HAGEMAN-AGUIAR, INC.
Underground Contamination Investigations, Groundwater Consultants, Environmental Engineering

QUARTERLY
GROUNDWATER SAMPLING REPORT

(sampled August 16, 1993)

QUALITY TUNE-UP
2780 Castro Valley Blvd
Castro Valley, CA

August 24, 1993

3732 Mt. Diablo Blvd. Suite 372 Lafayette, California 94549 (510) 284-1661 FAX (510) 284-1664

I. INTRODUCTION

The site location is the Quality Tune-up facility in Castro Valley, California. The location of the site is shown in Figure 1. In conjunction with a previous service station operation, the site has historically operated four underground fuel storage tanks for a number of years.

In February 1987 the two 7,500 Gasoline tanks and one Waste Oil tank were removed by 4M Construction of Madera, California. Soil and groundwater samples were collected, and were subsequently analyzed by Trace Analysis Laboratory, Inc. Of the seven soil samples collected, only "Extractable Hydrocarbons" were detected in those soil samples collected in the vicinity of the Waste Oil tank location. Analysis of the groundwater sample indicated 26 mg/L (ppm) of Volatile Hydrocarbons, 420 µg/L (ppb) of Benzene, 2,000 µg/L (ppb) of Toluene and 9,400 µg/L (ppb) of Total Xylenes.

On June 11, 1991, the final 8,000-gallon underground storage tank was removed from the site by Minter & Fahy Construction, Inc, Pacheco, California. This underground tank was utilized for Gasoline storage until February 1987, at which time it was converted to Waste Oil storage. At the time of removal, the tank was apparently being utilized for storage of Waste Oil. Soil samples were collected from the tank excavation and were subsequently analyzed by Chromalab Laboratory, Inc., San Ramon, California. The results of laboratory analyses indicated no detectable of concentrations of Diesel, Gasoline, Benzene, Oil & Grease, Halogenated Volatile Organics (EPA 8010), or Semi-Volatile Organics (EPA 8270). A groundwater sample was collected from the tank excavation and was subsequently analyzed. The results of laboratory

FIGURE 1.
Site Location Map

analyses indicated no detectable of concentrations of Diesel, Gasoline, Benzene, Oil & Grease, Halogenated Volatile Organics (EPA 601), or Extractable Organics (EPA 625). Soil samples collected from the spoils pile indicated the presence of Gasoline at concentrations of up to 1.4 mg/kg (ppm), and Oil & Grease at concentrations of up to 24 mg/kg (ppm).

Subsequent to the underground tank removals, three on-site shallow groundwater monitoring wells were installed by Hageman-Aguiar, Inc., on May 20, 1992. The report of that soil and groundwater investigation was issued on July 17, 1992. The locations of the monitoring wells are shown in Figure 2.

On August 16, 1993, all three of the on-site monitoring wells were sampled for the laboratory analysis for dissolved petroleum constituents. In addition to the monitoring well sampling, other tasks included water level measurements for each monitoring well. This fourth "round" of groundwater sampling has been conducted as part of the quarterly groundwater monitoring program at the site, as required by the Alameda County Department of Environmental Health and the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region.

