HAGEMAN-SCHANK, INC.

Underground Contamination Investigations

3732 Mt. Diablo Blvd. Suite 372
Lafayette, California 94549
(415) 284-1661
FAX (415) 284-1664

June 21, 1990

REPORT OF
SOIL AND GROUNDWATER INVESTIGATION

GRANHOLT SHEET METAL
501 SAN PABLO AVENUE
ALBANY, CA

INTRODUCTION

A soil and groundwater investigation has been completed at the above site. The location of the site is shown in Figure 1. A building is located on the property where sheet metal fabrication was conducted in the past. In conjunction with this operation, the site has historically operated one underground 550 gallon gasoline storage tank for a number of years. In November, 1989, the underground storage tank was removed. The tank removal was conducted by Delta Bay Builders, Inc., under permit from the Alameda County Environmental Health Department. Analytical results of one soil sample taken from the tank pit indicated a hydrocarbon level of 110 ppm.

The purpose of the soil and groundwater investigation was to install and sample one on-site monitoring well in order to define the extent of any petroleum constituents that

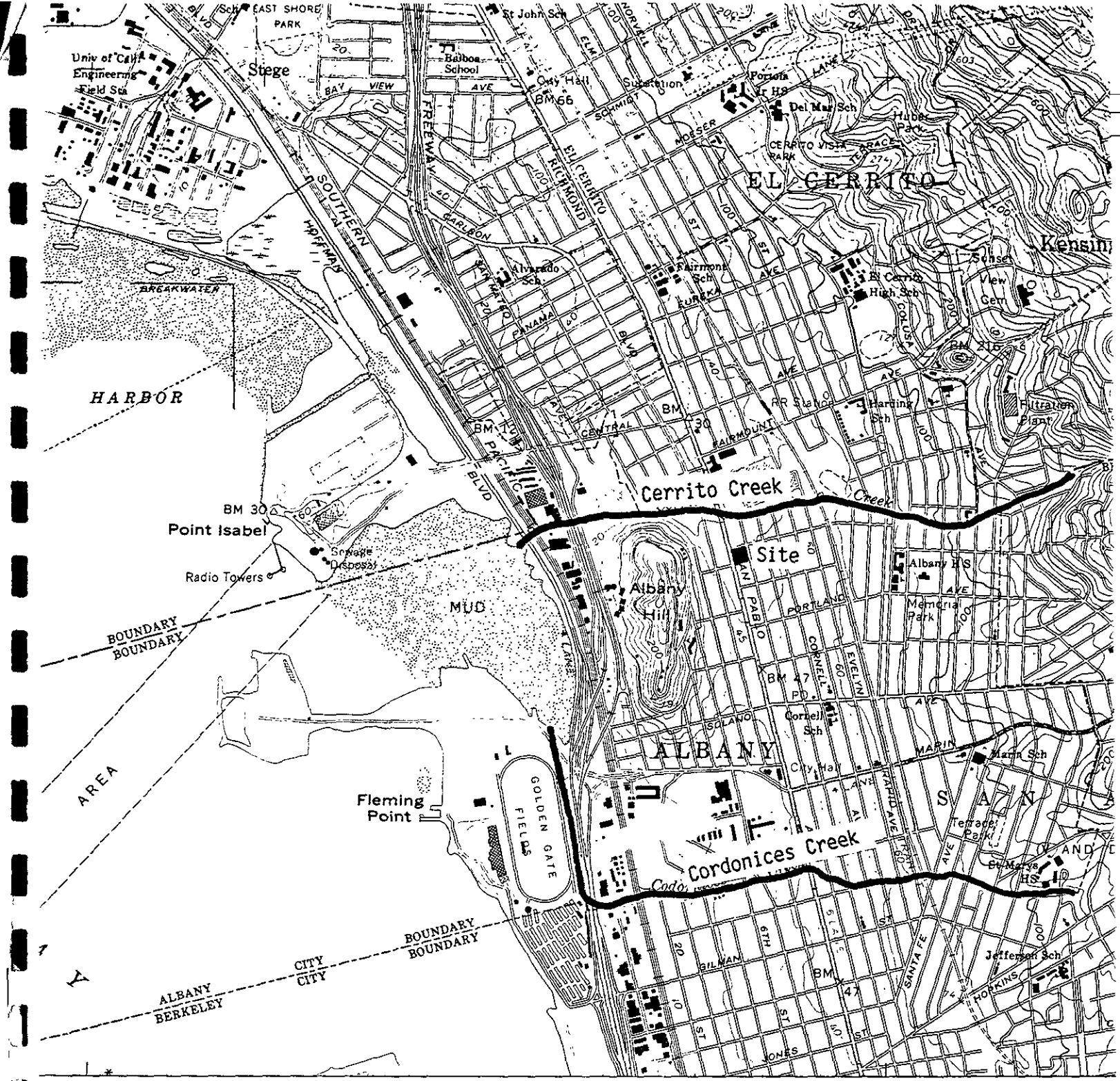


FIGURE 1.

Vicinity Map.

may be present in the shallow groundwater beneath the site in the immediate vicinity of the former underground tank.

MONITORING WELL INSTALLATION

On June 7, 1990, one shallow groundwater monitoring well was installed on the site. The location of the monitoring well, well # MW-1, is shown in Figure 2. The location of the well was selected based upon the known location of the former underground storage tank.

The well was installed with a truck-mounted drill rig using 8-inch hollow-stem augers. Shallow groundwater was encountered at the extremely shallow depth of approximately 3 feet below ground surface. During the drilling, soil samples for chemical analyses were collected from within the clayey soil beneath the saturated zone at depths of 10 and 15 feet below ground surface. Each soil sample was collected by driving a split-barrel sampler fitted with brass liners. All samples were immediately placed on ice, then transported under chain-of-custody to the laboratory at the end of the day.

Each boring was cased approximately ten feet below the top of the first saturated zone with 10 feet of 2-inch PVC slotted screen pipe (0.02" slots). Well MW-1 was completed to a depth of approximately 15 feet below the ground surface. The annular space of each well was packed to one foot above the slotted section with #3 Monterey Sand. At least one foot of wetted bentonite pellets were placed upon the sand pack, followed by a neat cement seal up to the ground surface. The well was fitted with a locking cap and steel traffic lid. The boring was logged in the field by a registered civil engineer (RCE #34262). The boring log is shown in Attachment

