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October 11, 2000

Mr. Larry Seto
Alameda County Dept. of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Remediation System Operation Report and System Shutdown Request**
Former Arco Service Station
706 Harrison Street
Oakland, California
Cambria Project #230-0116

Dear Mr. Seto:

On behalf of Mr. Bo Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this remediation system operation report for the soil vapor extraction (SVE) and air sparge (AS) system at the site referenced above. This report also includes a request to discontinue active remediation at the site, including removal of the remediation system. Described below are the remediation system design and installation, system operation & monitoring, system performance, and a system shutdown and removal request.

REMEDIATION SYSTEM DESIGN & INSTALLATION

Initial SVE/AS System: In May 1998, Cambria completed installation and startup of a SVE and AS system at the site. The SVE portion of the system consisted of a 250 cubic feet per minute (cfm) catalytic oxidizer manufactured by Stealth Industries for extracting and treating soil vapor from five wells: SVE wells VW-1 and VW-2, and combination SVE/AS wells VW/SP-3, VW/SP-4 and VW/SP-5. The air sparging portion of the system consisted of a 7.5-hp reciprocating piston air compressor for injecting air into wells VW/SP-3, VW/SP-4 and VW/SP-5. The construction of the SVE/AS wells consisted of a nested vapor extraction well and a deeper air sparge well. The depth to groundwater beneath the site varies 12 to 18 ft below grade surface (bgs). The remediation system layout is shown on Figure 1.

Revised SVE/AS System: In December 1998, Cambria coordinated installation of a revised SVE/AS system. The SVE equipment consisted of a 100-cfm positive-displacement blower and two, 200-lb carbon vessels connected in series. Due to hydrocarbon breakthrough, the carbon canisters were later upgraded to 1,000-lb canisters connected in series.

Oakland, CA
San Ramon, CA
Sonoma, CA
Portland, OR

Cambria Environmental Technology, Inc.

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Tel (510) 420-0700
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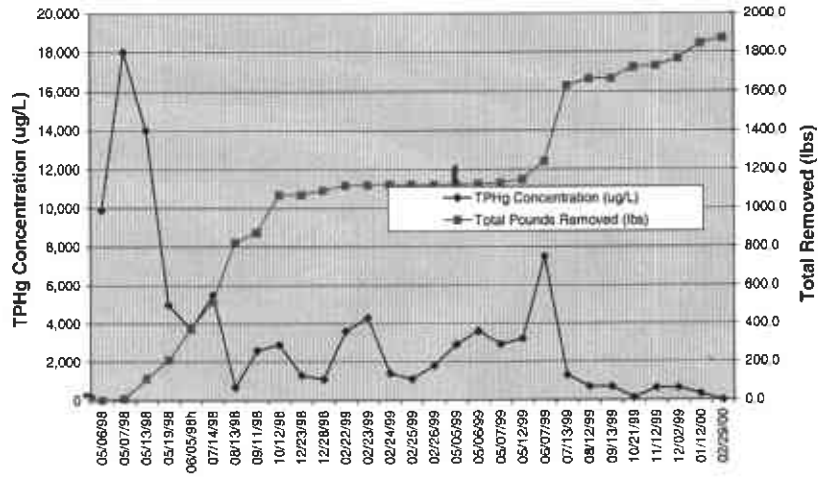
SYSTEM OPERATION AND MONITORING

System Operation: The initial SVE/AS system operated almost continuously between May 6 through October 12, 1998, when the relatively low hydrocarbon concentrations necessitated the installation of a more cost-effective system. After brief vapor extraction testing in late December 1998 and after the winter rains had ended, Cambria revised the remediation system by replacing the catalytic oxidizer with a blower and granular activated carbon. This revised SVE/AS system operated from May 5, 1999 to February 29, 2000. Hydrocarbon recovery was maximized during this period by achieving good well flow during the seasonally low groundwater levels. SVE system operations were discontinued in February 2000 after seeing a significant decrease in influent concentrations, well flow, and hydrocarbon recovery. At that time, Cambria requested regulatory approval to remove the carbon vessels from the site. The AS system has operated continuously since May 8, 1998, injecting approximately 2 cfm into each well at a pressure of 8 pounds per square inch (psi). Since shutdown of the SVE in February 2000, Cambria has continued injecting air into the subsurface to enhance natural hydrocarbon biodegradation.

System Monitoring: Until February 2000, Cambria monitored the SVE system on a monthly basis in accordance with the revised BAAQMD air permit condition. The monitoring involved measuring hydrocarbon concentrations either by submitting tedlar bag samples to an analytical laboratory, or by using a FID and recording system operation parameters. Influent hydrocarbon vapor concentrations over time are illustrated below on the Figure A. The analytical results for extracted soil vapor are summarized in Table 1.

