CAPE
ENVIRONMENTAL MANAGEMENT
I N C

TRANSMITTAL LETTER

Ms. JULIET SHIN
Attn: SENIOR HAZARDOUS MATERIALS SPECIALIST

ALAMEDA COUNTY DEPT. OF ENV. HEALTH
Co. name ENVIRONMENTAL PROTECTION DIVISION

1131 HARBOR BAY PARKWAY, #250
Address

ALAMEDA, CA 94502-6577

PH # 510-567-6763

Date JULY 20, 1995

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From LARRY HARLAN

Job. # 2403C.16

A·C·C
ENVIRONMENTAL
CONSULTANTS

July 19, 1995

95 JUL 20 PM 1:25

Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

RE: Results of Quarterly Groundwater Sampling at
2425 Encinal Avenue, Alameda, California

Dear Mr. Chrissanthos:

The enclosed report describes the materials and procedures used during the quarterly groundwater investigation performed at 2425 Encinal Avenue, Alameda, California. This work was performed to evaluate the areal extent of groundwater impact.

Analysis of the groundwater samples from monitoring wells MW-1, MW-2a, MW-3, and MW-4 indicated elevated concentrations of hydrocarbons. Analytical results of groundwater samples from monitoring wells MW-5 and MW-6 indicated below detectable levels of constituents indicating a lateral extent of groundwater impact.

If you have any comments regarding this report, please call me.

Sincerely,

Misty Kaltreider

Misty C. Kaltreider
Geologist #46

cc: Ms. Juliet Shin - Alameda County Health Care Services
Division of Hazardous Materials

1000 Atlantic Avenue, Suite 110 •Alameda, CA 94501 •(510) 522-8188 •FAX (510) 865-5731

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ENVIRONMENTAL
CONSULTANTS

QUARTERLY GROUNDWATER INVESTIGATION

2425 ENCINAL AVENUE
ALAMEDA, CALIFORNIA

Job Number 6039-5

July 1995

Prepared for:
Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

Prepared by: _____
Misty Kaltreider
Project Geologist

Reviewed by: _____
David R. DeMent, RG #5874
Registered Geologist

REGISTERED GEOLOGIST
DAVID R. DEMENT
NO. 5874
STATE OF CALIFORNIA

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TABLE OF CONTENTS

TABLES

ATTACHMENTS

1.0 INTRODUCTION

This report presents the procedures and findings of the quarterly groundwater investigation conducted by ACC Environmental Consultants, Inc., (ACC) on behalf of Mr. Steve Chrissanthos and Alameda Cellars, site owner at 2425 Encinal Avenue, Alameda, California. The project objective, as described in the Work Plan prepared on November 5, 1993, was to evaluate the extent of groundwater impact from the previous underground storage of gasoline.

2.0 BACKGROUND

The site is presently occupied by Alameda Cellars, a commercial liquor store. In March, 1990, two 10,000-gallon gasoline tanks were removed from the above referenced site. Analysis of the soil samples collected from beneath the two gasoline tanks indicated up to 710 parts per million (ppm) of Total Petroleum Hydrocarbons as gasoline (TPHg). Soil samples collected from beneath the diesel tank indicated less than detectable levels of TPH as diesel (TPHd).

In December 1992, five borings were drilled onsite. 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 soil sampling indicated a maximum soil concentration of TPHg as 1,365 ppm. Benzene concentration was 18.9 ppm in the same sample.

Initial groundwater samples collected in January, 1993, from the monitoring wells indicated a maximum TPHg concentration of 5,680 ppb (MW-2a) and a maximum benzene concentration of 1,560 ppb (MW-1).

Additional soil investigation was conducted in May, 1993 to evaluate the extent of contamination in the soil and groundwater. Findings of the additional investigation indicated the lateral extent of 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 appears to extend into Park and Encinal Avenues. Field observations made during the additional investigation and soil sample analysis indicated impacted soil exists primarily around the former tank excavation and the former dispenser island. The vertical limit of hydrocarbons in the soil is estimated to occur at the present groundwater table.

