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

REPORT OF
QUARTERLY GROUNDWATER SAMPLING

(sampled February 11, 1994)

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

February 17, 1994

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

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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-gallon 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

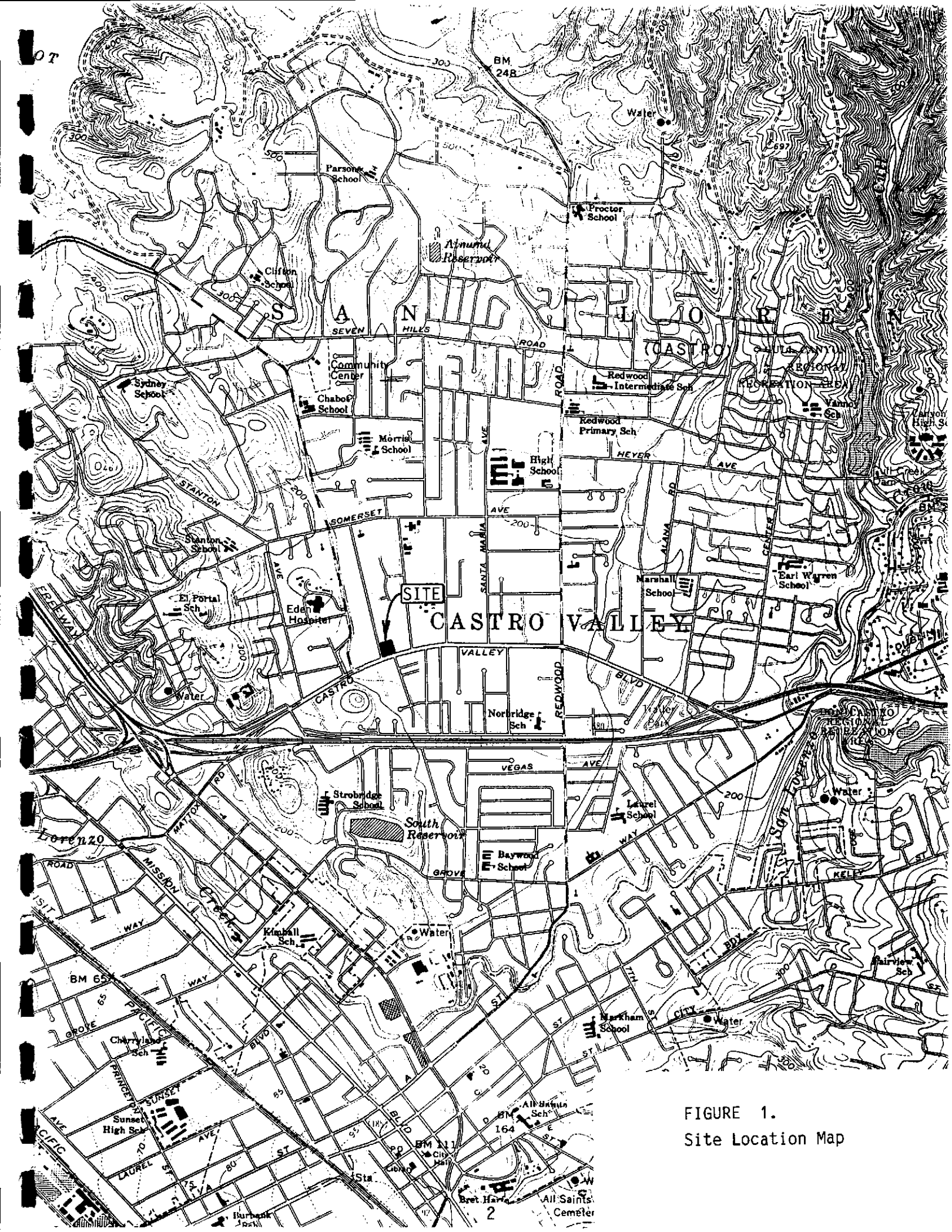


FIGURE 1.
Site Location Map

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).

