

HAGEMAN-AGUIAR, INC.

*Underground Contamination Investigations
Groundwater Consultants, Environmental Engineering*

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September 26, 1991

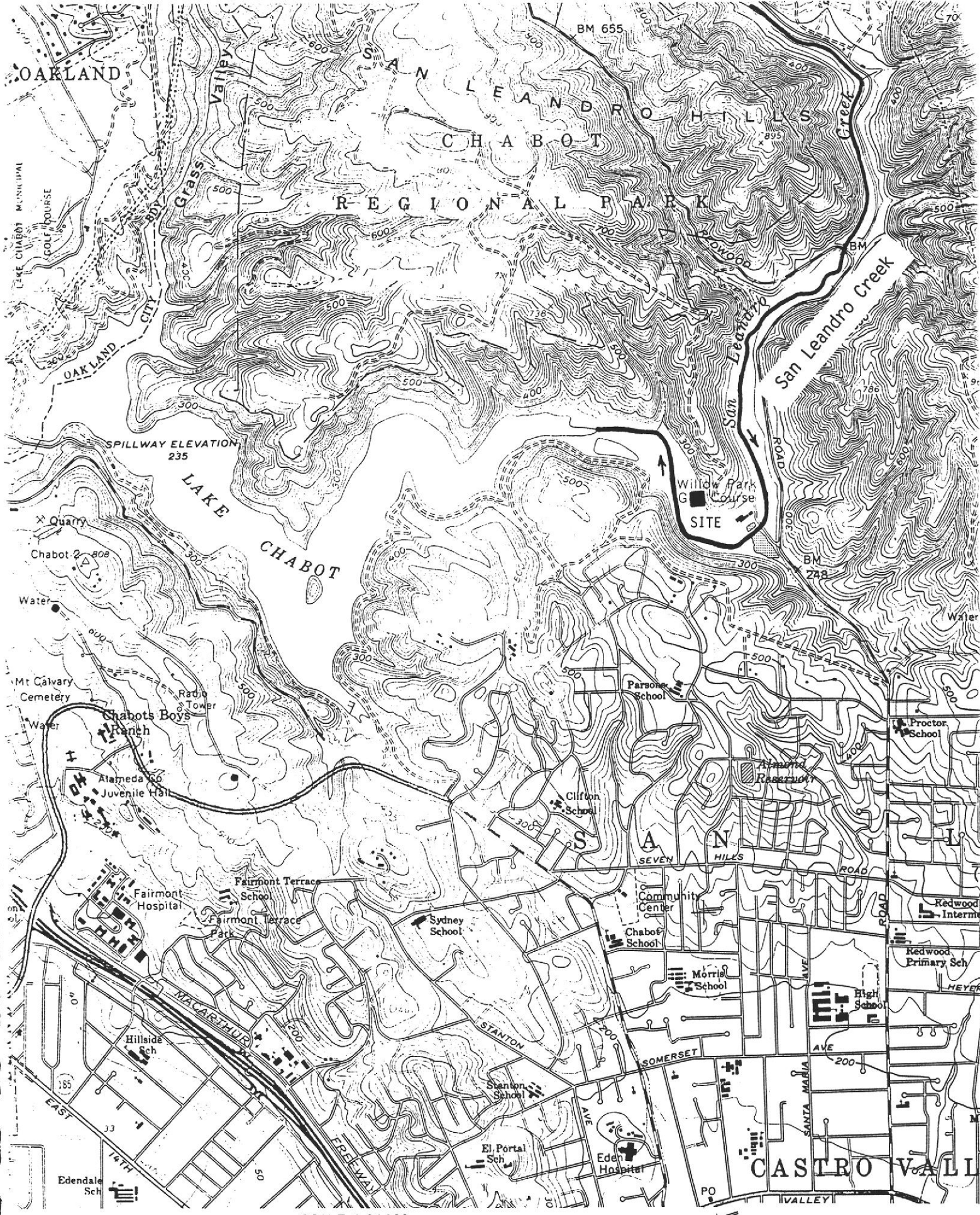
QUARTERLY GROUNDWATER SAMPLING REPORT

**Willow Park Golf Course
17007 Redwood Road
Castro Valley, CA**

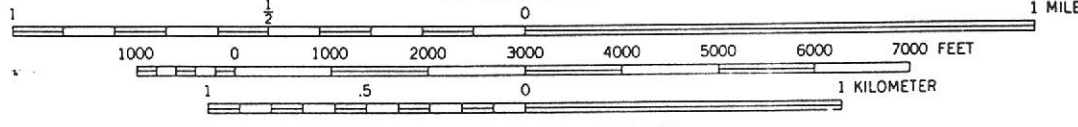
The site location is the maintenance area at the Willow Park Golf Course in Castro Valley, California. The location of the site is shown in Figure 1.