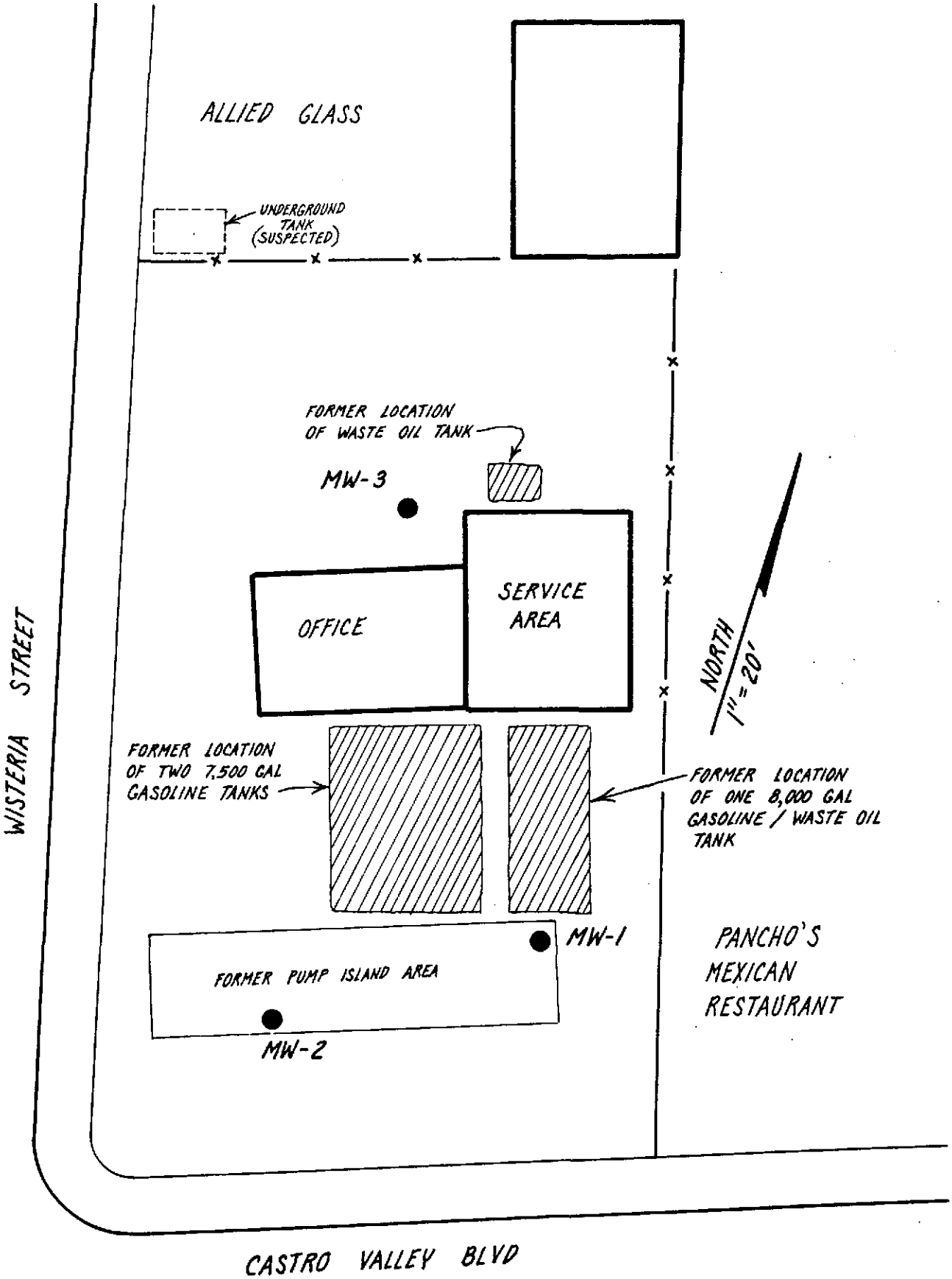


FIGURE 2.
Site Map.

TABLE 2.

Historical Water Table Elevations
(feet)

Well	Date of Measurement								
	5-20-92	8-19-92	11-18-92	3-1-93	5-24-93	8-16-93			
MW-1	152.67	152.64	152.40	154.88	153.27	153.00			
MW-2	152.65	152.47	151.84	154.23	153.01	152.69			
MW-3	154.28	154.48	154.05	156.88	154.89	154.48			
Flow Direction	SE	SE	S	S	S	S			
Hydraulic Gradient	0.025	0.029	0.030	0.035	0.027	0.025			

IV. SHALLOW GROUNDWATER SAMPLING RESULTS

Laboratory Analysis

All analyses were conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures (Priority Environmental Laboratory, Milpitas, CA).

All shallow groundwater samples were analyzed for 1) total extractable petroleum hydrocarbons (EPA method 8015), 2) total petroleum hydrocarbons as Gasoline (EPA method 8015) and 3) Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA method 602).

Results of Laboratory Analysis.

Table 3 presents the results of the laboratory analysis of the groundwater samples collected from monitoring wells MW-1, MW-2 and MW-3. For this most recent round of quarterly sampling, dissolved Gasoline was detected in wells MW-1 and MW-3 at concentrations of 53 µg/L (ppb) and 420 µg/L (ppb), respectively. In addition, samples collected from well MW-3 indicated the presence of Benzene at a concentration of 2.1 µg/L (ppb).

A copy of the laboratory certificate for the water sample analyses is included as Attachment B.

TABLE 3.

