: 10/04/2007 17:01

## 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
Benzene	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
Ethylbenzene	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
Toluene	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
Total Xylenes	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
t-Amyl Methyl ether	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BQI1527	BQI1527-BLK1	ND	ug/L	10		
Diisopropyl ether	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
Ethanol	BQI1527	BQI1527-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BQI1527	BQI1527-BLK1	ND	ug/L	0.50		
Total Purgeable Petroleum Hydrocarbons	BQI1527	BQI1527-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BQI1527	BQI1527-BLK1	104	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BQI1527	BQI1527-BLK1	98.9	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BQI1527	BQI1527-BLK1	100	%	86 - 115 (LCL - UCL)		

TRC Alton Geoscience  
21 Technology Drive  
Irvine, CA 92618-2302

Project: 6129  
Project Number: [none]  
Project Manager: Anju Farfan

Reported: 10/04/2007 17:01

### 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
- A01 PQL's and MDL's are raised due to sample dilution.
- A90 TPPH does not exhibit a "gasoline" pattern. TPPH is entirely due to MTBE.

Submission #: 071154

Project Code:           

TB Batch #           

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:           

All samples received? Yes  No  All samples containers intact? Yes  No  Description(s) match COC? Yes  No

COC Received  
 YES  NO

Ice Chest ID 6111  
 Temperature: 2.8 °C  
 Thermometer ID: #40

Emissivity 0.98  
 Container VCS

Date/Time 9/24/07  
 Analyst Init OTD

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										
100ml TOTAL ORGANIC CARBON										
QT TOX										
PT CHEMICAL OXYGEN DEMAND										
PTA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A3	A3	A3	(	(	(	(	(	(	(
QT EPA 413.1, 413.2, 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 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT QA/QC										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:             
 Sample Numbering Completed By: Rml Date/Time: 9/25/07 950



**BC LABORATORIES, INC.**

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

**CHAIN OF CUSTODY**

*07/11/54*

**Analysis Requested**

<b>Bill to: Conoco Phillips/ TRC</b>		<b>Consultant Firm: TRC</b>		<b>MATRIX</b> (GW) Ground-water (S) Soil (WW) Waste-water (SL) Sludge	BTEX/MTBE by 8021B, Gas by 8015  TPH GAS by 8015M  TPH DIESEL by 8015  8260 full list w/ oxygenates  BTEX/MTBE/OXYS BY 8260B  ETHANOL by 8260B  TPH -G by GC/MS  EDB/EDC by 8260B	Turnaround Time Requested
Address: <i>3420 35TH Ave.</i>		21 Techology Drive Irvine, CA 92618-2302 Attn: Anju Farfan				
City: <i>Oakland</i>		4-digit site#: <i>6129</i>				
State: CA Zip:		Workorder # <i>04583-4507923520</i>				
Conoco Phillips Mgr: <i>Bill Borgh</i>		Project #: <i>125703</i>				
		Sampler Name: <i>JOE LEWIS</i>				

Lab#	Sample Description	Field Point Name	Date & Time Sampled	Matrix	BTEX/MTBE by 8021B, Gas by 8015	TPH GAS by 8015M	TPH DIESEL by 8015	8260 full list w/ oxygenates	BTEX/MTBE/OXYS BY 8260B	ETHANOL by 8260B	TPH -G by GC/MS	EDB/EDC by 8260B	Turnaround Time Requested
	<i>1</i>	<i>MW-1</i>	<i>09-22-07 0706</i>	<i>GW</i>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>STD</i>
	<i>-2</i>	<i>MW-2</i>	<i>↓</i> <i>0726</i>	<i>↓</i>					<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>
	<i>-3</i>	<i>MW-3</i>	<i>↓</i> <i>0800</i>	<i>↓</i>					<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>

CHK BY: *[Signature]*  
 DISTRIBUTION  
 SUB-OUT

Comments:  GLOBAL ID: <i>70600101465</i>	Relinquished by: (Signature) <i>Joe D. Lewis</i>	Received by: <i>Refrigerator</i>	Date & Time <i>09-22-07 1100</i>
	Relinquished by: (Signature) <i>[Signature]</i>	Received by: <i>Ross Dickey</i>	Date & Time <i>9/24/07 14:00</i>
	Relinquished by: (Signature) <i>Ross Dickey 9/24/07</i>	Received by: <i>Reynold</i>	Date & Time <i>9-24-07 1800</i>

(A) = ANALYSIS      (C) = CONTAINER

(P) = PRESERVATIVE

*Reynold 9-24-07 2100      Terri Oaker 9/24/07 200*

## **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.