



April 15, 2006

Mr. Keith Woodburne, R.G.
Senior Project Geologist
TRC Solutions, Inc.
1590 Solano Way, Suite A
Concord, CA 94520

RECEIVED

10:37 am, Nov 03, 2008

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Environmental Health**

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Project No. 328-A

First Quarter 2006
Ozone Injection System O&M Report
76 Service Station No. 1871
96 MacArthur Boulevard
Oakland, California

Dear Mr. Woodburne:

Environ Strategy Consultants, Inc. is pleased to submit this ozone injection system operation and maintenance (O&M) report for 76 Service Station No. 1871, located at 96 MacArthur Boulevard, Oakland, California. An ozone injection system was started on June 23, 2003 to remediate hydrocarbon-impacted groundwater.

Type of Remediation System:	Ozone Injection System
Operation Data During: Reporting Period: Jan. 1, 2006 – Mar. 31, 2006	Operated 113 days during the period Hours of Operation: 558
System Operation Data Since Startup: June 23, 2003	Total Hours of Operation: 18,289
<p>Note: System down time occurred throughout the first quarter of 2006 due to reset meter and tripped ozone sensor.</p>	

Environ Strategy appreciates the opportunity to be of service. If you have any questions or require additional information regarding this report, please do not hesitate to call us at (949) 581-3222.

Respectfully submitted,

Sonny Nguyen
Project Assistant

Jinghui Niu, P.E.
Principal Engineer



First Quarter 2006 O&M Report

76 Service Station No. 1871

April 15, 2006

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Attachments: Figure - Site Plan

Table 1 - Ozone Injection - System Operation Data

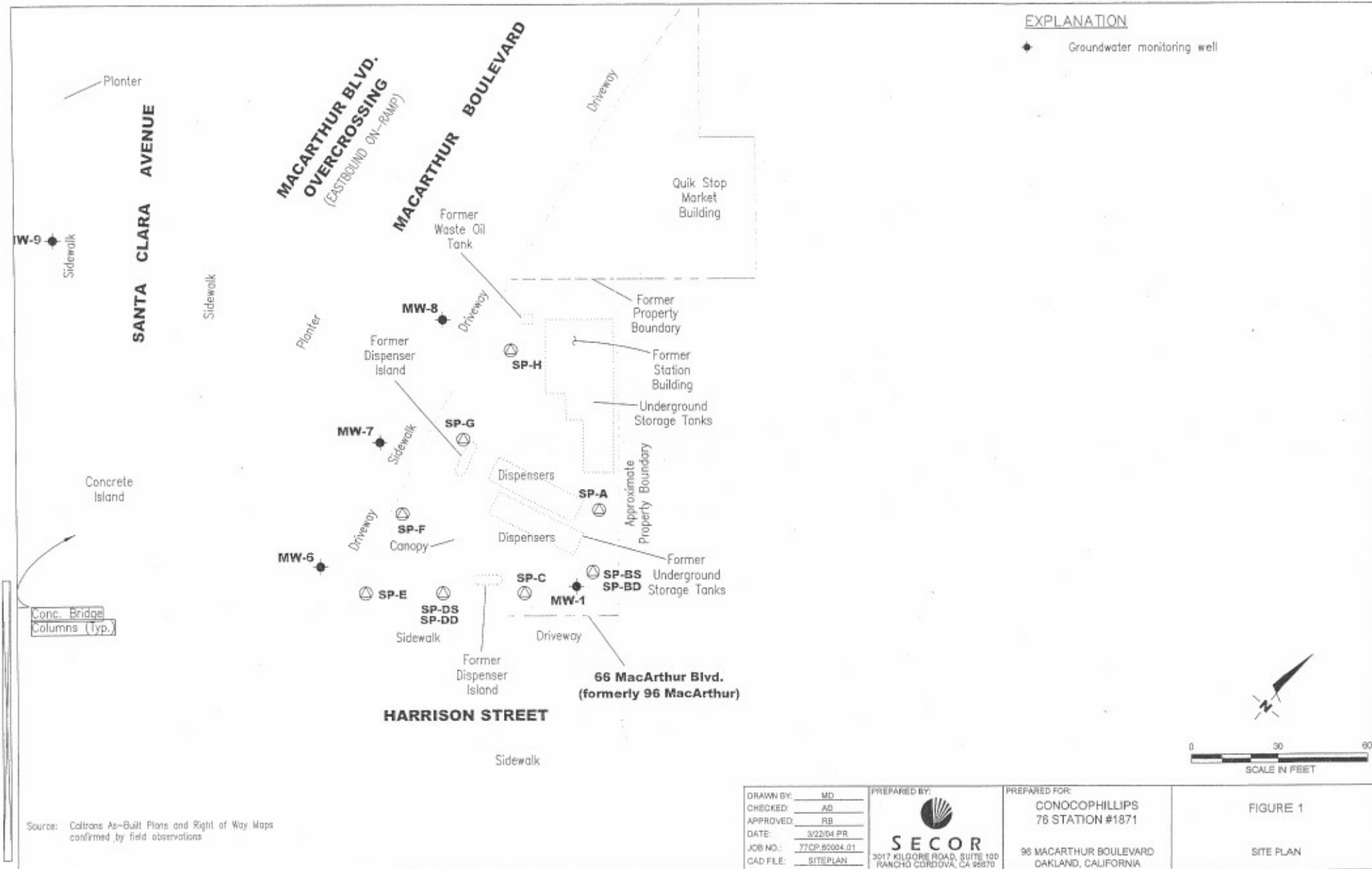
Table 2 - Ozone Injection - Groundwater Monitoring Data