Following 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.

In a meeting on January 26, 1994, Scott Seery of the Alameda County Health Department discussed the status of the subject site with Bruce Hageman and Gary Aguiar of Hageman-Aguiar, Inc., representative/consultant to Side B Corporation. Mr. Seery summarizes the issues discussed of that meeting in a letter to Mr. Armstrong, dated January 26, 1994. A copy of the letter can be found in Attachment A.

On February 11, 1994, all three (3) 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.

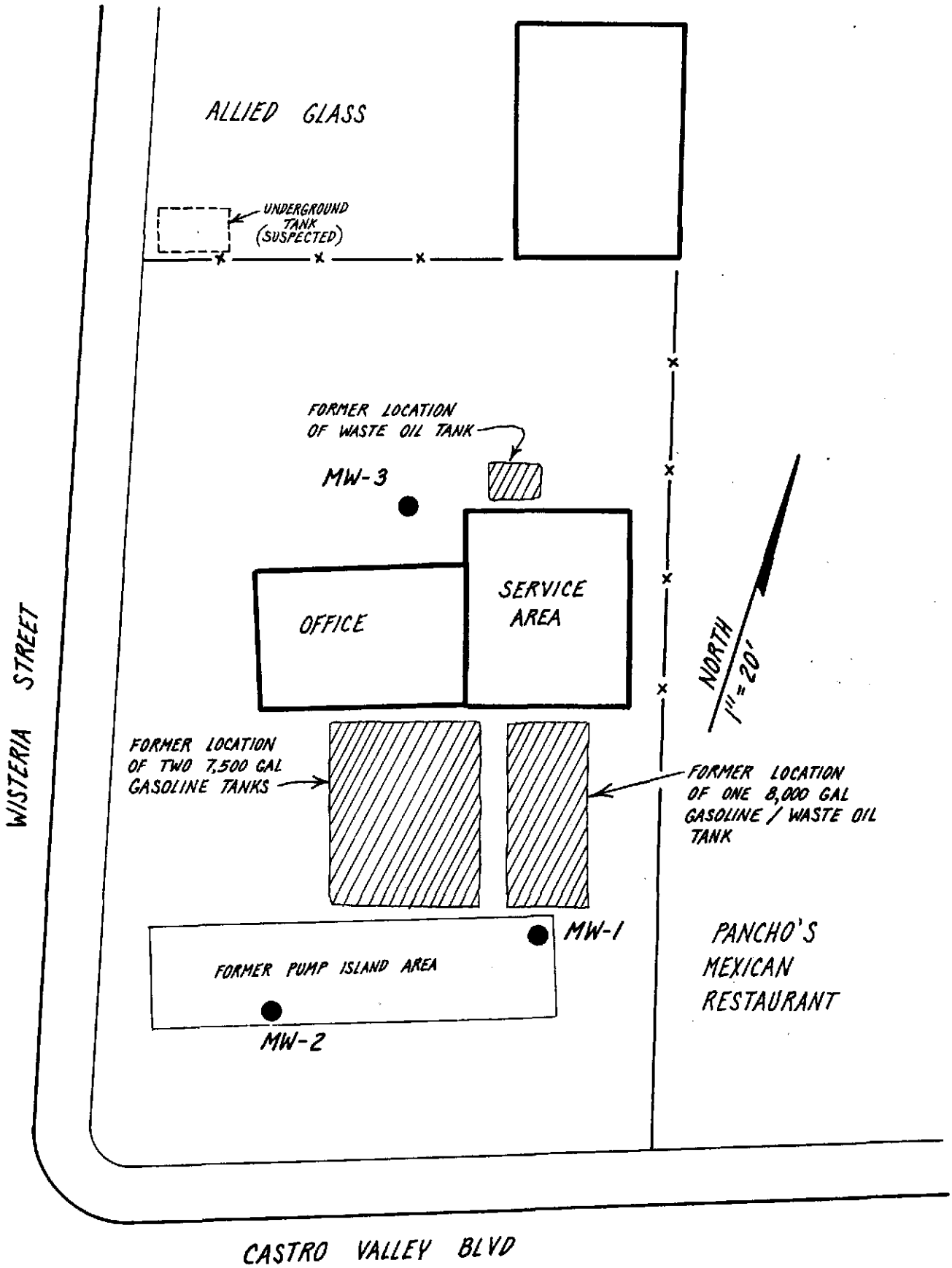


FIGURE 2.
Site Map.

