



Customer-Focused Solutions

January 12, 2004

ConocoPhillips Company  
76 Broadway  
Sacramento, CA 95818

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Alameda County  
JAN 30 2004  
Environmental Health

ATTN: MR. THOMAS KOSEL  
  
SITE: 76 STATION 5043  
449 HEGENBERGER ROAD  
OAKLAND, CALIFORNIA  
  
RE: QUARTERLY MONITORING REPORT  
OCTOBER THROUGH DECEMBER 2003

Dear Mr. Kosel:

Please find enclosed our Quarterly Monitoring Report for 76 Station 5043, located at 449 Hegenberger Road, Oakland, California. If you have any questions regarding this report, please call us at (949) 753-0101.

Sincerely,

TRC

Anju Farfan  
QMS Operations Manager

CC: Mr. Barney Chan, Alameda County Health Care Services  
Beretta Investment Group  
Ms. Barbara Moed, TRC

Enclosures  
20-0400/5043R01.QMS





Customer-Focused Solutions

**FOURTH QUARTER 2003  
FLUID LEVEL MONITORING AND  
GROUNDWATER SAMPLING REPORT**

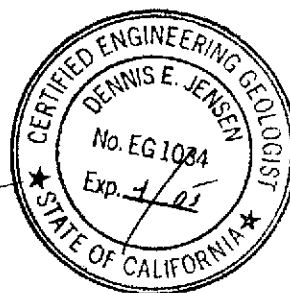
January 12, 2004

76 STATION 5043  
449 Hegenberger Road  
Oakland, California

Prepared For:

Mr. Thomas Kosel  
CONOCOPHILLIPS COMPANY  
76 Broadway  
Sacramento, California 95818

By:



Senior Project Geologist, Irvine Operations

## GROUNDWATER MONITORING REPORT

<b>LIST OF ATTACHMENTS</b>	
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Figures	Figure 1: Vicinity Map Figure 2: Groundwater Elevation Contour Map Figure 3: Dissolved-Phase Hydrocarbon Concentration Map
Graphs	Benzene Concentrations vs. Time Hydrographs
Field Activities	General Field Procedures Groundwater Sampling Field Notes
Laboratory Reports	Official Laboratory Reports Quality Control Reports Chain of Custody Records
Disposal Documents	Statement of Authorized Transportation and Disposal
Statement	Limitations

**Summary of Gauging and Sampling Activities  
 October 2003 through December 2003  
 76 Station 5043  
 449 Hegenberger Road  
 Oakland, CA**

**Site Information:**

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Site:	76 Station 449 Hegenberger Road Oakland, CA
Project Coordinator/Phone Number:	Thomas Kosel/916-558-7666
Groundwater wells onsite:	3
Groundwater wells offsite:	3

**Field Activity:**

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Sampling consultant:	TRC
Date(s) sampled:	10/2/03
Groundwater wells gauged:	6
Groundwater wells sampled:	6
Purging method:	submersible pump
Treatment/disposal method during sampling event:	Onyx/Rodeo Unit 100
Free product pumpouts other than sampling event:	No
Treatment/Disposal method during free product pumpouts:	N/A

**Site Hydrogeology:**

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Minimum depth to groundwater (feet bgs):	2.7
Maximum depth to groundwater (feet bgs):	5.46
Average groundwater elevation (feet relative to mean sea level):	4.69
Average change in groundwater elevations since previous event (feet):	-0.37
Groundwater gradient and flow direction:	0.01 ft/ft, southwest

**Groundwater Condition (Benzene Maximum Contaminant Level [MCL] = 1.0 µg/l)**

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Wells with benzene concentrations below MCL:	3
Wells with benzene concentrations at or above MCL:	3
Minimum benzene concentration (µg/l):	ND
Maximum benzene concentration (µg/l):	5600 (MW-6)
Minimum MTBE concentration (µg/l):	ND
Maximum MTBE concentration (µg/l):	210
Minimum TPPH concentration (µg/l):	ND
Maximum TPPH concentration (µg/l):	100000 (MW-6)
Groundwater wells with free product:	0
Minimum free product thickness (feet):	0
Maximum free product thickness (feet):	0

**Additional Information:**

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This report presents the results of groundwater monitoring and sampling activities performed by TRC. Please contact the primary consultant for other specific information on this site.

# TABLES

## TABLE KEY

### ABBREVIATIONS / SYMBOLS

LPH	=	liquid-phase hydrocarbons
µg/l	=	micrograms per liter
mg/l	=	milligrams per liter
ND	=	not detected at or above laboratory detection limit
DTSC	=	Department of Toxic Substances Control
N/A	=	not applicable
Trace	=	less than 0.01 foot of LPH in well
USTs	=	underground storage tanks
--	=	not analyzed, measured, or collected
TPH-G	=	total petroleum hydrocarbons with gasoline distinction
BTEX	=	benzene, toluene, ethylbenzene, and total xylenes
TPH-D	=	total petroleum hydrocarbons with diesel distinction
TRPH	=	total recoverable petroleum hydrocarbons
MTBE	=	methyl tertiary butyl ether
TAME	=	tertiary amyl methyl ether
ETBE	=	ethyl tertiary butyl ether
DIPE	=	di-isopropyl ether
TBA	=	tertiary butyl alcohol
1,1-DCA	=	1,1-Dichloroethane
1,2-DCA	=	1,2-Dichloroethane
1,1-DCE	=	1,1-Dichloroethene
1,2-DCE	=	cis- and trans-1,2-Dichloroethene
PCE	=	tetrachloroethene
TCA	=	trichloroethane
TCE	=	trichloroethene
PCB	=	polychlorinated biphenyls
TPPH	=	total purgeable petroleum hydrocarbons

### NOTES

Elevations are in feet above mean sea level.

Groundwater elevation for wells with LPH is calculated as follows:

$$\text{Surface elevation} - \text{depth to water} + (0.75 \times \text{LPH thickness}).$$

Concentration Graphs have been modified to plot non-detect results at the reporting limit stated in the official laboratory report. All non-detect results prior to the Second Quarter 2000 were plotted at 0.1 µg/l for graphical display.

J = estimated concentration, value is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL )

### REFERENCE

TRC began groundwater monitoring and sampling activities in October 2003. Historical data for 76 Station 5043 was provided by Gettler-Ryan Inc., Dublin, California, in an excel table received in September 2003.

**Table 1**  
**SUMMARY OF GROUNDWATER LEVELS AND CHEMICAL ANALYSIS RESULTS**  
**October 2, 2003**  
**76 Station 5043**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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</b>		<b>(Screen Interval in feet: 2.5-14.0)</b>												
10/2/03	8.04	3.12	0.00	4.92	-0.47	--	ND<250	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	210	
<b>MW-6</b>		<b>(Screen Interval in feet: 2.5-13.5)</b>												
10/2/03	8.87	3.82	0.00	5.05	-0.27	--	100000	5600	6900	4700	18000	--	ND<800	
<b>MW-7</b>		<b>(Screen Interval in feet: 3.0-13.0)</b>												
10/2/03	8.83	5.46	0.00	3.37	-0.86	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	4.9	
<b>MW-8</b>		<b>(Screen Interval in feet: 3.0-15.0)</b>												
10/2/03	8.52	3.89	0.00	4.63	-0.81	--	540	3.9	15	29	80	--	ND<2.0	
<b>MW-9</b>		<b>(Screen Interval in feet: 3.0-13.0)</b>												
10/2/03	8.29	2.70	0.00	5.59	0.10	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
<b>MW-10</b>		<b>(Screen Interval in feet: 3.0-13.0)</b>												
10/2/03	8.62	4.05	0.00	4.57	0.08	--	77	9.9	0.78	2.3	4.9	--	ND<2.0	

**Table 2**  
**HISTORIC GROUNDWATER LEVELS AND CHEMICAL ANALYSIS RESULTS**  
**February 1992 Through October 2003**

**76 Station 5043**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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 (Screen Interval in feet: DNA)</b>														
2/18/92	8.96	--	--	--	--	150000	--	17000	26000	5200	26000	--	--	
5/20/92	8.96	--	--	--	--	--	--	--	--	--	--	--	--	
8/31/92	8.96	--	--	--	--	64000	--	13000	12000	2500	22000	--	--	
11/30/92	8.96	--	--	--	--	--	--	--	--	--	--	--	--	
2/4/93	8.96	--	--	--	--	--	--	--	--	--	--	--	--	
5/4/93	8.96	2.13	0.10	6.90	--	--	--	--	--	--	--	--	--	
8/4/93	7.38	2.92	0.03	4.48	-2.42	--	--	--	--	--	--	--	--	
11/3/93	7.38	3.04	0.00	4.34	-0.14	--	--	--	--	--	--	--	--	
2/7/94	7.38	2.55	0.03	4.85	0.51	--	--	--	--	--	--	--	--	
5/19/94	7.38	2.23	0.01	5.16	0.31	--	--	--	--	--	--	--	--	
6/25/94	7.38	2.49	0.01	4.90	-0.26	--	--	--	--	--	--	--	--	
7/27/94	7.38	3.10	0.00	4.28	-0.62	--	--	--	--	--	--	--	--	
8/15/94	7.38	2.85	0.11	4.61	0.33	--	--	--	--	--	--	--	--	
11/14/94	7.38	2.97	0.12	4.50	-0.11	--	--	--	--	--	--	--	--	
2/21/95	7.38	1.53	0.02	5.87	1.37	--	--	--	--	--	--	--	--	
<b>MW-2 (Screen Interval in feet: DNA)</b>														
2/18/92	8.96	--	--	--	--	29000	--	1000	5300	260	7900	--	--	
5/20/92	8.96	--	--	--	--	24000	--	2200	7600	630	11000	--	--	
8/31/92	8.96	--	--	--	--	9000	--	1800	640	140	2000	--	--	
11/30/92	8.96	--	--	--	--	29000	--	2000	3400	1200	6900	--	--	
2/4/93	8.96	--	--	--	--	18000	--	1600	3000	ND	6900	--	--	
5/4/93	8.96	2.48	0.00	6.48	--	63000	--	3200	17000	470	17000	--	--	
8/4/93	8.58	3.20	0.00	5.38	-1.10	45000	--	2100	6600	1400	12000	--	--	
11/3/93	8.58	3.37	0.00	5.21	-0.17	72000	--	3700	16000	3700	20000	--	--	
2/7/94	8.58	2.40	0.00	6.18	0.97	--	--	--	--	--	--	--	--	



Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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>														
5/19/94	8.58	2.13	0.00	6.45	0.27	42000	--	2500	1300	2300	13000	--	--	
6/25/94	8.58	2.65	0.00	5.93	-0.52	--	--	--	--	--	--	--	--	
7/27/94	8.58	3.44	0.00	5.14	-0.79	--	--	--	--	--	--	--	--	
8/15/94	8.58	3.25	0.00	5.33	0.19	35000	--	2400	850	1700	15000	--	--	
11/14/94	8.58	2.13	0.00	6.45	1.12	43000	--	2200	6500	1800	14000	--	--	
2/21/95	8.58	1.65	0.00	6.93	0.48	44000	--	2200	3200	1300	1500	--	--	
<b>MW-3 (Screen Interval in feet: 2.5-14.0)</b>														
2/18/92	7.84	--	--	--	--	230	--	4.8	22	1.8	33	--	--	
5/20/92	7.84	--	--	--	--	--	--	--	--	--	--	--	--	
8/31/92	7.84	--	--	--	--	210	--	1	ND	ND	ND	--	--	
11/30/92	7.84	--	--	--	--	790	--	ND	ND	ND	ND	--	--	
2/4/93	7.84	--	--	--	--	3300	--	320	ND	96	6.1	--	--	
5/4/93	7.84	4.32	0.00	3.52	--	1800	--	95	ND	ND	ND	--	--	
8/4/93	7.84	4.94	0.00	2.90	-0.62	210	--	ND	ND	ND	ND	--	--	
11/3/93	7.42	4.53	0.00	2.89	-0.01	640	--	ND	ND	ND	ND	--	--	
2/7/94	7.42	2.40	0.00	5.02	2.13	2700	--	110	ND	17	ND	--	--	
5/19/94	7.42	3.60	0.00	3.82	-1.20	1800	--	83	ND	6.2	9.1	--	--	
6/25/94	7.42	4.58	0.00	2.84	-0.98	--	--	--	--	--	--	--	--	
7/27/94	7.42	4.58	0.00	2.84	0.00	--	--	--	--	--	--	--	--	
8/15/94	7.42	4.65	0.00	2.77	-0.07	130	--	1.1	0.54	ND	0.97	--	--	
11/14/94	7.42	3.18	0.00	4.24	1.47	1600	--	ND	ND	ND	ND	--	--	
2/21/95	7.42	1.81	0.00	5.61	1.37	3800	--	350	ND	130	22	--	--	
5/18/95	7.42	4.56	0.00	2.86	-2.75	1300	--	42	ND	ND	ND	--	--	
8/17/95	7.42	--	--	--	--	--	--	--	--	--	--	--	--	
7/26/96	7.42	--	--	--	--	--	--	--	--	--	--	--	--	
10/28/96	7.42	--	--	--	--	--	--	--	--	--	--	--	--	
1/29/97	7.42	--	--	--	--	--	--	--	--	--	--	--	--	
4/15/97	7.42	--	--	--	--	--	--	--	--	--	--	--	--	
5/27/97	7.42	3.45	0.00	3.97	--	670	--	6.5	ND	ND	ND	--	250	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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>														
6/1/97	7.42	3.50	0.00	3.92	-0.05	--	--	--	--	--	--	--	--	--
7/15/97	8.04	3.71	0.00	4.33	--	240	--	ND	ND	ND	ND	--	490	
10/9/97	8.04	3.70	0.00	4.34	--	270	--	1.1	ND	2.4	1.4	--	910	
1/14/98	8.04	2.16	0.00	5.88	1.54	310	--	ND	ND	0.62	0.65	--	140	
4/1/98	8.04	2.20	0.00	5.84	--	370	--	5.7	ND	ND	ND	--	93	
7/15/98	8.04	3.38	0.00	4.66	--	460	--	ND	ND	ND	ND	--	230	
10/16/98	8.04	2.30	0.00	5.74	--	330	--	4.7	ND	ND	ND	--	60	
1/25/99	8.04	2.42	0.00	5.62	--	420	--	1.5	ND	ND	ND	--	180	
4/15/99	8.04	2.16	0.00	5.88	--	290	--	0.54	ND	ND	ND	--	160	
7/14/99	8.04	2.35	0.00	5.69	--	290	--	3.2	ND	ND	ND	--	160	
10/21/99	8.04	2.49	0.00	5.55	--	360	--	0.77	ND	ND	ND	--	82	
1/20/00	8.04	2.38	0.00	5.66	--	ND	--	0.81	ND	ND	ND	--	54	
4/13/00	8.04	2.76	0.00	5.28	--	250	--	0.69	ND	ND	ND	--	150	
7/14/00	8.04	3.26	0.00	4.78	--	345	--	ND	ND	ND	ND	--	94.7	
1/3/01	8.04	3.65	0.00	4.39	--	364	--	1.59	ND	ND	ND	--	118	
4/4/01	8.04	--	--	--	--	417	--	1.24	ND	ND	0.802	--	237	
7/17/01	8.04	--	--	--	--	480	--	ND	ND	ND	ND	--	150	
10/1/01	8.04	--	--	--	--	310	--	1.0	ND<0.50	ND<0.50	ND<0.50	--	53	
1/31/02	8.04	--	--	--	--	250	--	3.5	ND<1	ND<1	ND<1	--	110	
4/18/02	8.04	3.55	0.00	4.49	--	300	--	ND<2	ND<2	ND<2	ND<2	--	59	
7/28/02	8.04	2.55	0.00	5.49	1.00	500	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	130	
10/9/02	8.04	2.47	0.00	5.57	0.08	690	--	ND<5	ND<5	ND<5	ND<10	--	120	
1/2/03	8.04	1.70	0.00	6.34	0.77	310	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	110	
4/1/03	8.04	3.48	0.00	4.56	--	250	--	ND<1	ND<1	ND<1	ND<2	--	210	
7/1/03	8.04	2.65	0.00	5.39	0.83	450	--	ND<2.5	ND<2.5	ND<2.5	ND<5	--	70	
10/2/03	8.04	3.12	0.00	4.92	-0.47	--	ND<250	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	210	
<b>MW-4 (Screen Interval in feet: DNA)</b>														
8/31/92	9.00	--	--	--	--	240	--	ND	ND	ND	0.54	--	--	
11/30/92	9.00	--	--	--	--	420	--	ND	ND	ND	ND	--	--	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-4 continued</b>														
2/4/93	9.00	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
5/4/93	9.00	4.09	0.00	4.91	--	110	--	0.95	ND	ND	ND	--	--	
8/4/93	9.00	5.01	0.00	3.99	-0.92	250	--	ND	3.5	ND	4.1	--	--	
11/3/93	8.41	4.23	0.00	4.18	0.19	130	--	ND	ND	ND	ND	--	--	
2/7/94	8.41	3.35	0.00	5.06	0.88	56	--	ND	ND	ND	ND	--	--	
5/19/94	8.41	3.92	0.00	4.49	-0.57	140	--	ND	ND	ND	ND	--	--	
6/25/94	8.41	4.35	0.00	4.06	-0.43	--	--	--	--	--	--	--	--	
7/27/94	8.41	4.28	0.00	4.13	0.07	--	--	--	--	--	--	--	--	
8/15/94	8.41	4.27	0.00	4.14	0.01	59	--	ND	0.6	ND	ND	--	--	
11/14/94	8.41	4.05	0.00	4.36	0.22	130	--	ND	ND	ND	ND	--	--	
<b>MW-5 (Screen Interval in feet: DNA)</b>														
8/31/92	8.95	--	--	--	--	78	--	0.89	ND	ND	13	--	--	
11/30/92	8.95	--	--	--	--	930	--	70	290	0.79	14	--	--	
2/4/93	8.95	--	--	--	--	5700	--	38	ND	620	170	--	--	
5/4/93	8.95	4.37	0.00	4.58	--	7400	--	41	ND	1000	35	--	--	
8/4/93	8.95	5.81	0.00	3.14	-1.44	1500	--	130	1	460	11	--	--	
11/3/93	8.95	5.68	0.00	3.27	0.13	13000	--	350	ND	3500	530	--	--	
2/7/94	8.95	5.11	0.00	3.84	0.57	2000	--	87	ND	370	110	--	--	
5/19/94	8.95	5.09	0.00	3.86	0.02	260	--	44	ND	32	4.1	--	--	
6/25/94	8.95	4.55	0.00	4.40	0.54	--	--	--	--	--	--	--	--	
7/27/94	8.95	5.72	0.00	3.23	-1.17	--	--	--	--	--	--	--	--	
8/15/94	8.95	5.68	0.00	3.27	0.04	1600	--	110	ND	340	72	--	--	
11/14/94	8.95	5.63	0.00	3.32	0.05	250	--	40	ND	ND	5	--	--	
<b>MW-6 (Screen Interval in feet: 2.5-13.5)</b>														
8/31/92	9.12	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/30/92	9.12	--	--	--	--	9200	--	550	ND	740	1600	--	--	
2/4/93	9.12	--	--	--	--	3600	--	340	ND	290	550	--	--	
5/4/93	9.12	3.72	0.00	5.40	--	4900	--	360	18	450	430	--	--	
8/4/93	9.12	5.15	0.00	3.97	-1.43	3400	--	390	ND	440	190	--	--	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-6 continued														
11/3/93	8.87	5.25	0.00	3.62	-0.35	1400	--	320	ND	200	7.7	--	--	
2/7/94	8.87	4.55	0.00	4.32	0.70	4900	--	650	ND	250	35	--	--	
5/19/94	8.87	4.62	0.00	4.25	-0.07	3600	--	300	1.7	210	41	--	--	
8/15/94	8.87	5.08	0.00	3.79	--	1300	--	130	6.7	54	57	--	--	
11/14/94	8.87	5.30	0.00	3.57	-0.22	730	--	50	ND	ND	39	--	--	
2/21/95	8.87	5.37	0.00	3.50	-0.07	2000	--	250	4.6	25	30	--	--	
5/18/95	8.87	--	--	--	--	--	--	--	--	--	--	--	--	
8/17/95	8.87	--	--	--	--	--	--	--	--	--	--	--	--	
7/26/96	8.87	6.40	3.33	4.97	--	--	--	--	--	--	--	--	--	
10/28/96	8.87	4.10	0.21	4.93	-0.04	--	--	--	--	--	--	--	--	
11/13/96	8.87	4.02	0.25	5.04	0.11	--	--	--	--	--	--	--	--	
11/25/96	8.87	4.01	0.75	5.42	0.38	--	--	--	--	--	--	--	--	
12/4/96	8.87	3.65	0.50	5.59	0.17	--	--	--	--	--	--	--	--	
12/19/96	8.87	4.80	2.20	5.72	0.13	--	--	--	--	--	--	--	--	
1/8/97	8.87	4.84	1.75	5.34	-0.38	--	--	--	--	--	--	--	--	
1/14/97	8.87	4.51	1.15	5.22	-0.12	--	--	--	--	--	--	--	--	
1/27/97	8.87	4.00	1.75	6.18	0.96	--	--	--	--	--	--	--	--	
1/29/97	8.87	3.24	0.31	5.86	-0.32	--	--	--	--	--	--	--	--	
2/11/97	8.87	4.65	1.20	5.12	-0.74	--	--	--	--	--	--	--	--	
2/24/97	8.87	4.81	1.10	4.89	-0.23	--	--	--	--	--	--	--	--	
3/10/97	8.87	4.60	0.95	4.98	0.10	--	--	--	--	--	--	--	--	
3/17/97	8.87	4.50	0.89	5.04	0.05	--	--	--	--	--	--	--	--	
3/31/97	8.87	4.65	1.00	4.97	-0.07	--	--	--	--	--	--	--	--	
4/15/97	8.87	4.90	1.03	4.74	-0.23	--	--	--	--	--	--	--	--	
4/28/97	8.87	4.78	0.03	4.11	-0.63	--	--	--	--	--	--	--	--	
5/15/97	8.87	4.60	0.25	4.46	0.35	--	--	--	--	--	--	--	--	
5/27/97	8.87	4.50	0.25	4.56	0.10	--	--	--	--	--	--	--	--	
6/9/97	8.87	4.60	0.20	4.42	--	--	--	--	--	--	--	--	--	
6/24/97	8.87	4.50	0.25	4.56	0.14	--	--	--	--	--	--	--	--	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground- water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-6 continued														
7/9/97	8.87	4.80	0.60	4.52	-0.04	--	--	--	--	--	--	--	--	
7/15/97	8.87	4.63	0.42	4.55	0.04	--	--	--	--	--	--	--	--	
7/21/97	8.87	4.75	0.25	4.31	-0.25	--	--	--	--	--	--	--	--	
8/6/97	8.87	4.50	0.10	4.44	0.14	--	--	--	--	--	--	--	--	
8/20/97	8.87	4.55	0.10	4.39	-0.05	--	--	--	--	--	--	--	--	
9/2/97	8.87	4.75	0.05	4.16	-0.24	--	--	--	--	--	--	--	--	
10/9/97	8.87	4.84	0.04	4.06	-0.10	--	--	--	--	--	--	--	--	
1/14/98	8.87	3.90	0.94	5.67	1.61	--	--	--	--	--	--	--	--	
2/12/98	8.87	3.35	0.64	6.00	0.33	--	--	--	--	--	--	--	--	
3/3/98	8.87	4.51	0.02	4.37	-1.63	--	--	--	--	--	--	--	--	
4/1/98	8.87	3.67	1.60	6.40	2.03	--	--	--	--	--	--	--	--	
5/26/98	8.87	4.11	0.50	5.13	-1.26	--	--	--	--	--	--	--	--	
6/15/98	8.87	5.03	0.30	4.06	-1.07	--	--	--	--	--	--	--	--	
7/15/98	8.87	4.56	0.05	4.35	0.28	--	--	--	--	--	--	--	--	
8/21/98	8.87	4.77	0.02	4.11	-0.23	--	--	--	--	--	--	--	--	
9/30/98	8.87	5.08	0.03	3.81	-0.30	--	--	--	--	--	--	--	--	
10/16/98	8.87	4.31	2.40	6.36	2.55	--	--	--	--	--	--	--	--	
11/6/98	8.87	3.98	0.17	5.02	-1.34	--	--	--	--	--	--	--	--	
11/25/98	8.87	3.92	0.10	5.02	0.01	--	--	--	--	--	--	--	--	
12/28/98	8.87	3.90	0.20	5.12	0.10	--	--	--	--	--	--	--	--	
1/25/99	8.87	4.18	0.60	5.14	0.02	--	--	--	--	--	--	--	--	
2/22/99	8.87	4.07	0.22	4.96	-0.18	--	--	--	--	--	--	--	--	
3/22/99	8.87	4.32	0.15	4.66	-0.30	--	--	--	--	--	--	--	--	
4/15/99	8.87	4.23	0.95	5.35	0.69	--	--	--	--	--	--	--	--	
5/28/99	8.87	4.38	0.39	4.78	-0.57	--	--	--	--	--	--	--	--	
6/29/99	8.87	4.12	0.02	4.76	-0.02	--	--	--	--	--	--	--	--	
7/14/99	8.87	4.20	0.03	4.69	-0.07	--	--	--	--	--	--	--	--	
8/23/99	8.87	4.51	0.24	4.54	-0.15	--	--	--	--	--	--	--	--	
9/30/99	8.87	4.17	0.17	4.83	0.29	--	--	--	--	--	--	--	--	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-6 continued</b>														
10/21/99	8.87	4.27	0.12	4.69	-0.14	--	--	--	--	--	--	--	--	
11/29/99	8.87	4.18	0.00	4.69	0.00	--	--	--	--	--	--	--	--	
12/20/99	8.87	4.26	0.01	4.62	-0.07	--	--	--	--	--	--	--	--	
1/20/00	8.87	4.31	0.00	4.56	-0.06	130000	--	2900	8600	2000	16000	--	ND	
2/26/00	8.87	3.98	0.00	4.89	0.33	--	--	--	--	--	--	--	--	
3/31/00	8.87	4.14	0.00	4.73	-0.16	--	--	--	--	--	--	--	--	
4/13/00	8.87	4.04	0.00	4.83	0.10	140000	--	5000	14000	3600	27000	--	7700	
5/26/00	8.87	4.41	0.00	4.46	-0.37	--	--	--	--	--	--	--	--	
6/17/00	8.87	4.35	0.00	4.52	0.06	--	--	--	--	--	--	--	--	
7/14/00	8.87	4.47	0.00	4.40	-0.12	259000	--	7670	13700	6860	40700	--	ND	
8/24/00	8.87	3.71	0.00	5.16	0.76	--	--	--	--	--	--	--	--	
9/27/00	8.87	4.33	0.00	4.54	-0.62	--	--	--	--	--	--	--	--	
10/26/00	8.87	4.32	0.00	4.55	0.01	110000	--	7000	6200	3700	12000	--	43	
1/3/01	8.87	4.52	0.00	4.35	-0.20	84700	--	3950	4130	3650	11800	--	ND	
4/4/01	8.87	--	--	--	--	69800	--	2060	2840	3650	10900	--	47.8	
7/17/01	8.87	--	--	--	--	100000	--	3200	3300	3400	12000	--	ND	
10/1/01	8.87	--	--	--	--	110000	--	3200	2400	4500	13000	--	ND<1000	
1/31/02	8.87	--	--	--	--	230000	--	2400	1800	5400	16000	--	ND<2500	
4/18/02	8.87	3.45	0.00	5.42	--	94000	--	6800	13000	3000	19000	--	ND<500	
7/28/02	8.87	2.24	0.00	6.63	1.21	110000	--	530	170	3200	7300	--	ND<100	
10/9/02	8.87	3.53	0.00	5.34	-1.29	970000	--	10000	39000	13000	94000	--	ND<2000	
1/2/03	8.87	2.34	0.00	6.53	1.19	270000	--	6100	15000	5400	37000	--	ND<200	
4/1/03	8.87	3.17	0.00	5.70	--	3000000	--	8000	39000	37000	260000	--	ND<2000	
7/1/03	8.87	3.55	0.00	5.32	-0.38	38000	--	2100	990	2700	6500	--	ND<100	
10/2/03	8.87	3.82	0.00	5.05	-0.27	--	100000	5600	6900	4700	18000	--	ND<500	
<b>MW-7 (Screen Interval in feet: 3.0-13.0)</b>														
5/27/97	8.83	4.50	0.00	4.33	--	68	--	ND	ND	ND	ND	--	ND	
6/1/97	8.83	4.54	0.00	4.29	-0.04	--	--	--	--	--	--	--	--	
7/15/97	8.83	4.70	0.00	4.13	--	ND	--	ND	ND	ND	ND	--	ND	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-7 continued</b>														
10/9/97	8.83	4.30	0.00	4.53	--	ND	--	ND	ND	ND	ND	--	ND	
1/14/98	8.83	2.88	0.00	5.95	1.42	ND	--	ND	ND	ND	ND	--	36	
4/1/98	8.83	3.13	0.00	5.70	--	ND	--	ND	ND	ND	ND	--	ND	
7/15/98	8.83	4.45	0.00	4.38	--	ND	--	ND	ND	ND	ND	--	ND	
10/16/98	8.83	3.45	0.00	5.38	--	ND	--	ND	ND	ND	ND	--	ND	
1/25/99	8.83	3.22	0.00	5.61	--	ND	--	ND	ND	ND	ND	--	ND	
4/15/99	8.83	3.11	0.00	5.72	--	ND	--	ND	ND	ND	ND	--	ND	
7/14/99	8.83	3.34	0.00	5.49	--	ND	--	ND	ND	ND	ND	--	ND	
10/21/99	8.83	3.43	0.00	5.40	--	ND	--	ND	ND	ND	ND	--	ND	
1/20/00	8.83	3.29	0.00	5.54	--	ND	--	ND	ND	ND	ND	--	4.2	
4/13/00	8.83	3.39	0.00	5.44	--	ND	--	ND	ND	ND	ND	--	ND	
7/14/00	8.83	4.42	0.00	4.41	--	ND	--	ND	ND	ND	ND	--	7.83	
7/17/01	8.83	5.06	0.00	3.77	--	ND	--	ND	ND	ND	ND	--	ND	
10/1/01	8.83	4.98	0.00	3.85	0.08	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<5	
1/31/02	8.83	3.88	0.00	4.95	1.10	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<2.5	
4/18/02	8.83	4.03	0.00	4.80	-0.15	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	5.7	
7/28/02	8.83	3.59	0.00	5.24	0.44	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	3.9	
10/9/02	8.83	4.53	0.00	4.30	-0.94	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	3.9	
1/3/03	8.83	3.36	0.00	5.47	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
4/1/03	8.83	3.94	0.00	4.89	-0.58	71	--	ND<0.50	ND<0.50	0.71	ND<1	--	3.4	
7/1/03	8.83	4.60	0.00	4.23	-0.66	64	--	ND<0.50	ND<0.50	0.77	2.0	--	35	
10/2/03	8.83	5.46	0.00	3.37	-0.86	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	4.9	
<b>MW-8 (Screen Interval in feet: 3.0-15.0)</b>														
5/27/97	8.52	3.42	0.00	5.10	--	310	--	0.88	0.67	15	70	--	ND	
6/1/97	8.52	3.46	0.00	5.06	-0.04	--	--	--	--	--	--	--	--	
7/15/97	8.52	3.49	0.00	5.03	--	ND	--	ND	ND	2.7	3.8	--	ND	
10/9/97	8.52	3.73	0.00	4.79	--	590	--	1.4	ND	32	4.1	--	ND	
1/14/98	8.52	1.92	0.00	6.60	1.81	ND	--	ND	ND	ND	ND	--	ND	
4/1/98	8.52	2.38	0.00	6.14	--	ND	--	ND	ND	ND	ND	--	4.7	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-8 continued</b>														
7/15/98	8.52	3.53	0.00	4.99	--	ND	--	ND	ND	0.56	1.1	--	ND	
10/16/98	8.52	3.04	0.00	5.48	--	ND	--	ND	ND	ND	ND	--	ND	
1/25/99	8.52	2.92	0.00	5.60	--	ND	--	ND	ND	ND	ND	--	ND	
4/15/99	8.52	2.40	0.00	6.12	--	ND	--	ND	ND	ND	ND	--	ND	
7/14/99	8.52	3.03	0.00	5.49	--	ND	--	ND	ND	ND	ND	--	ND	
10/21/99	8.52	3.11	0.00	5.41	--	ND	--	ND	ND	ND	ND	--	ND	
1/20/00	8.52	3.06	0.00	5.46	--	ND	--	ND	ND	ND	ND	--	ND	
4/13/00	8.52	2.84	0.00	5.68	--	ND	--	ND	ND	ND	ND	--	ND	
7/14/00	8.52	3.39	0.00	5.13	--	ND	--	ND	ND	ND	ND	--	ND	
7/17/01	8.52	3.46	0.00	5.06	--	ND	--	ND	ND	ND	ND	--	ND	
10/1/01	8.52	3.51	0.00	5.01	-0.05	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<5	
1/31/02	8.52	2.75	0.00	5.77	0.76	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<2.5	
4/18/02	8.52	2.98	0.00	5.54	-0.23	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<2.5	
7/28/02	8.52	2.41	0.00	6.11	0.57	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
10/9/02	8.52	2.09	0.00	6.43	0.32	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
1/2/03	8.52	1.98	0.00	6.54	0.11	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
4/1/03	8.52	2.66	0.00	5.86	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
7/1/03	8.52	3.08	0.00	5.44	-0.42	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
10/2/03	8.52	3.89	0.00	4.63	-0.81	--	540	3.9	15	29	80	--	ND<2.0	
<b>MW-9 (Screen Interval in feet: 3.0-13.0)</b>														
2/21/95	8.29	1.98	0.00	6.31	--	70	--	ND	ND	ND	ND	--	--	
5/18/95	8.29	3.47	0.00	4.82	-1.49	52	--	ND	1.1	ND	1.9	--	--	
8/17/95	8.29	1.49	0.00	6.80	1.98	ND	--	ND	ND	ND	ND	--	--	
7/26/96	8.29	0.28	0.00	8.01	1.21	ND	--	ND	ND	ND	ND	--	ND	
10/28/96	8.29	1.15	0.00	7.14	-0.87	ND	--	ND	ND	ND	ND	--	7.6	
1/29/97	8.29	1.05	0.00	7.24	--	ND	--	ND	ND	ND	ND	--	5.4	
4/15/97	8.29	1.88	0.00	6.41	--	ND	--	ND	ND	ND	ND	--	5.4	
5/27/97	8.29	1.05	0.00	7.24	--	--	--	--	--	--	--	--	--	
7/15/97	8.29	1.90	0.00	6.39	--	ND	--	ND	ND	ND	ND	--	ND	



Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground- water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-9 continued</b>														
10/9/97	8.29	1.76	0.00	6.53	--	ND	--	ND	ND	ND	ND	--	ND	
1/14/98	8.29	1.26	0.00	7.03	0.50	ND	--	ND	ND	ND	ND	--	3	
4/1/98	8.29	0.85	0.00	7.44	--	ND	--	ND	ND	ND	ND	--	ND	
7/15/98	8.29	1.52	0.00	6.77	--	ND	--	ND	ND	ND	ND	--	ND	
10/16/98	8.29	0.81	0.00	7.48	--	ND	--	ND	ND	ND	ND	--	ND	
1/25/99	8.29	0.92	0.00	7.37	--	ND	--	ND	ND	ND	ND	--	ND	
4/15/99	8.29	0.90	0.00	7.39	--	75	--	21	ND	ND	1.1	--	680	
7/14/99	8.29	1.04	0.00	7.25	--	ND	--	1.9	ND	ND	ND	--	260	
10/21/99	8.29	1.23	0.00	7.06	--	ND	--	ND	ND	ND	ND	--	170	
1/20/00	8.29	1.18	0.00	7.11	--	ND	--	1.1	ND	ND	ND	--	35	
4/13/00	8.29	1.08	0.00	7.21	--	160	--	0.64	ND	ND	ND	--	53	
7/14/00	8.29	1.43	0.00	6.86	--	ND	--	ND	ND	ND	ND	--	20.2	
10/26/00	8.29	1.38	0.00	6.91	--	240	--	2.9	ND	ND	ND	--	56	
1/3/01	8.29	1.66	0.00	6.63	-0.28	166	--	0.763	0.776	ND	1.28	--	50.2	
4/4/01	8.29	--	--	--	--	296	--	0.738	ND	ND	0.907	--	135	
7/17/01	8.29	--	--	--	--	ND	--	ND	ND	ND	ND	--	13	
10/1/01	8.29	--	--	--	--	51	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	5.0	
1/31/02	8.29	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	5.8	
4/18/02	8.29	1.76	0.00	6.53	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	5.1	
7/28/02	8.29	1.57	0.00	6.72	0.19	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	3.5	
10/9/02	8.29	1.45	0.00	6.84	0.12	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	17	
1/2/03	8.29	1.18	0.00	7.11	0.27	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	8.6	
4/1/03	8.29	2.04	0.00	6.25	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	9.4	
7/1/03	8.29	2.80	0.00	5.49	-0.76	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	3.2	
10/2/03	8.29	2.70	0.00	5.59	0.10	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
<b>MW-10 (Screen Interval in feet: 3.0-13.0)</b>														
2/21/95	8.62	4.69	0.00	3.93	--	1500	--	250	26	9.1	160	--	--	
5/18/95	8.62	4.92	0.00	3.70	-0.23	810	--	520	ND	18	23	--	--	
8/17/95	8.62	4.05	0.00	4.57	0.87	67	--	25	ND	2.4	ND	--	--	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-10 continued														
7/26/96	8.62	4.08	0.00	4.54	-0.03	ND	--	3.7	ND	ND	ND	--	ND	
10/28/96	8.62	4.09	0.00	4.53	-0.01	ND	--	1.1	ND	ND	ND	--	ND	
1/29/97	8.62	2.94	0.00	5.68	--	210	--	41	0.67	7.2	4.8	--	11	
4/15/97	8.62	4.07	0.00	4.55	--	110	--	12	ND	0.77	ND	--	9.7	
5/27/97	8.62	4.40	0.00	4.22	--	--	--	--	--	--	--	--	--	
7/15/97	8.62	4.19	0.00	4.43	--	ND	--	2.1	ND	0.67	0.73	--	ND	
10/9/97	8.62	4.75	0.00	3.87	--	190	--	38	0.92	6.6	7.6	--	ND	
1/14/98	8.62	2.66	0.00	5.96	2.09	59	--	9.5	0.85	1.2	1.7	--	4.5	
4/1/98	8.62	3.45	0.00	5.17	--	230	--	66	1.7	12	17	--	6.4	
7/15/98	8.62	4.21	0.00	4.41	--	290	--	98	45	21	38	--	21	
10/16/98	8.62	4.11	0.00	4.51	--	160	--	44	0.96	2.5	10	--	17	
1/25/99	8.62	3.26	0.00	5.36	--	140	--	27	ND	2.8	6.8	--	23	
4/15/99	8.62	3.63	0.00	4.99	--	120	--	18	ND	1.8	5.1	--	14	
7/14/99	8.62	3.89	0.00	4.73	--	280	--	55	3.2	11	31	--	6.1	
10/21/99	8.62	4.09	0.00	4.53	--	140	--	22	0.59	1.7	7.7	--	5.3	
1/20/00	8.62	3.92	0.00	4.70	--	ND	--	0.73	0.86	ND	ND	--	5.2	
4/13/00	8.62	3.85	0.00	4.77	--	67	--	54	ND	2.6	ND	--	3.8	
7/14/00	8.62	4.18	0.00	4.44	--	ND	--	0.547	ND	ND	ND	--	ND	
10/26/00	8.62	3.96	0.00	4.66	--	ND	--	3.3	ND	0.83	1.5	--	ND	
1/3/01	8.62	4.14	0.00	4.48	-0.18	52.7	--	5.15	ND	0.823	1.57	--	ND	
4/4/01	8.62	--	--	--	--	129	--	28.1	1.67	4.97	10.1	--	ND	
7/17/01	8.62	--	--	--	--	ND	--	4.1	ND	1.0	1.8	--	ND	
10/1/01	8.62	--	--	--	--	140	--	30	0.51	4.0	12	--	ND<5	
1/31/02	8.62	--	--	--	--	110	--	16	ND<0.50	2.3	5.6	--	ND<2.5	
4/18/02	8.62	4.01	0.00	4.61	--	ND<50	--	11	ND<0.50	1.4	4.5	--	ND<2.5	
7/28/02	8.62	4.11	0.00	4.51	-0.10	67	--	15	ND<0.50	0.94	7.3	--	ND<2	
10/9/02	8.62	3.97	0.00	4.65	0.14	ND<50	--	0.67	ND<0.50	ND<0.50	ND<1	--	ND<2	
1/2/03	8.62	3.03	0.00	5.59	0.94	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
4/1/03	8.62	3.83	0.00	4.79	--	ND<50	--	11	ND<0.50	ND<0.50	ND<1	--	ND<2	

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (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-10	continued													
7/1/03	8.62	4.13	0.00	4.49	-0.30	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
10/2/03	8.62	4.05	0.00	4.57	0.08	--	77	9.9	0.78	2.3	4.9	--	ND<2.0	
<b>Trip Blank</b>	<b>(Screen Interval in feet: DNA)</b>													
1/14/98	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
4/1/98	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
7/15/98	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
10/16/98	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
1/25/99	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
4/15/99	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
7/14/99	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
10/21/99	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
1/20/00	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
4/13/00	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
7/14/00	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
10/26/00	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
1/3/01	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
4/4/01	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	ND	
10/1/01	--	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<5	
1/31/02	--	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<2.5	
4/18/02	--	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<2.5	
7/28/02	--	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
10/9/02	--	--	--	--	--	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	
1/2/03	--	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
4/1/03	--	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	
7/1/03	--	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1	--	ND<2	