Graph 1 - MW-1 TPHg, Benzene, and MtBE Groundwater Concentrations

Graph 2 - MW-7 TPHg, Benzene, and MtBE Groundwater Concentrations

cc: Shelby Lathrop, ConocoPhillips Company (electronic copy)

Figure

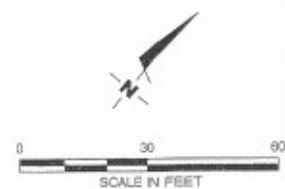


EXPLANATION

◆ Groundwater monitoring well

Conc. Bridge Columns (Typ.)

Source: Caltrans As-Built Plans and Right of Way Maps confirmed by field observations



DRAWN BY: MD
 CHECKED: AD
 APPROVED: RB
 DATE: 3/22/04 PR
 JOB NO.: 77CP.85084.01
 CAD FILE: SITEPLAN

PREPARED BY:

SECOR
 3017 KILGORE ROAD, SUITE 100
 RANCHO CORDOVA, CA 95870

PREPARED FOR:
 CONOCOPHILLIPS
 76 STATION #1871
 95 MACARTHUR BOULEVARD
 OAKLAND, CALIFORNIA

FIGURE 1
 SITE PLAN

Table

Table 1
Ozone Injection - System Operation Data
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California

Date	Notes	OZONE SPARGE SYSTEM						0Z-1	0Z-2	0Z-3	0Z-4	0Z-5	0Z-6	0Z-7	0Z-8	0Z-9	0Z-10	
		System Status (On/Off)		Hourmeter Reading	Period Online Factor	Cumulative Online Factor	Ozone Injected (lbs)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)	Pressure (psi)
		Arrival	Departure															
6/23/03		On	On	8807.26	--	0.95	--	20	18	19	20	21	23	20	26	14	26	
7/16/03		Off	On	8850.46	0.09	0.91	0.39	27	18	31	40	28	29	31	38	24	25	
8/30/03		On	On	9180.61	0.35	0.86	2.97	17	15	17	19	19	20	26	19	26		
9/18/03		On	On	9327.43	0.37	0.84	1.32	13.5	14.7	17.0	16.3	16.0	19.7	16.8	19.8	15.7	20	
10/16/03		On	On	--	--	0.84	--	27.0	19.5	40.8	39.0	40.8	38.5	34.2	46.4	24.2	39.8	
11/17/03		On	On	9696.55	0.29	0.81	--	11.0	20.0	17.0	18.0	17.5	17.0	16.0	21.0	51.0	22.0	
12/5/03		On	On	9804.98	0.29	0.80	0.98	33.0	21.0	44.0	40.0	43.0	39.0	33.5	44.0	26.0	33.0	
1/16/04		On	On	10471.28	0.76	0.79	6.00	12.5	11.0	18.5	16.5	17.5	17.0	16.0	20.0	16.0	20.0	
2/3/04		On	On	10727.69	0.68	0.79	2.31	12.3	11.5	18.2	16.5	18.2	17.3	16.0	19.0	16.0	18.2	
3/24/04		On	On	11424.95	0.66	0.78	6.28	31.0	18.3	37.5	26.0	34.0	33.2	32.3	41.5	23.0	31.0	
4/14/04		On	On	11676.10	0.57	0.77	2.26	32.0	19.0	38.7	26.0	37.7	37.1	32.8	41.8	23.8	29.5	
4/15/04	a	On	On	11685.29	0.44	0.77	0.08	--	--	--	--	--	--	--	--	--	--	
4/16/04	a	On	On	11693.80	0.41	0.77	0.08	--	--	--	--	--	--	--	--	--	--	
4/19/04	a	On	On	11742.90	0.78	0.77	0.44	--	--	--	--	--	--	--	--	--	--	