II. FIELD WORK

Monitoring Well Sampling

On February 11, 1994, groundwater samples were collected from each of the three on-site monitoring wells (MW-1, MW-2 and MW-3). The locations of the monitoring wells are shown on Figure 2 (site map). Prior to groundwater sampling, each well was purged by bailing several casing volumes of water. Field conductivity, temperature, and pH meters were present on-site during the monitoring well sampling. As the purging process proceeded, the three parameters were monitored. Purging continued until readings appeared to have reasonably stabilized. After the water level in the well had attained 80% or more of the original static water level, a groundwater sample was collected using a clean teflon bailer. The water samples were placed inside appropriate 40 mL VOA vials and 1-liter amber bottles free of any headspace. The samples were immediately placed on crushed ice, then transported under chain-of-custody to the laboratory at the end of the work day.

At the time each monitoring well was sampled, the following information was recorded in the field: 1) depth-to-water prior to purging, using an electrical well sounding tape, 2) identification of any floating product, sheen, or odor prior to purging, using a clear teflon bailer, 3) sample pH, 4) sample temperature, and 5) specific conductance of the sample.

Copies of the well sampling logs are included as Attachment B.

Wastewater Generation

All water removed from the wells during development and purging was drummed and stored on-site until the results of laboratory analyses were obtained. Based upon these results, the water should be sewered (if possible) as a non-hazardous liquid waste in accordance with local sewering agency permit requirements, or else it should be transported as a hazardous liquid waste under proper manifest to an appropriate TSD facility for treatment and disposal. The disposal of wastewater is the responsibility of the property owner (waste generator), and is beyond the scope of work as described in this report.

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

February 18, 1994

Scott Seery
Alameda County Health Agency
Department of Environmental Health
80 Swan Way
Room 200
Oakland, CA 94621

RE: Quality Tune-Up
2780 Castro Valley Blvd, Castro Valley, CA.

Dear Mr. Seery:

Please find enclosed a copy of the "Report of Quarterly Groundwater Sampling" by Hageman-Aguiar, Inc., dated February 17, 1994, for the above-referenced site.

If you have any questions, please call me at (510)284-1661.

Sincerely,

Gary Aguiar
Principal Engineer

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

III. RESULTS OF WATER LEVEL MEASUREMENTS

Shallow Groundwater Flow Direction

Shallow water table elevations were measured on February 11, 1994. These measurements are shown in Table 1. Figure 3 presents a contour map for the shallow groundwater table beneath the site. As shown in this figure, the data from these monitoring wells indicate that the shallow groundwater flow beneath the site was in the southwesterly direction during this most recent round of groundwater sampling.

Shallow Water Table Hydraulic Gradient

Figure 3 presents the contour map for the shallow groundwater table beneath the site. As shown in this figure, the shallow groundwater table through the center of the site appears to have a calculated hydraulic gradient of dH/dL = 0.2'/10' = 0.02.

Historical Water Level Measurements

In addition to the most recent measurement of the shallow water table elevations prior to the groundwater sampling on February 11, 1994, a tabulation of all historical water level measurements for the site has been completed. Table 2 presents the results of all water level measurements collected between May 20, 1992, and the present time.

TABLE 1.