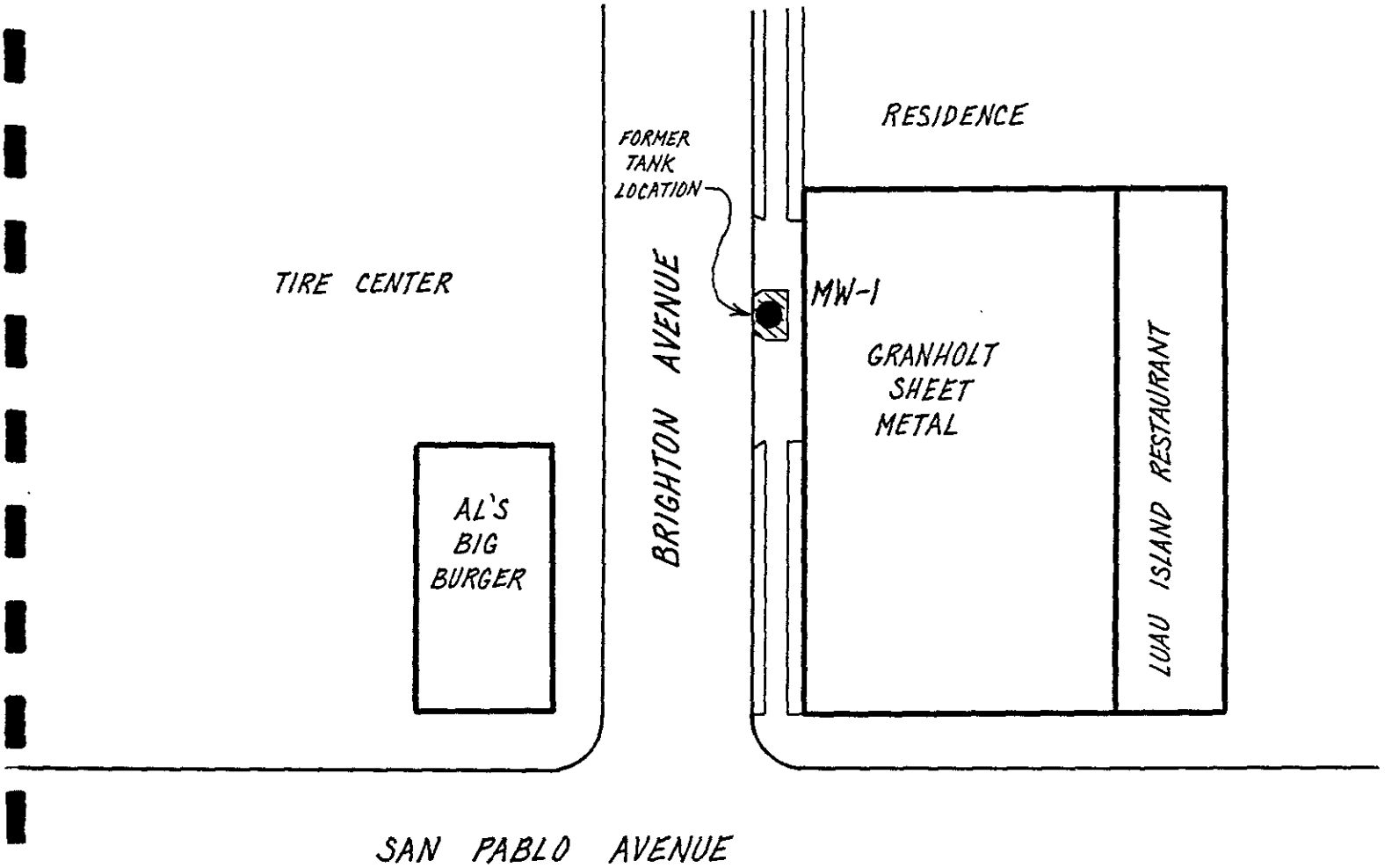


FIGURE 2.
Site Map.

A. A well construction diagram is shown in Attachment B. Included in Attachment B is a copy of the Groundwater Protection Ordinance Permit issued by Zone-7, Alameda County Flood Control and Water Conservation District.

Prior to the installation of the well, all drilling equipment, including augers, drill stem, and split barrel samplers, was steam-cleaned on-site.

All drill cuttings were drummed and stored on-site until the results of laboratory anaylses were obtained. Depending upon these results, the cuttings will be disposed of as either a non-hazardous waste, or else as a hazardous waste under proper manifest to an appropriate TSD facility.

MONITORING WELL SAMPLING AND LABORATORY ANALYSIS

On June 12, 1990, groundwater samples were collected from each of the newly installed monitoring wells. Prior to sampling, each well was developed by bailing out approximately 8 to 10 casing volumes of water. All samples were immediately placed on ice, then transported under chain-of-custody to the laboratory following the completion of work. During the development of the well, no appreciable drawdown was noted, thus indicating a high rate of recharge (likely to be more than 5 gpm).

All analyses were conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures. All soil and groundwater samples were analyzed for BTXE and Total Petroleum Hydrocarbons as Gasoline.

All water removed from the well during development and purging was drummed and stored on-site until the results of

laboratory anaylses were obtained. Depending upon these results, the water will be sewered as a non-hazardous liquid waste in accordance with local sewering agency permit requirements, or else it will be transported as a hazardous liquid waste under proper manifest to an appropriate TSD facility for treatment and disposal.

SITE HYDROGEOLOGY

The location of the site is shown on the vicinity map (Figure 1). The site is located at the foot of Albany Hill, which is an outcrop of the Franciscan Formation consisting of varying amounts of siltstone and sandstone (graywacke). To the east are the El Cerrito Hills, and consist of the Franciscan Formation with varying amounts of intrusive igneous rocks (Geologic Map of California, San Francisco Sheet, State of California Division of Mines and Geology, 1980). The soils directly beneath the site consist of Quaternary Alluvium overlying Franciscan bedrock. Considering the close proximity of Albany Hill, bedrock is likely to occur at a relatively shallow depth, possibly twenty to thirty feet below ground surface.