4/23/04	a	On	On	11773.10	0.36	0.77	0.27	--	--	--	--	--	--	--	--	--	--	
5/4/04		Off	On	11837.70	0.28	0.76	0.58	32.2	20.5	39.4	36.2	38.1	32.0	33.5	60.0	25.8	33.1	
5/11/04		On	On	11950.51	0.77	0.76	1.02	32.5	20.0	38.5	29.8	38.8	39.5	34.8	60.0	23.5	35.9	
6/14/04	b,c	On	On	12464.64	0.72	0.76	4.63	20.0	21.0	38.8	27.2	37.0	38.2	35.2	60.0	24.0	32.1	
7/29/04	d	On	On	844.62	0.99	0.77	7.60	22	15	--	26	35	34	35	--	25	33	
8/12/04	e	On	On	1075.97	0.98	0.78	2.08	--	--	--	--	--	--	--	--	--	--	
9/10/04		On	On	1490.23	0.85	0.78	3.73	32	32	33	33	21	24	30	20	26	30	
10/5/04		On	On	1868.83	0.90	0.78	3.41	31	32	33	31	22	23	31	21	26	28	
11/5/04		On	On	2360.90	0.93	0.79	4.43	22	26	12	18	12	22	30	32	26	22	
12/2/04	f	Off	Off	2802.02	0.97	0.79	3.97	--	--	--	--	--	--	--	--	--	--	
1/13/05		Off	On	2802.07	0.00	0.76	0.00	23	27	15	20	15	23	31	34	28	25	
2/25/05	g	Off	Off	2802.42	0.00	0.73	0.00	--	--	--	--	--	--	--	--	--	--	
3/8/05	h,i	Off	Off	2802.42	0.00	0.72	0.00	--	--	--	--	--	--	--	--	--	--	
4/5/05	i	Off	Off	2802.42	0.00	0.70	0.00	--	--	--	--	--	--	--	--	--	--	
5/4/05	j	Off	On	2802.49	0.00	0.69	0.00	14	11	16	12	20	27	25	29	25	31	
6/2/05	k	On	On	3407.97	1.00	0.69	5.45	35	25	Off	40	41	36	35	34	27	25	
7/7/05	k,l,m	On	On	4067.42	1.29	0.71	5.94	31	23	Off	30	Off	26	32	28	25	Off	
8/26/05	n	On	On	4665.98	0.81	0.72	5.39	13	13	Off	14	Off	13	12	12	13	Off	
9/23/05	o	On	On	4947.97	0.69	0.71	2.54	16	15	Off	Off	Off	16	16	16	16	Off	
10/23/05	p	On	On	5264.28	0.72	0.71	2.85	16	16	Off	Off	Off	16	16	16	16	Off	
11/11/05	q,r	On	Off	0.90	--	0.71	--	--	--	--	--	--	--	--	--	--	--	
11/15/05	s	Off	On	0.90	0.00	0.71	0.00	35	16	16	22	23	18	23	23	23	24	
12/6/05	t	Off	On	2.49	0.01	0.70	0.01	22	20	19	24	24	22	26	23	24	25	
1/4/06	v	Off	On	6.00	0.01	0.69	0.03	20	20	18	17	23	20	25	19	22	20	
1/18/06	v	Off	On	203.00	0.96	0.69	1.77	22	19	19	20	19	18	21	22	22	23	
2/1/06	v	Off	On	316.00	0.55	0.69	1.02	20	20	18	22	22	18	23	23	22	25	
2/15/06	v	Off	On	344.00	0.14	0.68	0.25	20	19	18	17	19	20	23	19	22	20	
3/1/06	v	Off	On	417.00	0.35	0.68	0.66	21	20	19	19	21	17	24	23	21	21	
3/16/06	u	Off	On	501.00	0.38	0.68	0.76	20	19	18	17	19	20	23	20	22	20	
3/29/06	u	Off	On	560.00	0.31	0.67	0.53	20	20	19	19	20	21	25	21	22	21	
Spurge time per cycle (min)								7	7	7	7	7	7	7	7	7		