Figure A - Hydrocarbon Concentrations and Removal vs. Time
Former Arco Station, 706 Harrison Street, Oakland, CA



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REMEDIATION SYSTEM PERFORMANCE

To assess the performance of the remediation system, Cambria calculated the hydrocarbon removal rates, hydrocarbon emission rates, and TPHg destruction efficiency based on analytical results, field measurements, and system operation parameters. The SVE system performance data is summarized on Table 2. As shown in Figure A and Table 2, hydrocarbon concentrations exhibit an overall decreasing trend with hydrocarbon removal rates approaching asymptotic levels. The cumulative amount of hydrocarbons removed to date is approximately 1,871 pounds.

SYSTEM SHUT-DOWN REQUEST

Based on the rationale presented below, Cambria respectfully requests regulatory concurrence to discontinue active remediation (air sparging) and to remove the remediation system from the site.

Seasonal System Operation: Cambria operated the system during two summer and fall seasons in 1998 and 1999, when groundwater depth was at seasonal lows. This timing ensured that the hydrocarbons trapped below the water table were exposed, collected, and destroyed by the remediation system. Vapor extraction wells VW-1 through VW-5 were installed specifically to screen across the capillary fringe and the vadose zone in order to maximize well flow and hydrocarbon recovery.

Asymptotic Hydrocarbon Removal Rates: Cambria operated the remediation system for a total of two years and nine months between May 1998 and February of 2000. During that time, system influent TPHg concentrations declined from 18,000 ug/L to about 320 ug/L. This represents a significant effort to remove as much residual hydrocarbons from the subsurface as is technologically and cost effectively feasible using best available technology. As shown above in Figure A, hydrocarbon removal rates have reached asymptotic levels.

Hydrocarbon Source Removal: The combined SVE/AS system has proven to be an effective remedial approach for the site based on the 1,871 pounds of hydrocarbons removed from the subsurface. This large volume represents a significant recovery of hydrocarbons that remained in the source area after UST removal and overexcavation.

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Groundwater Concentrations: Hydrocarbon concentrations in groundwater have remained stable. As shown in the most quarterly sampling data, the maximum benzene concentration at the site is 5,000 ug/L in monitoring well MW-2. This benzene concentration is below Oakland's site specific target level (SSTL) for Merritt sands of 22,000 ug/L relating to the inhalation of indoor vapors in a commercial setting. Tables and figures from the most recent quarterly monitoring report are included as Attachment A. • do not address TPH g conc.

MTBE in Groundwater: MTBE has never been stored or dispensed at the site (former ARCO gasoline station). The southwesterly groundwater flow direction and the steadily increasing MTBE concentrations in groundwater indicates that MTBE is migrating from the active Shell service station located directly upgradient from the site (see most recent quarterly sampling data in Attachment A). As discussed in recent quarterly monitoring reports and during numerous telephone conversations and meetings, Cambria believes that Mr. Bo Gin should not be responsible for any additional remediation relating to the MTBE concentrations in groundwater.

CLOSING

Based on previous telephone conversations, Cambria understands that the final tasks prior to site closure will likely include a receptor survey, a conduit study, and a trend analysis of hydrocarbon concentrations versus time for the onsite wells. To facilitate case closure, please prepare a written request for these and/or other tasks required by your agency. Cambria will assist Mr. Gin with obtaining cost pre-approval from the State Cleanup Fund. Please call if you have questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Ron Scheele

Ron Scheele, RG
Senior Geologist

Figures: 1 – Site Plan
2 – System Layout
Tables: 1 – SVE System Analytical Results
2 – Soil Vapor Extraction/Air Sparging System Performance Summary

Attachments: A – 3rd Quarter 2000 Groundwater Monitoring Report

cc: Mr. Bo Gin, 288 11th Street, Oakland, California 94712
Ms. Anna Torres, State UST Cleanup Fund, 2014 T Street, Sacramento, California 94244
Mr. Robert Cave, BAAQMD, 939 Ellis Street, San Francisco, California 94109