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

This preliminary Site Assessment was conducted to further evaluate the groundwater contamination from a gasoline release onsite upon request of Alameda County Health Care Services - Hazardous Materials Division.

In December 1993, three additional monitoring wells (MW-4, MW-5, and MW-6) were installed to further evaluate the extent of hydrocarbon groundwater impact. Laboratory analysis of the soil collected from each boring indicated below detectable levels of constituents which verifies the lateral extent of soil impact.

Laboratory analysis of the groundwater samples collected from monitoring well MW-5 and MW-6 indicated below detectable levels of constituents evaluated. The groundwater results indicated a lateral extent of groundwater impact. Laboratory analysis of groundwater collected from monitoring well MW-4 indicated detectable levels of constituents. Constituents reported from monitoring well MW-4 are low when compared with reported levels in monitoring wells MW-1, MW-2a, and MW-3. The location of the southern edge of the groundwater impact is just off site to the south. This "cross" gradient movement is attributed to the relatively flat gradient and possible recharge into the excavated area.

3.0 FIELD PROCEDURES

3.1 Groundwater Sampling

Groundwater samples were collected on June 23, 1995 from monitoring wells MW-1, MW-2a, MW-3, MW-4, MW-5, and MW-6. Prior to groundwater sampling, the depth to the surface of the water table was measured from the top of the PVC casing using a Solinst Water Level Meter. Information regarding well elevations and groundwater level measurements are summarized in Table 1.

TABLE 1 - Groundwater Depth Information

Date Sampled	Depth to Groundwater (Ft.)	Groundwater Elevation (Ft.)
Well No. MW-1	Elevation of Top of Casing-27.61 MSL	
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

TABLE 1 - Groundwater Depth Information, cont.

Date Sampled	Depth to Groundwater (Ft.)	Groundwater Elevation (Ft.)
Well No. MW-2a	Elevation of Top of Casing-27.98 MSL	
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
12/07/94	7.23	20.75
03/16/95	5.62	22.36
06/23/95	7.35	20.63
Well No. MW-3	Elevation of Top of Casing-27.89 MSL	
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

TABLE 1 - Groundwater Depth Information, cont.

Date Sampled	Depth to Groundwater (Ft.)	Groundwater Elevation (Ft.)
Well No. MW-4	Elevation of Top of Casing-26.97 MSL	
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
06/23/95	6.65	20.32
Well No. MW-5	Elevation of Top of Casing-27.34 MSL	
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
Well No. MW-6	Elevation of Top of Casing-28.03 MSL	
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

Notes: All measurements in feet
MSL = Mean Sea Level

After water-level measurements were collected, each onsite well was purged by hand using a designated disposable Teflon bailer for each well. Groundwater pH, temperature and electrical conductivity were monitored during well purging. Each well was considered to be purged when these parameters stabilized. Three to four well volumes were removed to purge each well. Worksheets of conditions monitored during purging are attached in Appendix A.

After the groundwater level had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using designated disposable Teflon bailers. Two 40 ml VOA vials, without headspace, were filled from the water collected from each monitoring well. The samples were preserved on ice and submitted to Chromalab Inc. under chain of custody protocol. Laboratory results with chain of custody forms are attached in Appendix B.

4.0 FINDINGS

4.1 Analytical Results - Groundwater

One groundwater sample each, from monitoring wells MW-1, MW-2a, MW-3, MW-4, MW-5, and MW-6, was collected and submitted for analysis for TPHg by EPA test method 5030 and BTEX by EPA test method 602. Analysis results from the groundwater samples are summarized in Table 2 and Figure 2. Analytical results are attached in Appendix B.