Shallow Water Table Elevations
February 11, 1994

Well	Top of Casing Elevation (feet)	Depth to Water (feet)	Water Table Elevation (feet)
MW-1	163.70	8.74	154.96
MW-2	163.33	9.18	154.15
MW-3	163.35	8.53	154.82

Datum is Alameda County Benchmark Anita-CVB.
Standard surveyor brass disc on top-of-curb over drop inlet on Anita Avenue.
Elevation = 168.04 MSL

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	11-15-93	2-11-94	
MW-1	152.67	152.64	152.40	154.88	153.27	153.00	153.52	154.96	
MW-2	152.65	152.47	151.84	154.23	153.01	152.69	153.01	154.15	
MW-3	154.28	154.48	154.05	156.88	154.89	154.48	154.87	154.82	
Flow Direction	SE	SE	S	S	S	S	S	SW	
Hydraulic Gradient	0.025	0.029	0.030	0.035	0.027	0.025	0.024	0.020	

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 petroleum hydrocarbons as Gasoline (EPA method 8015) and 2) Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA method 602).

In the past, shallow groundwater samples were analyzed for total extractable petroleum hydrocarbons (TEPH) using EPA method 8015, as originally required by the Alameda County Department of Environmental Health and the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. In a recent meeting with Alameda County Health Department, Hageman-Aguiar learned TEPH analysis is no longer required for the samples (Ref. Attachment A).

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 3,000 µg/L (ppb) and 3,700 µg/L (ppb), respectively. In addition, samples collected from wells MW-1, and MW-3 indicated the presence of Benzene at concentrations of 3.9 µg/L (ppb) and 7.7 µg/L (ppb),

TABLE 3.

Shallow groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)
MW-1	05-20-92	260	ND	ND	4.4	9.0
	08-19-92	ND	ND	ND	ND	ND
	11-18-92	160	0.9	4.0	2.6	9.4
	02-22-93	9,000	15	34	46	91
	05-24-93	540	0.5	0.9	2.0	4.5
	08-16-93	53	ND	ND	1.0	4.7
	11-15-93	780	0.6	0.9	1.1	5.2
	02-11-94	3,000	3.9	2.5	12	26
MW-2	05-20-92	ND	ND	ND	ND	ND
	08-19-92	ND	ND	ND	ND	ND
	11-18-92	70	ND	ND	0.9	6.7
	02-22-93	ND	ND	ND	ND	ND
	05-24-93	ND	ND	ND	ND	ND
	08-16-93	ND	ND	ND	ND	ND
	11-15-93	ND	ND	ND	ND	ND
	02-11-94	ND	ND	ND	ND	ND
MW-3	05-20-92	4,200	4.5	1.2	13	43
	08-19-92	280	5.3	16	25	61
	11-18-92	4,800	26	27	35	98
	02-22-93	6,200	9.4	15	30	66
	05-24-93	1,100	1.5	3.4	4.1	9.9
	08-16-93	420	2.1	3.0	3.8	23
	11-15-93	3,000	2.4	3.1	4.4	20
	02-11-94	3,700	7.7	6.8	12	29
Detection Limit		50	0.5	0.5	0.5	0.5

ND = Not Detected

respectively.

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

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).

Data Analysis

The most recent sampling data continue to suggest the possibility of migration of subsurface contamination from 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.

It should be noted that during a previous "round" of groundwater sampling **on February 22, 1993, the removal of two underground storage tanks from the Allied Glass property was observed by Hageman-Aguiar, Inc., field staff**. Follow-up conversation with Scott Seery, Alameda County Health, indicates that **holes in each of the tanks were observed by County personnel during the tank removals**.

Review of UST closure data indicate a release of fuel at Allied Glass did not occur at levels resulting in the GW contamination at subject site.