Table 1
 Ozone Injection - System Operation Data
 76 Service Station No. 1871
 96 MacArthur Blvd., Oakland, California

Reporting Period: First Quarter 2006 (1/01/06 to 3/31/05)
 Total Hours Operational: 18,289
 Total Pounds Ozone Injected: 165
 Period Hours Operational: 558
 Period Percent Operational: 21%
 Period Pounds Ozone Injected: 5.02

Definitions:

psi Pounds per square inch
 -- Data not available
 NA Not applicable
 lbs Pounds

Notes:

- System cycles through program 18 times per day, for 53% utilization
- a Troubleshooting time counter
- b Hourmeter replaced
- c Solenoid 8 has high pressure, taken offline
- d Solenoid 3 leaking, taken off line
- e Pressures not properly recorded
- f Ozone generator hose ruptured on effluent side to solenoid manifold. No Readings.
- g System down due to bad GFI
- h New GFI was installed.
- i Fan in compressor broken and tubing from compressor to manifold needs to be replaced. System left off until repairs made.
- j Installed new motor fan and manifold fittings, restarted system.
- k OZ-3 turned off due to high pressure of over 60 psi.
- l OZ-5 too brittle. Left off until lines are replaced.
- m OZ-10 turned off due to leak in secondary containment
- n Hourmeter reading not correct, will check next visit
- o Hourmeter not working properly.
- p Pressure gauge stuck at 16 psi.
- q New hourmeter, panel fan, and GFCI installed
- r Fuse blown in ozone generator, system left off
- s Replaced tubing to all wells and replaced ozone generator circuit board and pressure gauge
- t System down due to tripped GFI; foam on door may have been pressing reset button. Foam removed.
- u Ozone sensor tripped.
- v Meter reset.

Table 2
Ozone Injection - Groundwater Monitoring Data
 76 Service Station No. 1871
 96 MacArthur Blvd., Oakland, California