TABLE 2 - Analytical Results - Groundwater

Analytical Results MW-1 Groundwater					
Date Collected	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	E.Benzene (ug/L)	Xylenes (ug/L)
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	2700	170.0	19.0	40.0	180.0

Analytical Results MW-2a Groundwater					
Date Collected	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	E.Benzene (ug/L)	Xylenes (ug/L)
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
06/23/9	4,300	170.0	58.0	33.0	810.0

Analytical Results MW-3 Groundwater					
Date Collected	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	E.Benzene (ug/L)	Xylenes (ug/L)
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

Analytical Results MW-4 Groundwater					
Date Collected	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	E.Benzene (ug/L)	Xylenes (ug/L)
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	1800	140.0	13.0	13.0	28.0

Analytical Results MW-5 Groundwater					
Date Collected	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	E.Benzene (ug/L)	Xylenes (ug/L)
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

Analytical Results MW-6 Groundwater					
Date Collected	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	E.Benzene (ug/L)	Xylenes (ug/L)
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

Note: TPHg = Total Petroleum Hydrocarbons as gasoline
ug/L = Parts Per Billion (PPB)
E.Benzene = Ethylbenzene
NT = Not Tested

4.2 Groundwater Gradient

Prior to calculating the groundwater gradient, elevations for the onsite monitoring wells were surveyed by Ron Archer Civil Engineer, Inc. to an accuracy of one-hundredth of a foot. The well elevation was surveyed at the top of the PVC well casing. The elevations of the monitoring wells were established relative to a nearby benchmark located in the curb on the northwest corner of the intersection of Park and Encinal Avenues in Alameda, California.

The groundwater gradient was calculated using the onsite monitoring wells. The location of the wells is shown on Figure 1 - Site Plan. Groundwater elevations were collected from monitoring wells MW-1, MW-2a, MW-3, MW-4, MW-5, and MW-6 on June 23, 1995 and are illustrated in Figure 3. The gradient was evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum. Groundwater flow direction and gradient is consistent with previous sampling events as summarized in Table 3.

TABLE 3 - Historic Groundwater Gradient

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

Date Monitored	Gradient (foot/foot)	Direction
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

5.0 CONCLUSION

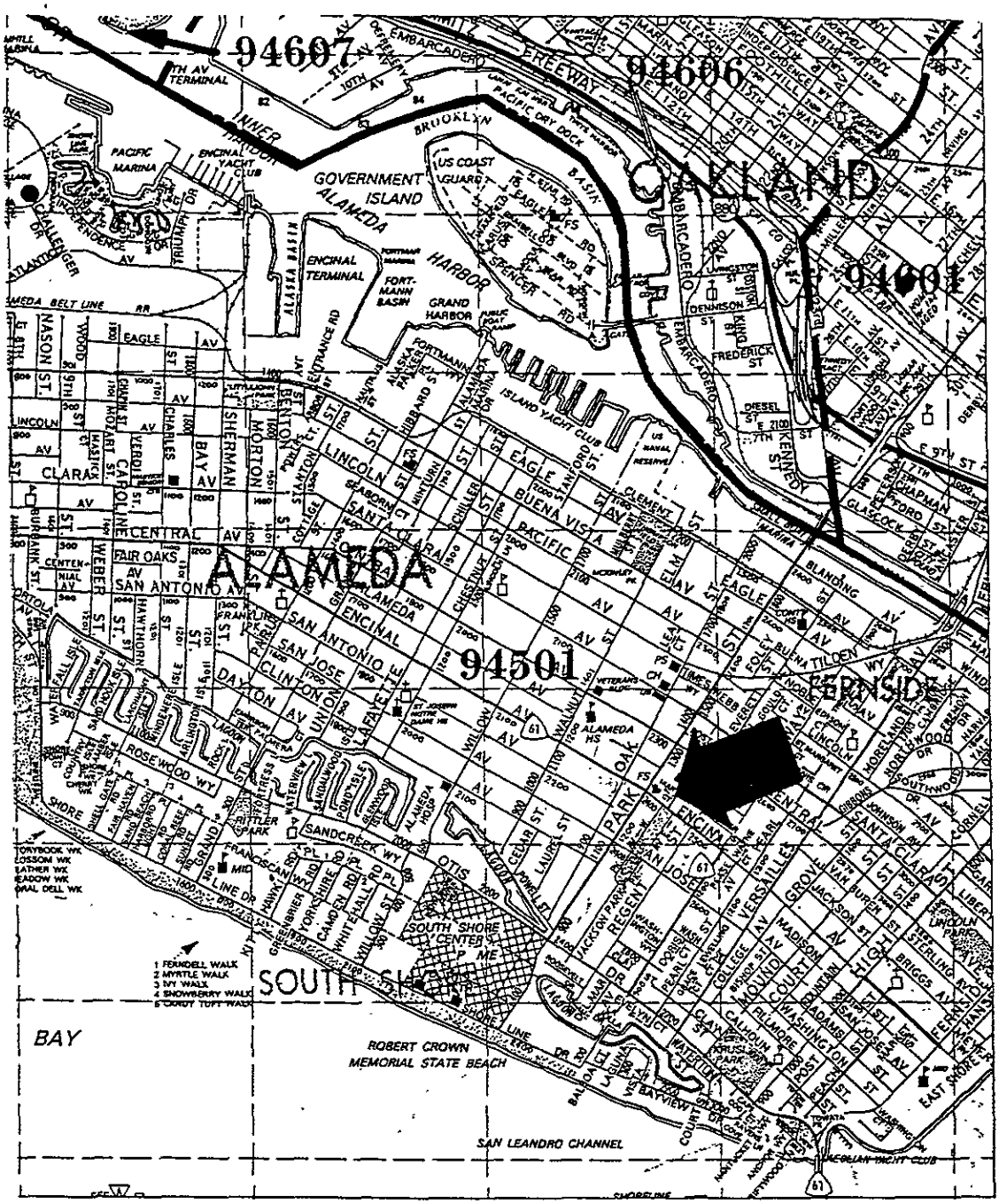
The data and observations discussed herein indicate that groundwater has been impacted due to an unauthorized hydrocarbon release. The analytical parameters used for soil and groundwater sampling was performed in accordance with the guidance document "Tri-Regional Water Quality Control Boards Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990, for gasoline tanks and ACC protocols.