**Table 3**  
**SUMMARY OF ADDITIONAL CHEMICAL ANALYSIS RESULTS**  
**76 Station 5043**

Date Sampled	TPH-D	EDB	TAME 8260B	TBA 8260B	DIPE 8260B	ETBE 8260B	Ethanol 8260B	1,2 DCE
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
<b>MW-1</b>								
2/18/92	13000	--	--	--	--	--	--	--
8/31/92	8900	--	--	--	--	--	--	--
<b>MW-2</b>								
2/18/92	4300	--	--	--	--	--	--	--
5/20/92	4300	--	--	--	--	--	--	--
8/31/92	1600	--	--	--	--	--	--	--
11/30/92	5700	--	--	--	--	--	--	--
2/4/93	6100	--	--	--	--	--	--	--
5/4/93	7100	--	--	--	--	--	--	--
8/4/93	1800	--	--	--	--	--	--	--
11/3/93	2600	--	--	--	--	--	--	--
5/19/94	3000	--	--	--	--	--	--	--
8/15/94	2800	--	--	--	--	--	--	--
11/14/94	10000	--	--	--	--	--	--	--
2/21/95	2000	--	--	--	--	--	--	--
<b>MW-3</b>								
2/18/92	ND	--	--	--	--	--	--	--
8/31/92	92	--	--	--	--	--	--	--
11/30/92	94	--	--	--	--	--	--	--
2/4/93	550	--	--	--	--	--	--	--
5/4/93	250	--	--	--	--	--	--	--
8/4/93	100	--	--	--	--	--	--	--
11/3/93	160	--	--	--	--	--	--	--
2/7/94	620	--	--	--	--	--	--	--
5/19/94	480	--	--	--	--	--	--	--
8/15/94	110	--	--	--	--	--	--	--

Date Sampled	TPH-D (µg/l)	EDB (µg/l)	TAME 8260B (µg/l)	TBA 8260B (µg/l)	DIPE 8260B (µg/l)	ETBE 8260B (µg/l)	Ethanol 8260B (µg/l)	1,2 DCE (µg/l)
<b>MW-3 continued</b>								
11/14/94	150	--	--	--	--	--	--	--
2/21/95	850	--	--	--	--	--	--	--
5/18/95	150	--	--	--	--	--	--	--
6/1/97	610	--	--	--	--	--	--	--
7/15/97	240	--	--	--	--	--	--	--
10/9/97	500	--	--	--	--	--	--	--
1/14/98	340	--	--	--	--	--	--	--
4/1/98	320	--	--	--	--	--	--	--
7/15/98	510	--	--	--	--	--	--	--
10/16/98	67	--	--	--	--	--	--	--
1/25/99	120	--	--	--	--	--	--	--
4/15/99	170	--	--	--	--	--	--	--
7/14/99	420	--	--	--	--	--	--	--
10/21/99	350	--	--	--	--	--	--	--
1/20/00	2060	--	--	--	--	--	--	--
4/13/00	200	ND	ND	ND	ND	ND	ND	ND
7/14/00	423	--	--	--	--	--	--	--
1/3/01	287	--	--	--	--	--	--	--
4/4/01	360	--	--	--	--	--	--	--
7/17/01	270	--	--	--	--	--	--	--
10/1/01	270	--	--	--	--	--	--	--
1/31/02	250	--	--	--	--	--	--	--
4/18/02	320	--	--	--	--	--	--	--
7/28/02	310	--	--	--	--	--	--	--
10/9/02	700	--	--	--	--	--	--	--
1/2/03	210	ND<2	ND<2	ND<100	ND<2	ND<2	ND<500	ND<2
4/1/03	200	--	--	--	--	--	--	--
7/1/03	380	--	--	--	--	--	ND<2500	--
10/2/03	300	--	--	--	--	--	ND<2500	--

Date Sampled	TPH-D	EDB	TAME 8260B	TBA 8260B	DIPE 8260B	ETBE 8260B	Ethanol 8260B	1,2 DCE
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
<b>MW-4</b>								
8/31/92	90	--	--	--	--	--	--	--
11/30/92	61	--	--	--	--	--	--	--
2/4/93	ND	--	--	--	--	--	--	--
5/4/93	ND	--	--	--	--	--	--	--
8/4/93	81	--	--	--	--	--	--	--
11/3/93	68	--	--	--	--	--	--	--
2/7/94	ND	--	--	--	--	--	--	--
5/19/94	90	--	--	--	--	--	--	--
8/15/94	72	--	--	--	--	--	--	--
11/14/94	ND	--	--	--	--	--	--	--
<b>MW-5</b>								
8/31/92	690	--	--	--	--	--	--	--
11/30/92	470	--	--	--	--	--	--	--
2/4/93	5500	--	--	--	--	--	--	--
5/4/93	4600	--	--	--	--	--	--	--
8/4/93	970	--	--	--	--	--	--	--
11/3/93	2100	--	--	--	--	--	--	--
2/7/94	830	--	--	--	--	--	--	--
5/19/94	600	--	--	--	--	--	--	--
8/15/94	860	--	--	--	--	--	--	--
11/14/94	290	--	--	--	--	--	--	--
<b>MW-6</b>								
8/31/92	750	--	--	--	--	--	--	--
11/30/92	1400	--	--	--	--	--	--	--
2/4/93	890	--	--	--	--	--	--	--
5/4/93	1800	--	--	--	--	--	--	--
8/4/93	1100	--	--	--	--	--	--	--
11/3/93	390	--	--	--	--	--	--	--
2/7/94	970	--	--	--	--	--	--	--

Date Sampled	TPH-D	EDB	TAME 8260B	TBA 8260B	DIPE 8260B	ETBE 8260B	Ethanol 8260B	1,2 DCE
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)

**MW-6 continued**

5/19/94	1400	--	--	--	--	--	--	--
8/15/94	790	--	--	--	--	--	--	--
11/14/94	800	--	--	--	--	--	--	--
2/21/95	730	--	--	--	--	--	--	--
1/20/00	67600	--	--	--	--	--	--	--
4/13/00	8700	--	--	--	--	--	--	--
7/14/00	133000	--	--	--	--	--	--	--
10/26/00	61000	--	--	--	--	--	--	--
1/3/01	929	--	--	--	--	--	--	--
4/4/01	18000	ND	ND	ND	ND	ND	ND	ND
7/17/01	20000	--	--	--	--	--	--	--
10/1/01	24000	--	--	--	--	--	--	--
1/31/02	11000	--	--	--	--	--	--	--
4/18/02	3500	--	--	--	--	--	--	--
7/28/02	27000	--	--	--	--	--	--	--
10/9/02	170000	--	--	--	--	--	--	--
1/2/03	66000	--	--	--	--	--	--	--
4/1/03	35000	--	--	--	--	--	--	--
7/1/03	11000	--	--	--	--	--	ND<25000	--
10/2/03	ND<50	--	--	--	--	--	ND<200000	--

**MW-7**

6/1/97	69	--	--	--	--	--	--	--
7/15/97	ND	--	--	--	--	--	--	--
10/9/97	190	--	--	--	--	--	--	--
1/14/98	65	--	--	--	--	--	--	--
4/1/98	ND	--	--	--	--	--	--	--
7/15/98	74	--	--	--	--	--	--	--
10/16/98	ND	--	--	--	--	--	--	--
1/25/99	ND	--	--	--	--	--	--	--

Date Sampled	TPH-D (µg/l)	EDB (µg/l)	TAME 8260B (µg/l)	TBA 8260B (µg/l)	DIPE 8260B (µg/l)	ETBE 8260B (µg/l)	Ethanol 8260B (µg/l)	1,2 DCE (µg/l)
<b>MW-7 continued</b>								
4/15/99	ND	--	--	--	--	--	--	--
7/14/99	69	--	--	--	--	--	--	--
10/21/99	ND	--	--	--	--	--	--	--
1/20/00	ND	--	--	--	--	--	--	--
4/13/00	ND	--	--	--	--	--	--	--
7/14/00	68	--	--	--	--	--	--	--
7/17/01	ND	--	--	--	--	--	--	--
10/1/01	ND<51	--	--	--	--	--	--	--
1/31/02	90	--	--	--	--	--	--	--
4/18/02	78	--	--	--	--	--	--	--
7/28/02	ND<50	--	--	--	--	--	--	--
10/9/02	ND<96	--	--	--	--	--	--	--
1/3/03	78	--	--	--	--	--	--	--
4/1/03	67	--	--	--	--	--	--	--
7/1/03	68	--	--	--	--	--	ND<500	--
10/2/03	82	--	--	--	--	--	ND<500	--
<b>MW-8</b>								
5/27/97	320	--	--	--	--	--	--	--
6/1/97	320	--	--	--	--	--	--	--
7/15/97	ND	--	--	--	--	--	--	--
10/9/97	390	--	--	--	--	--	--	--
1/14/98	230	--	--	--	--	--	--	--
4/1/98	510	--	--	--	--	--	--	--
7/15/98	140	--	--	--	--	--	--	--
10/16/98	170	--	--	--	--	--	--	--
1/25/99	ND	--	--	--	--	--	--	--
4/15/99	91	--	--	--	--	--	--	--
7/14/99	120	--	--	--	--	--	--	--
10/21/99	110	--	--	--	--	--	--	--

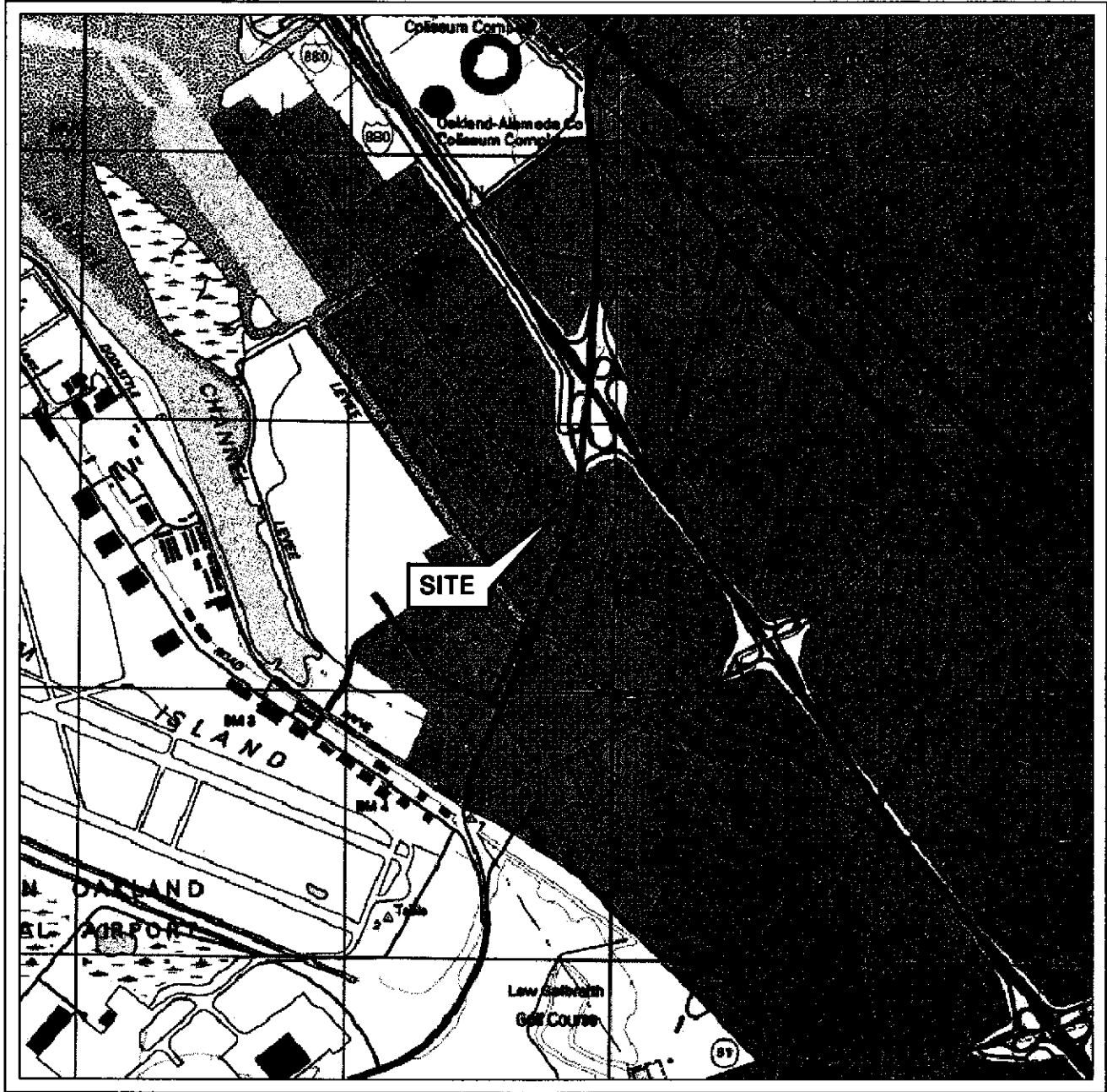


Date Sampled	TPH-D (µg/l)	EDB (µg/l)	TAME 8260B (µg/l)	TBA 8260B (µg/l)	DIPE 8260B (µg/l)	ETBE 8260B (µg/l)	Ethanol 8260B (µg/l)	1,2 DCE (µg/l)
<b>MW-8 continued</b>								
1/20/00	583	--	--	--	--	--	--	--
4/13/00	80	--	--	--	--	--	--	--
7/14/00	113	--	--	--	--	--	--	--
7/17/01	ND	--	--	--	--	--	--	--
10/1/01	ND<50	--	--	--	--	--	--	--
1/31/02	260	--	--	--	--	--	--	--
4/18/02	160	--	--	--	--	--	--	--
7/28/02	140	--	--	--	--	--	--	--
10/9/02	120	--	--	--	--	--	--	--
1/2/03	210	--	--	--	--	--	--	--
4/1/03	220	--	--	--	--	--	--	--
7/1/03	170	--	--	--	--	--	ND<500	--
10/2/03	350	--	--	--	--	--	ND<500	--
<b>MW-9</b>								
2/21/95	71	--	--	--	--	--	--	--
5/18/95	ND	--	--	--	--	--	--	--
8/17/95	ND	--	--	--	--	--	--	--
7/26/96	98	--	--	--	--	--	--	--
10/28/96	99	--	--	--	--	--	--	--
1/29/97	54	--	--	--	--	--	--	--
4/15/97	94	--	--	--	--	--	--	--
7/15/97	ND	--	--	--	--	--	--	--
10/9/97	160	--	--	--	--	--	--	--
1/14/98	110	--	--	--	--	--	--	--
4/1/98	110	--	--	--	--	--	--	--
7/15/98	200	--	--	--	--	--	--	--
10/16/98	ND	--	--	--	--	--	--	--
1/25/99	ND	--	--	--	--	--	--	--
4/15/99	ND	--	--	--	--	--	--	--