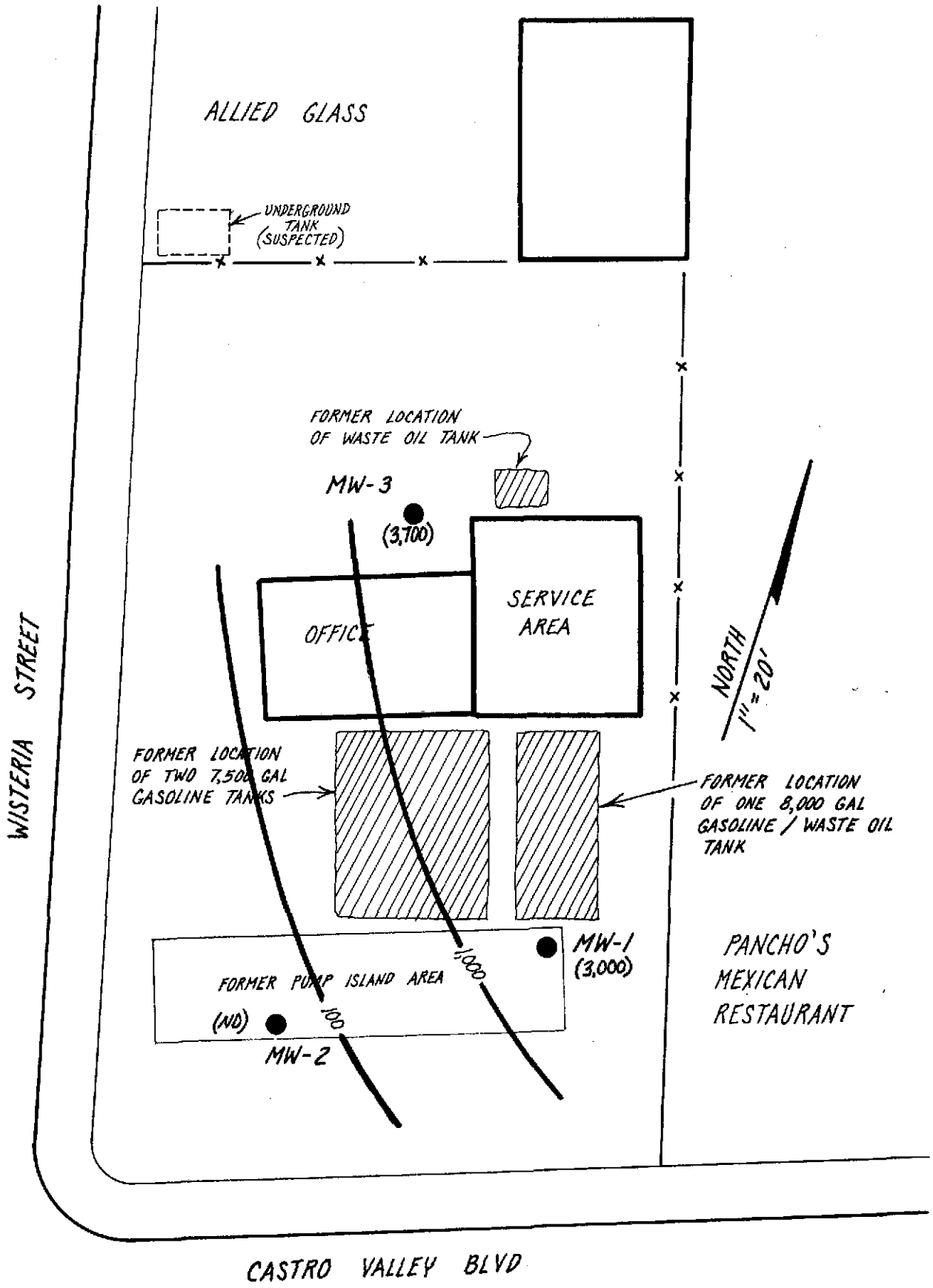


FIGURE 4. Lines of Equal Concentration of Gasoline in ug/L in the Shallow Groundwater (2-11-94).