During the boring for the well installation, very shallow groundwater was encountered. Soil sampling at the 10 and 15 foot depths indicated the presence of unsaturated clay and moderately consolidated, nearly dry sandstone beneath this shallow saturated zone. The groundwater encountered in well MW-1 is obviously "perched" groundwater. Although this groundwater was found to be present in the non-native tank backfill material (sand), the extremely high rate of recharge the was noted during the well construction and subsequent development and sampling indicates a connection with a system of one or more saturated strata. This

"perched" groundwater may be related to the close proximity to Albany Hill, which is likely to contain numerous saturated fracture zones.

RESULTS OF SOIL SAMPLING

Table 1 presents the results of the laboratory analysis of the soil samples collected during the monitoring well installations. As shown in this table, 15 mg/kg (ppm) of gasoline were detected in the soil sample collected at the 10-foot depth, while no concentrations of Gasoline were detected at the 15-foot depth. As shown in Table 1, no appreciable concentrations of Benzene, Toluene, Ethyl Benzene, or Xylenes were detected in any of the soil samples.

Copies of the laboratory certificates are included as Attachment C.

RESULTS OF GROUNDWATER SAMPLING

Table 2 presents the results of the laboratory analysis of the groundwater sample collected from the monitoring well on June 12, 1990. As shown in this table, trace concentrations of dissolved "weathered" Gasoline (770 ppb), Benzene (3.0 ppb), Ethyl Benzene (3.0 ppb), and Xylenes (4.0 ppb) were detected in monitoring well MW-1.

Copies of the laboratory certificates are included as Attachment E.

TABLE 1. Soil Sampling Results.
Granholt Sheet Metal, Albany

Boring	Depth (feet)	Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)
MW-1	10	15	ND	ND	0.18	0.18
	15	ND	ND	0.05	ND	ND
DETECTION LIMIT (mg/kg)		0.5	0.015	0.015	0.015	0.045

TABLE 2. Groundwater Sampling Results
Granholt Sheet Metal, Albany

	Sampled 6-12-90				
Well	Weathered Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Xylenes (ug/L)
MW-1	770	3.0	ND	3.0	4.0
DETECTION LIMIT (ug/L)	50	0.3	0.3	0.3	0.6

CONCLUSIONS

Based upon the results of this soil and groundwater investigation, the following can be concluded:

1) The shallow groundwater appears to be present in a very shallow saturated zone (3 feet below ground surface), and is "perched" above a stratum of unsaturated clay and moderately consolidated, nearly dry sandstone.

2) Trace concentrations of dissolved "weathered" Gasoline were detected in the shallow groundwater in monitoring well MW-1 at a concentration of 770 ug/L (ppb).

3) Trace concentrations of Benzene (3.0 ppb), Ethyl Benzene (3.0 ppb), and Xylenes (4.0 ppb) were detected in the shallow groundwater sampled from monitoring well MW-1.

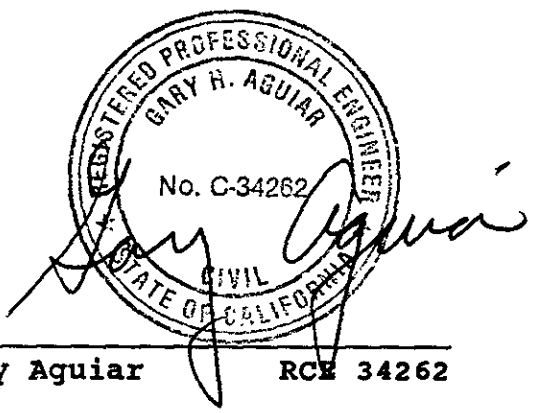
4) 15 mg/kg (ppm) of gasoline were detected in the soil sample collected at the 10-foot depth (clay layer beneath the saturated, "perched" groundwater zone), while no concentrations of Gasoline were detected at the 15-foot depth.

RECOMMENDATIONS

The results of the investigation indicate that some residual gasoline contamination remains in the shallow groundwater in the immediate vicinity of the former underground storage tank.

It is recommended that quarterly monitoring of monitoring well MW-1 be carried out over the course of one year. If contamination levels remain stable or decline during the

first year, as would be expected due to the removal of the contamination source (underground tank), a request will be made to the appropriate regulatory agency for permission to either reduce the frequency of monitoring or else discontinue monitoring and properly abandon the existing monitoring well.