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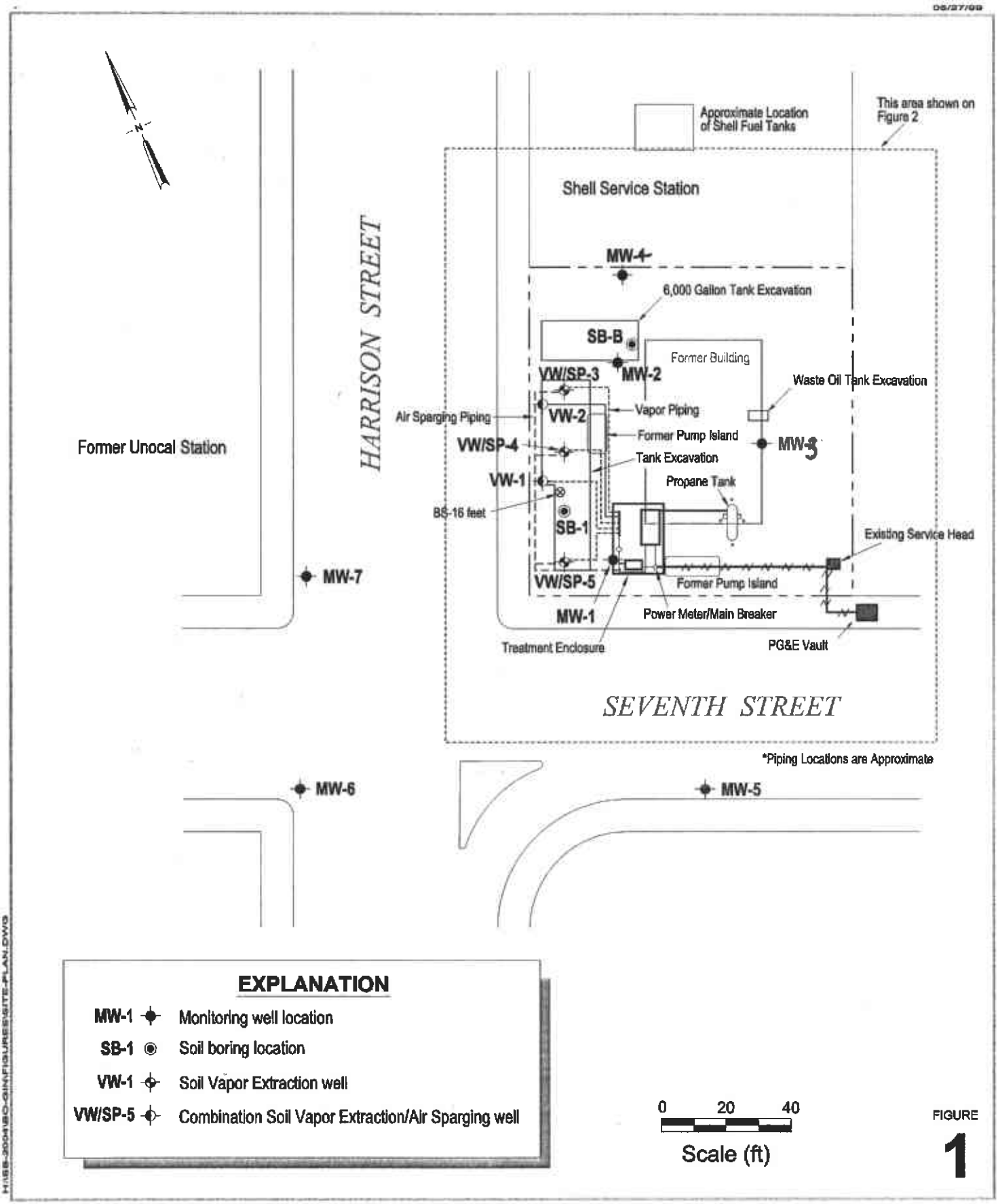

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Former Arco Station

706 Harrison Street

Oakland, California

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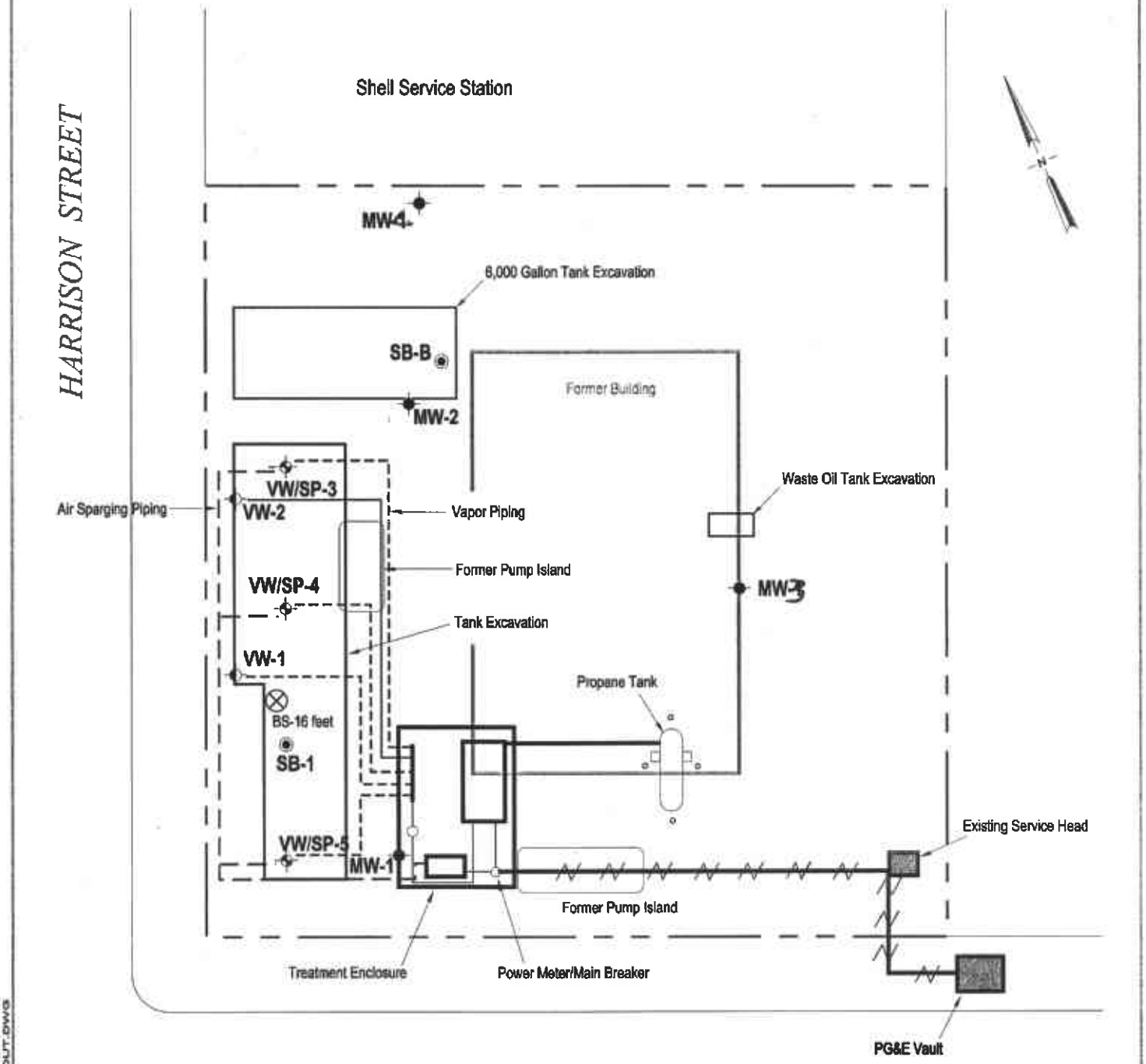
Site Plan