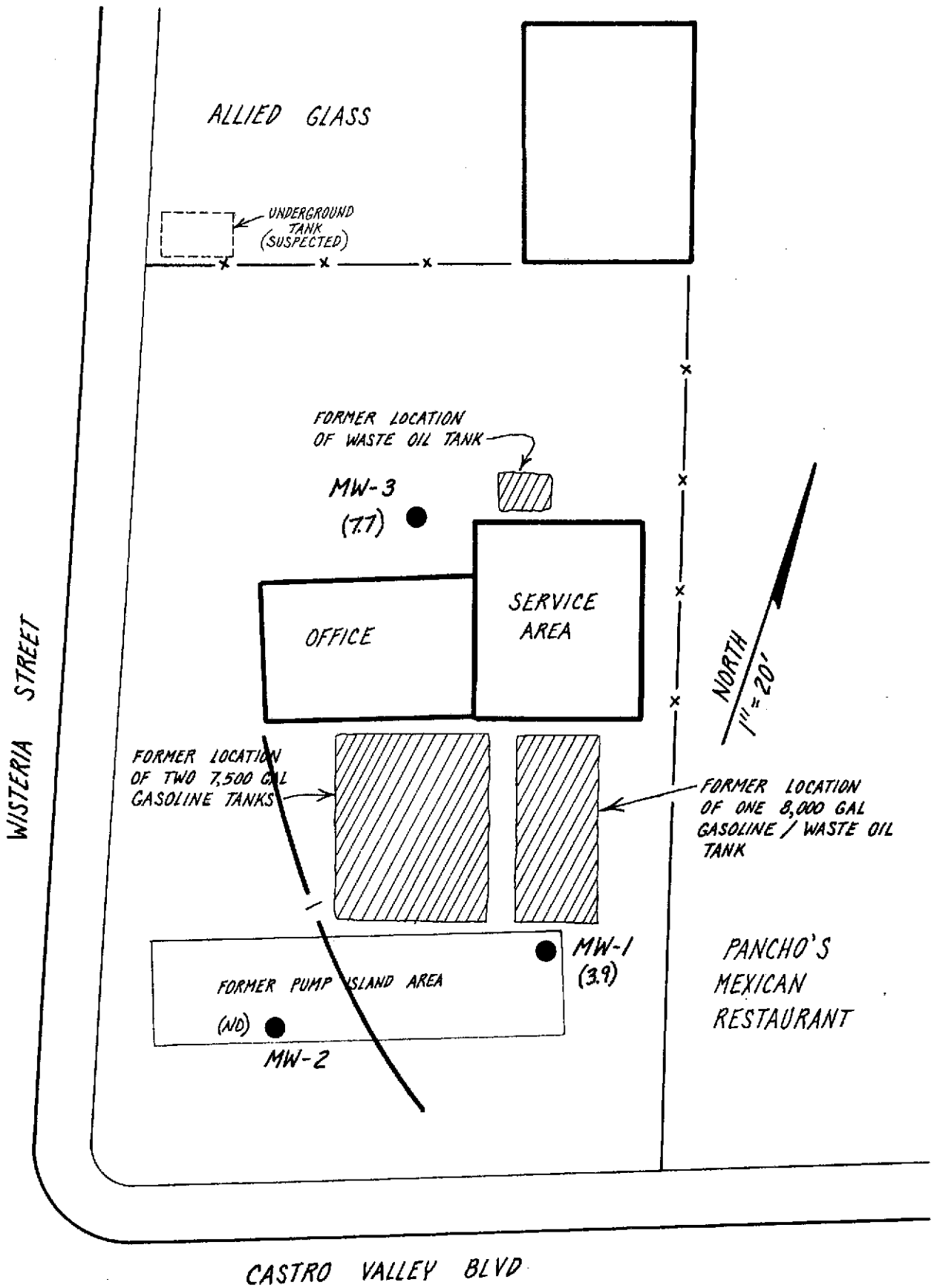
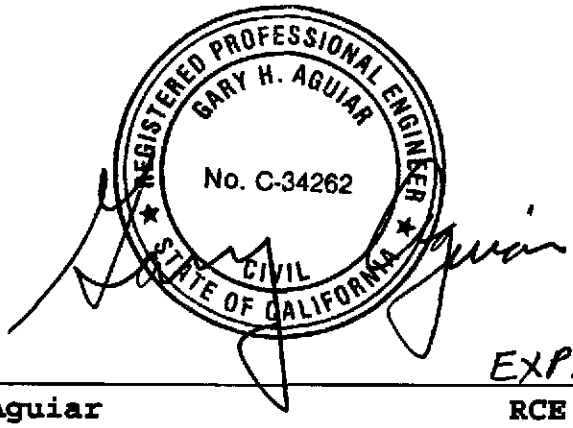


FIGURE 5. Line of Equal Concentration of Benzene in ug/L (ppb) in the Shallow Groundwater (2-11-94).