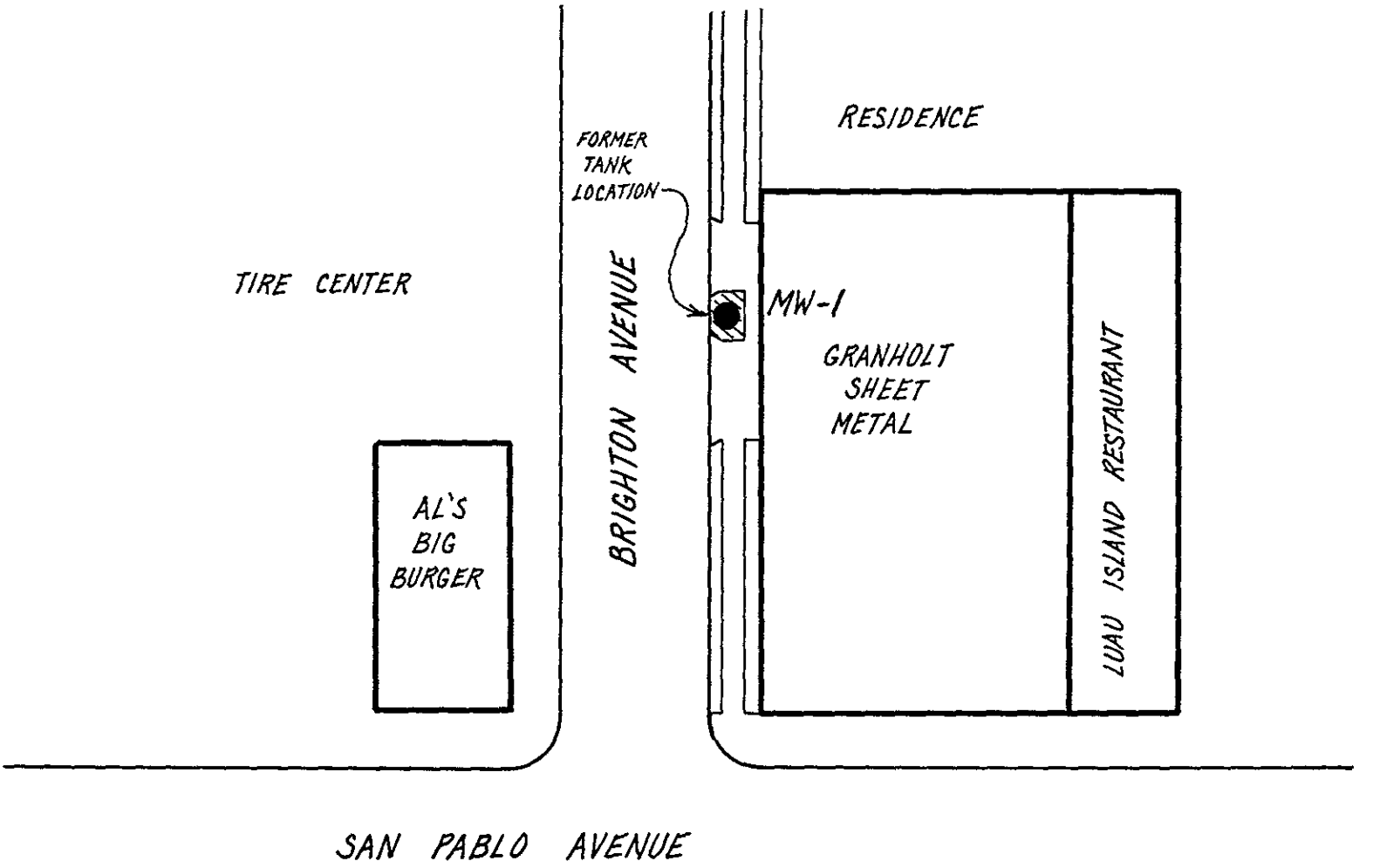


Gary Aguiar RCE 34262

Bruce Hageman

ATTACHMENT A

Boring Logs



SITE MAP
Granholt Sheet Metal
Albany, CA

LOCATION OF BORING

SEE SITE MAP

JOB NO.	CLIENT	LOCATION
	GRANHOLT	ALBANY

DRILLING METHOD: 8" HOLLOW STEM AUGER

BORING NO. MW-1

SHEET 1 of 1

SAMPLING METHOD: 2" SPLIT BARREL SAMPLER WITH BRASS LINERS

DRILLING

					START	FINISH
WATER LEVEL					TIME	TIME
TIME					0900	1026
DATE					DATE	DATE
CASING DEPTH					6/7/90	6/7/90

DATUM ELEVATION

DRILLING CONTR.

