



ENVIRONMENTAL  
SAMPLING

May 21, 1997

Mr. Steve Chrissanthos  
Alameda Cellars  
1709 Otis Drive  
Alameda, California 94501

RE: Groundwater Monitoring Report  
2425 Encinal Avenue, Alameda, California  
ACC Project No. 6039-002.05

Dear Mr. Chrissanthos:

The enclosed report describes work completed during groundwater monitoring at 2425 Encinal Avenue, Alameda, California. This work was performed to evaluate the aerial extent of groundwater impact and evaluate petroleum hydrocarbon plume stability in accordance with requests from Alameda County Health Care Services Agency (ACHCSA).

The groundwater from each well located at 2425 Encinal was sampled for petroleum hydrocarbons as gasoline. In addition, the groundwater was evaluated for indications of natural bioremediation.

Based on the sample analysis and in-field testing conducted in July 1996, natural bioremediation is occurring at this site. However, natural bioremediation is occurring slowly. ACHCSA requested continued monitoring on a biannual basis to document decreasing concentrations of groundwater constituents. Once this is documented, ACC will present the "no further action" alternative to ACHCSA for consideration to obtain site closure.

If you have any comments regarding this report, please call me at (510) 638-8400.

Sincerely,

*Semi-annual?*

*Misty Kaltreider*  
mcr

Misty C. Kaltreider  
Senior Project Geologist

/mck:mcr:clm

cc: Ms. Juliet Shin, ACHCSA



ENVIRONMENTAL  
PROTECTION

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## GROUNDWATER MONITORING REPORT

May 19, 1997

2425 Encinal Avenue  
Alameda, California

Prepared For:  
Mr. Steve Chrissanthos  
Alameda Cellars

OAKLAND ■ SACRAMENTO  
SEATTLE ■ LOS ANGELES

ACC Project No. 96-6039-002.05

**GROUNDWATER MONITORING REPORT**

2425 Encinal Avenue  
Alameda, California

*ACC Project No. 6039-002.05*


Prepared for:  
Mr. Steve Chrissanthos  
Alameda Cellars  
1709 Otis Drive  
Alameda, California

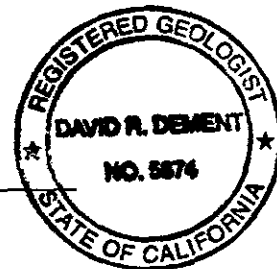
May 19, 1997

Prepared by:

  
\_\_\_\_\_  
Misty Kaltreider  
Senior Project Geologist

Reviewed by:

  
\_\_\_\_\_  
David R. DeMent, RG  
Senior Geologist



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# GROUNDWATER MONITORING REPORT

2425 Encinal Avenue

Alameda, California

## 1.0 INTRODUCTION

On behalf of Mr. Steve Chrissanthos of Alameda Cellars, ACC Environmental Consultants, Inc., (ACC) has prepared this report on groundwater monitoring performed at 2425 Encinal Avenue, Alameda, California. The site is located at the northern corner of Encinal and Park Avenues in Alameda, California (Figure 1). The property is occupied by Alameda Cellars, a commercial liquor store.

The project objectives were to: 1) measure the water levels and calculate the elevation of the groundwater in each monitoring well; 2) obtain groundwater samples from the six existing monitoring wells and analyze the water samples for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX); 3) obtain measurements of intrinsic bioremediation; and 4) report the findings.

## 2.0 BACKGROUND

In March 1990, two 10,000-gallon gasoline underground storage tanks (USTs) were removed from the subject site. Analysis of the soil samples collected from beneath the USTs indicated concentrations up to 710 parts per million (ppm) TPHg.

In December 1992, ACC performed a subsurface investigation, including drilling five borings on site. Three of the borings were converted into monitoring wells MW-1, MW-2a, and MW-3. Analytical results of the soil collected during drilling and sampling indicated concentrations up to 1,365 ppm TPHg and up to 18.9 ppm benzene. Initial groundwater samples collected from the monitoring wells in January 1993 indicated concentrations up to 5,680 parts per billion (ppb) in well MW-2a and up to 1,560 ppb benzene in well MW-1.

An additional soil investigation was conducted in May 1993 to evaluate the extent of impact in the soil and groundwater. Findings of the additional investigation indicated the lateral extent of petroleum hydrocarbon impacted soil did not appear to extend beyond the property boundaries along the northern, western, and eastern sides. However, along the southern side, the impacted soil appeared to extend into Park and Encinal Avenues. Field observations made during the additional investigation and soil sample analytical results indicated impacted soil existed primarily around the former tank excavation and the former dispenser island. The vertical extent of petroleum hydrocarbons in soil occurs at the soil/groundwater interface.

Analysis of grab groundwater samples collected from borings drilled during the additional investigation indicate that residual petroleum hydrocarbons from the former tank excavation and dispenser island migrated off site via the groundwater.

In December 1993, three additional monitoring wells (MW-4, MW-5, and MW-6) were installed at the property to further evaluate the extent of petroleum hydrocarbon impact to groundwater. Locations of the monitoring wells are illustrated on Figure 2. Laboratory analysis of the soil samples collected from each boring indicated no detectable concentrations of constituents, which verifies the lateral extent of soil impact.

Laboratory analytical results of the groundwater samples collected from monitoring wells MW-5 and MW-6 have consistently indicated no detectable concentrations of constituents above reporting limits, indicating a lateral extent of groundwater impact. Laboratory analytical results of groundwater collected from monitoring well MW-4 indicated detectable concentrations of constituents. The location of the southern edge of the groundwater impact is just off site to the south. This crossgradient movement is attributed to the relatively flat gradient and possible recharge into the excavated area.

In a letter dated April 30, 1996, the Alameda County Health Care Services Agency (ACHCSA) requested that in-field testing and additional analyses be performed on groundwater samples collected at the site to evaluate whether natural bioremediation is occurring. ACC's report dated February 13, 1997, addresses the results of the additional analyses. ACC continues to perform in-field testing to evaluate natural bioremediation. This report documents the findings from the most recent groundwater monitoring evaluation.

### **3.0 GROUNDWATER MONITORING AND SAMPLING**

ACC conducted groundwater monitoring on April 30, 1997. Work at the site included measuring depth to water, subjectively evaluating groundwater in the wells, and purging and sampling the wells for laboratory analysis.

#### **3.1 Groundwater Monitoring**

Before groundwater sampling, the depth to the surface of the water table was measured from the top of the polyvinyl chloride well casing using a Solinst water level meter. The water level measurements were recorded to the nearest 0.01 foot with respect to mean sea level (MSL). Groundwater monitoring data obtained at the site is included in Appendix 1. Information regarding well elevations and groundwater levels is summarized in Table 1.