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

February 17, 1994



EXP. 9-30-95

Gary Aguiar **RCE 34262**

Gerard F. Aarons 2-17-94

Gerard Aarons **Geologist**

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

STID 969

January 26, 1994

Mr. Larry Armstrong
Quality Tune-Up
286 E. Hamilton Avenue, Ste. A
Campbell, CA 95008

RE: QUALITY TUNE-UP SHOP, 2780 CASTRO VALLEY BLVD., CASTRO VALLEY

Dear Mr. Armstrong:

I met today with Messrs. Bruce Hageman and Gary Aguiar of Hageman-Aguiar, Inc. to discuss and plan the most appropriate course your project should take in the near future. We also discussed the results of the underground storage tank (UST) removal project at the site adjoining yours to the north, Allied Glass.

Laboratory results following the analyses of soil and water samples collected during UST closures at Allied Glass do not suggest that a noteworthy release of gasoline has occurred at that site. Although a sample of water collected from one of the tank pits exhibited levels of gasoline compounds at elevated levels, field observations suggest that this water was not true ground water, but rather rain water runoff which had collected in this pit while the excavation was open. This interpretation is further supported by the absence of gasoline compounds in any of the soil samples collected from within either of the two UST pits, and only trace levels of toluene (11 ug/kg) in stockpiled soil excavated from around the subject USTs prior to their removal. Elevated levels of extractable lead remain the only apparent contaminant of concern in excavated soil, the presence of which does not appear to be related to the former USTs. Hence, in the absence of additional, substantial evidence to the contrary, and based on that body of evidence submitted to date, Allied Glass does not appear to be a contributor to the gasoline plume underlying your site.

Messrs. Hageman and Aguiar presented (but did not submit) a *draft* work plan for the emplacement of several "hydropunch" points about your site in an attempt to better define the extent and concentration distribution of the plume. Hydropunch studies have proven effective in the past on many sites for qualitatively mapping plumes and identifying potential sources without the expense and uncertainty of permanent well points.

We also discussed the potential presence of an additional buried, on-site source (e.g., abandoned UST) at this site. Mr. Aguiar suggested the use of ground penetrating radar (GPR) to determine if such a source exists. This is a sound suggestion.

Additionally, the number of target analytes to be sought in water samples collected from each well has been reduced. Future samples need only be analyzed for total petroleum hydrocarbons characterized as gasoline (TPH-G), and the aromatic compounds benzene, toluene, ethylbenzene, and total xylene isomers (BTEX).

As it becomes available, please submit the proposal for the cited hydropunch study and GPR, or equivalent, survey for review. Should you have any questions, please contact me at 510/271-4530.

Sincerely,

Scott O. Seery, CHMM
Senior Hazardous Materials Specialist

cc: Rafat A. Shahid, Assistant Agency Director
Gil Jensen, Alameda County District Attorney's Office
Ed Laudani, Alameda County Fire Department
Britt Johnson, ACDEH
Gary Aguiar, Hageman-Aguiar, Inc.
William and Mary Gong, 4320 View Crest Ct., Oakland 94619

ATTACHMENT B

WELL SAMPLING LOGS

WELL SAMPLING LOG

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

Site Location CASTRO VALLEY

Date 2/11/94

Well No. MW 1

Time Began 1158

Weather CLEAR / 70°F Completed 1430

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 8.74 Diameter of Casing 2"