The most recent groundwater sampling indicated detectable concentrations of petroleum hydrocarbons in monitoring wells MW-1 through MW-4. TPHg concentrations have decreased in wells MW2a and MW-4. TPHg concentrations have increased in monitoring wells MW-1 and MW-3. Since June 1994, varying concentrations of hydrocarbons in wells MW-1 through MW-4 appear to be a result of residual hydrocarbons from the former excavation that continue to be impacting the groundwater through fluctuating groundwater levels.

6.0 RECOMMENDATIONS

Semi-annually

On behalf of Alameda Cellars, ACC proposes to reduce groundwater sampling on MW-6 from quarterly sampling to biannual sampling. Pursuant to the Tri-Regional Board guidelines, groundwater sampling and monitoring of the onsite wells should continue on a quarterly basis and shall include wells MW-1 through MW-5. Well number MW-6 will be monitored for groundwater levels on a quarterly basis, and sampled biannually. The next quarterly groundwater sampling will be conducted in September 1995.

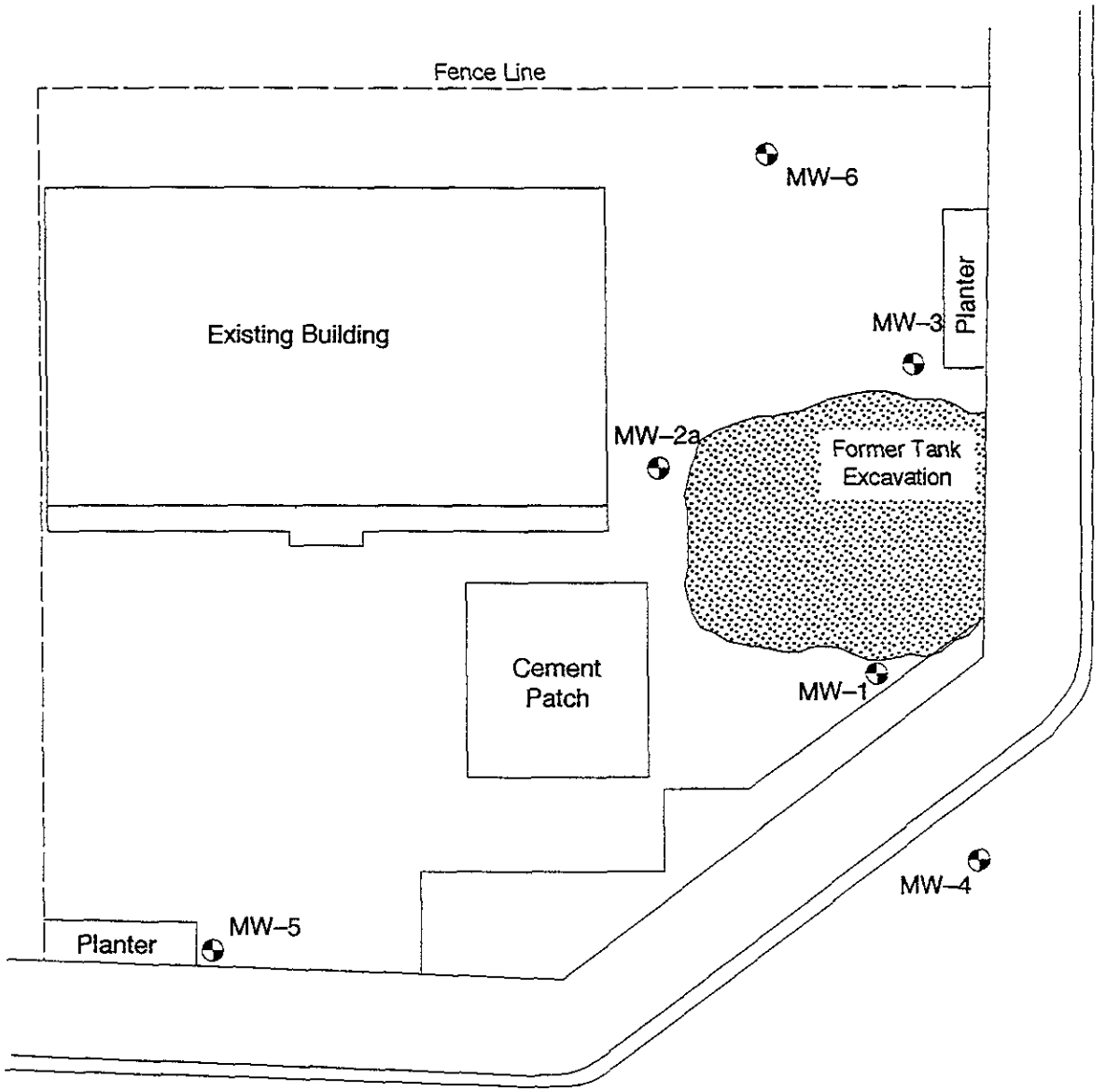


Scale: 1" = 0.25 miles

Source: Thomas Brothers

Project No. 6093-3	**Location Map** Alameda Cellars 2425 Encinal Avenue Alameda, California	**Figure:** 1
Date: 03/20/1995		

ACC Environmental Consultants • 1000 Atlantic Avenue, Suite 110 • Alameda, CA 94501• (510) 522–8188 Fax: (510) 865–5731



Legend

- Monitoring Well
- Groundwater Elevation Contour (Contour interval = 0.1 feet)
- Approximate Groundwater Flow Direction

Title:	Site Plan 2425 Encinal Ave Alameda, California
Figure Number: 2	Scale: 1" = 20"
Drawn By: TRF	Date: 3/29/95
Project Number: 6039–5	