Date	Notes	Monitoring Well: MW-1								Monitoring Well: MW-7							
		ORP (mV)	DO (mg/l)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (total) (µg/L)	MIBE (µg/L)	ORP (mV)	DO (mg/l)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (total) (µg/L)	MIBE (µg/L)
4/16/2003	a	NM	NM	510	57	0.62	29	61	160	NM	NM	<25,000	<250	<250	<250	<500	37,000
6/23/2003	a	NM	NM	75	<0.50	<0.50	<0.50	5.3	12	NM	NM	20,000	260	<0.50	<0.50	<1.0	20,000
8/29/2003	a	NM	NM	11,000	64	<10	330	1,400	440	NM	NM	<10,000	<100	<100	<100	<200	24,000
9/18/2003		NM	NM	390	2.3	<0.50	3.6	31	30	NM	NM	--	--	--	--	--	--
10/16/2003		NM	NM	2,100	6.0	<0.50	24.0	120	110	NM	NM	--	--	--	--	--	--
11/17/2003		NM	NM	130	0.51	<0.50	2.1	7.9	43	NM	NM	16,000	<130	<130	<130	<250	17,000
12/5/2003		NM	NM	<50	<0.50	<0.50	<0.50	<1.0	36	NM	NM	12,000	<100	<100	<100	<200	19,000
1/16/2004	b	NM	NM	<50	<0.50	<0.50	<0.50	<1.0	<2.0	NM	NM	17,000	160	270	<130	<250	19,000
2/3/2004		238	NM	<50	<0.50	<0.50	<0.50	<1.0	<2.0	72	NM	10,000	<25	<25	<25	<50	15,000
3/24/2004	b	169	NM	55	<0.50	<0.50	0.80	2.9	7.8	56	NM	13,000	<100	<100	<100	<200	15,000
4/14/2004	b	0.4	NM	23,000	310	10	590	2400	1700	42	NM	9,000	<50	<50	<50	<100	11,000
5/11/2004	c	NM	NM	7,800	160	<10	170	700	720	-3	NM	8,300	<50	<50	<50	<100	11,000
6/14/2004		20	5.25	110	<0.50	<0.50	1.0	6.4	3.4	35	1.45	<5,000	<50	<50	<50	<100	6,500
7/26/2004		NM	NM	<50	<0.50	<0.50	<0.50	<1.0	3.2	NM	NM	<5,000	<50	<50	<50	<100	3,100
8/12/2004		171	0.07	<50	<0.50	<0.50	<0.50	<1.0	0.80	117	0.06	2,100	<10	<10	<10	<20	2,700
9/10/2004		180	0.08	<50	<0.50	<0.50	<0.50	<1.0	5.7	122	0.07	3,100	<13	<13	<13	<25	4,400
10/5/2004		175	0.09	<50	<0.50	<0.50	<0.50	<1.0	<0.50	117	0.08	<50	<0.50	<0.50	<0.50	<1.0	7.1
11/5/2004	d	117	0.05	<50	<0.50	<0.50	<0.50	<1.0	0.89	210	0.06	50	<0.50	<0.50	<0.50	<1.0	1.1
12/2/2004		109	0.03	83	0.83	<0.50	<0.50	1.2	44	214	0.03	180	1.6	<0.50	66	4.5	51
1/13/2005		105	0.04	1,100	26	1.2	2.10	70	630	201	0.05	1,000	25	1	1.9	68	460
2/25/2005	c,f	--	2.67	24,000	350	10	820	2,200	1,300	21	2.05	680	<2.0	<2.0	2.3	58	2,500
3/8/2005	g	-35	4.43	23,000	410	<10	1,100	2,300	1,300	NR	NR	--	--	--	--	--	--
4/5/2005		-30	4.56	34,000	300	<10	910	2,000	1,100	135	6.53	<5,000	<50	<50	<50	<1.00	19,000
5/4/2005		-59	2.40	26,000	220	7.4	790	2,100	860	-24	1.13	<2,000	<0.50	<0.50	<0.50	<1.0	7,100
6/2/2005		-20	7.34	<50	<0.50	<0.50	<0.50	<1.0	3.5	-12	1.01	3500	<0.50	<0.50	<0.50	<1.0	4,000
7/7/2005	i,j	142	7.42	<50	<0.50	<0.50	<0.50	<1.0	0.61	154	1.40	5000	<0.50	<0.50	<0.50	<1.0	8,900
9/23/2005		16	7.77	<50	<0.50	<0.50	<0.50	<1.0	<0.50	56	1.39	<500	<5.0	<5.0	<5.0	<10	1,900
10/23/2005		154	7.13	<50	<0.50	<0.50	<0.50	<1.0	0.56	191	1.59	<250	<2.5	<2.5	<2.5	<5	680
11/1/2005	k	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Definitions:

TPHg = Total petroleum hydrocarbons as gasoline
 MIBE = Methyl tert-butyl ether
 µg/L = Micrograms per liter