Shallow Groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	TPH as Kerosene (ug/L)	TPH as Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	Motor Oil (mg/L)
MW-1	05-20-92	**260**	ND	ND	ND	ND	**4.4**	**9.0**	ND
	08-19-92	ND	ND	ND	ND	ND	ND	ND	ND
	11-18-92	**160**	ND	ND	**0.9**	**4.0**	**2.6**	**9.4**	ND
	02-22-93	**9,000**	ND	ND	**15**	**34**	**46**	**91**	ND
	05-24-93	**540**	ND	**480**	**0.5**	**0.9**	**2.0**	**4.5**	ND
(duplicate)	05-24-93	---	ND	**420**	---	---	---	---	ND
	08-16-93	**53**	ND	ND	ND	ND	**1.0**	**4.7**	ND
MW-2	05-20-92	ND	ND	ND	ND	ND	ND	ND	ND
	08-19-92	ND	ND	ND	ND	ND	ND	ND	ND
	11-18-92	**70**	ND	ND	ND	ND	**0.9**	**6.7**	ND
	02-22-93	ND	ND	ND	ND	ND	ND	ND	ND
	05-24-93	ND	ND	**200**	ND	ND	ND	ND	ND
(duplicate)	05-24-93	---	ND	**210**	---	---	---	---	ND
	08-16-93	ND	ND	ND	ND	ND	ND	ND	ND
Detection Limit		50	50	50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

TABLE 3. (continued)

Shallow Groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	TPH as Kerosene (ug/L)	TPH as Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	Motor Oil (mg/L)
MW-3	05-20-92	4,200	ND	ND	4.5	1.2	13	43	ND
	08-19-92	280	ND	ND	5.3	16	25	61	ND
	11-18-92	4,800	ND	ND	26	27	35	98	ND
	02-22-93	6,200	ND	ND	9.4	15	30	66	ND
	05-24-93	1,100	ND	580	1.5	3.4	4.1	9.9	ND
(duplicate)	05-24-93	---	ND	540	---	---	---	---	ND
	08-16-93	420	ND	ND	2.1	3.0	3.8	23	ND
Detection Limit		50	50	50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

Chemical Concentration Contours.

Figures 4 and 5 show lines of equal concentration for Gasoline and Benzene in the shallow groundwater. Since these lines have been drawn based upon relatively limited data (three data points), the plot represents only a small portion of the respective concentration plume. The plot does continue to suggest, however, that the dissolved concentrations are centered somewhere around the rear of the service/office building (vicinity of well MW-3).

The most recent sampling data continue to suggest the possibility of migration of Gasoline contamination from the existing underground storage tanks located on the adjoining Allied Glass property. Its location with respect to the concentration contours is consistent with the measured shallow groundwater flow direction beneath the subject site. In terms of possible on-site sources of contamination (disregarding the Allied Glass property), the nearby presence of the former underground waste oil tank would be the most likely source for the Gasoline concentrations in the shallow groundwater.