EXPLANATION

- MW-1 — Monitoring well location
- SB-1 — Soil boring location
- VW-1 — Soil Vapor Extraction well
- VW/SP-5 — Combination Soil Vapor Extraction/Air Sparging well

0 10 20

Scale (ft)

FIGURE

2

H:\SB-2004\SO-GIN\FIGURES\SYS-LAYOUT.DWG

Former Arco Station

706 Harrison Street

Oakland, California

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System Layout

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Table 1. SVE System Analytical Results - 706 Harrison Street, Oakland, California

Sample ID (Location)	Date Sampled	TPH-G	B	T	E	X	MTBE
		← (Concentrations in µg/L) →					
Sys-Inf (Influent)	5/6/98	9,900	480	370	44	160	<700
Sys-Eff (Efflent)	5/6/98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
Sys-Inf (Influent)	5/7/98	18,000	190	320	44	120	---
INFL (Influent)	5/13/98	14,000	390	530	54	170	<1,200
EFFL (Efflent)	5/13/98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
SYS-INF (Influent)	6/5/98	3,700	130	140	20	95	---
SYS-EFF (Effluent)	6/5/98	<50	<0.5	<0.5	<0.5	<0.5	---
Well Gas (Influent)	7/14/98	5,500	110	190	21	180	<70
SYS-EFF (Effluent)	7/14/98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
Well Gas (Influent)	8/13/98	690	6.2	15	1.5	42	---
SYS-EFF (Effluent)	8/13/98	<50	<0.5	<0.5	<0.5	2.7	---
Well Gas (Influent)	9/11/98	2,600	15	40	7.6	87	---
Sys-Eff (Effluent)	9/11/98	<50	<0.5	<0.5	<0.5	<0.5	---
IN (Influent)	12/23/98	1,300	2.1	5.6	2.3	9.5	<5.0
BE (Mid-Carbon)	12/23/98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
EF (Effluent)	12/23/98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
IN (Influent)	12/28/98	1,100	8.3	29	6.1	49	---
BE (Mid Carbon)	12/28/98	<50	<0.5	<0.5	<0.5	<0.5	---
EF (Effluent)	12/28/98	<50	<0.5	<0.5	<0.5	<0.5	---

Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
B, T, E, X = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020
MTBE= Methyl tert-butyl ether by EPA Method 8020. Result in parentheses indicates MTBE by EPA Method 8260
ft= Feet, µg/L=Micrograms per liter

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Table 2. Soil Vapor Extraction System Performance Summary - 706 Harrison Street, Oakland, California