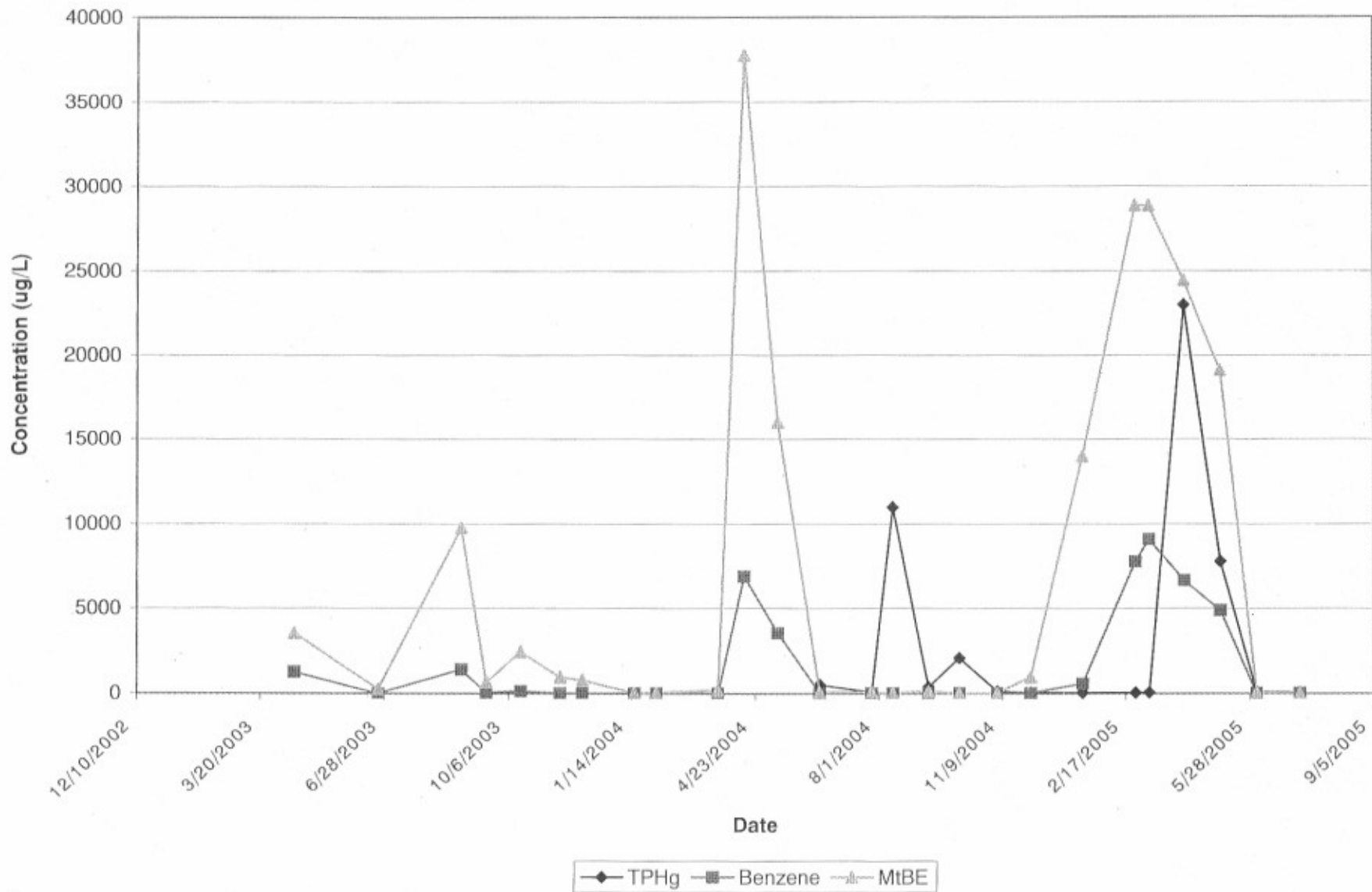
 ORP = Oxidation Reduction Potential
 DO = Dissolved Oxygen
 mV = Millivolts
 mg/l = Milligrams per liter

Notes:

-- Data not available
 NM Not Measured
 a Sampled by Gettler-Ryan, Inc.
 b Hydrocarbon in gasoline range does not match laboratory gasoline standard.
 c ORP reading under the range
 d Quantity of unknown hydrocarbon(s) in sample based on gasoline.
 e Data not available at time of reporting
 f MW-7 Estimated value of MIBE; concentration exceeded the calibration of analysis
 g Car parked on MW-7.
 h Data not available at time of reporting
 i Siloxane peaks were found in the sample which are not believed to be gasoline related. If they were to be quantified as gasoline, the concentration would be 58 µg/L. (MW-1).
 j The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern. (MW-1)
 k Sampling discontinued at the request of ConocoPhillips

Graph

Graph 1
MW-1 TPHg, Benzene, and MtBE Groundwater Concentrations
76 Service Station No. 1871
96 MacArthur Blvd., Oakland, California



Graph 2
MW-7 TPHg, Benzene, and MtBE Groundwater Concentrations
 76 Service Station No. 1871
 96 MacArthur Blvd., Oakland, California