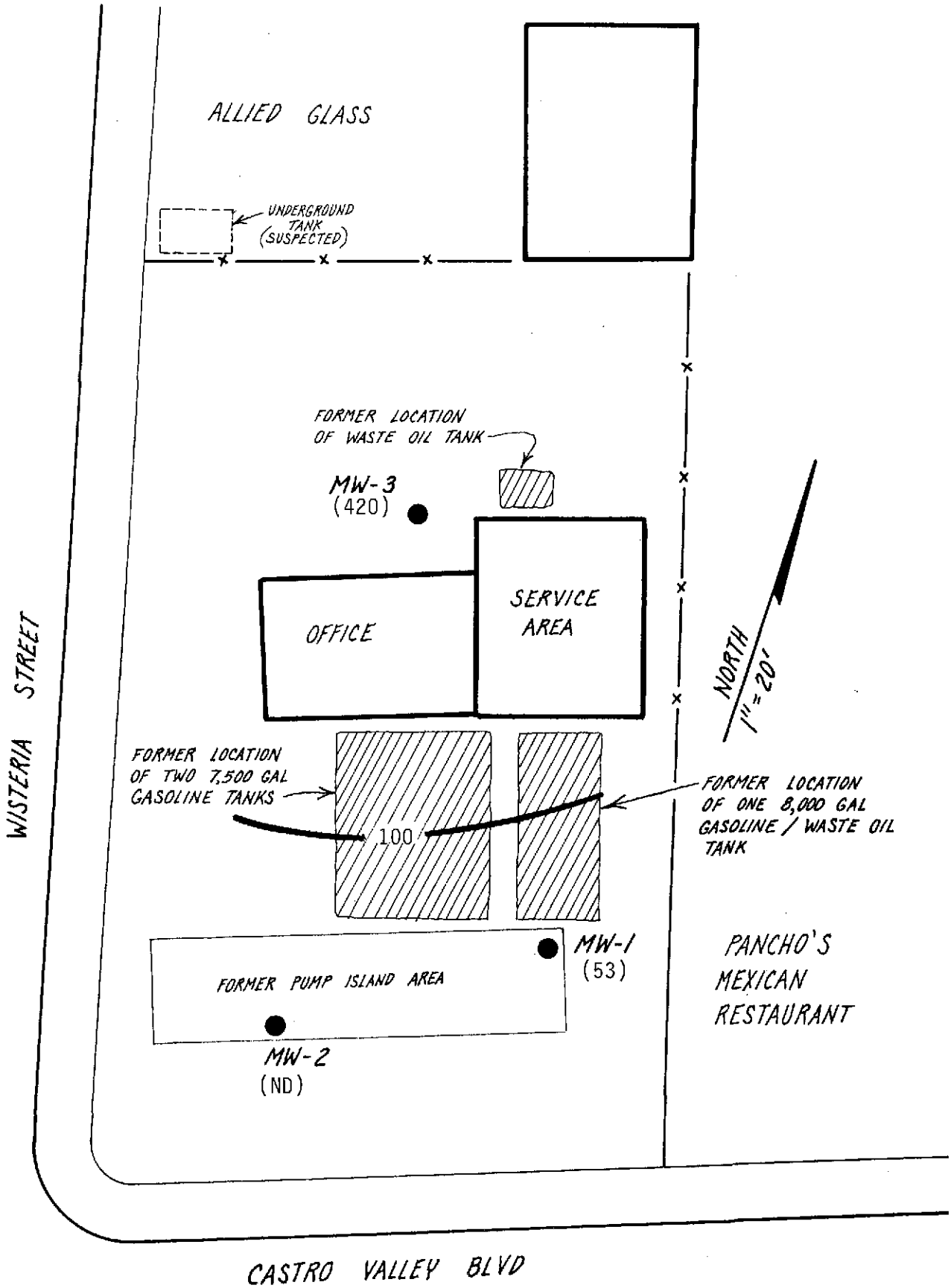


FIGURE 4.
Lines of Equal Concentration of Gasoline in ug/L (ppb) in the Shallow Groundwater.