**TABLE 1 - GROUNDWATER DEPTH INFORMATION**

Well ID Well Elevation	Date Monitored	Depth to Groundwater (feet)	Groundwater Elevation (feet above MSL)
MW-1 27.61	01/09/93	6.75	20.86
	02/09/93	6.41	21.20
	03/10/93	6.34	21.27
	04/12/93	6.52	21.09
	05/17/93	7.38	20.23
	06/28/93	8.42	19.19
	07/13/93	8.68	18.93
	08/10/93	8.25	19.36
	09/10/93	8.73	18.88
	10/12/93	9.04	18.57
	12/20/93	7.87	19.74
	03/18/94	6.96	20.65
	04/08/94	7.69	19.92
	06/22/94	8.55	19.06
	12/07/94	6.92	20.69
	03/16/95	5.54	22.07
	06/23/95	7.17	20.44
	09/14/95	8.17	19.44
	12/18/95	6.77	20.84
	3/19/96	5.34	22.27
06/27/96	7.45	20.16	
10/14/96	8.66	18.95	
04/30/97	7.20	20.41	
MW-2a 27.98	01/09/93	7.06	20.92
	02/09/93	6.63	21.35
	03/10/93	6.57	21.41
	04/12/93	6.77	21.21
	05/17/93	7.61	20.37
	06/28/93	8.68	19.30
	07/13/93	8.94	19.04
	08/10/93	8.66	19.32
	09/10/93	8.95	19.03
	10/12/93	9.36	18.62
	12/20/93	8.24	19.74
	03/18/94	7.80	20.18
	04/08/94	7.67	20.31
06/22/94	7.82	20.16	

Well ID Well Elevation	Date Monitored	Depth to Groundwater (feet)	Groundwater Elevation (feet above MSL)
MW-2a 27.98 (continued)	12/07/94	7.23	20.75
	03/16/95	5.62	22.36
	06/23/95	7.35	20.63
	09/14/95	8.41	19.57
	12/18/95	7.05	20.93
	3/19/96	5.49	22.49
	06/27/96	7.67	20.31
	10/14/96	---	---
	04/30/97	7.41	20.57
MW-3 27.89	01/09/93	6.68	21.21
	02/09/93	6.25	21.64
	03/10/93	6.18	21.71
	04/12/93	6.41	21.48
	05/17/93	7.37	20.52
	06/28/93	8.47	19.42
	07/13/93	8.74	19.15
	08/10/93	8.45	19.44
	09/10/93	8.52	19.37
	10/12/93	9.20	18.69
	12/20/93	7.95	19.94
	03/18/94	6.60	21.29
	04/08/94	7.70	20.19
	06/22/94	8.62	19.27
	12/07/94	6.92	20.97
	03/16/95	5.25	22.64
	06/23/95	6.99	20.90
	09/14/95	8.11	19.78
	12/18/95	6.58	21.31
	3/19/96	5.14	22.75
06/27/96	7.37	20.52	
10/14/96	8.62	19.27	
04/30/97	7.08	20.81	
MW-4 26.97	12/20/93	7.25	19.72
	03/18/94	6.64	20.33
	04/08/94	7.12	19.85
	06/22/94	7.96	19.01
	12/07/94	6.32	20.65
	03/16/95	5.08	21.89



Well ID Well Elevation	Date Monitored	Depth to Groundwater (feet)	Groundwater Elevation (feet above MSL)
MW-4 26.97 (continued)	06/23/95	6.65	20.32
	09/14/95	7.61	19.36
	12/18/95	6.20	20.77
	03/19/96	4.87	22.10
	06/27/96	6.93	20.04
	10/14/96	8.12	18.85
	04/30/97	6.66	20.31
MW-5 27.34	12/20/93	8.01	19.33
	03/18/94	7.80	19.54
	04/08/94	7.82	19.52
	06/22/94	8.51	18.83
	12/07/94	7.08	20.26
	03/16/95	5.72	21.62
	06/23/95	7.38	19.96
	09/14/95	8.27	19.07
	12/18/95	7.17	20.17
	3/19/96	5.49	21.85
	06/27/96	7.55	19.79
	10/14/96	8.72	18.62
	04/30/97	7.34	20.00
MW-6 28.03	12/20/93	8.00	20.03
	03/18/94	---	---
	04/08/94	7.72	20.31
	06/22/94	8.68	19.35
	12/07/94	---	---
	12/13/94	6.73	21.30
	03/16/95	5.04	22.99
	06/23/95	6.90	21.13
	09/14/95	8.07	19.96
	12/18/95	---	---
	3/19/96	5.05	22.98
	06/27/96	7.55	19.79
	10/14/96	8.63	19.40
04/30/97	7.02	21.01	

Note: Depth to groundwater measured from the top of well casing  
 --- = Depth to groundwater not measured

In addition, groundwater monitoring was performed before, during, and after purging to evaluate the groundwater for intrinsic parameters of biodegradation. Monitoring included measuring dissolved

oxygen (DO), salinity, turbidity, pH, and temperature with the use of a Horiba® flow-cell unit. The parameter results from April 30, 1997, are summarized in Table 2.

**TABLE 2 - MONITORING PARAMETERS**

Well No.- Gallons Removed	pH	Temp (°C)	Conductivity (µn/cm)	DO (mg/L)	Salinity	Turbidity (units)
MW-1 - 1.6	6.93	19.9	0.99	3.92	0.04	136
3.2	7.16	19.7	0.98	4.20	0.04	-10
4.8	7.25	19.7	1.00	4.12	0.04	-10
6.4	7.28	19.8	1.00	4.08	0.04	-10
MW-2 - 1.1	7.90	19.6	0.480	3.55	0.01	-10
2.2	8.27	20.0	0.473	3.72	0.01	-10
3.3	8.30	20.0	0.470	3.67	0.01	-10
4.4	8.17	19.9	0.470	3.78	0.01	-10
MW-3 - 1.3	6.93	19.3	0.461	3.96	0.01	312
2.6	7.96	19.1	0.400	4.28	0.01	722
3.9	7.28	19.0	0.375	4.31	0.01	808
5.2	7.21	19.0	0.372	4.34	0.01	791
MW-4 - 1.8	7.84	20.0	0.548	4.13	0.02	-10
3.6	8.03	19.9	0.523	4.23	0.02	294
5.4	8.12	19.8	0.531	4.26	0.02	277
7.2	8.08	19.8	0.529	4.19	0.02	312
MW-5 - 1.6	8.67	20.8	0.418	4.24	0.01	442
3.2	8.69	20.5	0.451	4.38	0.01	999
4.8	8.71	20.4	0.452	4.81	0.01	999
6.4	8.64	20.4	0.455	4.76	0.01	999
MW-6 - 1.7	8.83	18.2	0.255	4.27	0.01	915
3.4	8.57	18.0	0.258	4.47	0.01	999
5.1	8.32	18.0	0.260	4.50	0.01	999
6.8	8.37	17.9	0.258	4.52	0.01	921

Notes: mg/L = milligrams per liter, equivalent to ppm

### 3.2 Groundwater Gradient

The groundwater flow direction, as calculated from monitoring well data obtained on April 30, 1997, is illustrated on Figure 3. Based on groundwater elevation calculations, groundwater flow is toward the southwest at an average gradient of 0.01 foot/foot. The groundwater flow direction, as determined from monitoring well data, is similar to previous sampling events. Table 3 summarizes historical gradient and approximate flow directions calculated from water elevations.

**TABLE 3 - HISTORICAL GRADIENT AND FLOW DIRECTION**

Date Monitored	Gradient (foot/foot)	Direction
01/09/93	0.01	west
02/09/93	0.01	southwest
03/10/93	0.01	west/southwest
04/12/93	0.01	west/southwest
05/17/93	0.01	south/southwest
06/28/93	0.01	southwest
07/13/93	0.01	southwest
08/10/93	0.004	west
09/10/93	0.02	southwest
10/12/93	0.004	southwest
12/20/93	0.01	west
03/18/94	0.02	west
04/08/94	0.01	west
06/22/94	0.03	south/southwest
12/07/94	0.01 (average)	west/southwest
03/16/95	0.01	southwest
06/23/95	0.01-0.013 (varies)	southwest
09/14/95	0.008	southwest
12/18/95	0.011	southwest
03/19/96	0.011	southwest
06/27/96	0.013	southwest
10/14/96	0.007	southwest
04/30/97	0.01	southwest

**3.3 Groundwater Sampling**

Before groundwater sampling, each well was purged using a new polyethylene disposable bailer and new string. Groundwater samples were collected when temperature, pH, and conductivity of the water stabilized and a minimum of four well-casing volumes of water had been removed. Following purging, each well was allowed to recharge prior to sampling. When recovery to 80 percent of the

static water level was observed, a sample was collected for analysis. Groundwater conditions were monitored during purging and sampling. Well monitoring worksheets are included as Appendix 1.