Date	Interval of Operation (days)	Total Well Flow Rate (cfm)	System Flow Rate (cfm)	System Vacuum (" H_2O)	Total Well Influent Hydrocarbon Concentrations[a]			Effluent Hydrocarbon Concentrations		Hydrocarbon Removal Rate[b]		Hydrocarbon Emission Rates[b]		Destruction Efficiency	Total TPHg Removal[c] (lbs)
					OVA[d] (ppmv)	TPHg (ug/L)	Benz (ug/L)	TPHg (ug/L)	Benz (ug/L)	TPHg (lbs/day)	Benz (lbs/day)	TPHg (lbs/day)	Benz (lbs/day)	(%)	
05/06/98	0	10	124	100	2,080	9,900	480	< 50	< 0.5	9.3	0.45	< 0.56	< 0.0056	> 94	0
05/07/98	1	11	188	98	>1,800	18,000	190	NA	NA	17.7	0.19	NA	NA	NA	9.3
05/13/98	6	13	155	83	NA	14,000	390	< 50	< 0.5	15.9	0.44	< 0.70	< 0.0070	> 96	115
05/19/98	6	16	110	103	1,843	4,970 [i]	NA	NA	NA	7.2	NA	NA	NA	NA	210
06/05/98[h]	23	11	122	86	130	3,700	130	< 50	< 0.5	3.6	0.13	< 0.55	< 0.0055	> 85	375
07/14/98	39	21	98 [f]	100	NA	5,500	130	< 50	< 0.5	10.2	0.24	< 0.44	< 0.0044	> 96	515
08/13/98	30	29 [g]	98	95	NA	690	6.2	< 50	< 0.5	1.8	0.02	< 0.44	< 0.0044	> 76	823
09/11/98	29	38	33	86	NA	2,600	15	< 50	< 0.5	8.9	0.05	< 0.15	< 0.0015	> 98	875
10/12/98	22	26	31	86	1,060[e]	2,900	NA	NA	NA	6.9	NA	NA	NA	NA	1,071
12/23/98	0	38	38	110	1,300	1,300	2.1	< 50	< 0.5	4.4	0.01	< 0.17	< 0.0017	> 96	1,071
12/28/98	5	36	36	100	300	1,100	8.3	< 50	< 0.5	3.6	0.03	< 0.16	< 0.0016	> 95	1,093
02/22/99	7	6	6	104	1,000	3,600 [i]	NA	220	NA	1.9	NA	0.12	NA	94	1,118
02/23/99	1	5	33	102	1,200	4,300 [i]	NA	2700	NA	1.9	NA	8.02	NA	j	1,120
02/24/99	1	4	36	58	400	1,400 [i]	NA	2700	NA	0.5	NA	8.75	NA	j	1,122
02/25/99	1	4	36	55	300	1,100 [i]	NA	810	NA	0.4	NA	2.62	NA	j	1,122
02/26/99	1	5	35	56	500	1,800 [i]	NA	1400	NA	0.8	NA	4.41	NA	j	1,122
05/05/99	0	15	48	50	800	2,900 [i]	NA	0	NA	3.9	NA	0.00	NA	100	1,122
05/06/99	1	12	47	57	1,000	3,600 [i]	NA	0	NA	3.8	NA	0.00	NA	100	1,126
05/07/99	1	14	45	65	800	2,900 [i]	NA	0	NA	3.5	NA	0.00	NA	100	1,130
05/12/99	5	13	46	50	900	3,200 [i]	NA	0	NA	3.6	NA	0.00	NA	100	1,148
06/07/99	26	16	53	50	2,100	7,500 [i]	NA	0	NA	10.8	NA	0.00	NA	100	1,241
07/13/99	36	20	55	50	350	1,300 [i]	NA	1	NA	2.3	NA	0.00	NA	100	1,630
08/12/99	15	22	56	40	200	700 [i]	NA	0	NA	1.4	NA	0.00	NA	100	1,665
09/13/99	1	24	50	50	200	700 [i]	NA	1	NA	1.5	NA	0.00	NA	100	1,667
10/21/99	38	31	52	45	32	120 [i]	NA	1	NA	0.3	NA	0.00	NA	99	1,724

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Table 2. Soil Vapor Extraction System Performance Summary - 706 Harrison Street, Oakland, California

Date	Interval of Operation (days)	Total Well Flow Rate (cfm)	System Flow Rate (cfm)	System Vacuum (" H_2O)	Total Well Influent Hydrocarbon Concentrations[a] OVA[d] (ppmv)	TPHg (ug/L)	Benz (ug/L)	Effluent Hydrocarbon Concentrations TPHg (ug/L)	Benz (ug/L)	Hydrocarbon Removal Rate[b] TPHg (lbs/day)	Benz (lbs/day)	Hydrocarbon Emission Rates[b] TPHg (lbs/day)	Benz (lbs/day)	Destruction Efficiency (%)	Total TPHg Removal[c] (lbs)
11/12/99	22	33	54	45	180	640 [i]	NA	6	NA	1.9	NA	0.03	NA	98	1,731
12/02/99	20	32	58	50	180	640 [i]	NA	10	NA	1.8	NA	0.05	NA	97	1,770
01/12/00	41	19	47	50	90	320 [i]	NA	6	NA	0.5	NA	0.03	NA	95	1,845
02/29/00	48	0	0	100	0	0 [i]	NA	0	NA	0.0	NA	0.00	NA	100	1,871

Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline
Benz = Benzene
ppmv = Parts per million by volume
ug/L = micrograms per liter
NA = Not analyzed

0.5 x48 + 1845 = 1870 ✓

[a] Hydrocarbon concentrations based on Organic Vapor Analyzer (OVA), TPHg and benzene (Benz) by Modified EPA Methods 8015 and 8020.
[b] Hydrocarbon removal calculation: Pounds per day removed = Concentration (ug/L) x flowrate (scfm) x 1440 min/day x 28.3 l/scf x 2.2 lbs/kg * 1/1,000,000,000 kg/ug
[c] Total TPHg Removal = The previous removal rates times the interval days of operation plus the previous total removal amount.
[d] Gastech LEL meter, photoionization detector, or flame ionization detector used to measure field hydrocarobon concentrations.
[e] The OVA readings from the October 5, 1998 monitoring event were used to calculate the amount of hydrocarbons removed.
[f] System flow rate average of 6/5/98 and 9/11/98 flow rates.
[g] Total well flow rate average of 7/14/98 and 9/11/98 flow rates.
[h] Influent and effluent samples switched.
[i] TPHg concentration estimated from OVA measurement.
j Carbon breakthrough, destruction efficiency not calculated