Date Sampled	TPH-D	EDB	TAME 8260B	TBA 8260B	DIPE 8260B	ETBE 8260B	Ethanol 8260B	1,2 DCE
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
<b>MW-9 continued</b>								
7/14/99	140	--	--	--	--	--	--	--
10/21/99	210	--	--	--	--	--	--	--
1/20/00	519	--	--	--	--	--	--	--
4/13/00	81	--	--	--	--	--	--	--
7/14/00	107	--	--	--	--	--	--	--
10/26/00	240	--	--	--	--	--	--	--
1/3/01	164	--	--	--	--	--	--	--
4/4/01	240	--	--	--	--	--	--	--
7/17/01	ND	--	--	--	--	--	--	--
10/1/01	ND<52	--	--	--	--	--	--	--
1/31/02	200	--	--	--	--	--	--	--
4/18/02	ND<50	--	--	--	--	--	--	--
7/28/02	ND<50	--	--	--	--	--	--	--
10/9/02	100	--	--	--	--	--	--	--
1/2/03	ND<50	--	--	--	--	--	--	--
4/1/03	56	--	--	--	--	--	--	--
7/1/03	ND<50	--	--	--	--	--	ND<500	--
10/2/03	ND<50	--	--	--	--	--	ND<500	--
<b>MW-10</b>								
2/21/95	270	--	--	--	--	--	--	--
5/18/95	75	--	--	--	--	--	--	--
8/17/95	ND	--	--	--	--	--	--	--
7/26/96	ND	--	--	--	--	--	--	--
10/28/96	ND	--	--	--	--	--	--	--
1/29/97	ND	--	--	--	--	--	--	--
4/15/97	ND	--	--	--	--	--	--	--
7/15/97	ND	--	--	--	--	--	--	--
10/9/97	ND	--	--	--	--	--	--	--
4/1/98	62	--	--	--	--	--	--	--

Date Sampled	TPH-D (µg/l)	EDB (µg/l)	TAME 8260B (µg/l)	TBA 8260B (µg/l)	DIPE 8260B (µg/l)	ETBE 8260B (µg/l)	Ethanol 8260B (µg/l)	1,2 DCE (µg/l)
MW-10	continued							
7/15/98	78	--	--	--	--	--	--	--
10/16/98	ND	--	--	--	--	--	--	--
1/25/99	ND	--	--	--	--	--	--	--
4/15/99	ND	--	--	--	--	--	--	--
7/14/99	180	--	--	--	--	--	--	--
10/21/99	96	--	--	--	--	--	--	--
1/20/00	252	--	--	--	--	--	--	--
4/13/00	69	--	--	--	--	--	--	--
7/14/00	149	--	--	--	--	--	--	--
10/26/00	83	--	--	--	--	--	--	--
1/3/01	126	--	--	--	--	--	--	--
4/4/01	75	--	--	--	--	--	--	--
7/17/01	ND	--	--	--	--	--	--	--
10/1/01	100	--	--	--	--	--	--	--
1/31/02	170	--	--	--	--	--	--	--
4/18/02	130	--	--	--	--	--	--	--
7/28/02	58	--	--	--	--	--	--	--
10/9/02	ND<94	--	--	--	--	--	--	--
1/2/03	64	--	--	--	--	--	--	--
4/1/03	76	--	--	--	--	--	--	--
7/1/03	87	--	--	--	--	--	ND<500	--
10/2/03	160	--	--	--	--	--	ND<500	--

# FIGURES



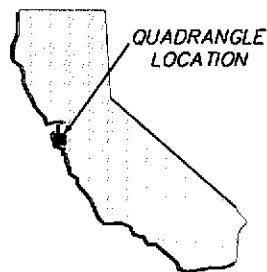
0 1/4 1/2 3/4 1 MILE

SCALE 1: 24,000



SOURCE:

United States Geological Survey  
7.5 Minute Topographic Maps:  
San Leandro Quadrangle



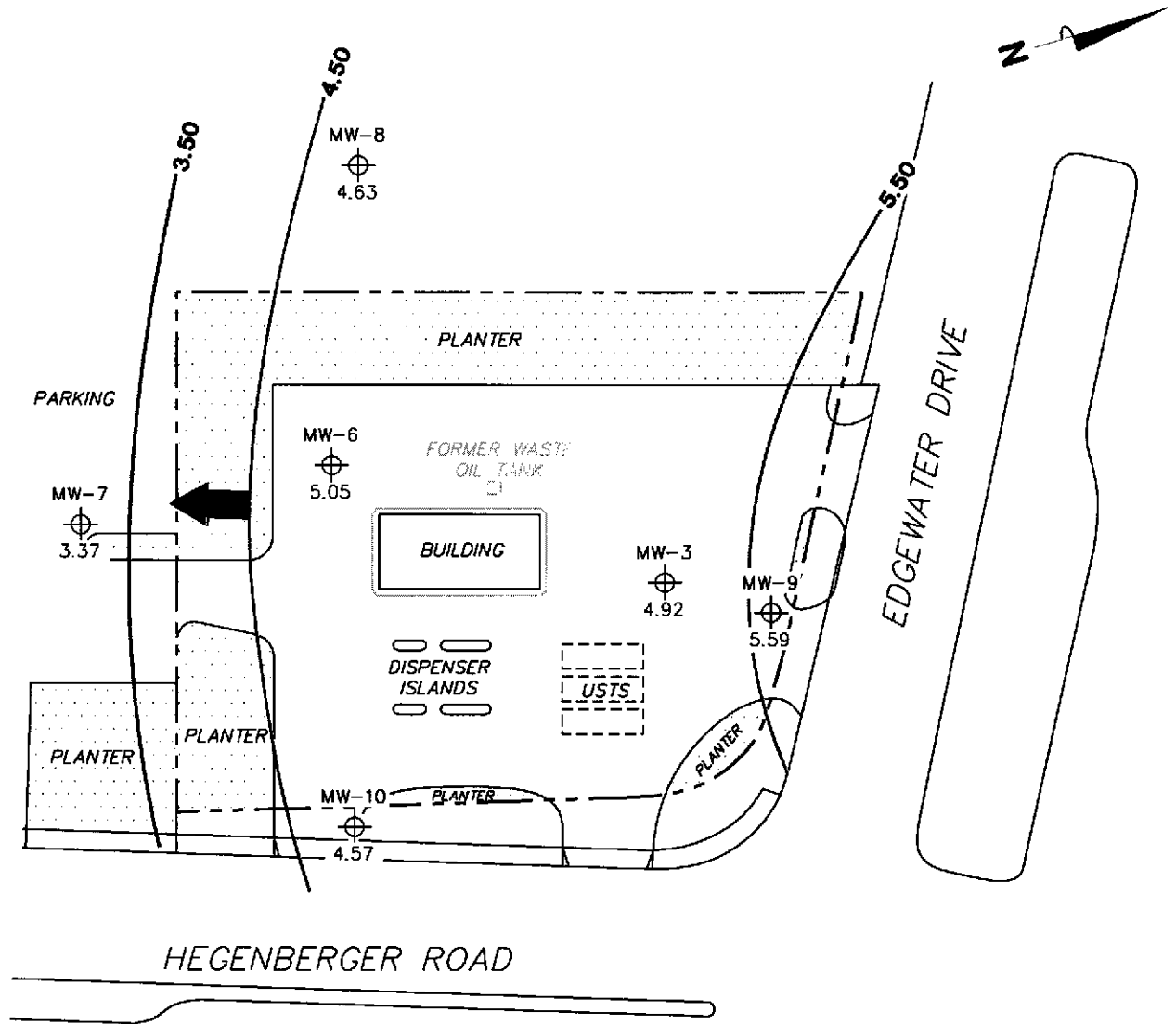
**VICINITY MAP**

76 Station 5043  
449 Hegenberger Road  
Oakland, California

**FIGURE 1**

PS = 1:1




**TRC**



**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.

**LEGEND**

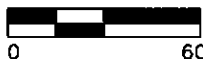
- MW-9  Monitoring Well with Groundwater Elevation (feet)
- 5.50  Groundwater Elevation Contour
-  General Direction of Groundwater Flow

**GROUNDWATER ELEVATION  
CONTOUR MAP  
October 2, 2003**

76 Station 5043  
449 Hegenberger Road  
Oakland, California

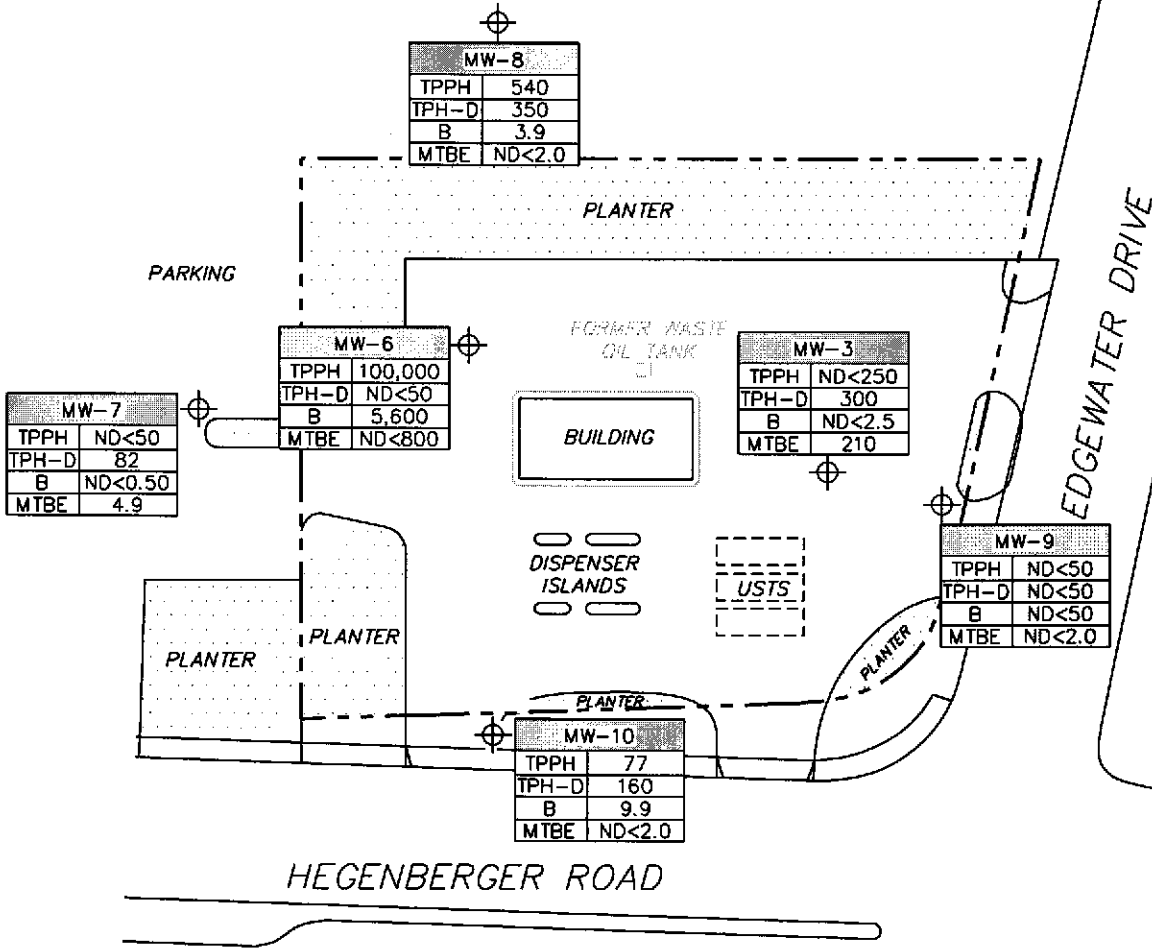
**TRC**

SCALE (FEET)



**FIGURE 2**

PS=1:1



MW-7	
TPPH	ND<50
TPH-D	82
B	ND<0.50
MTBE	4.9

MW-6	
TPPH	100,000
TPH-D	ND<50
B	5,600
MTBE	ND<800

MW-8	
TPPH	540
TPH-D	350
B	3.9
MTBE	ND<2.0

MW-3	
TPPH	ND<250
TPH-D	300
B	ND<2.5
MTBE	210

MW-9	
TPPH	ND<50
TPH-D	ND<50
B	ND<50
MTBE	ND<2.0

MW-10	
TPPH	77
TPH-D	160
B	9.9
MTBE	ND<2.0

**NOTES:**

TPPH = total purgeable petroleum hydrocarbons.  
 TPH-D = total petroleum hydrocarbons as diesel.  
 B = benzene. MTBE = methyl tertiary butyl ether.  $\mu\text{g}/\text{l}$  = micrograms per liter. ND = not detected at limit indicated on official laboratory report. UST = underground storage tank.  
 TPPH, B, and MTBE, results obtained using EPA Method 8260B. TPH-D results obtained using EPA Method 8015.