On August 21, 1991, the on-site monitoring well was sampled for the subsequent laboratory analysis for dissolved petroleum constituents. This sampling represents the first "round" of quarterly sampling, following the soil and groundwater investigation previously conducted at the site by Hageman-Aguiar, Inc. The report of that investigation was issued on June 21, 1991.

On August 28, 1990, a 1,000-gallon underground Gasoline storage tank was removed from the site. The tank removal was conducted by K.T.W. & Associates, Fremont, California, under permit from the Alameda County Environmental Health Department and the City of Castro Valley Fire Department.



SCALE 1:24 000



CONTOUR INTERVAL 20 FEET

FIGURE 1.
Site Location Map.

The tank closure report by K.T.W. & Associates documents the fact that upon removal, the structural integrity of the tank was found to be sound. The tank was wrapped, and was observed to contain no corrosion holes. Very slight hydrocarbon odor was observed while removing the overburden surrounding the fill pipe, and the overburden material contained some discoloration. The backfill material consisted of native soil with large quantities of shale.

Following the closure of the underground storage tank, representatives from the Alameda County Health Department, the East Bay Municipal Utilities District, and the Regional Water Quality Control Board met on February 20, 1991, in order to reach an agreement as to the scope of a subsurface investigation at the site.

The letter from the law offices of Randick and O'Dea, dated February 22, 1991, summarizes the agreed upon plan as follows:

Willow Park's management will engage the service of an environmental consulting firm which will determine the optimal location for the installation of one groundwater monitoring well in the assumed down-gradient location from the previous underground storage tank location. The well is to be sited where its installation will be the least impeded by the bedrock formations that underlie the area. The well will be drilled to whatever depth is necessary to reach groundwater or to a maximum of fifty (50) feet if no groundwater is encountered. Soil samples will be taken every 5 feet, if possible. If groundwater is not encountered and the soil samples are either totally devoid of petroleum hydrocarbons or contain such low levels as to make migration to groundwater

implausible, it will be assumed that, due to the low level of source contamination initially discovered and the fact that the alleged source has been removed, groundwater contamination is extremely unlikely and no further work will be required at the site by Alameda County or the Board.

If groundwater is encountered within fifty (50) feet of ground surface, the well will be developed and sampled. Regardless of the result of the initial analysis, the well will be retested in ninety (90) days.

If the results of the two groundwater analyses reveal no actionable levels of petroleum hydrocarbons and no potential source of later contamination is suggested by the soil samples taken during the well installation, no further work will be required and the well will be destroyed in the prescribed manner.

This report presents the results of the two above-referenced groundwater analyses.

Monitoring Well Sampling

A map of the site is shown in Figure 2. This map shows the layout of the facility, along with the location of the previous tank excavation and the location of monitoring well MW-1.

On August 21, 1991, the on-site well was purged, and a groundwater sample was subsequently collected. Prior to

