ARTESIAN ENVIRONMENTAL CONSULTANTS

May 6, 1992

Mr. Hugh Murphy
City of Hayward Hazardous Materials Dept.
22300 Foothill Blvd.
Hayward, CA 94541

Dear Mr. Murphy;

Please find enclosed the Subsurface Investigation at Five Star Auto Care Facility at 1220 West Tennyson Avenue in Hayward, California. The report will be mailed to all of the persons listed on the Distribution page.

Please contact us if you should have any questions.

Thank you.

Olivia Jacobs

Olivia Jacobs

5/11/92 - left message for Olivia Jacobs to call. OJ

ARTESIAN ENVIRONMENTAL CONSULTANTS

SUBSURFACE INVESTIGATION

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, California

Prepared for:

Mr. Mark East
E & G Construction
6433 Oberlin Way
San Jose, CA 95123

April 1992

Olivia T. P. Jacobs
Olivia T.P. Jacobs
President

James A. Jacobs, R.G. #4815
Principal Geologist

REGISTERED GEOLOGIST
JAMES A. JACOBS
NO. 4815
STATE OF CALIFORNIA

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100 Shoreline Hwy., Suite 295 B • Mill Valley, CA 94941 • (415) 381-6456 FAX (415) 389-0423

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100 Shoreline Hwy., Suite 295 B • Mill Valley, CA 94941 • (415) 381-6456 FAX (415) 389-0423

EXECUTIVE SUMMARY

Artesian Environmental Consultants (Artesian) conducted a subsurface investigation at the Five Star Auto Care Facility located at 1220 West Tennyson Avenue in Hayward, California. Three soil borings (B-1 through B-3) which were converted into monitor wells (MW-1 through MW-3, respectively) were drilled west, north and south of the underground storage tank pit to detect and monitor the presence of hydrocarbons in the soils and groundwater. This investigation only evaluated on-site soil and groundwater conditions. No off-site sampling was performed during this investigation.

The three soil borings were drilled on March 3, 1992 to a maximum depth of 22.5 feet (MW-1), 19.5 feet (MW-2) and 19.5 feet (MW-3) below ground surface. Soil samples were collected every five feet during the drilling of the soil borings. The borings, B-1 through B-3 were completed on March 3, 1992 as monitor wells MW-1 through MW-3, respectively. The wells were completed at depths of between 19.0 and 19.5 feet below ground surface. The soil samples were transported in an ice chest under chain of custody to Chromalab, Inc. (Chromalab), a state of California certified laboratory in San Ramon, California.

Seven soil samples were collected and analyzed from borings B-1 through B-3 at 5.0 and 10.5 depth intervals. B-3 also contained a soil sample from 12.0 feet. The soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene and total xylenes (BTEX).

TPH-g and BTEX were detected in B-1 at 10.5 feet at 34 parts per million (ppm) and 440 parts per billion (ppb), 460 ppb, 270 ppb and 2100 ppb, respectively.

Only TPH-g and benzene were detected in boring B-2 at a 10.5 foot depth at 1.3 ppm and 240 ppb, respectively.

The highest concentrations of analytes were detected in boring B-3 at 12 feet. TPH-g and BTEX were detected at 680 ppm, 8,100 ppb, 15,000 ppb, 11,000 ppb and 730,000 ppb, respectively.

Soil analyses from the excavation pit (P-1 to P-9) contained levels of gasoline and BTEX with the highest quantities at 2900 mg/kg, 12,000 mg/kg, 160,000 mg/kg, 35,000 mg/kg and 420,000 mg/kg, respectively. Soil analyses from the well installation samples revealed levels of gasoline and BTEX with the highest quantities at 680 mg/kg, 8,100 mg/kg, 15,000 mg/kg, 11,000 mg/kg and 73,000 mg/kg, respectively.

On March 9, 1992 (72 hours after well installation), a sampling Geologist was sent out to purge and sample the wells; Two of the wells were covered with soil piles and the third was located in a busy and inconvenient area. The wells were sampled later on April 7, 1992. The water samples were transported in an ice chest under chain of custody to Chromalab, Inc.(Chromalab), a state of California certified laboratory in San Ramon, California.

Soil samples were collected on March 4, 1992 in the excavation pit prior to installing new underground tanks. The samples (P-1 through P-9) were collected from depths ranging between 11'0" to 12'2" below ground surface above floor of the excavation and in the capillary fringe. TPH-g was detected at levels as high as 2,900 ppm.

Free product was not encountered in any of the wells. Groundwater samples collected from the

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monitor wells MW-1 through MW-3 did not contain detectible levels of dissolved TPH-g and ethylbenzene in MW-1. Benzene, toluene and xylenes were detected in MW-1 at 2.1 ppb, 0.56 ppb and 1.4 ppb, respectively. Groundwater samples from MW-2 and MW-3 contained TPH-g and BTEX, with the highest concentrations in MW-3 at 59,000 ppb, 13,000 ppb, 12,000 ppb, 1,600 ppb and 13,000 ppb for TPH-g, and BTEX, respectively.