CHK'D BY

DATE

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	TIME	DEPTH IN FEET	SOIL GRAPH
						0	
						1	
						2	
						3	
						4	
2" SPLIT	18/4			1/1/1	0948	5	
						6	
						7	
						8	
						9	
2" SPLIT	18/15			10/13/28	1008	10	
						1	
						2	
						3	
						4	
						5	
2 SPLT	18/12			9/17/21	1026	6	
						7	
						8	
						9	
						0	

SURFACE CONDITIONS:

CONCRETE

GREY SAND (SP), FILL, FINE GRAIN, LOOSE

SAME, SATURATED

(NO ODOR)

REGISTERED PROFESSIONAL ENGINEER
GARY H. AGUIAR
No. C-34262
CIVIL
STATE OF CALIFORNIA

GREY GRAVELLY CLAY (CH), MOIST, STIFF, VERY GRAVELLY, ANGULAR & SUB-ANGULAR GRAVEL TO 1"

BRN GRAVELLY CLAY (CH), NEARLY DRY, STIFF, VERY GRAVELLY, ANGULAR & SUB-ANGULAR TO 1"

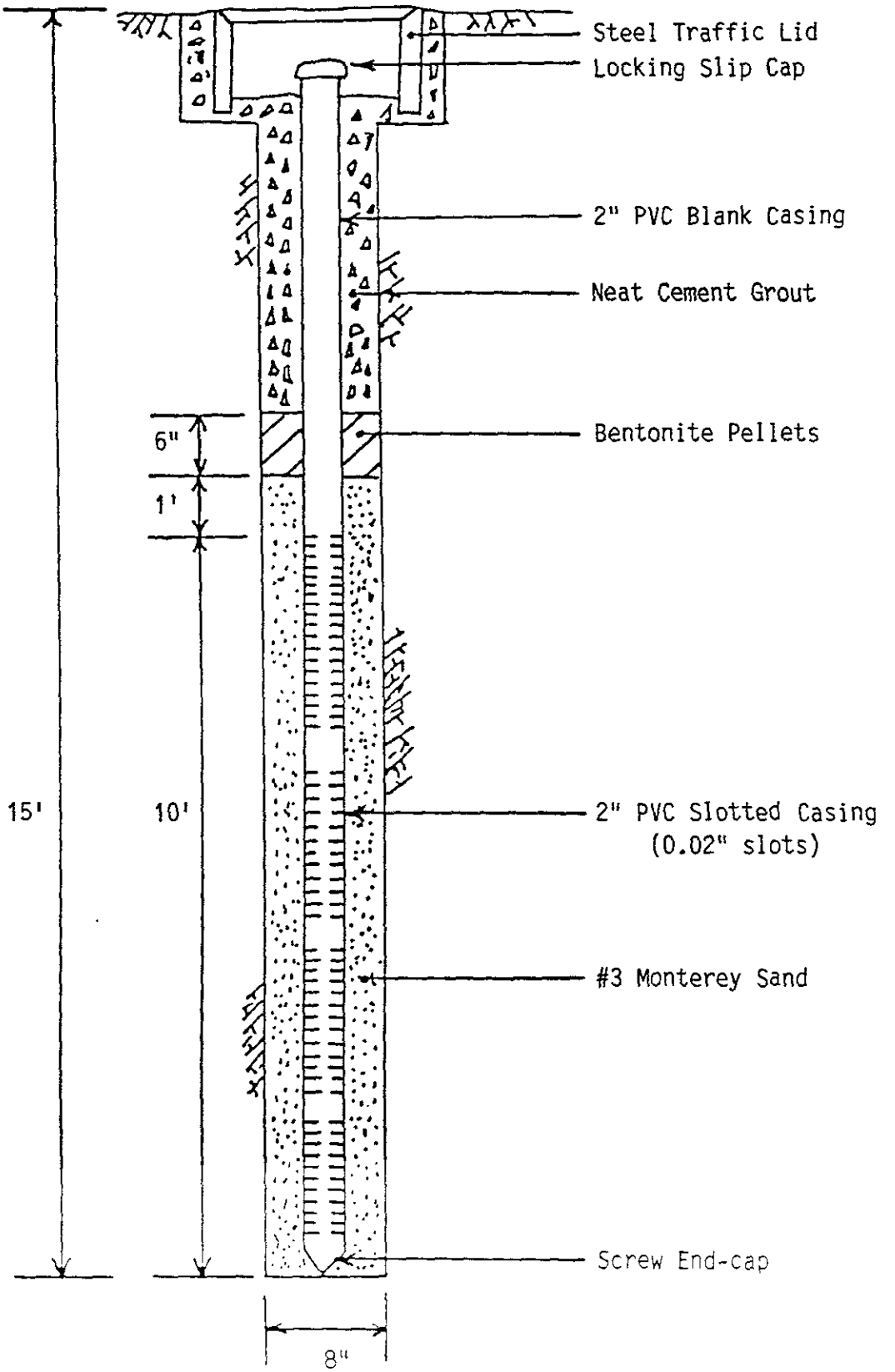
DK BRN CLAY (CH) & LT BRN SANDSTONE, NEARLY DRY, SANDSTONE & CLAY INTERBEDDED IN LARGE POCKETS, SANDSTONE MODERATELY CONSOLIDATED, CLAY STIFF, MODERATE PLASTICITY