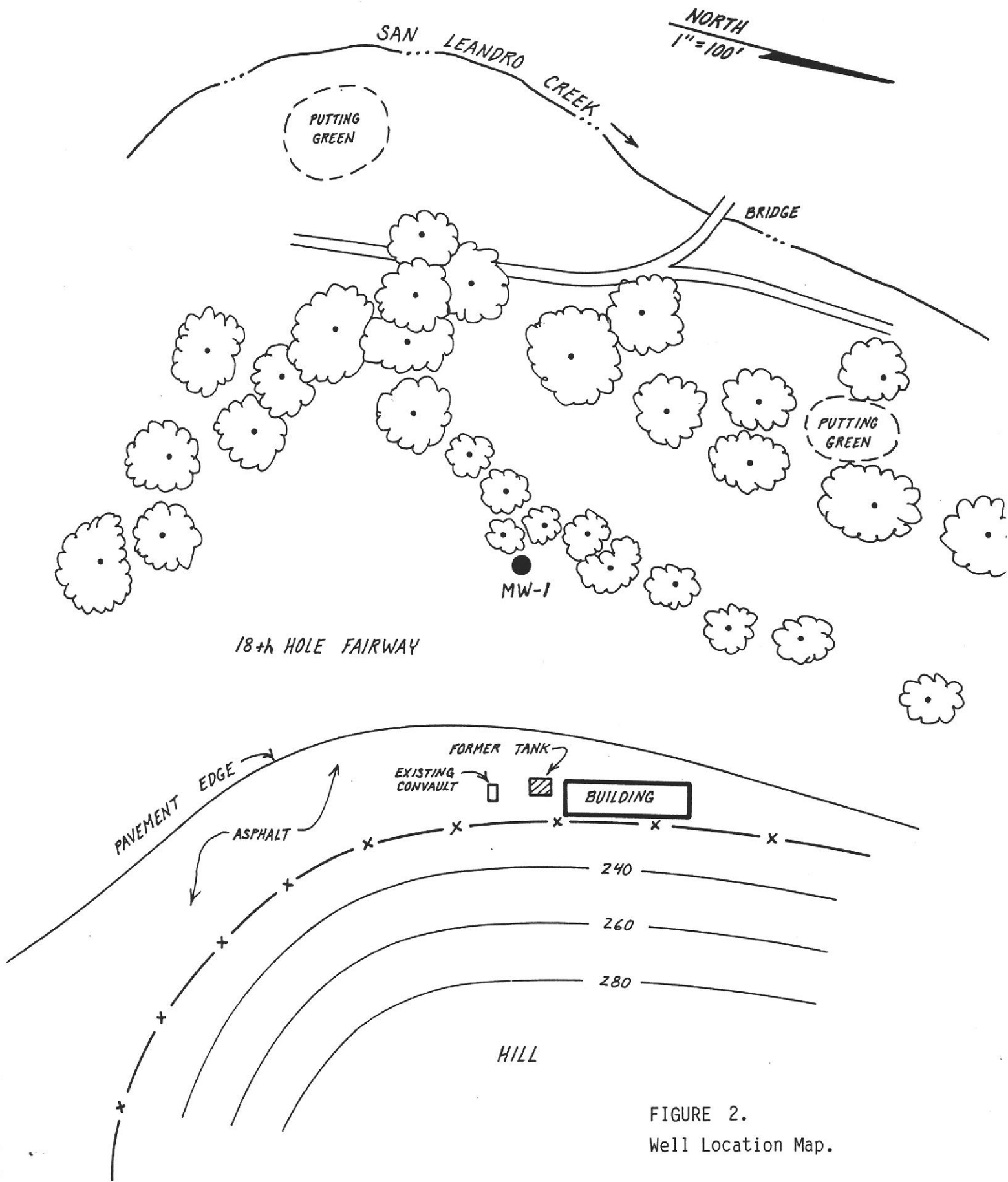


FIGURE 2.
Well Location Map.

groundwater sampling, the well was purged by bailing 3 to 5 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 sample was placed inside appropriate 40 mL VOA vials free of any headspace. The samples were immediately placed on ice, then transported under chain-of-custody to the laboratory at the end of the work day.

At the time the 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. A copy of the well sampling log is included as Attachment A.

All water removed from the well during purging was drummed and stored on-site until the results of laboratory analyses were obtained. Since no detectable concentrations of any petroleum hydrocarbons were found in any of the groundwater samples, this water was ultimately poured out onto the pavement of the maintenance yard.

Laboratory Analysis

All analyses were conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures (Chromalab, San Ramon, CA). The Groundwater sample was analyzed for Total Petroleum Hydrocarbons as Gasoline, and Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA methods 8015 and 602).

Water Level Measurement

Shallow water table elevations were measured on August 21, 1991. These measurements are shown in Table 1. Shallow groundwater was found to be at a depth of 12 below the ground surface, some 4 feet lower than the elevation measured at the time of the initial groundwater sampling.

Results of Quarterly Monitoring

Table 2 presents the results of the laboratory analysis of the groundwater sample collected from monitoring well MW-1.