Water levels in the three monitor wells in the investigatiion area were measured by Artesian personnel on April 7, 1992, and groundwater elevations indicate that the shallow groundwater flow direction is to the west-southwest at an average gradient of 0.0271 foot per feet in the vicinity of the subject investigation area.

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1. INTRODUCTION

This report presents the results of the subsurface investigation performed by Artesian Environmental Consultants (Artesian) at the Five Star Auto Care Facility in Hayward, California (Figures 1 and 2). During the drilling of the borings on March 3, 1992, the pit which had formerly contained underground fuel storage tanks was open. The work completed on that day followed the scope of work which was outlined in the work plan, which follows:

SCOPE OF WORK

1. Prepare Work Plan, Site Safety Plan, obtain necessary permits and locate underground utilities and obstacles;

2. Drill and sample three soil borings on-site;

3. Sample the tank pit.

4. Complete borings B-1, B-2 and B-3 as 2-inch diameter groundwater monitor wells MW-1, MW-2 and MW-3;

5. Analyze all soil and groundwater samples for:
   total petroleum hydrocarbons as gasoline (TPH-g) by modified Environmental Protection Agency (EPA) Method 8015,
   benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020;

6. Develop and sample monitor wells, MW-1, MW-2 and MW-3;

7. Review the field and laboratory data and prepare a report of the investigation.

2. BACKGROUND

SITE SETTING

The project site is located on the south side of West Tennyson Avenue on the southwest corner of West Tennyson Avenue and Pompano Avenue. The site is located in the southern section of Hayward approximately 2,000 feet east of the Nimitz Freeway. The property is bounded on the south and west by residential areas. Areas to the north and east are commercial properties.

PREVIOUS INVESTIGATIONS

The property is an active gasoline retail service station and auto maintenance business. Four underground fuel storage tanks were removed from the property on October 10, 1990. Tank A was a 4,000 gallon fuel tank, Tank B was a 4,000 gallon fuel tank, Tank C was a 4,000 gallon fuel tank and D was a 6,000 gallon fuel tank. Water was present at 12 feet below ground surface in the excavation pit and had dark fuel product sheen and odor. This information was provided by Environmental Geological Consultants, Inc. of Hayward, California, according to their October 24, 1990 tank report and lab summary. Groundwater from the pit contained levels of gas and BTEX with the highest level being Benzene at 5,200 ppm. Soil analyses from this report revealed levels of lead, gas and BTEX with the highest quantities at 4.3 ppm, 4,300 ppm, 29,000, 160,000 ppm, 68,000 ppm and 280,000 ppm respectively.

3. SOIL BORINGS AND HYDROGEOLOGY

The soil borings were drilled through the asphalt surface (0.5'), imported fill (1.5') and into the native soils. All soil borings were drilled with an 8-inch outer diameter hollow-stem auger using a CME 45 drill rig. The CME 45 used a 140 pound drop-hammer with a 30 inch drop. The drilling was performed by a state-licensed driller (C-57 # 596309), K L Drilling of Alameda, California.

Soil samples were collected from the borings at approximate intervals of 5.0 feet, for lithologic and hydrologic characterization and for chemical analysis. The samples were screened with a photoionization detector (PID) to qualitatively evaluate the concentration of volatile hydrocarbons that were present. PID readings were 26 ppm (B-1), 3 ppm (B-2), 8 ppm (B-3) at 5 feet bgs, 2 ppm (B-2) at 8 feet bgs, 3 ppm (B-1), 2 ppm (B-2) at 10 feet bgs, 178 ppm (B-3) at 11 feet bgs, 43 ppm (B-3) at 12 feet bgs, 3 ppm (B-1) at 13 feet bgs and 1 ppm (B-1) at 15 feet bgs. Artesian standard operating procedures for collecting organic vapor data are described in Appendix A. All soil cuttings were stored on-site on visqueen and covered with visqueen pending laboratory analysis for appropriate disposal.

Each borehole was sampled (procedures are described in Appendix A) and logged by state-registered geologist (R.G. # 4815), James A. Jacobs. Soil samples were logged in accordance with the Unified Soil Classification System (USCS). Boring logs are included as Appendix B. Four soil samples were collected and sent under chain-of-custody to Chromalab, Inc. of San Ramon, California. (Chain of Custody is found in Appendix F.)

The soil borings penetrated soils consisting of fill, clays, sandy clays and sandy gravels to a maximum depth of 22.5 ft. below ground surface. A dry sandy clay was encountered at about 19.0 to 20.0 feet in all the borings. All borings were reamed out to 8 inches in diameter and a bentonite

plug was installed from the bottom of the hole up to about 19.0 to 19.5 feet below ground surface for each of the borings. Groundwater was first encountered while drilling between 13 and 15 feet below ground surface.