Wells were sampled using a disposable polyethylene bailer attached to new string. From each monitoring well, sample vials were filled to overflowing and sealed so that no air was trapped in the vial. Once filled, sample vials were inverted and tapped to test for air bubbles. Samples were collected in approved, laboratory-supplied vials. Sample containers were labeled with self-adhesive, preprinted tags and stored in a pre-chilled, insulated container pending delivery to a state-certified laboratory for analysis.

Water purged during the development and sampling of the monitoring wells was stored temporarily on site in Department of Transportation approved 55-gallon drums pending laboratory analysis and proper disposal.

#### **4.0 RESULTS OF GROUNDWATER SAMPLING**

Groundwater samples collected from each well were submitted to Chromalab, Inc., following chain of custody protocol. Groundwater samples collected from wells MW-1 through MW-6 were analyzed for TPHg, BTEX, and methyl tertiary butyl ether (MTBE) by EPA Method 8015M/8020. Copies of the chain of custody record and laboratory analytical reports are included in Appendix 2. Dissolved gasoline constituents were detected in groundwater samples collected from wells MW-1, MW-2a, MW-3, and MW-4. Laboratory analysis of water samples collected from wells MW-5 and MW-6 indicated no detectable concentrations of constituents above laboratory reporting limits. A summary of groundwater sample results is presented in Table 4.

**TABLE 4 - GROUNDWATER SAMPLE ANALYTICAL RESULTS**

Well ID	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-1	01/09/93	5,360	1,560.0	1,026.6	641.0	2,706.2	---
	04/12/93	12,000	750.0	100.0	500.0	1,400.0	---
	07/13/93	720	119.6	32.7	70.8	262.0	---
	10/12/93	8,400	420.0	39.0	280.0	880.0	---
	12/20/93	5,200	270.0	58.0	170.0	590.0	---
	03/18/94	18,000	570.0	180.0	270.0	1,500.0	---
	04/08/94	NT	NT	NT	NT	NT	---
	06/22/94	4,800	160.0	56.0	130.0	310.0	---
	12/07/94	9,100	530.0	200.0	350.0	1,300.0	---
	03/16/95	230	15.0	4.5	9.4	38.0	---
	06/23/95	2,700	170.0	19.0	40.0	180.0	---
	09/14/95	1,700	160.0	12.0	69.0	100.0	---
	12/18/95	2,900	190.0	57.0	130.0	380.0	---
	03/19/96	14,000	910	280	400	2,100	---
	06/27/96	5,300	320	81	280	710	---
	10/14/96	1,000	58	4.2	40	25	---
	04/30/97	4,400	230	64	220	550	<50
MW-2a	01/09/93	5,680	801.6	598.6	840.2	2,196.1	---
	04/12/93	12,000	460.0	110.0	240.0	1,600.0	---
	07/13/93	550	145.2	47.5	126.8	127.4	---
	10/12/93	2,000	280.0	17.0	100.0	120.0	---
	12/20/93	3,300	450.0	40.0	200.0	350.0	---
	03/18/94	7,900	370.0	53.0	190.0	530.0	---
	04/08/94	NT	NT	NT	NT	NT	---
	06/22/94	3,800	420.0	37.0	140.0	290.0	---
	12/07/94	6,800	640.0	100.0	370.0	950.0	---
	03/16/95	6,500	590.0	96.0	360.0	1,000.0	---
	06/23/95	4,300	170.0	58.0	33.0	810.0	---
	09/14/95	1,700	270.0	17.0	76.0	160.0	---
	12/18/95	3,900	410.0	52.0	290.0	610.0	---
	03/19/96	9,000	470	70	540	1,400	---
	06/27/96	9,900	350	33	230	580	---
	10/14/96	---	---	---	---	---	---
	04/30/97	4,300	300	31	190	450	<50

Well ID	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-3	01/09/93	<50	<0.5	<0.5	<0.5	<0.5	---
	04/12/93	1,500	95.0	30.0	46.0	85.0	---
	07/13/93	540	18.3	106.2	75.7	128.0	---
	10/12/93	3,500	290.0	230.0	210.0	460.0	---
	12/20/93	690	31.0	10.0	31.0	25.0	---
	03/18/94	450	9.6	11.0	5.5	23.0	---
	04/08/94	NT	NT	NT	NT	NT	---
	06/22/94	2,500	150.0	130.0	81.0	280.0	---
	12/07/94	420	16.0	8.3	26.0	37.0	---
	03/16/95	490	19.0	2.7	24.0	46.0	---
	06/23/95	860	41.0	5.4	32.0	110.0	---
	09/14/95	720	43.0	3.7	50.0	86.0	---
	12/18/95	860	27.0	10.0	38.0	53.0	---
	03/19/96	570	28	2.2	21	30	---
	06/27/96	910	54	4.9	53	79	---
	10/14/96	610	48	3.6	31	37	---
04/30/97	590	44	4.5	25	39	<5.0	
MW-4	12/20/93	580	2.3	<0.5	1.4	1.1	---
	03/18/94	2,100	11.0	1.5	2.3	6.0	---
	04/08/04	NT	NT	NT	NT	NT	---
	06/22/94	1,600	39.0	7.5	13.0	16.0	---
	12/07/94	2,100	82.0	9.6	4.7	14.0	---
	03/16/95	3,400	140.0	12.0	45.0	29.0	---
	06/23/95	1,800	140.0	13.0	13.0	28.0	---
	09/14/95	3,900	250.0	6.1	3.8	11.0	---
	12/18/95	2,400	94.0	14.0	11.0	29.0	---
	03/19/96	1,300	68.0	8.2	25.0	21.0	---
	06/27/96	2,100	96.0	11.0	18.0	20.0	---
	10/14/96	2,300	130	8.4	3.4	5.6	---
04/30/97	2,500	100	12	46	35	<50	

Well ID	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-5	12/20/93	<50	<0.5	<0.5	<0.5	<0.5	---
	03/18/94	<50	<0.5	<0.5	<0.5	<0.5	---
	04/08/94	NT	NT	NT	NT	NT	---
	06/22/94	<50	<0.5	<0.5	<0.5	<0.5	---
	12/07/94	<50	<0.5	<0.5	<0.5	<0.5	---
	03/16/95	<50	<0.5	<0.5	<0.5	<0.5	---
	06/12/95	<50	<0.5	<0.5	<0.5	<0.5	---
	09/14/95	<50	<0.5	<0.5	<0.5	<0.5	---
	12/18/95	<50	<0.5	<0.5	<0.5	<0.5	---
	03/19/96	<50	<0.5	<0.5	<0.5	<0.5	---
	06/27/96	<50	<0.5	<0.5	<0.5	<0.5	---
	10/14/96	<50	<0.5	<0.5	<0.5	<0.5	---
	04/30/97	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	12/20/93	<50	<0.5	<0.5	<0.5	<0.5	---
	03/13/94	NT	NT	NT	NT	NT	---
	04/08/94	<50	<0.5	<0.5	<0.5	<0.5	---
	06/22/94	<50	<0.5	<0.5	<0.5	<0.5	---
	12/13/94	<50	<0.5	<0.5	<0.5	<0.5	---
	03/16/95	<50	<0.5	<0.5	<0.5	<0.5	---
	06/23/95	<50	<0.5	<0.5	<0.5	<0.5	---
	09/14/95	<50	<0.5	<0.5	<0.5	<0.5	---
	03/19/96	<50	<0.5	<0.5	<0.5	<0.5	---
	06/27/96	<50	<0.5	<0.5	<0.5	<0.5	---
	10/14/96	<50	<0.5	<0.5	<0.5	<0.5	---
04/30/97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