As shown in Table 2, no detectable concentrations of Gasoline, Benzene, Toluene, Ethyl Benzene, or Total Xylenes were found in the groundwater sample collected from monitoring well MW-1.

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

TABLE 1.

**Shallow Water Table Elevations
WELL MW-1**

Date	Top of Casing Elevation (feet)	Depth to Water (feet)	Water Table Elevation (feet)
05-20-91	224.38	8.05	216.33
08-21-91	224.38	12.04	212.34

Based upon original Willow Park Golf Course grading plans by Bob Baldock & Son, Architects, dated February 2, 1966.

Elevation at northwest corner of clubhouse = 236 feet MSL.

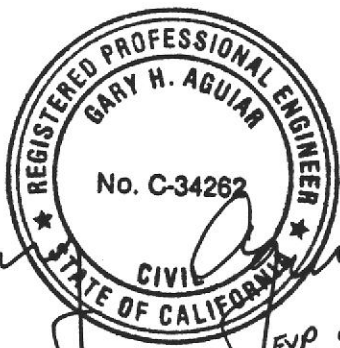
TABLE 2.

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	05-22-91 08-21-91	ND ND	ND ND	ND ND	ND ND	ND ND
Detection Limit		50	0.5	0.5	0.5	0.5

Recommendation

The results of the two shallow groundwater sampling events clearly indicate that no detectable concentrations of any petroleum hydrocarbons are present in the shallow groundwater beneath the site. In accordance with the agreed-upon plan, it is recommended that **no further work be required and that monitoring well MW-1 be destroyed in the prescribed manner.**



Gary Aguiar RCE 34262

Bruce Hageman

ATTACHMENT A

WELL SAMPLING LOGS

WELL SAMPLING LOG

Project/No. WILLOW PARK GOLF COURSE Page 1 of 1
Site Location CASTRO VALLEY, CA Date 8-21-91
Well No. MW-1 Time Sampling Began 14:30
Weather 80°F, SUNNY Completed 15:30

EVACUATION DATA

Description of Measuring Point (MP) WELL BOX (AT GRADE)
Total Sounded Depth of Well Below MP 23.80
Depth to Water Below MP 12.04 Diameter of Casing 2"
Water Column in Well 11.76
Gallons in Well 2.0 Gallons Pumped/Bailed Prior to Sampling 10
Evacuation Method TEFLON BAILER

SAMPLING DATA / FIELD PARAMETERS

Color CLEAR Odor NONE
Appearance NO SHEEN Temperature 20.5° F (°C)
Specific Conductance (umhos/cm) 1310 pH 6.86
Sampling Method and Material TEFLON BAILER

FIELD ANALYSES:	Start	Mid	End
Time	<u>14:40</u>	<u>14:58</u>	<u>15:18</u>
Temperature	<u>23°</u>	<u>20.5°</u>	<u>20.5°</u>
Conductivity	<u>1425</u>	<u>1300</u>	<u>1310</u>
pH	<u>6.81</u>	<u>6.86</u>	<u>6.86</u>

Sampling Personnel Keith Jay

ATTACHMENT B

ANALYTICAL RESULTS: GROUNDWATER

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

September 3, 1991

ChromaLab File No.: 0891196

HAGEMAN-AGUIAR, INC.

Attn: Keith Jay

RE: One water sample for Gasoline/BTEX analysis

Project Name: WILLOW PARK GOLF COURSE - CASTRO VALLEY

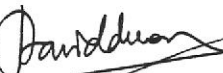
Date Sampled: August 21, 1991 Date Submitted: August 21, 1991

Date Extracted: August 30, 1991 Date Analyzed: August 30, 1991

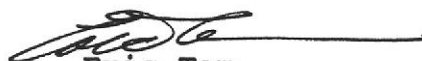
RESULTS:

Sample I.D.	Gasoline ($\mu\text{g}/\text{l}$)	Benzene ($\mu\text{g}/\text{l}$)	Toluene ($\mu\text{g}/\text{l}$)	Ethyl Benzene ($\mu\text{g}/\text{l}$)	Total Xylenes ($\mu\text{g}/\text{l}$)
MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	100.5%	91.9%	104.1%	107.6%	106.9%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director