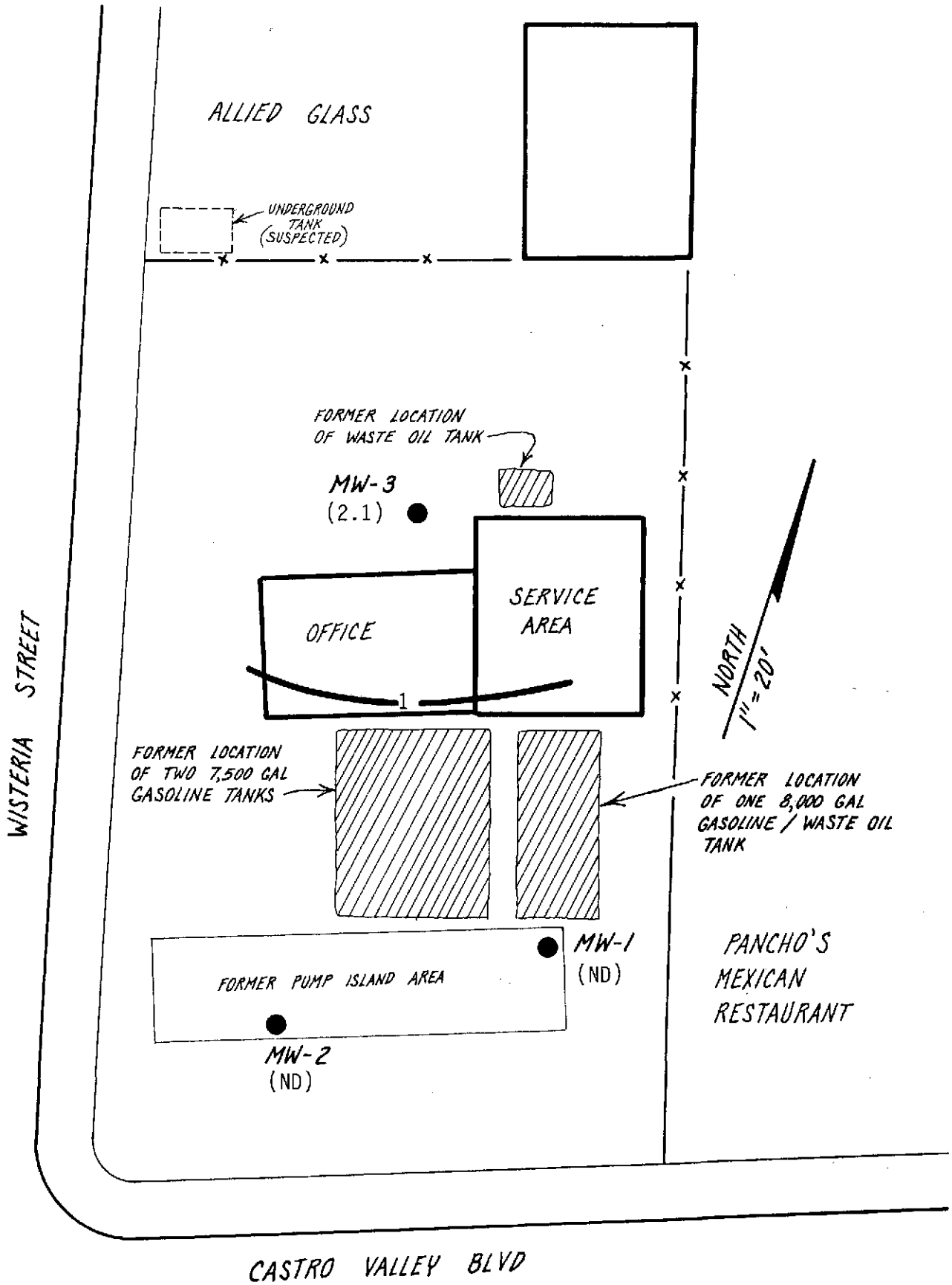
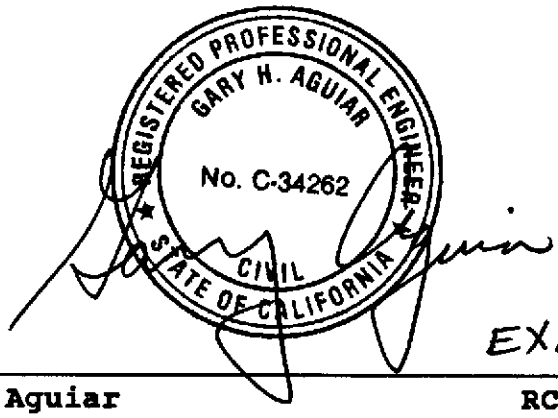


FIGURE 5.
Lines of Equal Concentration of Benzene in ug/L (ppb) in the Shallow Groundwater.

QUARTERLY REPORT
QUALITY TUNE-UP
2780 Castro Valley Blvd, Castro Valley, CA.

August 25, 1993



EXP, 9-30-95

Gary Aguiar **RCE 34262**

Rick Milelli **Environmental Engineer**

WELL SAMPLING LOG

Project/No. QUALITY TUNE-UP Page 1 of 3

Site Location CASTRO VALLEY

Date 8/16/93

Well No. MW 1

Time Began 1045

Weather CLEAR / 85°F Completed 1200

EVACUATION DATA

Description of Measuring Point (MP) WELL BOX AT GRADE

Total Sounded Depth of Well Below MP 24.81

Diameter of Casing 2"

- Depth to Water Below MP 10.70

= Water Column in Well 14.11

Gallons in Casing 2.3 + Annular Space (30% porosity) (X10) = Total Gallons 23

Gallons Pumped Prior to Sampling 23

Evacuation Method PVC BAILER

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: NONE DETECTED
(thickness to 0.1 inch, if any)

Time	1045	1055	1125	1140
Gals Removed	0	8	16	23
Temperature	24.3	24.0	21.5	21.2
Conductivity	500	600	450	400
pH	8.0	8.0	7.1	6.9
Color / Odor	CLR/ORG	CLR/ORG	GRY/ORG	GRY/ORG
Turbidity	LOW	LOW	HIGH	HIGH