Notes: µg/L = micrograms per liter (approximately equivalent to ppb)  
NT = Not tested

## 5.0 DISCUSSION

This report documents the groundwater monitoring conducted for all six groundwater wells at Alameda Cellars, 2425 Encinal Avenue, Alameda, California. Groundwater sample results indicate detectable concentrations of gasoline constituents in the groundwater samples collected from wells MW-1, MW-2a, MW-3, and MW-4. No detectable concentrations of TPHg and BTEX were reported in samples collected from wells MW-5 and MW-6, which is consistent with previous sampling events. The samples collected from wells MW-2a and MW-3 indicated a decrease in gasoline constituents compared with the previous sampling events conducted in June and October 1996. Concentrations of TPHg reported in well MW-4 have increased, but the

benzene has decreased since the previous sampling event. Groundwater flow direction and gradient are consistent with the previous sampling events.

In addition to petroleum hydrocarbons, the groundwater was evaluated for indicator parameters of bioremediation. The water in each well was monitored before, during, and after purging to evaluate indications of biodegradation. Results of each parameter monitored are discussed below.

### 5.1 Dissolved Oxygen

DO was measured by using a flow-cell configuration consisting of a down-hole pump lowered into the groundwater that pumps water into a small bucket in a double-contained holding system. The water is then pumped into the small, inner bucket to overflowing to prevent introduction of oxygen. The probe is lowered into the small bucket and direct readings are recorded. Overflowing water is pumped from the containment bucket into a drum.

DO concentrations can be used to evaluate the mass of constituents that can be biodegraded by aerobic processes. During aerobic biodegradation, DO levels are reduced and aerobic biodegradation can degrade BTEX components if sufficient DO ( $>1$  to  $2$  mg/L) is present (Buscheck and O'Reilly, March 1995). Levels of DO varied throughout the site from  $4.81$  mg/L in well MW-5 to  $3.55$  mg/L in well MW-2a. Water from wells MW-1, MW-2a, MW-3, and MW-4 (with elevated concentrations of petroleum hydrocarbons) indicated the lowest levels of DO. Water from wells MW-5 and MW-6 (with no detectable concentrations of petroleum hydrocarbons) indicated the highest levels of DO. This indicates that sufficient DO is present in the non-impacted groundwater, and aerobic degradation of petroleum hydrocarbons is occurring. The measured reduction in DO from non-impacted groundwater indicates that the natural microbes are using the DO to degrade petroleum hydrocarbons.

## 6.0 CONCLUSIONS

The extent of the groundwater impact has been identified and groundwater monitoring conducted since January 1993 has documented fluctuating concentrations of TPHg and BTEX. However, the overall concentrations within the groundwater are decreasing. Based on the work completed to date and the analytical results from groundwater monitoring, the following conclusions can be made:

- The findings from the groundwater monitoring and analysis indicate that natural biodegradation is occurring within the impacted groundwater plume. Due to the naturally occurring concentrations of DO in the groundwater, natural biodegradation is occurring aerobically.
- Because of the rate of aerobic biodegradation, petroleum hydrocarbon concentrations in the groundwater will continue to illustrate fluctuations as a result of fluctuating water levels, but



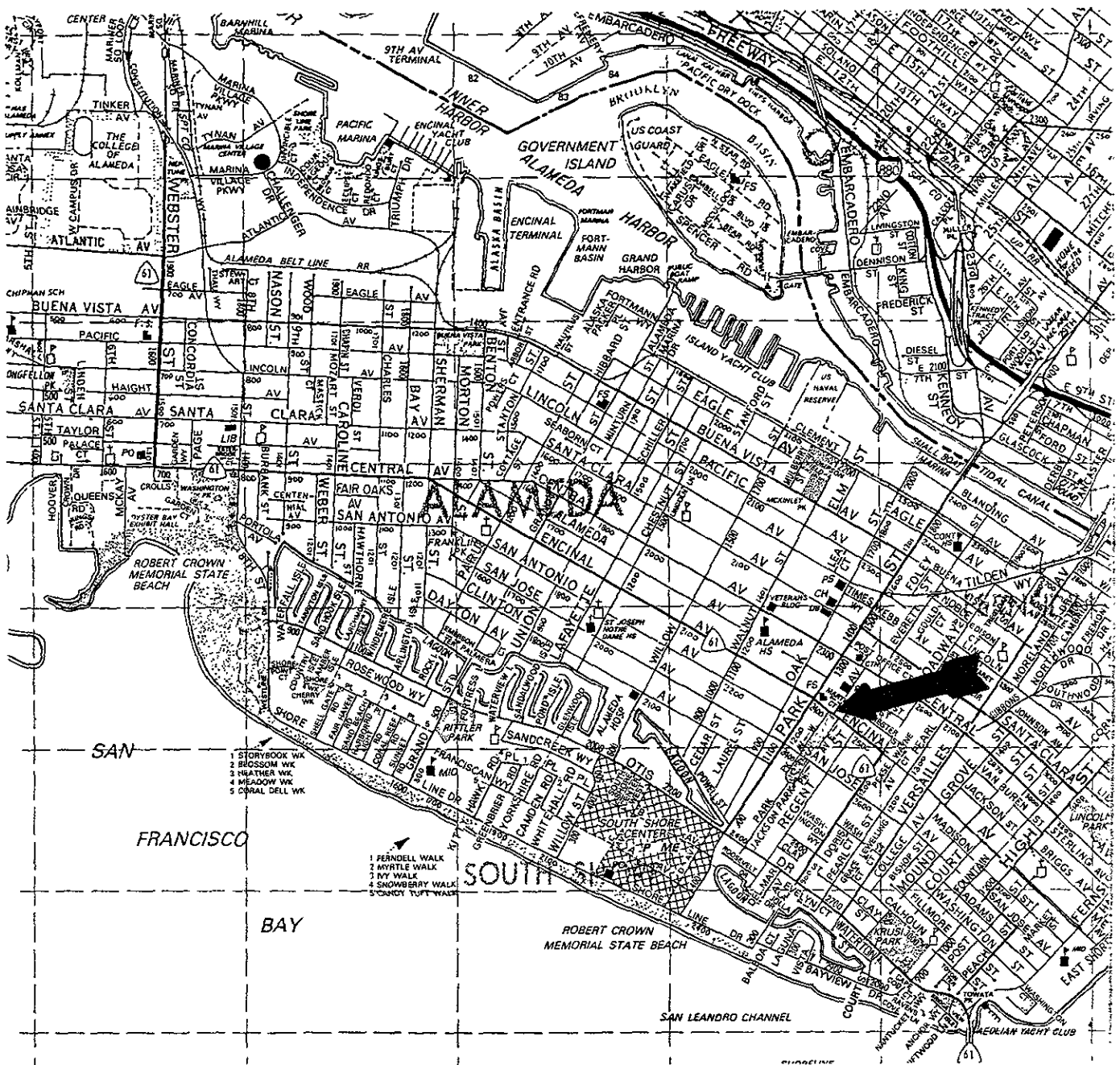
the overall concentrations will decrease with time. This slow decrease has been illustrated in the groundwater sampling and analysis performed at the site since 1993.