ATTACHMENT A

3rd Quarter 2000 Groundwater Monitoring Data

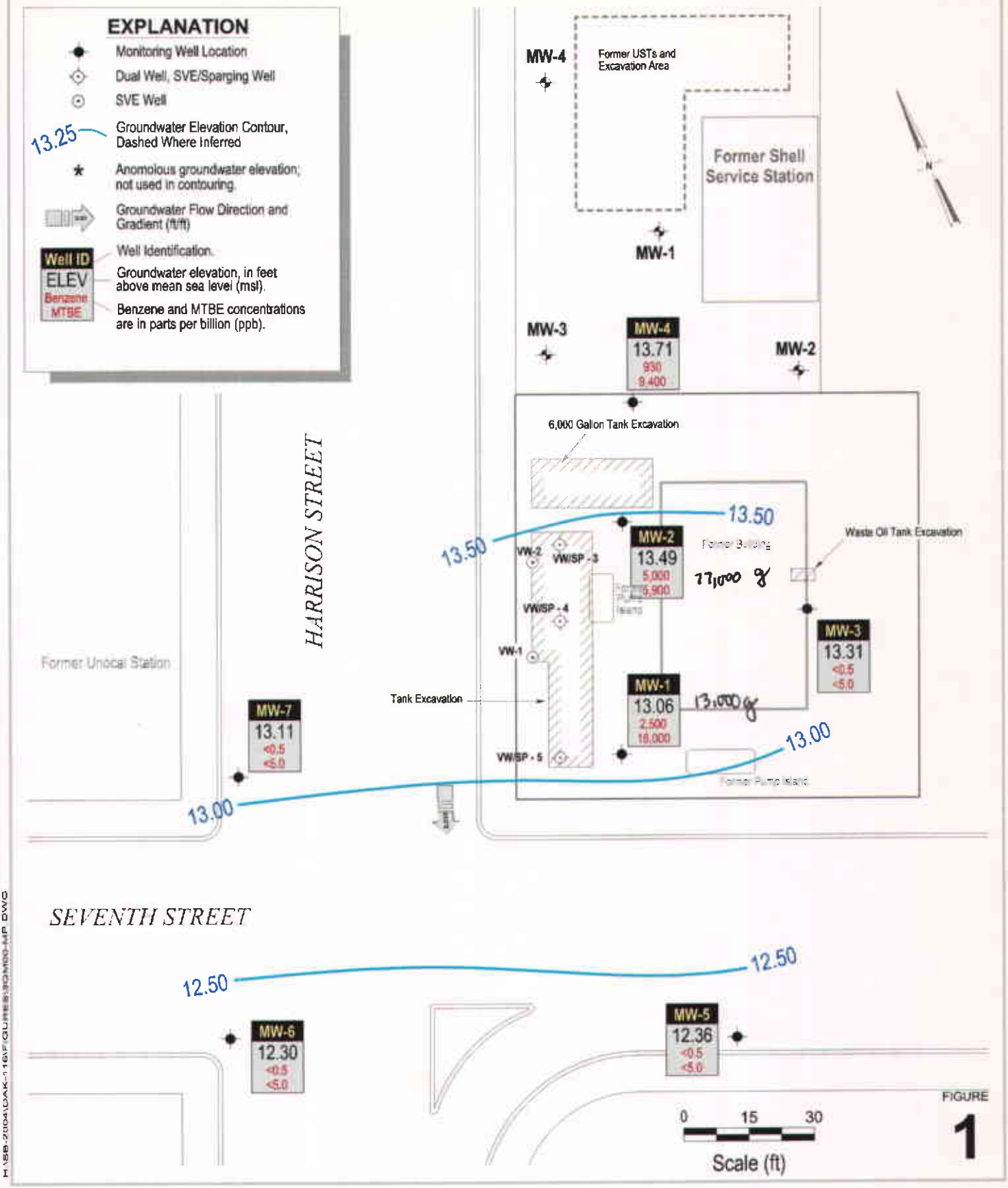

FIGURE
1

H:\SB-2004\OAK-116\FIGURES\3QM00-MP.DWG

Former Arco Station
706 Harrison Street
Oakland, California

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Groundwater Elevation Contour Map
August 9, 2000

Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
MW-1	8/13/93	17.40	11.75	20,000	8,500	640	280	440	-	
29.15	12/14/93	17.27	11.88	17,000	9,200	1,200	4,400	540	-	
Quarterly	4/15/94	17.00	12.15	9,500	3,600	530	160	280	-	
	12/29/94	16.40	12.75	-	-	-	-	-	-	
	7/19/96	15.83	13.32	17,000	5,200	1,100	330	530	-	sheen/odor
	1/27/97	13.58	15.57	30,000	9,800	1,300	790	880	400	b, sheen/odor
	6/18/97	16.11	13.04	19,000	5,600	1,400	510	770	1,200 (800)	a, b
	9/18/97	16.62	12.53	48,000	18,000	4,400	1,000	1,700	<640	b
	12/10/97	15.93	13.22	22,000	4,900	1,300	580	650	460 (260)	a, b, odor
	2/18/98	11.56	17.59	16,000	5,000	750	400	780	1,800	b
	5/12/98	13.53	15.62	19,000	4,600	810	450	770	5,500	b, c
	8/18/98	15.19	13.96	12,000	3,600	1,300	300	570	5,100(3,700)	a, b
	11/24/98	15.67	13.48	13,000	3,600	890	330	380	6,100	b
	2/4/99	15.31	13.84	20,000	5,900	830	450	500	4,900	b
	5/18/99	14.95	14.20	23,000	7,000	1,600	520	830	6,100	b
	8/27/99	15.84	13.31	19,000	5,800	1,700	410	710	1,800 (2,100)	a, b
	11/18/99	16.39	12.76	20,000	4,900	630	410	580	4,900 (3,600)	b
	2/29/00	13.43	15.72	12,000	2,800	24	290	170	3,100 (3,400)	a
	5/25/00	15.08	14.07	12,000	2,200	120	330	260	9,100 (12,000)	a, b
	8/9/00	**16.09**	**13.06**	**13,000**	**2,500**	**44**	**310**	**140**	**16,000**	**b**
MW-2	8/13/93	17.05	13.46	34,000	6,800	10,000	740	3,900	-	
30.51	12/14/93	18.28	12.23	16,000	3,200	4,200	500	1,700	-	
Quarterly	4/15/94	18.10	12.41	23,000	2,500	4,200	470	1,800	-	
	12/29/94	17.40	13.11	-	-	-	-	-	-	
	7/19/96	16.72	13.79	90,000	7,300	14,000	1,600	7,300	-	odor

Table continued on next page

Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
	1/27/97	14.89	15.62	63,000	7,100	13,000	1,600	7,100	500	b, odor
	6/18/97	17.12	13.39	52,000	5,100	10,000	1,400	6,000	<200	b
	9/18/97	17.63	12.88	110,000	9,400	23,000	2,600	13,000	<890	b, sheen/odor
	12/10/97	16.98	13.53	39,000	2,600	5,300	940	3,900	780 (320)	b, odor
	2/18/98	12.61	17.90	85,000	9,000	19,000	2,300	11,000	2,400	b
	5/12/98	14.45	16.06	110,000	9,500	21,000	2,500	12,000	<1,200	b
	8/18/98	16.14	14.37	64,000	6,000	13,000	1,700	7,800	2,000(1,300)	a, b
operation of A3 NE system	11/24/98	16.70	13.81	78,000	5,300	14,000	2,300	11,000	<2,000	b, g
	2/4/99	18.39	12.12	66,000	5,800	16,000	2,600	12,000	3,000	b, g
	5/18/99	15.90	14.61	78,000	6,700	17,000	2,400	10,000	4,300	b
	8/27/99	16.79	13.72	91,000	7,400	17,000	2,300	11,000	1,200 (1,000)	a, b
	11/18/99	17.32	13.19	180,000	7,000	20,000	3,300	16,000	<6,000 (1,700)	b,g
	2/29/00	14.37	16.14	86,000	5,500	13,000	2,000	9,500	3,500 (4,700)	a
	5/25/00	16.01	14.50	110,000	6,300	14,000	2,400	10,000	7,500 (6,500)	a, b, g
	8/9/00	**17.02**	**13.49**	**77,000**	**5,000**	**13,000**	**2,000**	**8,600**	**5,900**	**b**
MW-3	8/13/93	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5	-	
29.77	12/14/93	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5	-	
Biannually	4/15/94	17.40	12.37	<50	<0.5	<0.5	<0.5	<0.5	-	
	12/29/94	16.80	12.97	-	-	-	-	-	-	
	7/19/96	16.28	13.49	<50	<0.5	<0.5	<0.5	<0.5	-	
	1/27/97	13.83	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	16.53	13.24	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	9/18/97	17.07	12.70	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/10/97	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	11.80	17.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	13.85	15.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/18/98	15.57	14.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