= Water Column in Well 16.02

Gallons in Casing 2.6 + Annular Space (30% porosity) (x10) = Total Gallons 26

Gallons Pumped Prior to Sampling 26

Evacuation Method PVC BAILER

SAMPLING DATA / FIELD PARAMETERS

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

Time	1158	1220	1235	1315
Gals Removed	0	10	18	26
Temperature	19.2	19.8	19.7	20.2
Conductivity	230	315	260	340
pH	7.1	6.8	6.8	6.7
Color / Odor	CLR/ORG	GRY/ORG	GRY/ORG	GRY/ORG
Turbidity	LOW	LOW	MED	MED

Comments: NONE

WELL SAMPLING LOG

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

Site Location CASTRO VALLEY

Date 2/11/94

Well No. MW 2

Weather CLEAR / 70 °F Time Began 1118

Completed 1440

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 9.18 Diameter of Casing 2"

= Water Column in Well 11.72

Gallons in Casing 1.9 + Annular Space (30% porosity) (X10) = Total Gallons 19

Gallons Pumped Prior to Sampling 15

Evacuation Method PVC BAILER

SAMPLING DATA / FIELD PARAMETERS

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

Time	1118	1122	1305	1412
Gals Removed	0	5	10	15
Temperature	~~23.7~~ JR 20.0	20.2	20.3	20.4
Conductivity	370	370	390	380
pH	6.8	6.7	6.6	6.6
Color / Odor	CLR/ORG	GRY/ORG	GRY/ORG	GRY/ORG
Turbidity	LOW	MED	HIGH	HIGH

Comments: SLOW RECHARGE

WELL SAMPLING LOG

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

Site Location CASTRO VALLEY Date 2/11/94

Well No. MW 3 Time Began 1125

Weather CLEAR / 70°F Completed 1450

EVACUATION DATA

Description of Measuring Point (MP) WELL BOX AT GRADE

Total Sounded Depth of Well Below MP 24.81

- Depth to Water Below MP 8.53 Diameter of Casing 2"

= Water Column in Well 16.28

Gallons in Casing 2.6 + Annular Space (30% porosity) (X10) = Total Gallons 26

Gallons Pumped Prior to Sampling 26

Evacuation Method PVC BAILER

SAMPLING DATA / FIELD PARAMETERS

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

Time	1125	1135	1245	1328
Gals Removed	0	8	16	26
Temperature	18.4	20.1	20.2	20.
Conductivity	380	420	430	450
pH	6.7	6.5	6.4	6.5
Color / Odor	CLR/ORG	GRY/ORG	GRY/ORG	GRY/ORG
Turbidity	LOW	MED	HIGH	HIGH

Comments: NONE

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 16, 1994 PEL # 9402038

HAGEMAN - AGUIAR, INC.

Attn: Jeffrey Roth
Re: Three water samples for Gasoline/BTEX analysis.

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

Date sampled: Feb 11, 1994 Date submitted: Feb 15, 1994
Date extracted: Feb 15, 1994 Date analyzed: Feb 15, 1994

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
MW 1	3000	3.9	2.5	12	26
MW 2	N.D.	N.D.	N.D.	N.D.	N.D.
MW 3	3700	7.7	6.8	12	29
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	105.1%	93.1%	90.0%	89.0%	101.9%
Duplicate Spiked Recovery	93.3%	97.2%	93.1%	94.0%	106.7%
Detection limit	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602

David Duong
Laboratory Director

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

PEL # 9402038

CHAIN OF CUSTODY RECORD

INV # 24484

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

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION	TPH Gas/BTXE	TPH Diesel	Cancel by Mr. Gary 2/15/94				REMARKS
MW 1	2/11/94	1430		X	Monitor Well # 1	X	X					Norm
MW 2	2/11/94	1440		X	" # 2	X	X					"
MW 3	2/11/94	1450		X	" # 3	X	X					"

RELINQUISHED BY: (Signature)	DATE 2/15/94 TIME 0920	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 TIME