- The most recent groundwater sampling indicates detectable concentrations of petroleum hydrocarbons in monitoring wells MW-1 through MW-4. TPHg concentrations decreased in wells MW-2a and MW-3 and benzene concentrations decreased in wells MW-2a, MW-3, MW-4 during the current event. TPHg concentrations increased in monitoring wells MW-1 and MW-4.
- The bulk of the source was removed with the tank removal; therefore, ACC believes that the detectable concentrations observed in the groundwater in wells MW-1 through MW-4 are the result of remnant impacted soil affecting the groundwater.
- The area of impact is limited based on laboratory results from samples collected from well MW-5, which has continually indicated no detectable concentrations of constituents.
- Due to the relatively flat gradient, the potential for plume migration is limited. Impacted groundwater will likely degrade before any substantial downgradient migration occurs and a stable plume has been clearly demonstrated.

## 7.0 RECOMMENDATIONS

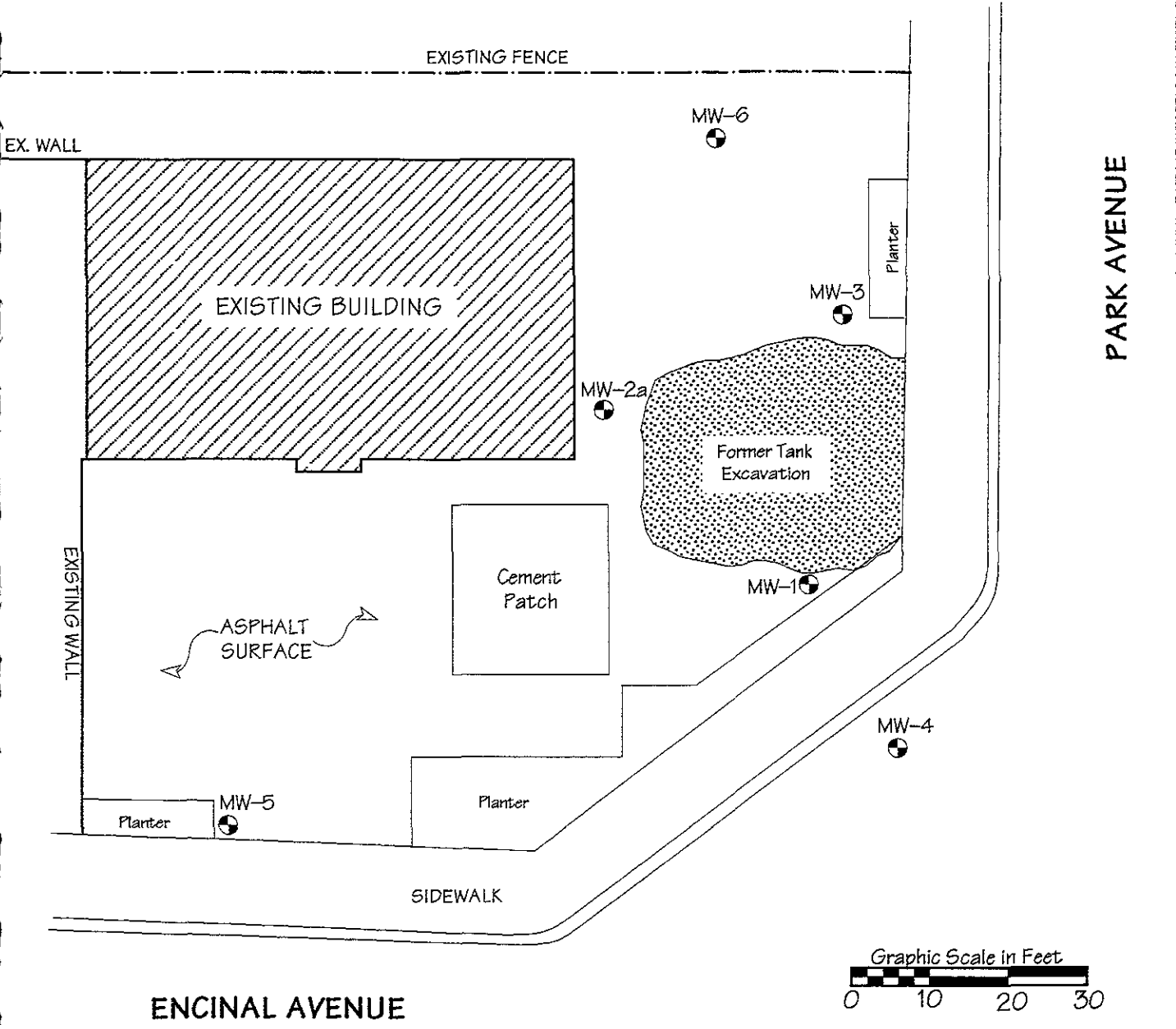
Based on the work completed to date and the laboratory results from the groundwater samples collected, ACC anticipates that the concentrations observed within the monitoring wells will fluctuate with seasonal precipitation then decline with time.

ACC recommends that biannual groundwater monitoring of all six wells be continued for a minimum of one year to evaluate trends, and then the site should be evaluated for final closure.

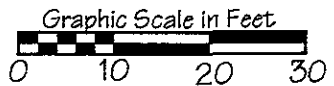


SOURCE: THOMAS BROTHERS GUIDE, 1990 ed.

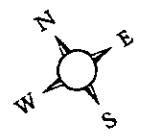
Title: <b>Location Map</b> <b>2425 Encinal Avenue</b> <b>Alameda, California</b>	
Figure Number: 1.0	Scale: 1" = 1/4 mi
Drawn By: JVC	Date: 3/19/96
Project Number: 6039-5	
<b>ACC Environmental Consultants</b> 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	