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Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
	11/24/98	16.04	13.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/4/99	17.80	11.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	15.29	14.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/27/99	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/18/99	16.77	13.00	--	--	--	--	--	--	
	2/29/00	13.71	16.06	<50	2.0	<0.5	<0.5	<0.5	<5.0	
	5/25/00	15.46	14.31	--	--	--	--	--	--	
	8/9/00	**16.46**	**13.31**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	
MW-4	12/16/94	18.10	13.08	2,500	32	6.5	4.5	17	-	
31.18	12.29/94	17.95	13.23	-	-	-	-	-	-	
Quarterly	7/19/96	17.38	13.80	3,300	520	39	67	60	-	
	1/27/97	15.25	15.93	4,500	860	55	100	91	1,100	b
	6/18/97	17.61	13.57	2,700	700	52	81	76	2,200 (2,300)	a, b
	9/18/97	18.01	13.17	3,900	760	38	56	64	<170	b
	12/10/97	17.45	13.73	12,000	1,800	120	210	210	2,900 (2,600)	a, b
	2/18/98	13.09	18.09	1,700	210	8.0	6.7	16	200	b
	5/12/98	14.78	16.40	2,100	300	15	36	34	920	b, c
	8/18/98	16.59	14.59	4,700	1,000	130	110	150	5,200(4,900)	a, b
	11/24/98	17.18	14.00	3,000	810	44	76	94	4,800	b
	2/4/99	18.90	12.28	2,800	770	50	69	69	3,100	b
	5/18/99	16.30	14.88	4,000	780	57	7.7	79	4,800	b
	8/27/99	17.21	13.97	4,100	870	51	74	99	3,300 (4,100)	a, b
	11/18/99	17.77	13.41	3,000	760	43	67	65	5,100 (5,400)	b
	2/29/00	14.85	16.33	4,600	1,000	64	94	170	4,100 (4,600)	a
	5/25/00	16.45	14.73	2,600	540	39	59	41	3,500 (5,300)	a, b
	8/9/00	**17.47**	**13.71**	**4,400**	**930**	**66**	**98**	**79**	**9,400**	**b**

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Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
MW-5	12/16/94	16.07	11.97	<50	1.1	<0.5	<0.5	2.4	-	
28.04	12/29/94	16.10	11.94	-	-	-	-	-	-	
Biannually	7/19/96	15.49	12.55	<50	<0.5	<0.5	<0.5	<0.5	-	
	1/27/97	13.60	14.44	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	15.55	12.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	9/18/97	16.16	11.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/10/97	15.41	12.63	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	10.93	17.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	13.25	14.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/18/98	14.75	13.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/24/98	15.15	12.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/4/99	14.61	13.43	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	14.15	13.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/27/99	15.43	12.61	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/18/99	15.97	12.07	--	--	--	--	--	--	
	2/29/00	13.16	14.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/25/00	14.72	13.32	--	--	--	--	--	--	--
	8/9/00	**15.68**	**12.36**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	
MW-6	12/16/94	17.74	11.36	-	-	-	-	-	-	
29.10	12/29/94	17.40	11.70	-	-	-	-	-	-	
Biannually	7/19/96	16.60	12.50	<50	<0.5	<0.5	<0.5	<0.5	-	
	1/27/97	14.88	14.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	16.73	12.37	51	22	<0.5	<0.5	<0.5	<5.0	c
	9/18/97	17.24	11.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/10/97	16.56	12.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	12.93	16.17	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	14.35	14.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

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Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
	8/18/98	15.94	13.16	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/24/98	16.46	12.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/4/99	18.25	10.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	15.73	13.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/27/99	15.64	13.46	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/18/99	17.04	12.06	-	-	-	-	-	-	
	2/29/00	14.55	14.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/25/00	15.86	13.24	--	--	--	--	--	--	
	8/9/00	**16.80**	**12.3**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	
MW-7	12/16/94	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
29.67	12/29/94	17.65	12.02	-	-	-	-	-	-	
Biannually	7/19/96	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/27/97	15.09	14.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	16.59	13.08	73	<0.5	0.55	<0.5	<0.5	<5.0	d
	9/18/97	17.06	12.61	94	<0.5	<0.5	<0.5	<0.5	<5.0	e, f
	12/10/97	16.58	13.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	12.60	17.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	14.81	14.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/18/98	15.67	14.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/24/98	16.30	13.37	200	<0.5	<0.5	<0.5	<0.5	<5.0	d
	2/4/99	15.99	13.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	15.42	14.25	200	<0.5	<0.5	<0.5	<0.5	<5.0	d
	8/27/99	16.35	13.32	140	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/18/99	16.81	12.86	--	--	--	--	--	--	
	2/29/00	14.16	15.51	100	<0.5	<0.5	<0.5	<0.5	<5.0	f
	5/25/00	15.54	14.13	--	--	--	--	--	--	
	8/9/00	**16.56**	**13.11**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	

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Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						

Abbreviations and Analyses:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
Benzene, ethylbenzene, toluene and xylenes by EPA Method 8020.
MTBE = Methyl tert-butyl ether by EPA Method 8020 and 8260.
µg/L = Micrograms per liter
TOC = Top of casing elevation with respect to mean sea level
— = not sampled

Notes:

a = Result in parentheses indicates MTBE by EPA Method 8260.
b = Analytical laboratory notes that unmodified or weakly modified gasoline is significant.
c = Analytical laboratory notes that lighter gasoline range compounds are significant.
d = Analytical laboratory notes that isolated peaks are present.
e = Analytical laboratory notes that heavier gasoline range compounds are significant.
f = Analytical laboratory notes hydrocarbons with no recognizable patterns are present.
g = Analytical laboratory notes lighter than water immiscible sheen is present.
Data prior to 12/16/94 provided by previous consultant.