Comments: NONE

WELL SAMPLING LOG

Project/No. QUALITY TUNE-UP Page 2 of 3

Site Location CASTRO VALLEY Date 8/16/93

Well No. MW 2

Weather CLEAR / 85°F Time Began 1105
Completed 1245

EVACUATION DATA

Description of Measuring Point (MP) WELL BOX AT GRADE

Total Sounded Depth of Well Below MP 20.90

- Depth to Water Below MP 10.64 Diameter of Casing 2"

= Water Column in Well 10.26

Gallons in Casing 1.6 + Annular Space (30% porosity) (X10) = Total Gallons 16

Gallons Pumped Prior to Sampling 14

Evacuation Method PVC BAILER

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: NONE DETECTED
(thickness to 0.1 inch, if any)

Time	1105	1115	1145	1230
Gals Removed	0	5	8	14
Temperature	22.9	22.4	21.5	21.1
Conductivity	500	500	500	500
pH	7.4	7.4	7.0	7.1
Color / Odor	CLR/NO	BRN/ORG	GRY/ORG	GRY/ORG
Turbidity	LOW	MED	HIGH	HIGH

Comments: SLOW RECHARGE RATE

WELL SAMPLING LOG

Project/No. QUALITY TUNE-UP Page 3 of 3

Site Location CASTRO VALLEY

Date 8/16/93

Well No. MW3

Time Began 1025
Completed 1250

Weather CLEAR/85°F

EVACUATION DATA

Description of Measuring Point (MP) WELL BOX AT GRADE

Total Sounded Depth of Well Below MP 24.76

- Depth to Water Below MP 8.87

Diameter of Casing 2"

= Water Column in Well 15.89

Gallons in Casing 2.5 + Annular Space (30% porosity) (X10) = Total Gallons 25

Gallons Pumped Prior to Sampling 25

Evacuation Method PVC BAILER

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: NONE DETECTED
(thickness to 0.1 inch, if any)

Time	1025	1035	1140	1215
Gals Removed	0	8	16	25
Temperature	22.4	21.1	2.9	20.2
Conductivity	500	600	550	600
pH	6.8	6.7	6.9	7.0
Color / Odor	CLR/HC	GRY/HC	GRY/ORG	GRY/ORG
Turbidity	LOW	HIGH	HIGH	HIGH

Comments: NONE

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

August 20, 1993 PEL # 9308071

HAGEMAN - AGUIAR, INC.

Attn: Jeffrey Roth
Re: Three water samples for Gasoline/BTEX and TEPH analyses.

Project name: Quality Tune-Up
Project location: Castro Valley Blvd., - Castro Valley, CA.

Date sampled: Aug 16, 1993 Date submitted: Aug 18, 1993
Date extracted: Aug 18-19, 1993 Date analyzed: Aug 18-19, 1993

RESULTS:

SAMPLE I.D.	Kerosene (ug/L)	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	Motor Oil (mg/L)	Stoddard Solvent (ug/L)
MW 1	N.D.	53	N.D.	N.D.	N.D.	1.0	4.7	N.D.	N.D.
MW 2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW 3	N.D.	420	N.D.	2.1	3.0	3.8	23	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	82.5%	93.1%	90.6%	95.8%	92.4%	97.8%	106.3%	---	84.4%
Duplicate Spiked Recovery	---	86.7%	92.5%	88.5%	90.4%	91.7%	98.0%	---	---
Detection limit	50	50	50	0.5	0.5	0.5	0.5	0.5	50
Method of Analysis	3510 / 8015	5030 / 8015	3510 / 8015	602	602	602	602	3510/ 8015	3510/ 8015

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

PEL # 9308071

CHAIN OF CUSTODY RECORD

INV # 23911

PROJECT NAME AND ADDRESS:
Quality Tune-Up
Castro Valley Blvd
Castro Valley, CA

SAMPLER: (Signature)

HAGEMAN - AGUIAR, INC.
3732 Mt. Diablo Blvd., Suite 372
Lafayette, CA 94549
(415)284-1661 (415)284-1664 (FAX)

ANALYSIS REQUESTED: TPH GAS/BTXE; TEPH

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION	REMARKS
MW 1	8/16/93	1200		X	Monitor Well # 1	Norm TAT
MW 2	8/16/93	1245		X	" " # 2	"
MW 3	8/16/93	1250		X	" " # 3	"

RELINQUISHED BY: (Signature)	DATE 8/18/93 TIME 1035	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED FOR LABORATORY BY: (Signature)	DATE 8/18/93 TIME 10:35 AM