ENCINAL AVENUE

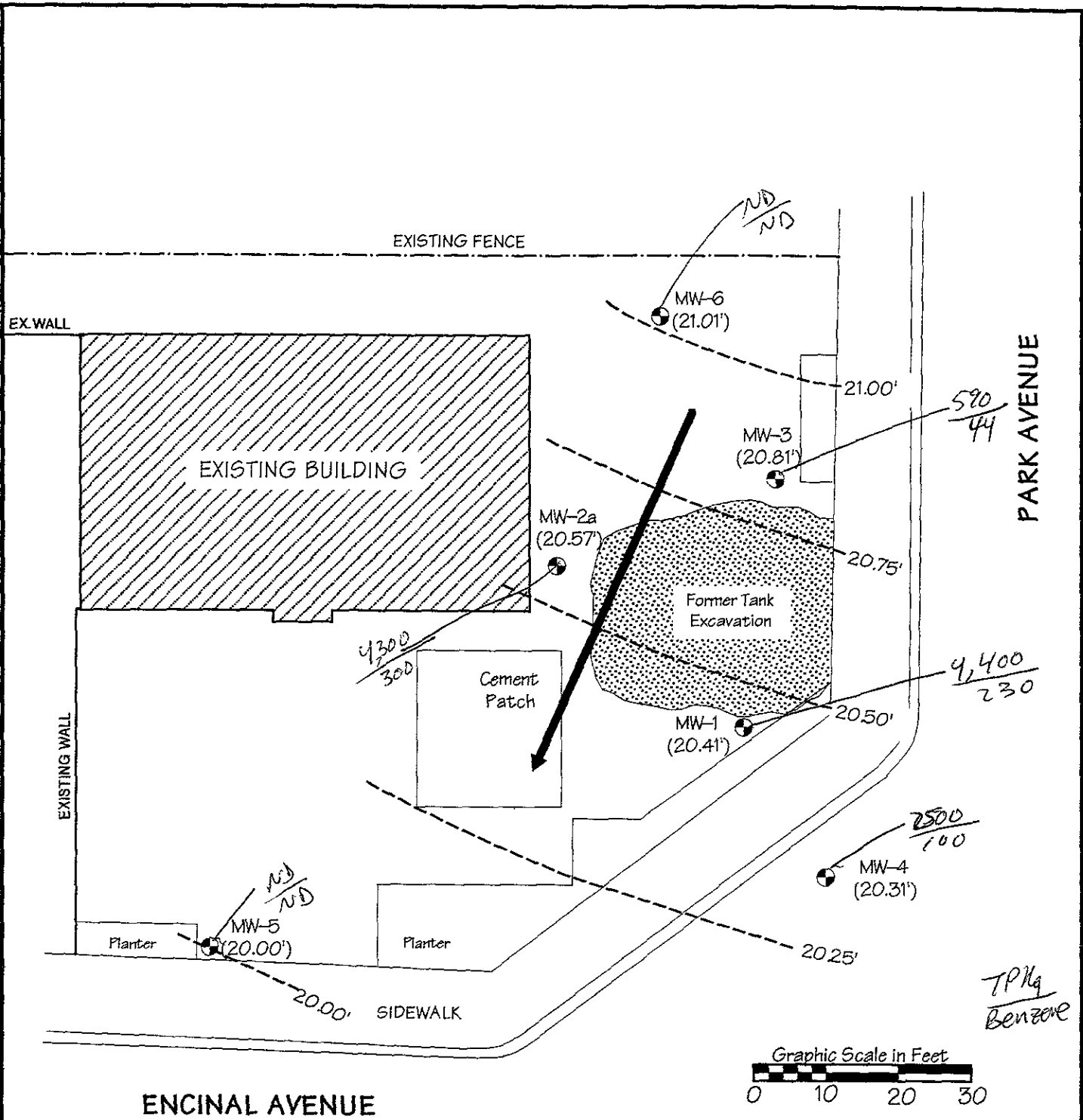


Title: <b>Site Plan</b> <b>2425 Encinal Ave</b> <b>Alameda, California</b>	
Figure Number: <b>2</b>	Scale: <b>1" = 20"</b>
Drawn By: <b>JVC</b>	Date: <b>11/18/96</b>
Project Number: <b>6039-2.5</b>	
<b>ACC Environmental Consultants</b> 7977 Capwell Drive, Suite 100 Oakland, CA 94621 (510) 638-8400 Fax: (510) 638-8404	



**Legend**

MW-5  - Groundwater Monitoring Well Location



ENCINAL AVENUE

PARK AVENUE

**Legend**

- MW-5 - Groundwater Monitoring Well Location
- Groundwater Elevation Contour (Contour Interval = 0.22 foot)
- Approximate Groundwater Flow Direction 4/30/97

Title: <b>Groundwater Gradient 2425 Encinal Avenue Alameda, California</b>	
Figure Number: <b>3</b>	Scale: <b>1" = 20"</b>
Drawn By: <b>JVC</b>	Date: <b>5/19/97</b>
Project Number: <b>6039-002.05</b>	
<b>ACC Environmental Consultants</b> 7977 Capwell Drive, Suite 100 Oakland, CA 94621 (510) 638-8400 Fax: (510) 638-8404	

**WELL MONITORING WORKSHEET**

---

JOB NAME: <u>Alameda Cellars</u>	PURGE METHOD: <u>Manual Bailing</u>
SITE ADDRESS: <u>2425 Encinal Ave</u>	SAMPLED BY: <u>Eloy Cisneros</u>
JOB #: <u>6039-5.0</u>	LABORATORY: <u>Chromalab</u>
DATE: <u>4/30/97</u>	ANALYSIS: <u>Gas, BTEX, MTBE</u>
Onsite Drum Inventory SOIL:	MONITORING <input checked="" type="checkbox"/> DEVELOPING <input type="checkbox"/>
EMPTY: WATER: <u>1=100%</u>	SAMPLING <input checked="" type="checkbox"/>

	PURGE	PURGE WATER READINGS						OBSERVATIONS
	VOL	pH	Temp.(C)	Cond.	Sal.	Turb.	D.O.	
<b>WELL: MW-1</b>	(Gal)	pH	Temp.(C)	Cond.	Sal.	Turb.	D.O.	<input type="checkbox"/> Froth
DEPTH OF BORING: <u>17.52'</u>	<u>1.6</u>	<u>6.93</u>	<u>19.9</u>	<u>0.99</u>	<u>0.04</u>	<u>136</u>	<u>3.92</u>	<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>7.20'</u>	<u>3.2</u>	<u>7.16</u>	<u>19.7</u>	<u>0.98</u>	<u>0.04</u>	<u>-10</u>	<u>4.20</u>	<input checked="" type="checkbox"/> Odor Type <u>gas</u>
WATER COLUMN: <u>10.32'</u>	<u>4.8</u>	<u>7.25</u>	<u>19.7</u>	<u>1.00</u>	<u>0.04</u>	<u>-10</u>	<u>4.12</u>	<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>								Amount _____ Type _____
WELL VOLUME: <u>≈ 1.6 gal</u>								<input type="checkbox"/> Other
COMMENTS:								
<u>20.41 MSL</u>	<u>6.4</u>	<u>7.28</u>	<u>19.8</u>	<u>1.00</u>	<u>0.04</u>	<u>-10</u>	<u>4.08</u>	
<b>WELL: MW-2</b>	(Gal)	pH	Temp.(C)	Cond.	Sal.	Turb.	D.O.	<input type="checkbox"/> Froth
DEPTH OF BORING: <u>14.13'</u>	<u>1.1</u>	<u>7.90</u>	<u>19.6</u>	<u>0.490</u>	<u>0.01</u>	<u>-10</u>	<u>3.55</u>	<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>7.41'</u>	<u>2.2</u>	<u>8.27</u>	<u>20.0</u>	<u>0.473</u>	<u>0.01</u>	<u>-10</u>	<u>3.72</u>	<input checked="" type="checkbox"/> Odor Type <u>gas</u>
WATER COLUMN: <u>6.72'</u>	<u>3.3</u>	<u>8.30</u>	<u>20.0</u>	<u>0.470</u>	<u>0.01</u>	<u>-10</u>	<u>3.67</u>	<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>								Amount _____ Type _____
WELL VOLUME: <u>≈ 1.1 gal</u>								<input type="checkbox"/> Other
COMMENTS:								
<u>20.57 MSL</u>	<u>4.4</u>	<u>8.17</u>	<u>19.9</u>	<u>0.470</u>	<u>0.01</u>	<u>-10</u>	<u>3.78</u>	
<b>WELL: MW-3</b>	(Gal)	pH	Temp.(C)	Cond.	Sal.	Turb.	D.O.	<input type="checkbox"/> Froth
DEPTH OF BORING: <u>14.80'</u>	<u>1.3</u>	<u>6.93</u>	<u>19.3</u>	<u>0.461</u>	<u>0.01</u>	<u>312</u>	<u>3.96</u>	<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>7.08'</u>	<u>2.6</u>	<u>7.96</u>	<u>19.1</u>	<u>0.400</u>	<u>0.01</u>	<u>722</u>	<u>4.28</u>	<input checked="" type="checkbox"/> Odor Type <u>gas</u>
WATER COLUMN: <u>7.72'</u>	<u>3.9</u>	<u>7.28</u>	<u>19.0</u>	<u>0.375</u>	<u>0.01</u>	<u>808</u>	<u>4.31</u>	<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>								Amount _____ Type _____
WELL VOLUME: <u>≈ 1.3 gal</u>								<input type="checkbox"/> Other
COMMENTS:								
<u>20.81 MSL</u>	<u>5.2</u>	<u>7.21</u>	<u>19.0</u>	<u>0.372</u>	<u>0.01</u>	<u>791</u>	<u>4.34</u>	