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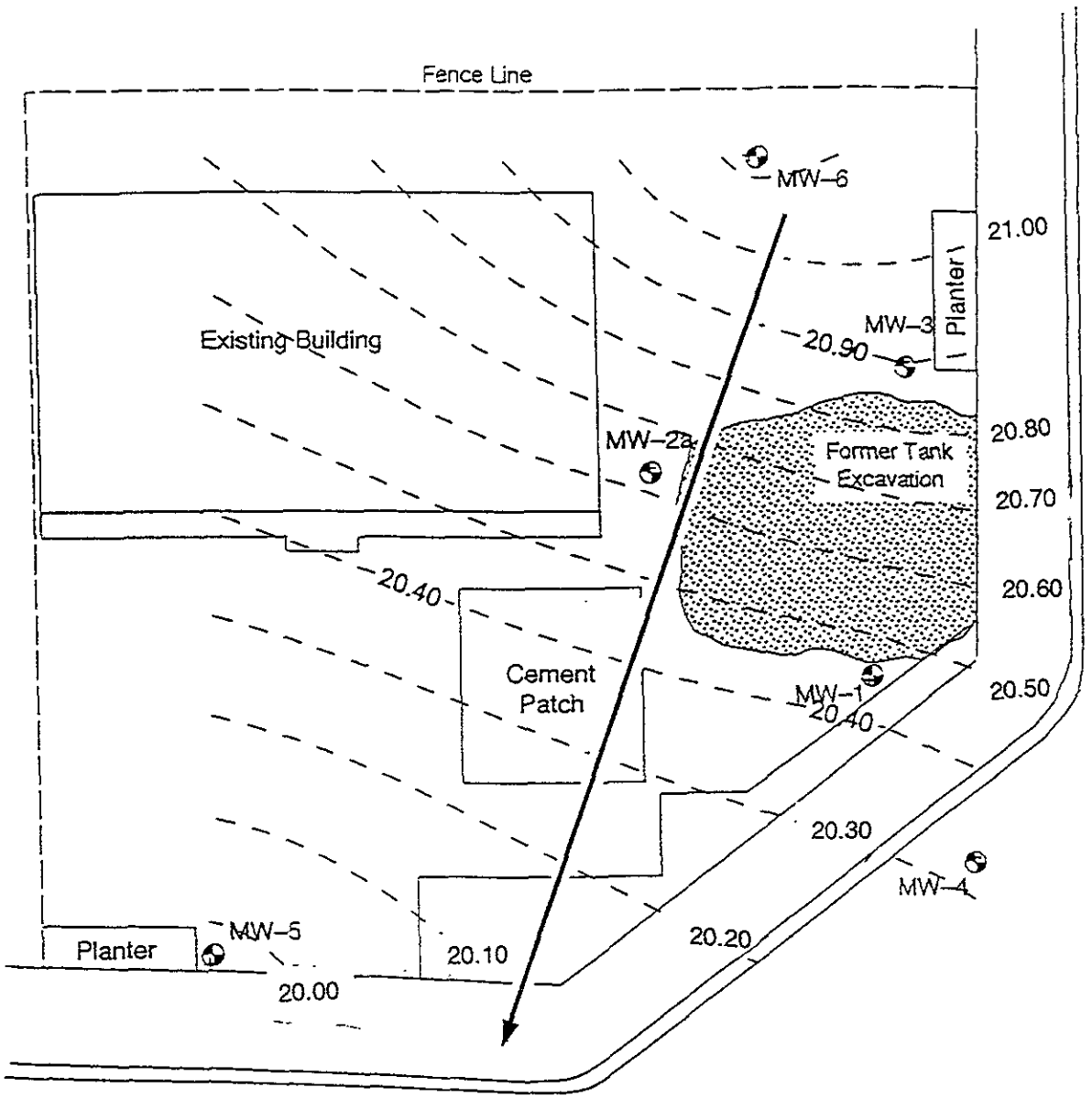

Legend

- Monitoring Well
- Groundwater Elevation Contour (Contour interval = 0.1 feet)
- Approximate Groundwater Flow Direction

Title: Groundwater Gradient/Figure 3 2425 Encinal Ave Alameda, California	
Figure Number: 3	Scale: 1" = 20'
Drawn By: TRF	Date: 3/29/95
Project Number: 6039-5	