TOTAL DEPTH = 16' BLS

ATTACHMENT B

WELL CONSTRUCTION DIAGRAMS

MONITORING WELL MW-1



Granholt Sheet Metal
Albany, CA

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ (415) 484-2600

30 May 1990

Hageman-Aguiar, Inc.
3732 Mt. Diablo Street
Lafayette, CA 94549

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 90334 for a monitoring well construction project at 501 San Pablo Avenue in Albany for Fred Granhart.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Wyman Hong or Craig Mayfield at 484-2600.

Very truly yours,

Mun J. Mar
General Manager

By J. Killingstad, Chief
Water Resources Engineering

WH:mm
Enc.

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

(1) LOCATION OF PROJECT 501 San Pablo Ave. Albany, CA

(2) CLIENT
Name Fred Gemmer
Address P.O. Box 798 Phone 916-335-4848
City Burney CA Zip 96013

(3) APPLICANT
Name Harding-Regua Inc
Address 3752 Mt. Diablo Phone 284-1661
City Lafayette Zip 94549

(4) DESCRIPTION OF PROJECT
Water Well Construction ___ Geotechnical Investigation ___
Cathodic Protection ___ General ___
Well Destruction ___ Contamination X

(5) PROPOSED WATER WELL USE
Domestic ___ Industrial ___ Irrigation ___
Municipal ___ Monitoring X Other ___

(6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ___ Air Rotary ___ Auger X Hollow stem
Cable ___ Other ___

DRILLER'S LICENSE NO. C57-482000

WELL PROJECTS
Drill Hole Diameter 8" in. Maximum
Casing Diameter 2" in. Depth 25 ft.
Surface Seal Depth 5' ft. Number 1
Approx

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 5-29-90
ESTIMATED COMPLETION DATE 5-29-90

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Dave Hayman Date 5-25-90

FOR OFFICE USE

PERMIT NUMBER 90334
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 25 May 90
Wyman Hong

21989

ATTACHMENT C

ANALYTICAL RESULTS: SOIL

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (415) 222-3002 FAX (415) 222-1251

CERTIFICATE OF ANALYSIS

State License No. 211

Received: 06/07/90
Reported: 06/14/90
Job No #: 71614

Attn: Gary Aguiar
Hageman-Schank, Inc.
3732 Mt. Diablo Blvd., Suite 372
Lafayette, Ca. 94549