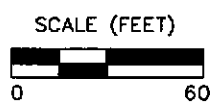
**LEGEND**

Well No.	
TPPH	$\mu\text{g}/\text{l}$
TPH-D	$\mu\text{g}/\text{l}$
B	$\mu\text{g}/\text{l}$
MTBE	$\mu\text{g}/\text{l}$

⊕ Monitoring Well with Dissolved-Phase Hydrocarbon Concentrations ( $\mu\text{g}/\text{l}$ )

**DISSOLVED-PHASE HYDROCARBON CONCENTRATIONS MAP**  
**October 2, 2003**

76 Station 5043  
 449 Hegenberger Road  
 Oakland, California



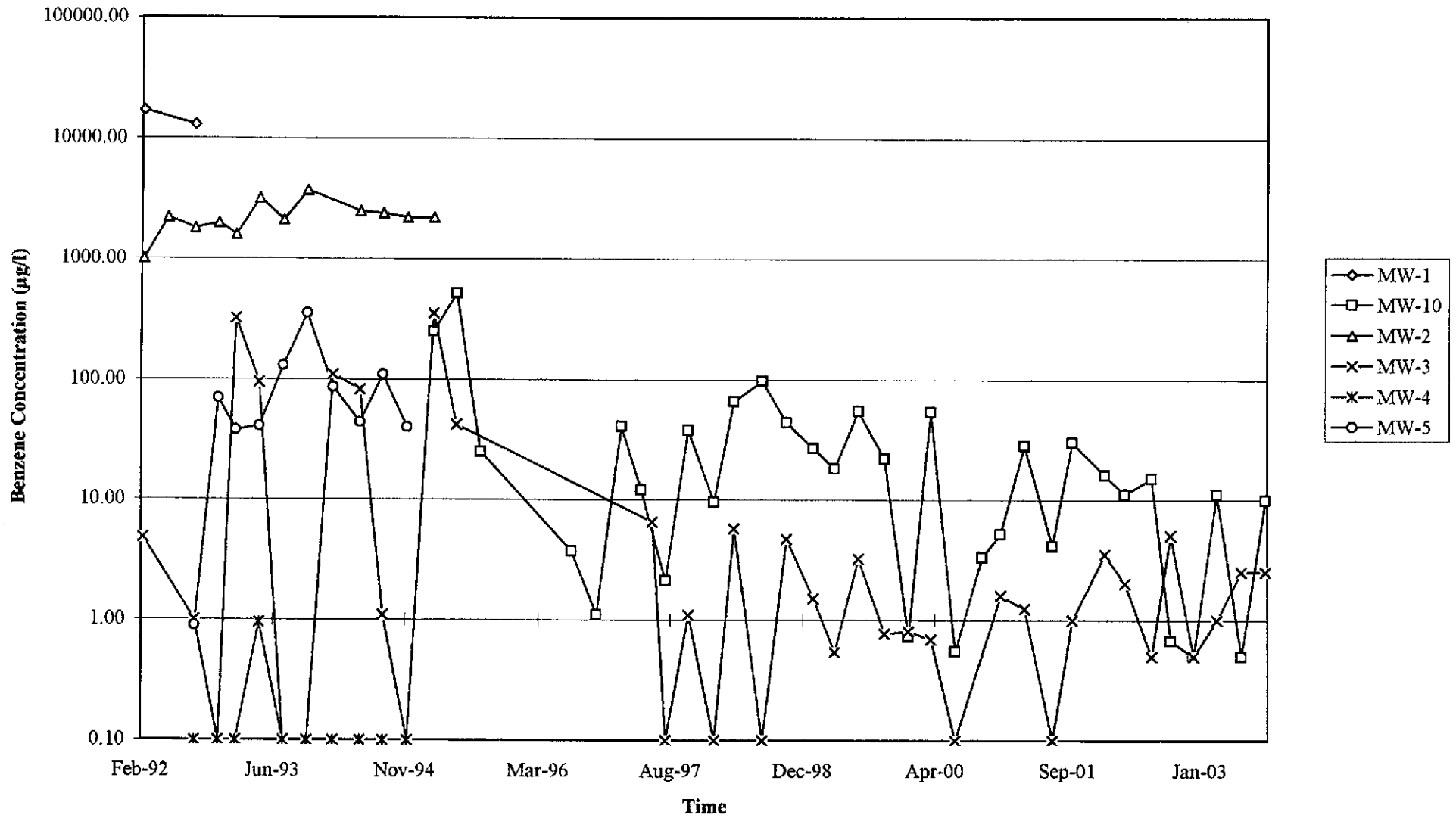
**FIGURE 3**

PS=1:1

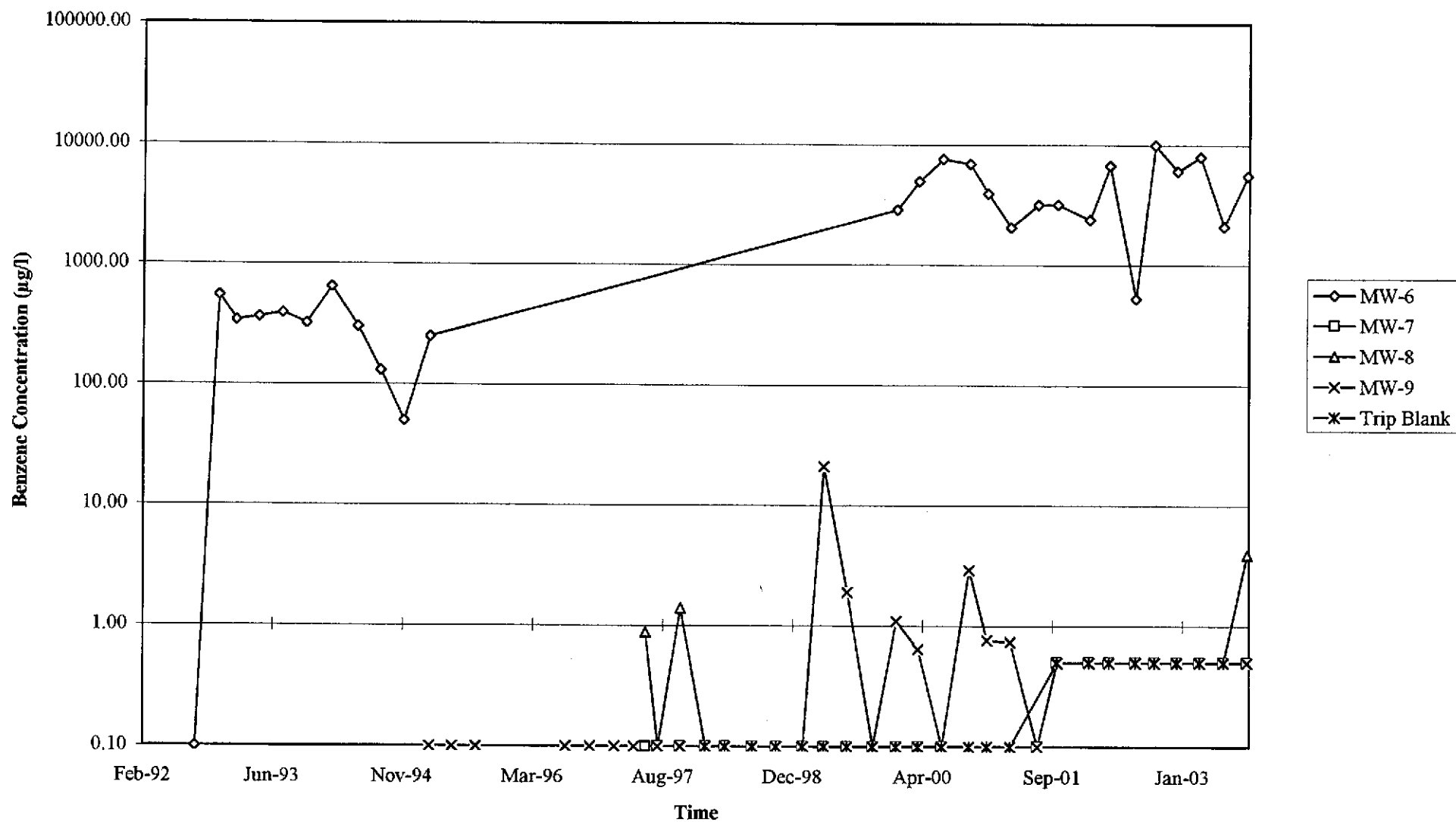
# GRAPHS



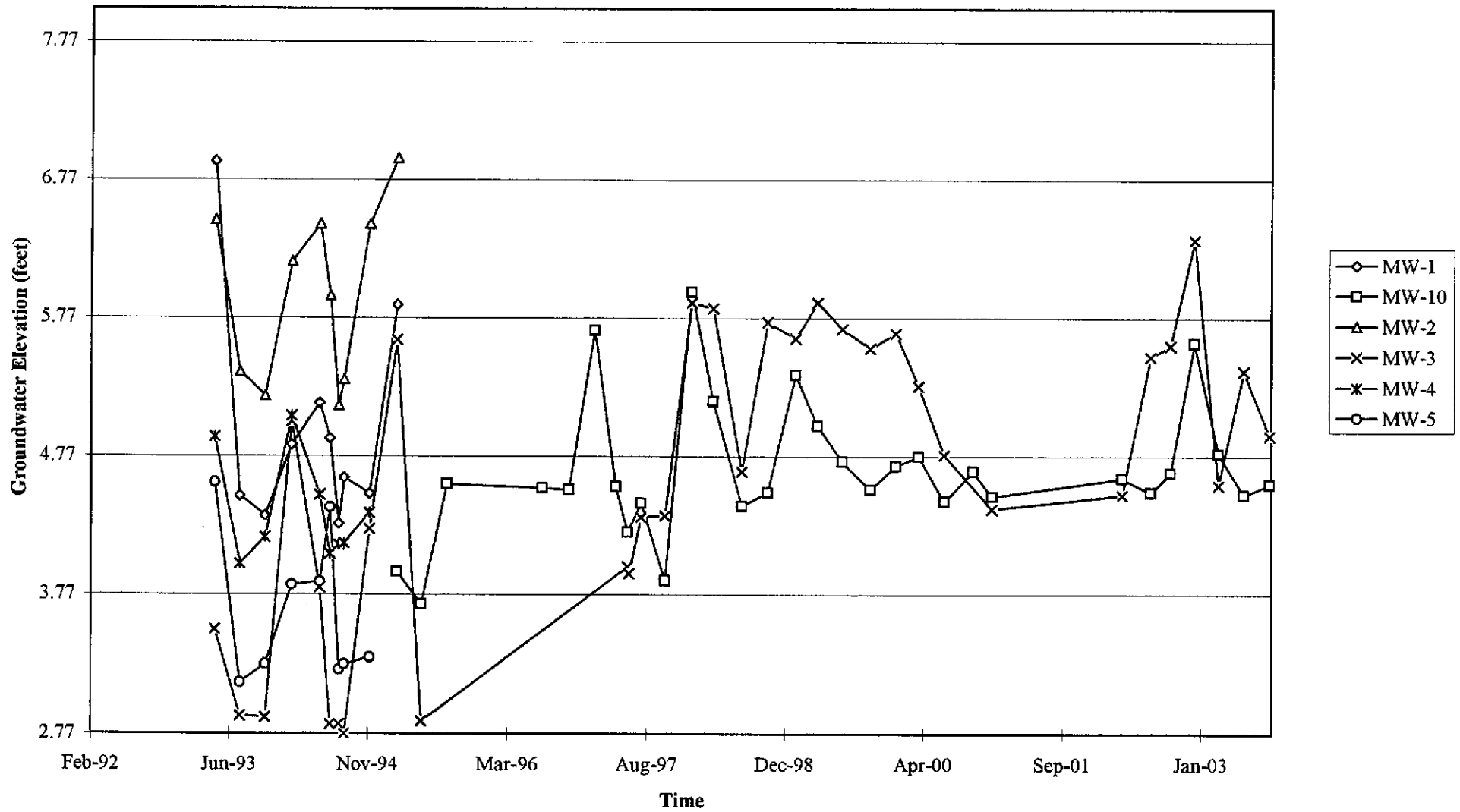
Graph 1  
Benzene Concentrations vs. Time  
76 Station 5043



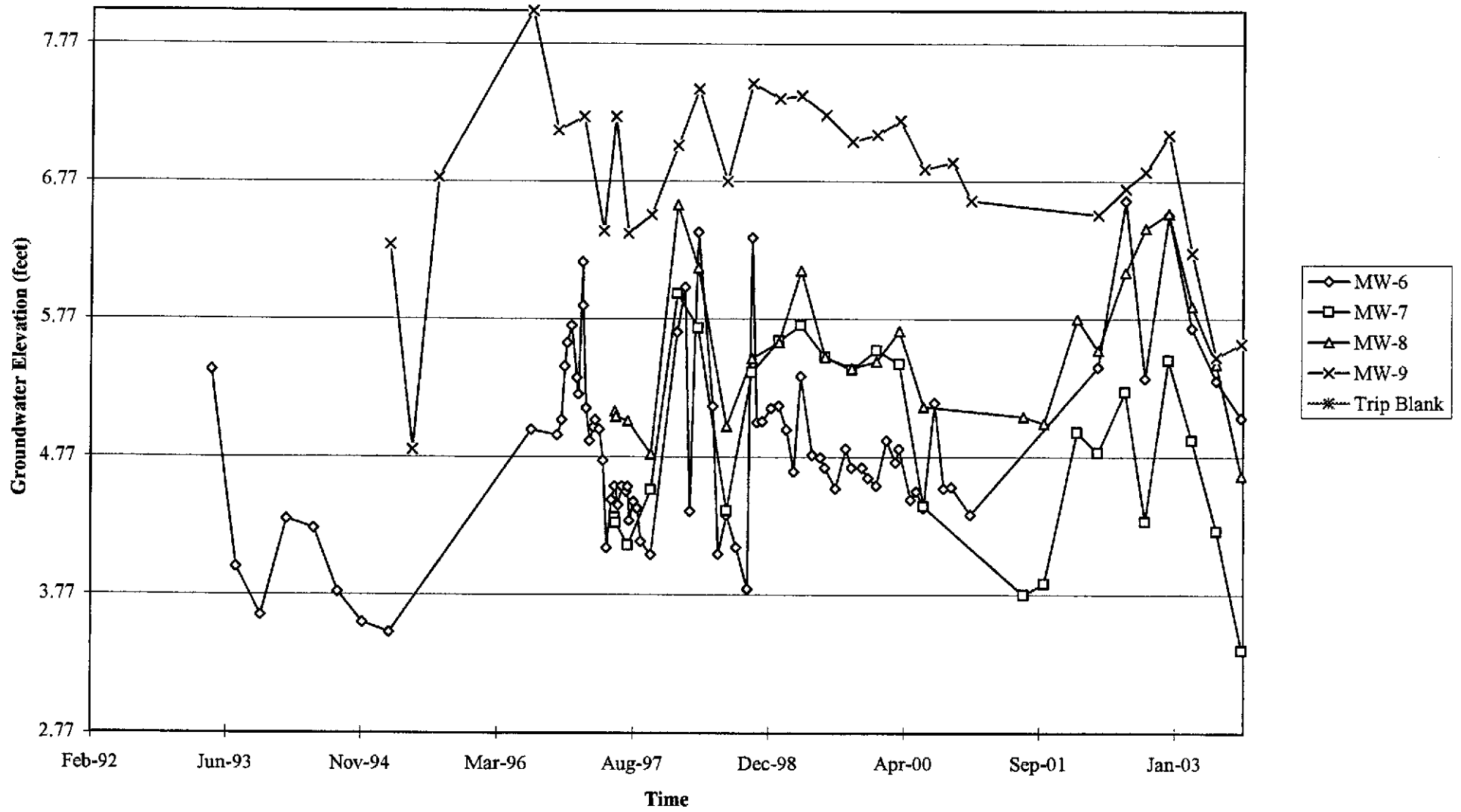
Graph 2  
Benzene Concentrations vs. Time  
76 Station 5043



Graph 3  
Hydrograph  
76 Station 5043



Graph 4  
Hydrograph  
76 Station 5043



## 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 measurement 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, and the samplers 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 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 well 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 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: HERNANDEZ

Site: S043

Project No.: 410500-01/A20

Date: 10/02/03

Well No. MW-9

Purge Method: SUB

Depth to Water (feet): 2.70

Depth to Product (feet): Ø

Total Depth (feet): 12.55

LPH & Water Recovered (gallons): Ø

Water Column (feet): 9.85

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 4.47

Borehole Diameter (Inches): .