JOB NAME: <u>Alameda Cellars</u>	PURGE METHOD: <u>Manual Bailing</u>
SITE ADDRESS: <u>2425 Encinal Ave</u>	SAMPLED BY: <u>Eloy Cisneros</u>
JOB #: <u>6039-5.0</u>	LABORATORY: <u>Chromalab</u>
DATE: <u>4/30/97</u>	ANALYSIS: <u>Gas, BTEX, MTBE</u>
Onsite Drum Inventory SOIL:	MONITORING <input checked="" type="checkbox"/> DEVELOPING <input type="checkbox"/>
EMPTY: WATER: <u>1=100%</u>	SAMPLING <input checked="" type="checkbox"/>

	PURGE VOL	PURGE WATER READINGS						OBSERVATIONS
	(Gal)	pH	Temp.(C)	Cond.	Sal.	Turb.	D.O.	
<b>WELL: MW-4</b>								<input type="checkbox"/> Froth
DEPTH OF BORING: <u>17.51'</u>	<u>1.8</u>	<u>7.84</u>	<u>20.0</u>	<u>0.548</u>	<u>0.02</u>	<u>-10</u>	<u>4.13</u>	<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>6.66'</u>	<u>3.6</u>	<u>8.03</u>	<u>19.9</u>	<u>0.523</u>	<u>0.02</u>	<u>294</u>	<u>4.23</u>	<input checked="" type="checkbox"/> Odor Type <u>gas</u>
WATER COLUMN: <u>10.85'</u>	<u>5.4</u>	<u>8.12</u>	<u>19.8</u>	<u>0.531</u>	<u>0.02</u>	<u>277</u>	<u>4.26</u>	<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>								Amount _____ Type _____
WELL VOLUME: <u>≈ 1.8 gal</u>								<input type="checkbox"/> Other
COMMENTS:								
<u>20.31 mSL</u>	<u>7.2</u>	<u>8.08</u>	<u>19.8</u>	<u>0.529</u>	<u>0.02</u>	<u>312</u>	<u>4.19</u>	
<b>WELL: MW-5</b>								<input type="checkbox"/> Froth
DEPTH OF BORING: <u>17.50'</u>	<u>1.6</u>	<u>8.67</u>	<u>20.8</u>	<u>0.418</u>	<u>0.01</u>	<u>442</u>	<u>4.24</u>	<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>7.34'</u>	<u>3.2</u>	<u>8.69</u>	<u>20.5</u>	<u>0.451</u>	<u>0.01</u>	<u>999</u>	<u>4.38</u>	<input type="checkbox"/> Odor Type _____
WATER COLUMN: <u>10.16'</u>	<u>4.8</u>	<u>8.71</u>	<u>20.4</u>	<u>0.452</u>	<u>0.01</u>	<u>999</u>	<u>4.81</u>	<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>								Amount _____ Type _____
WELL VOLUME: <u>≈ 1.6 gal</u>								<input type="checkbox"/> Other
COMMENTS:								
<u>20.00 mSL</u>	<u>6.4</u>	<u>8.64</u>	<u>20.4</u>	<u>0.455</u>	<u>0.01</u>	<u>999</u>	<u>4.76</u>	
<b>WELL: MW-6</b>								<input type="checkbox"/> Froth
DEPTH OF BORING: <u>17.52'</u>	<u>1.7</u>	<u>8.83</u>	<u>18.2</u>	<u>0.255</u>	<u>0.01</u>	<u>915</u>	<u>4.27</u>	<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>7.02'</u>	<u>3.4</u>	<u>8.57</u>	<u>18.0</u>	<u>0.258</u>	<u>0.01</u>	<u>999</u>	<u>4.47</u>	<input type="checkbox"/> Odor Type _____
WATER COLUMN: <u>10.50'</u>	<u>5.1</u>	<u>8.32</u>	<u>18.0</u>	<u>0.260</u>	<u>0.01</u>	<u>999</u>	<u>4.50</u>	<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>								Amount _____ Type _____
WELL VOLUME: <u>≈ 1.7 gal</u>								<input type="checkbox"/> Other
COMMENTS:								
<u>21.01 mSL</u>	<u>6.8</u>	<u>8.37</u>	<u>17.9</u>	<u>0.258</u>	<u>0.01</u>	<u>999</u>	<u>4.52</u>	



**ANALYTICAL RESULTS AND CHAIN OF CUSTODY RECORD**

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# CHROMALAB, INC.

Environmental Services (SDB)

May 9, 1997

Submission #: 9705009

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL AVE  
Received: May 1, 1997

Project#: 6039-5.0

re: One sample for Gasoline BTEX MTBE analysis.  
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-1

Spl#: 129825

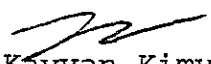
Matrix: WATER

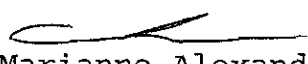
Sampled: April 30, 1997

Run#: 6753

Analyzed: May 9, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	4400	500	N.D.	94	10
MTBE	N.D.	50	N.D.	98	10
BENZENE	230	5.0	N.D.	107	10
TOLUENE	64	5.0	N.D.	107	10
ETHYL BENZENE	220	5.0	N.D.	108	10
XYLENES	550	5.0	N.D.	109	10

  
Kayvan Kimyai  
Chemist

  
Marianne Alexander  
Gas/BTEX Supervisor

✓

# CHROMALAB, INC.

Environmental Services (SDB)

May 9, 1997

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ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL AVE  
Received: May 1, 1997

Project#: 6039-5.0

re: One sample for Gasoline BTEX MTBE analysis.  
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-2

Spl#: 129826


Matrix: WATER

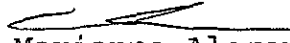
Sampled: April 30, 1997

Run#: 6753

Analyzed: May 8, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	4300	500	N.D.	94	10
MTBE	N.D.	50	N.D.	98	10
BENZENE	300	5.0	N.D.	107	10
TOLUENE	31	5.0	N.D.	107	10
ETHYL BENZENE	190	5.0	N.D.	108	10
XYLENES	450	5.0	N.D.	109	10

  
Kayvan Kimyai  
Chemist

  
Marianne Alexander  
Gas/BTEX Supervisor

✓

# CHROMALAB, INC.

Environmental Services (SDB)

May 9, 1997

Submission #: 9705009

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL AVE  
Received: May 1, 1997