Project: Granholt Sheet Metal / Albany. CA.
Matrix: Soil

Total Petroleum Hydrocarbon Analysis:
EPA Method 5030
mg/kg

Lab ID	Client ID	Gasoline	MDL
71614-1	MW-1 @ 10'	15	0.5
71614-2	MW-2 @ 15'	ND<0.5	0.5

QA/QC: Spike Recovery for Gasoline: 81%

MDL: Method detection limit; Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (415) 222-3002 FAX (415) 222-1251

CERTIFICATE OF ANALYSIS

State License No. 211

Received: 06/07/90
Reported: 06/14/90
Job No #: 71614

Attn: Gary Aguiar
Hageman-Schank, Inc.
3732 Mt. Diablo Blvd., Suite 372
Lafayette, Ca. 94549

Project: Granholt Sheet Metal / Albany. CA.
Matrix: Soil

Aromatic Volatile Hydrocarbon Analysis:
EPA Method 8020
mg/kg

Lab ID	Client ID	Benzene	MDL	Toluene	MDL
71614-1	MW-1 @ 10'	ND<0.015	0.015	ND<0.015	0.015
71614-2	MW-[illegible] @ 15'	ND<0.015	0.015	0.05	0.015

Lab ID	Client ID	Ethyl-benzene	MDL	Xylene	MDL
71614-1	MW-1 @ 10'	0.18	0.015	0.18	0.045
71614-2	MW-[illegible] @ 15'	ND<0.015	0.015	ND<0.045	0.045

QA/QC: Spike Recovery for Benzene: 75%
Spike Recovery for Toluene: 75%
Spike Recovery for O-Xylene: 75%

MDL: Method detection limit; Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dc

CHAIN OF CUSTODY

JECT NO.	SAMPLERS (Signature) Gary Aguiar

JECT NAME AND ADDRESS:
FRANHOLT SHEET METAL, ALBANY, CA.

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION	TPH- GASOLINE/DIESEL	BTX - (8020)	HALOGENATED (8010)	TOTAL OIL & GREASE	PCB's (8080)	METALS (CAM-17)	REMARKS
-1-10'	6/7/90	1008	X		MONITORING WELL #1 @10'	X	X					
-1-15'	6/7/9	1026	X		" " " @15'	X	X					
					5-DAY TURNAROUND							

QUISHED BY: (Signature) Gary Aguiar	DATE 6/7/90 TIME 1210	RECEIVED BY: (Signature) [illegible]	DATE 6/7/90 TIME [illegible]
QUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME
QUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME
QUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME

ATTACHMENT D

ANALYTICAL RESULTS: GROUNDWATER

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (415) 222-3002 FAX (415) 222-1251

CERTIFICATE OF ANALYSIS

State License No. 211

Received: 06/12/90
Reported: 06/18/90
Job No #: 71628

Attn: Gary Aguiar
Hageman-Schank, Inc.
3732 Mt. Diablo Blvd., Suite 372
Lafayette, Ca. 94549

Project: Granholtz - Albany, CA.
Matrix: Water

Total Petroleum Hydrocarbon Analysis:
EPA Method 5030
ug/l

Lab ID	Client ID	Weathered Gasoline	MDL
71628-1	MW - 1	770	50

QA/QC: Spike Recovery for Gasoline: 95%

MDL: Method detection limit; Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (415) 222-3002 FAX (415) 222-1251

CERTIFICATE OF ANALYSIS

State License No. 211

Received: 06/12/90
Reported: 06/18/90
Job No #: 71628

Attn: Gary Aguiar
Hageman-Schank, Inc.
3732 Mt. Diablo Blvd., Suite 372
Lafayette, Ca. 94549

Project: Granholtz - Albany, CA.
Matrix: Water

Aromatic Volatile Hydrocarbon Analysis:
EPA Method 8020
ug/l

Lab ID	Client ID	Benzene	MDL	Toluene	MDL
71628-1	MW - 1	3.0	0.3	ND<0.3	0.3

Lab ID	Client ID	Ethyl-benzene	MDL	Xylene	MDL
71628-1	MW - 1	3.0	0.3	4.0	0.6

QA/QC: Spike Recovery for Benzene: 106%
Spike Recovery for Toluene: 107%
Spike Recovery for O-Xylene: 102%

MDL: Method detection limit; Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dc