ACC Environmental Consultants
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N E S W

APPENDIX A

NOTES OF WELL SAMPLING

Well Data Worksheet

Job Name: 2425 Encinal	Method of Purging: Bailing
Site Address:	Sampled By: Allison Ekdale
Job #: 6039-5	Laboratory: Chromalab
Date: June 23 1995	Analysis: TPHG w/ BTEX

# of Drums on Site: Full: 1 ½ Empty: 1
Contents: water Contents:

Well #	Depth to H20(ft)	Well Depth (ft)	Time	Purge Volume (gal)	Temp (F)	Conductivity (umho/cm)	pH	Free Product	Observations
MW5	7.38	17.51	8:30	1.8	70.4	5.08	7.41	No.	
				3.6	70.5	5.15	7.25		
				5.4	70.4	5.30	7.24		
					70.2	4.95	7.28		
					70.1	4.98	7.27		
MW4	6.65	17.52	9:15	1.8	71.2	5.14	7.11	No.	Odor
				3.6	70.0	5.76	6.96		
				5.4	69.8	5.40	6.92		
					69.6	5.37	6.90		
					69.7	5.36	6.80		
					69.6	5.36	6.80		
MW1	7.17	17.31	9:45	1.8	70.1	8.99	7.11	No	Odor
				3.6	69.0	7.79	6.96		
				5.4	69.2	6.81	6.78		
					69.1	6.77	6.79		
					69.1	6.79	6.80		
MW2A	7.35	14.17	10:15	1.1	71.7	5.62	7.34	No.	Odor.
				2.2	70.1	5.60	7.34		
				3.3	69.2	5.52	7.36		
					69.1	5.51	7.34		
					69.2	5.49	7.34		

Well Data Worksheet

Job Name: 2425 Encinal	Method of Purging: Bailing
Site Address:	Sampled By: Alison Eckdale
Job #: 6039-5	Laboratory: Chromalab
Date: June 23, 1995	Analysis: TPHG w/ BTEX
# of Drums on Site: Full: Contents:	Empty: Contents:

Well #	Depth to H20(ft)	Well Depth (ft)	Time	Purge Volume (gal)	Temp (F)	Conductivity (umho/cm)	pH	Free Product	Observations
MW3	6.99	13.95	10:45	1.1	71.1	8.18	7.18	No.	Odor.
				2.2	69.1	7.10	7.19		
				3.3	68.9	6.90	7.19		
					68.5	6.87	7.17		
					68.5	6.85	7.18		
MW6	6.90	17.57	11:30	1.8	66.6	3.17	7.73	No.	
				3.6	65.2	2.75	7.20		
				5.4	64.5	2.69	7.41		
					64.3	2.47	7.38		
					64.4	2.45	7.37		

APPENDIX B

ANALYTICAL RESULTS

CHAIN OF CUSTODY

CHROMALAB, INC.

Environmental Services (SDB)

June 30, 1995

Submission #: 9506344

Revised 07/11/95

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 2425 ENCINAL
Received: June 23, 1995

Project#: 6039-3

re: 6 samples for Gasoline and BTEX analysis.
Method: EPA 5030/8015M/602/8020

Sampled: June 23, 1995 *Matrix:* WATER
Run: 7369-B *Analyzed:* June 27, 1995

Spl #	Client Sample ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
93743	MW-1	2700	170	19	40	180
93744	MW-2A	4300	420	58	33	810
	Note: Detection limit : btex=10ug/l & gasoline=1mg/l					
93745	MW-3	860	41	5.4	32	110
93746	MW-4	1800	140	13	13	28
93747	MW-5	N.D.	N.D.	N.D.	N.D.	N.D.
93748	MW-6	N.D.	N.D.	N.D.	N.D.	N.D.
	Reporting Limits	0.05	0.5	0.5	0.5	0.5
	Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
	Blank Spike Result (%)	96	99	105	108	111

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

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