1 Borehole Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
1006			2	5.79	19.9	7.05		
			4	4.21	21.5	7.03		
	1009		6	3.69	22.6	6.85		
Static at Time Sampled		Total Gallons Purged			Sample Time			
2.54		6 gal			1225			
Comments:								

Well No. MW-3

Purge Method: SUB

Depth to Water (feet): 3.12

Depth to Product (feet): SUB Ø

Total Depth (feet): 14.00

LPH & Water Recovered (gallons): Ø

Water Column (feet): 10.88

Casing Diameter (Inches): Ø 2"

80% Recharge Depth(feet): 5.29

Borehole Diameter (Inches): Ø 2"

1 Borehole Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
1053			2	3.05	23.0	6.72		
			4	3.20	22.5	6.90		
	1056		6	3.68	23.4	6.73		
Static at Time Sampled		Total Gallons Purged			Sample Time			
8.45		6 gal			1302			
Comments: <u>DONT Recover in 2 hrs</u>								

Borehole Volume Constants	Casing/Borehole Diameter	2"/8"	4"/8"	4"/10"	6"/10"	6"/12"
	Borehole Constant (gal/ft)	0.88	1.19	(1.63)	2.16	(3.07)



# GROUNDWATER SAMPLING FIELD NOTES

Technician: HERNANDEZ

Site: 5043

Project No.: 410-500-01 FA20

Date: 6/16/13

Well No. MW-7

Purge Method: TB

Depth to Water (feet): 5.46

Depth to Product (feet): 0

Total Depth (feet): 13.05

LPH & Water Recovered (gallons): 5

Water Column (feet): 7.59

Casing Diameter (Inches): 24

80% Recharge Depth(feet): 6.97

Borehole Diameter (Inches): \_\_\_\_\_

1 Borehole Volume (gallons): 1

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
1130			1	2.97	24.9	7.96		
			2	2.72	24.7	7.06		
	1135		3	2.05	23.6	6.94		
Static at Time Sampled		Total Gallons Purged			Sample Time			
7:41		3 gal			13:41			
Comments: <u>DIDN'T RECOVER IN 2 HRS</u>								

Well No. MW-8

Purge Method: SUB

Depth to Water (feet): 3.89

Depth to Product (feet): 0

Total Depth (feet): 14.75

LPH & Water Recovered (gallons): 0

Water Column (feet): 10.86

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 6.00

Borehole Diameter (Inches): \_\_\_\_\_

1 Borehole Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O.
1153			2	14.04	21.1	6.92		
			4	13.01	21.3	6.65		
	1201		6	12.00	22.2	6.78		
Static at Time Sampled		Total Gallons Purged			Sample Time			
7:22		6 gal			14:05			
Comments: <u>DIDN'T RECOVER IN 45 MIN OR 2 HRS</u>								

Borehole Volume Constants	Casing/Borehole Diameter	2"/8"	4"/8"	4"/10"	6"/10"	6"/12"
	Borehole Constant (gal/ft)	0.88	1.19	(1.63)	2.16	(3.07)

# GROUNDWATER SAMPLING FIELD NOTES

Technician: HERNANDEZ

Site: 5043

Project No.: 410-500-01/FAZ

Date: 10/02/03

Well No. MW-10

Purge Method: SUB

Depth to Water (feet): 4.05

Depth to Product (feet): 0

Total Depth (feet): 12.75

LPH & Water Recovered (gallons): 0

Water Column (feet): 8.70

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 5.79

Borehole Diameter (Inches): .

1 Borehole Volume (gallons): 1

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O
1031			1	4.05	21.1	7.20		
			2	3.55	21.6	7.17		
	1033		3	3.08	21.8	7.19		
Static at Time Sampled			Total Gallons Purged		Sample Time			
3.85			3 gal		1042			
Comments:								

Well No. MW-6

Purge Method: SUB

Depth to Water (feet): 3.02

Depth to Product (feet): 0

Total Depth (feet): 12.75

LPH & Water Recovered (gallons): 0

Water Column (feet): 8.93

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 4.42

Borehole Diameter (Inches): .

1 Borehole Volume (gallons): 1

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	Turbidity	D.O
1109			1	5.62	21.3	7.19		
			2	4.33	22.6	7.13		
	1111		3	3.38	23.2	7.09		
Static at Time Sampled			Total Gallons Purged		Sample Time			
7.79			3 gal		1318			
Comments: <u>DON'T RECOVER IN 2 HRS</u>								

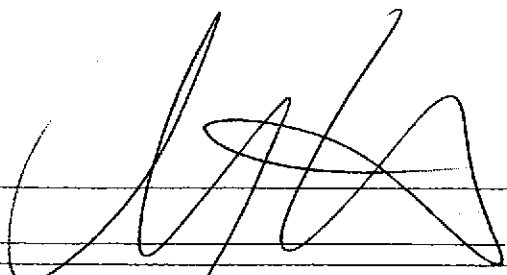
Borehole Volume Constants	Casing/Borehole Diameter	2"/8"	4"/8"	4"/10"	6"/10"	6"/12"
	Borehole Constant (gal/ft)	0.88	1.19	(1.63)	2.16	(3.07)

# METER CALIBRATION LOG

CLIENT NAME: Phillips  
 SITE #: 5043 CALIBRATED BY: Hernandez  
 LOCATION: 449 Hegenberger Rd. DATE: 12/02/19  
 METER BRAND NAME: HYDRA METER BRAND NAME: \_\_\_\_\_  
 METER MODEL #: 971 METER MODEL #: \_\_\_\_\_  
 ALTON METER #: 971 ALTON METER #: \_\_\_\_\_  
 CALIBRATION STANDARD EXP. DATE: 03 CALIBRATION STANDARD EXP. DATE: \_\_\_\_\_

SITE INITIAL CALIBRATION			POST-SAMPLING STANDARD MEASUREMENTS		
	Standard	Final Calibrated Values		Standard	Measured Values
pH	4.00	4.00	pH	4.00	
pH	7.00	7.00	pH	7.00	
pH	10.00	10.00	pH	10.00	
Conductivity	1000	—	Conductivity	1000	
Conductivity	10000	10000	Conductivity	10000	
Turbidity	1.0	—	Turbidity	1.0	
Turbidity	10.0	—	Turbidity	10.0	

REMARKS:



SIGNATURE: \_\_\_\_\_

Page 1 of 1

TRC Alton Geoscience

October 23, 2003

21 Technology Drive  
Irvine, CA 92718

Attn.: Anju Farfan  
Project: Site # 5043  
Site: 449 Hegenberger Rd

Attached is our report for your samples received on 10/07/2003 16:50  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
11/21/2003 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-9	10/02/2003 12:25	Water	1
MW-3	10/02/2003 13:02	Water	2
MW-7	10/02/2003 13:41	Water	3
MW-8	10/02/2003 14:05	Water	4
MW-10	10/02/2003 10:42	Water	5
MW-6	10/02/2003 13:18	Water	6

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

10/15/2003 15:32

Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-9	Lab ID:	2003-10-0281 - 1
Sampled:	10/02/2003 12:25	Extracted:	10/14/2003 22:50
Matrix:	Water	QC Batch#:	2003/10/14-2B.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/14/2003 22:50	
Benzene	ND	0.50	ug/L	1.00	10/14/2003 22:50	
Toluene	ND	0.50	ug/L	1.00	10/14/2003 22:50	
Ethylbenzene	ND	0.50	ug/L	1.00	10/14/2003 22:50	
Total xylenes	ND	1.0	ug/L	1.00	10/14/2003 22:50	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	1.00	10/14/2003 22:50	
Ethanol	ND	500	ug/L	1.00	10/14/2003 22:50	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	101.9	76-114	%	1.00	10/14/2003 22:50	
Toluene-d8	101.4	88-110	%	1.00	10/14/2003 22:50	

## Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s): 5030B Test(s): 8260FAB  
 Sample ID: MW-3 Lab ID: 2003-10-0281 - 2  
 Sampled: 10/02/2003 13:02 Extracted: 10/15/2003 13:19  
 Matrix: Water QC Batch#: 2003/10/15-01.64

Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	250	ug/L	5.00	10/15/2003 13:19	
Benzene	ND	2.5	ug/L	5.00	10/15/2003 13:19	
Toluene	ND	2.5	ug/L	5.00	10/15/2003 13:19	
Ethylbenzene	ND	2.5	ug/L	5.00	10/15/2003 13:19	
Total xylenes	ND	5.0	ug/L	5.00	10/15/2003 13:19	
Methyl tert-butyl ether (MTBE)	210	10	ug/L	5.00	10/15/2003 13:19	
Ethanol	ND	2500	ug/L	5.00	10/15/2003 13:19	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	91.2	76-114	%	5.00	10/15/2003 13:19	
Toluene-d8	98.8	88-110	%	5.00	10/15/2003 13:19	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

10/15/2003 15:32

Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-7	Lab ID:	2003-10-0281 - 3
Sampled:	10/02/2003 13:41	Extracted:	10/14/2003 23:32
Matrix:	Water	QC Batch#:	2003/10/14-2B.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/14/2003 23:32	
Benzene	ND	0.50	ug/L	1.00	10/14/2003 23:32	
Toluene	ND	0.50	ug/L	1.00	10/14/2003 23:32	
Ethylbenzene	ND	0.50	ug/L	1.00	10/14/2003 23:32	
Total xylenes	ND	1.0	ug/L	1.00	10/14/2003 23:32	
Methyl tert-butyl ether (MTBE)	4.9	2.0	ug/L	1.00	10/14/2003 23:32	
Ethanol	ND	500	ug/L	1.00	10/14/2003 23:32	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	101.1	76-114	%	1.00	10/14/2003 23:32	
Toluene-d8	103.7	88-110	%	1.00	10/14/2003 23:32	



Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-8	Lab ID:	2003-10-0281-4
Sampled:	10/02/2003 14:05	Extracted:	10/15/2003 13:41
Matrix:	Water	QC Batch#:	2003/10/15-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	540	50	ug/L	1.00	10/15/2003 13:41	
Benzene	3.9	0.50	ug/L	1.00	10/15/2003 13:41	
Toluene	15	0.50	ug/L	1.00	10/15/2003 13:41	
Ethylbenzene	29	0.50	ug/L	1.00	10/15/2003 13:41	
Total xylenes	80	1.0	ug/L	1.00	10/15/2003 13:41	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	1.00	10/15/2003 13:41	
Ethanol	ND	500	ug/L	1.00	10/15/2003 13:41	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	96.3	76-114	%	1.00	10/15/2003 13:41	
Toluene-d8	98.2	88-110	%	1.00	10/15/2003 13:41	

Gas/BTEX Fuel Oxygenates by 8260B

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-10	Lab ID:	2003-10-0281-5
Sampled:	10/02/2003 10:42	Extracted:	10/15/2003 00:54
Matrix:	Water	QC Batch#:	2003/10/14-2B.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	77	50	ug/L	1.00	10/15/2003 00:54	
Benzene	9.9	0.50	ug/L	1.00	10/15/2003 00:54	
Toluene	0.78	0.50	ug/L	1.00	10/15/2003 00:54	
Ethylbenzene	2.3	0.50	ug/L	1.00	10/15/2003 00:54	
Total xylenes	4.9	1.0	ug/L	1.00	10/15/2003 00:54	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	1.00	10/15/2003 00:54	
Ethanol	ND	500	ug/L	1.00	10/15/2003 00:54	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	107.9	76-114	%	1.00	10/15/2003 00:54	
Toluene-d8	106.9	88-110	%	1.00	10/15/2003 00:54	

Gas/BTEX Fuel Oxygenates by 8260B

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-6	Lab ID:	2003-10-0281 - 6
Sampled:	10/02/2003 13:18	Extracted:	10/15/2003 01:16
Matrix:	Water	QC Batch#:	2003/10/14-2B.68
Analysis Flag: o ( See Legend and Note Section )			

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	100000	20000	ug/L	400.00	10/15/2003 01:16	
Benzene	5600	200	ug/L	400.00	10/15/2003 01:16	
Toluene	6900	200	ug/L	400.00	10/15/2003 01:16	
Ethylbenzene	4700	200	ug/L	400.00	10/15/2003 01:16	
Total xylenes	18000	400	ug/L	400.00	10/15/2003 01:16	
Methyl tert-butyl ether (MTBE)	ND	800	ug/L	400.00	10/15/2003 01:16	
Ethanol	ND	200000	ug/L	400.00	10/15/2003 01:16	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	101.7	76-114	%	400.00	10/15/2003 01:16	
Toluene-d8	107.0	88-110	%	400.00	10/15/2003 01:16	