Project#: 6039-5.0

re: One sample for Gasoline BTEX MTBE analysis.  
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-3

Spl#: 129827


Matrix: WATER


Sampled: April 30, 1997

Run#: 6753

Analyzed: May 8, 1997

<u>ANALYTE</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u> (ug/L)	<u>BLANK</u> <u>RESULT</u> (ug/L)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	590	50	N.D.	94	1
MTBE	N.D.	5.0	N.D.	98	1
BENZENE	44	0.50	N.D.	107	1
TOLUENE	4.5	0.50	N.D.	107	1
ETHYL BENZENE	25	0.50	N.D.	108	1
XYLENES	39	0.50	N.D.	109	1

  
Kayvan Kimyai  
Chemist

  
Marianne Alexander  
Gas/BTEX Supervisor

510-638-8404

1220 Quarry Lane • Pleasanton, California 94566-4756  
(510) 484-1919 • Facsimile (510) 484-1096  
Federal ID #68-0140157

PM V132 O: BTEXQC0220  
KAYVAN 17:40

# CHROMALAB, INC.

Environmental Services (SDB)

May 9, 1997

Submission #: 9705009

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL AVE  
Received: May 1, 1997

Project#: 6039-5.0

re: One sample for Gasoline BTEX MTBE analysis.  
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-4

Spl#: 129828


Matrix: WATER

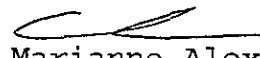
Sampled: April 30, 1997

Run#: 6753

Analyzed: May 8, 1997

<u>ANALYTE</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u> (ug/L)	<u>BLANK</u> <u>RESULT</u> (ug/L)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	2500	500	N.D.	94	10
MTBE	N.D.	50	N.D.	98	10
BENZENE	100	5.0	N.D.	107	10
TOLUENE	12	5.0	N.D.	107	10
ETHYL BENZENE	46	5.0	N.D.	108	10
XYLENES	35	5.0	N.D.	109	10

  
Kayvan Kimyai  
Chemist

  
Marianne Alexander  
Gas/BTEX Supervisor

# CHROMALAB, INC.

Environmental Services (SDB)

May 9, 1997

Submission #: 9705009

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL AVE  
Received: May 1, 1997

Project#: 6039-5.0

re: One sample for Gasoline BTEX MTBE analysis.  
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-5

Spl#: 129829

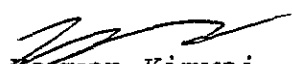
Matrix: WATER

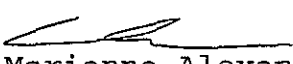
Sampled: April 30, 1997

Run#: 6753

Analyzed: May 8, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	94	1
MTBE	N.D.	5.0	N.D.	98	1
BENZENE	N.D.	0.50	N.D.	107	1
TOLUENE	N.D.	0.50	N.D.	107	1
ETHYL BENZENE	N.D.	0.50	N.D.	108	1
XYLENES	N.D.	0.50	N.D.	109	1

  
Kayvan Kimyai  
Chemist

  
Marianne Alexander  
Gas/BTEX Supervisor

✓

# CHROMALAB, INC.

Environmental Services (SDB)

May 9, 1997

Submission #: 9705009

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL AVE  
Received: May 1, 1997

Project#: 6039-5.0

re: One sample for Gasoline BTEX MTBE analysis.  
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-6

Spl#: 129830

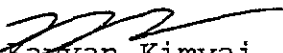
Matrix: WATER

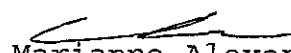
Sampled: April 30, 1997

Run#: 6753

Analyzed: May 8, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	94	1
MTBE	N.D.	5.0	N.D.	98	1
BENZENE	N.D.	0.50	N.D.	107	1
TOLUENE	N.D.	0.50	N.D.	107	1
ETHYL BENZENE	N.D.	0.50	N.D.	108	1
XYLENES	N.D.	0.50	N.D.	109	1

  
Kayvan Kimyai  
Chemist

  
Marianne Alexander  
Gas/BTEX Supervisor



# CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

CLIENT: ACC  
 JE #: 05/08/97  
 EF #: 33483

## Chain of Custody

DATE 4/30/97 PAGE 1 OF 1

PROJECT INFORMATION					ANALYSIS REPORT														NUMBER OF CONTAINERS				
SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	MTBE	LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)		PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (ICLP, STLC)	
MW-1	4/30/97	14:00	H <sub>2</sub> O			X										X							4
MW-2	4/30/97	11:45	H <sub>2</sub> O			X										X							4
MW-3	4/30/97	11:00	H <sub>2</sub> O			X										X							4
MW-4	4/30/97	14:30	H <sub>2</sub> O			X										X							4
MW-5	4/30/97	13:15	H <sub>2</sub> O			X										X							4
MW-6	4/30/97	12:30	H <sub>2</sub> O			X										X							4

PROJECT INFORMATION				SAMPLE RECEIPT				RELINQUISHED BY 1			RELINQUISHED BY 2			RELINQUISHED BY 3		
PROJECT NAME 2425 Encinal Ave		TOTAL NO. OF CONTAINERS 24		RELINQUISHED BY 1 <i>Eloy Cisneros</i> 12:04 (SIGNATURE) (TIME)			RELINQUISHED BY 2 (SIGNATURE) (TIME)			RELINQUISHED BY 3 <i>Chris Rowley</i> 13:37 (SIGNATURE) (TIME)						
PROJECT NUMBER 6039-5.0		HEAD SPACE		RELINQUISHED BY 1 <i>Eloy Cisneros</i> 5/1/97 (PRINTED NAME) (DATE)			RELINQUISHED BY 2 (PRINTED NAME) (DATE)			RELINQUISHED BY 3 <i>Chris Rowley</i> 5-1-97 (PRINTED NAME) (DATE)						
P.O.# 6039-5.0		CONFORMS TO RECORD		ACC Environmental (COMPANY)			Chromalab (COMPANY)			Chromalab (COMPANY)						
TAT	STANDARD 5-DAY	24	48	72	OTHER	RECEIVED BY 1 <i>Chris Rowley</i> 12:04 (SIGNATURE) (TIME)			RECEIVED BY 2 (SIGNATURE) (TIME)			RECEIVED BY LABORATORY <i>Chris Rowley</i> 13:37 (SIGNATURE) (TIME)				
SPECIAL INSTRUCTIONS/COMMENTS UST FUND Billing						RECEIVED BY 1 <i>Chris Rowley</i> 5-1-97 (PRINTED NAME) (DATE)			RECEIVED BY 2 (PRINTED NAME) (DATE)			RECEIVED BY LABORATORY <i>Chris Rowley</i> 5/1/97 (PRINTED NAME) (DATE)				
						Chromalab (COMPANY)			Chromalab (COMPANY)			Chromalab (LAB)				

# CHROMALAB, INC.

Environmental Service (SDB)

## Sample Receipt Checklist

Client Name: ACC ENVIRONMENTAL CONSULTANTS Date/Time Received: 05/01/97 | 1204

Reference/Submis: 33483 | 9705009 Received by: Bm

Checklist completed by: [Signature] 5/2/97 Reviewed by: M/5/2  
Signature | Date | Initials | Date

Matrix: WATER Carrier name: Client C/L

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? 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? Temp: 5.6°C Yes  No
- Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No
- Water - pH acceptable upon receipt?  Adjusted?  Checked by chemist for VOAs

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted: \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

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

Corrective Action: \_\_\_\_\_