Gas/BTEX Fuel Oxygenates by 8260B

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Method Blank

Water

QC Batch # 2003/10/14-2B.68

MB: 2003/10/14-2B.68-003

Date Extracted: 10/14/2003 21:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/14/2003 21:03	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	10/14/2003 21:03	
Benzene	ND	0.5	ug/L	10/14/2003 21:03	
Toluene	ND	0.5	ug/L	10/14/2003 21:03	
Ethylbenzene	ND	0.5	ug/L	10/14/2003 21:03	
Total xylenes	ND	1.0	ug/L	10/14/2003 21:03	
Ethanol	ND	500	ug/L	10/14/2003 21:03	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	99.1	76-114	%	10/14/2003 21:03	
Toluene-d8	104.8	88-110	%	10/14/2003 21:03	

Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Method Blank

Water

QC Batch # 2003/10/15-01.64

MB: 2003/10/15-01.64-000

Date Extracted: 10/15/2003 11:00

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/15/2003 11:00	
Benzene	ND	0.5	ug/L	10/15/2003 11:00	
Toluene	ND	0.5	ug/L	10/15/2003 11:00	
Ethylbenzene	ND	0.5	ug/L	10/15/2003 11:00	
Total xylenes	ND	1.0	ug/L	10/15/2003 11:00	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	10/15/2003 11:00	
Ethanol	ND	500	ug/L	10/15/2003 11:00	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	83.2	76-114	%	10/15/2003 11:00	
Toluene-d8	100.2	88-110	%	10/15/2003 11:00	

Gas/BTEX Fuel Oxygenates by 8260B

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2003/10/14-2B.68

LCS 2003/10/14-2B.68-022

Extracted: 10/14/2003

Analyzed: 10/14/2003 20:22

LCSD 2003/10/14-2B.68-043

Extracted: 10/14/2003

Analyzed: 10/14/2003 20:43

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Methyl tert-butyl ether (MTBE)	22.7	24.6	25	90.8	98.4	8.0	65-165	20		
Benzene	24.0	25.0	25	96.0	100.0	4.1	69-129	20		
Toluene	24.1	25.6	25	96.4	102.4	6.0	70-130	20		
<i>Surrogates(s)</i>										
1,2-Dichloroethane-d4	459	499	500	91.8	99.8		76-114			
Toluene-d8	513	521	500	102.6	104.2		88-110			

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10/15/2003 15:32

Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

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Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2003/10/15-01.64

LCS 2003/10/15-01.64-015

Extracted: 10/15/2003

Analyzed: 10/15/2003 10:15

LCSD 2003/10/15-01.64-037

Extracted: 10/15/2003

Analyzed: 10/15/2003 10:37

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	24.2	23.4	25.0	96.8	93.6	3.4	69-129	20		
Toluene	25.6	25.6	25.0	102.4	102.4	0.0	70-130	20		
Methyl tert-butyl ether (MTBE)	21.8	22.7	25.0	87.2	90.8	4.0	65-165	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	393	406	500	78.6	81.2		76-114			
Toluene-d8	515	505	500	103.0	101.0		88-110			

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Gas/BTEX Fuel Oxygenates by 8260B

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Matrix Spike ( MS / MSD )

Water

QC Batch # 2003/10/14-2B.68

MW-7 >> MS

Lab ID: 2003-10-0281 - 003

MS: 2003/10/14-2B.68-052

Extracted: 10/14/2003

Analyzed: 10/14/2003 23:52

Dilution: 1.00

MSD: 2003/10/14-2B.68-013

Extracted: 10/15/2003

Analyzed: 10/15/2003 00:13

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	27.3	25.7	ND	25	109.2	102.8	6.0	69-129	20		
Toluene	27.1	25.8	ND	25	108.4	103.2	4.9	70-130	20		
Methyl tert-butyl ether	32.8	30.0	4.94	25	111.4	100.2	10.6	65-165	20		
<i>Surrogate(s)</i>											
1,2-Dichloroethane-d4	496	517		500	99.2	103.4		76-114			
Toluene-d8	508	527		500	101.7	105.4		88-110			

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10/15/2003 15:32



Gas/BTEX Fuel Oxygenates by 8260B

TRC Alton Geoscience

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

---

Legend and Notes

---

Analysis Flag

o

Reporting limits were raised due to high level of analyte present in the sample.

Diesel

TRC Alton Geoscience

Attn.: Anju Farfan

21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-9	10/02/2003 12:25	Water	1
MW-3	10/02/2003 13:02	Water	2
MW-7	10/02/2003 13:41	Water	3
MW-8	10/02/2003 14:05	Water	4
MW-10	10/02/2003 10:42	Water	5
MW-6	10/02/2003 13:18	Water	6

Diesel

TRC Alton Geoscience

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Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	MW-9	Lab ID:	2003-10-0281 - 1
Sampled:	10/02/2003 12:25	Extracted:	10/14/2003 12:32
Matrix:	Water	QC Batch#:	2003/10/14-05:10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	10/15/2003 19:30	
<i>Surrogate(s)</i>						
o-Terphenyl	71.5	60-130	%	1.00	10/15/2003 19:30	

Diesel

TRC Alton Geoscience

Attn.: Anju Farfan

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Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	MW-3	Lab ID:	2003-10-0281 - 2
Sampled:	10/02/2003 13:02	Extracted:	10/14/2003 12:32
Matrix:	Water	QC Batch#:	2003/10/14-05.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	300	50	ug/L	1.00	10/15/2003 21:00	ndp
<i>Surrogate(s)</i>						
o-Terphenyl	83.5	60-130	%	1.00	10/15/2003 21:00	

Diesel

TRC Alton Geoscience

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Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	MW-7	Lab ID:	2003-10-0281 - 3
Sampled:	10/02/2003 13:41	Extracted:	10/14/2003 12:32
Matrix:	Water	QC Batch#:	2003/10/14-05.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	82	50	ug/L	1.00	10/15/2003 21:25	ndp
<i>Surrogate(s)</i> o-Terphenyl	88.7	60-130	%	1.00	10/15/2003 21:25	

Diesel

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s): 3510/8015M Test(s): 8015M  
 Sample ID: MW-8 Lab ID: 2003-10-0281 - 4  
 Sampled: 10/02/2003 14:05 Extracted: 10/14/2003 12:32  
 Matrix: Water QC Batch#: 2003/10/14-05.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	350	50	ug/L	1.00	10/15/2003 21:51	ndp
<i>Surrogate(s)</i>						
o-Terphenyl	87.2	60-130	%	1.00	10/15/2003 21:51	

Diesel

TRC Alton Geoscience

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	MW-10	Lab ID:	2003-10-0281 - 5
Sampled:	10/02/2003 10:42	Extracted:	10/14/2003 12:32
Matrix:	Water	QC Batch#:	2003/10/14-05.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	160	50	ug/L	1.00	10/15/2003 22:16	ndp
<i>Surrogate(s)</i>						
o-Terphenyl	82.8	60-130	%	1.00	10/15/2003 22:16	

Diesel

TRC Alton Geoscience

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	MW-6	Lab ID:	2003-10-0281 - 6
Sampled:	10/02/2003 13:18	Extracted:	10/14/2003 12:32
Matrix:	Water	QC Batch#:	2003/10/14-05.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	10/15/2003 22:41	
<i>Surrogate(s)</i>						
o-Terphenyl	84.2	60-130	%	1.00	10/15/2003 22:41	



Diesel

TRC Alton Geoscience

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Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Method Blank

Water

QC Batch # 2003/10/14-05.10

MB: 2003/10/14-05.10-001

Date Extracted: 10/14/2003 12:32

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	10/15/2003 08:15	
<b>Surrogates(s)</b> o-Terphenyl	81.9	60-130	%	10/15/2003 08:15	

Diesel

TRC Alton Geoscience

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Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2003/10/14-05.10

LCS 2003/10/14-05.10-002

Extracted: 10/14/2003

Analyzed: 10/15/2003 08:46

LCSD 2003/10/14-05.10-003

Extracted: 10/14/2003

Analyzed: 10/15/2003 09:16

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Diesel	737	786	1000	73.7	78.6	6.4	60-130	25		
Surrogates(s) o-Terphenyl	18.5	19.2	20.0	92.4	96.1		60-130	0		

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

10/20/2003 16:06

Diesel

TRC Alton Geoscience

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21 Technology Drive

Irvine, CA 92718

Phone: (949) 341-7440 Fax: (949) 753-0111

Project: Site # 5043

Received: 10/07/2003 16:50

Site: 449 Hegenberger Rd

---

Legend and Notes

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**Result Flag**

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

STL San Francisco

Sample Receipt Checklist

Submission #: 2003- 10 - 0281

Checklist completed by: (initials) CR Date: 10, 08 /03

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_\_\_ No \_\_\_\_\_ Not Present

Chain of custody present? Yes  No \_\_\_\_\_

Chain of custody signed when relinquished and received? Yes  No \_\_\_\_\_

Chain of custody agrees with sample labels? Yes  No \_\_\_\_\_

Samples in proper container/bottle? Yes  No \_\_\_\_\_

Sample containers intact? Yes  No \_\_\_\_\_

Sufficient sample volume for indicated test? Yes  No \_\_\_\_\_

All samples received within holding time? Yes  No \_\_\_\_\_

Container/Temp Blank temperature in compliance (4° C ± 2)? Temp: 4.2 °C Yes  No \_\_\_\_\_

Ice Present Yes  No \_\_\_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted \_\_\_\_\_ Yes  No \_\_\_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~O), M (medium ~ O) or L (large ~ O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc -Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ /03

Client contacted:  Yes  No

Summary of discussion: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Corrective Action (per PM/Client): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1220 Quarry Lane  
 Pleasanton, CA 94566  
 (925) 484-1919 (925) 484-1096 fax

ConocoPhillips Site Manager:

INVOICE REMITTANCE ADDRESS:

2003-10-0281

CONOCOPHILLIPS  
 Attn: D. Hutchins  
 35100 South Harbour Blvd, Suite 200  
 San Francisco, CA 94134

ConocoPhillips Work Order Number

ConocoPhillips Cost Object

DATE: 10/07/03  
 PAGE: 1 of 1

SAMPLING COMPANY: TRC		Valid Value ID:	CONOCOPHILLIPS SITE NUMBER 5043		GLOBAL ID NO.:
ADDRESS: 21 Technology Drive, Irvine, CA 92618			SITE ADDRESS (Street and City): 449 HEGENBERGER RD		
PROJECT CONTACT (Hardcopy or PDF Report to): Anju Farfan			EOP DELIVERABLE TO (RP or Designee): Chris Rentz, crentz@trcsolutions.com		PHONE NO.: 949-753-0101
TELEPHONE: 949-341-7440	FAX: 949-753-0111	E-MAIL: afarfan@trcsolutions.com		LAB USE ONLY	

SAMPLER NAME(S) (Print): Heggenberger CONSULTANT PROJECT NUMBER: 410 500-01720

TURNAROUND TIME (CALENDAR DAYS):  
 14 DAYS  7 DAYS  72 HOURS  48 HOURS  24 HOURS  LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NEEDED

REQUESTED ANALYSES		FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes  4.2°C TEMPERATURE ON RECEIPT C°
ANALYSIS	STATUS	
8015m - TPHhd Extractable		7PPH by 9260B BTEX/MTBE by 9260B ETHANOL by 9260B
8260B - TPHg/BTEX/MTBE		
8260B - TPHg/BTEX/8 Oxygenates		
8260B - TPHg/BTEX/8 oxygenates + methanol (8015M)		
8260B - Full Scan VOCs (does not include oxygenates)		
8270C - Semi-Volatiles		
8015M/8021B - TPHg/BTEX/MTBE		
Lead	<input type="checkbox"/> Total <input type="checkbox"/> TLCL	

LAB USE ONLY	Sample Identification/Field Point Name*	SAMPLING		MATRIX	NO. OF CONT.	8015m - TPHhd Extractable	8260B - TPHg/BTEX/MTBE	8260B - TPHg/BTEX/8 Oxygenates	8260B - TPHg/BTEX/8 oxygenates + methanol (8015M)	8260B - Full Scan VOCs (does not include oxygenates)	8270C - Semi-Volatiles	8015M/8021B - TPHg/BTEX/MTBE	Lead	<input type="checkbox"/> Total <input type="checkbox"/> TLCL	
		DATE	TIME												
	MW-9	10/02/03	1225	GW	3 JARS ANALYZED	X									
	MW-3		1302												
	MW-7		1341												
	MW-8		1405												
	MW-10		1042												
	MW-6		1318												

Reinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: 10.07.03	Time: 1330
Reinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) Deuse Harmon / STL-SF	Date: 10.07.03	Time: 1150
Reinquished by: (Signature)	Received by: (Signature)	Date:	Time:

**TRC** Customer Focused Solutions  
5052 Commercial Circle  
Concord, CA 94520-1248

## Statement of Authorized Transportation and Disposal

This is to certify that non-hazardous groundwater produced during purging and sampling of monitoring wells at ConocoPhillips site number 5043 was accumulated at TRC's groundwater monitoring facility at Concord, California, for transportation by Onyx Transportation, Inc. to the ConocoPhillips Refinery at Rodeo California for disposal. TRC records indicate that approximately 30 gallons of purge water from the site were transferred to the purge water holding tank on 10/2/03. The contents of the holding tank were transported to the Unit 100 Water Treatment Facility at the Rodeo Refinery on 11/3/04.

Disposal at the facility was authorized by ConocoPhillips in accordance with "ESD Standard Operating Procedures - Water Quality and Compliance", as revised on February 7, 2003. The procedure requires that TRC dispose only of monitoring well purge water from sites for which TRC services are under contract by ConocoPhillips. The non-hazardous nature of the purge water is confirmed quarterly by analysis by an independent certified laboratory of a random sample from the TRC holding facility. The sample is analyzed for all analytes and parameters that might affect the ConocoPhillips NPDES permit for ultimate disposal of the water. Documentation of compliance with ConocoPhillips requirements is provided by an ESD Form R-149, which is on file with ConocoPhillips.

If any purge water collected at the site is suspected of containing potentially hazardous material such as liquid-phase hydrocarbons, that water was accumulated separately in a drum for transportation and disposal by Filter Recycling, Inc.

In witness of this statement

  
Dennis E. Jensen

QMS Program Manager

1/12/04  
date

## 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.