On March 4, 1992, nine samples collected were collected using a backhoe bucket along the perimeter of the open pit. The backhoe was operated by E & G Construction. The samples were collected at a depth of 11'0" and 12'0" feeet below ground surface, approximately 1 foot above the standing water in the pit. The samples (P-1 through P-9) were collected approximately every 15 linear feet along the perimeter of the pit. The soil samples were collected in a stainless steel sampler with a zero-contamination precleaned brass sleeve using a twelve pound slide hammer. Registered geologist James A. Jacobs collected the samples according to the standard operating procedures defined in Appendix A. The samples were analyzed for TPH-g and BTEX. After sampling, new tanks were installed and clean imported fill was placed and compacted in the tank pit by E & G Construction.

4. MONITOR WELL INSTALLATION AND DEVELOPMENT

Soil borings B-1 through B-3 were converted into 2-inch diameter monitor wells MW-1 through MW-3, respectively. The Standard Operating Procedures for well installation and development are included in Appendix C and in accordance to local regulatory guidelines. Well construction details are included on the boring log (Appendix B). The wells were screened from about 19.0 to 9.0 in well MW-1 and 19.5 feet to 9.5 feet in wells MW-2 and MW-3. The screened interval for all wells was 10.0 feet in length.

Two inch inner diameter polyvinyl chloride (PVC) casing with a slot size of 0.020" was used for the well screen. A threaded end-cap was attached to the base of the well screen. After installing a Monterey #3 sand pack, a 2-inch bailer was used for up to 10 minutes per well to swab the screened interval. A one foot bentonite seal was constructed using about 0.5 buckets of pellets per well. Complete hydration of the bentonite seal was ensured by maintaining standing water on top of the pellets during the hydration process. A neat cement was used as the surface sanitary seal. A flush-mounted, traffic-rated Christy box was placed on the surface.

During well development from three to four well volumes were evacuated from the well, allowing the pH, specific conductivity, temperature and sediment content of the water to stabilize. The development water was stored on-site in 55-gallon DOT drums pending laboratory analysis for appropriate disposal.

5. GROUNDWATER SAMPLING

Water level measurement data were collected from all monitoring wells on site. The wells were purged using unused disposable plastic tubing and a downhole pump. Groundwater samples from MW-1 through MW-3 were collected using a 2-inch unused disposable bailer. The measuring instruments and pumps were cleaned between wells using a alconox wash, a dionized water rinse and a dionized spray between wells. The samples were collected using the disposable bailer. The Artesian Standard Operating Procedure for groundwater purging and sampling procedures and groundwater sampling data sheets are found in Appendix D.

The groundwater samples were sent under chain-of-custody to state-certified Chromalab. The purged water was stored on-site in 55-gallon DOT drums pending laboratory analysis for appropriate disposal.

6. ANALYTIC RESULTS

Soil samples were analyzed at Chromalab for total petroleum hydrocarbons as gasoline (TPH-g) by modified EPA Method 8015, benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020.

Groundwater samples from all borings and wells were analyzed at Chromalab for total petroleum hydrocarbons as gasoline (TPH-g) by modified EPA Method 602 and benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020.

The analytic results for the soil and groundwater samples are presented in Tables 1 and 2, respectively, and soil analyses for the pit are found in Table 4. The laboratory reports with laboratory quality assurance/quality control documents for soil and groundwater samples are included as Appendix E. Chain-of-custody forms are included as Appendix F. Groundwater elevation data are included in Table 3.

SOIL SAMPLES

Soil analyses from the pit (P-1 to P-9) revealed levels of gasoline and BTEX with the highest quantities at 2900 ppm, 12,000 ppb, 160,000 ppb, 35,000 ppb and 420,000 ppb, respectively. Soil analyses from the well installation samples revealed levels of gasoline and BTEX with the highest quantities at 680 ppm, 8,100 ppb, 15,000 ppb, 11,000 ppb and 73,000 ppb, respectively. Table 4 lists soil pit levels of hydrocarbons.

GROUNDWATER SAMPLES

Free product was not encountered in any of the wells. Groundwater samples collected from the monitor wells MW-1 through MW-3 did not contain detectible levels of dissolved TPH-g and ethylbenzene in MW-1. Benzene, toluene and xylenes were detected in MW-1 at 2.1 ppb, 0.56 ppb and 1.4 ppb, respectively. Groundwater samples from MW-2 and MW-3 contained TPH-g and BTEX, with the highest concentrations in MW-3 at 59,000 ppb, 13,000 ppb, 12,000 ppb, 1,600 ppb and 13,000 ppb for TPH-g, and BTEX, respectively.

? Did they or didn't they

7. GROUNDWATER FLOW

The property was surveyed by licensed surveyor, Morgan Porteous with Fremont Engineers of Fremont, California. The survey was assembled in a graphic, Figure 2. The potentiometric map is shown as Figure 3. The groundwater gradient on April 7, 1992 was in the south-southeast direction at a rate of 0.0271 feet per foot.

8. DISTRIBUTION

Artesian has been instructed by Mr. Mark East to submit a copy of this report to the following people:

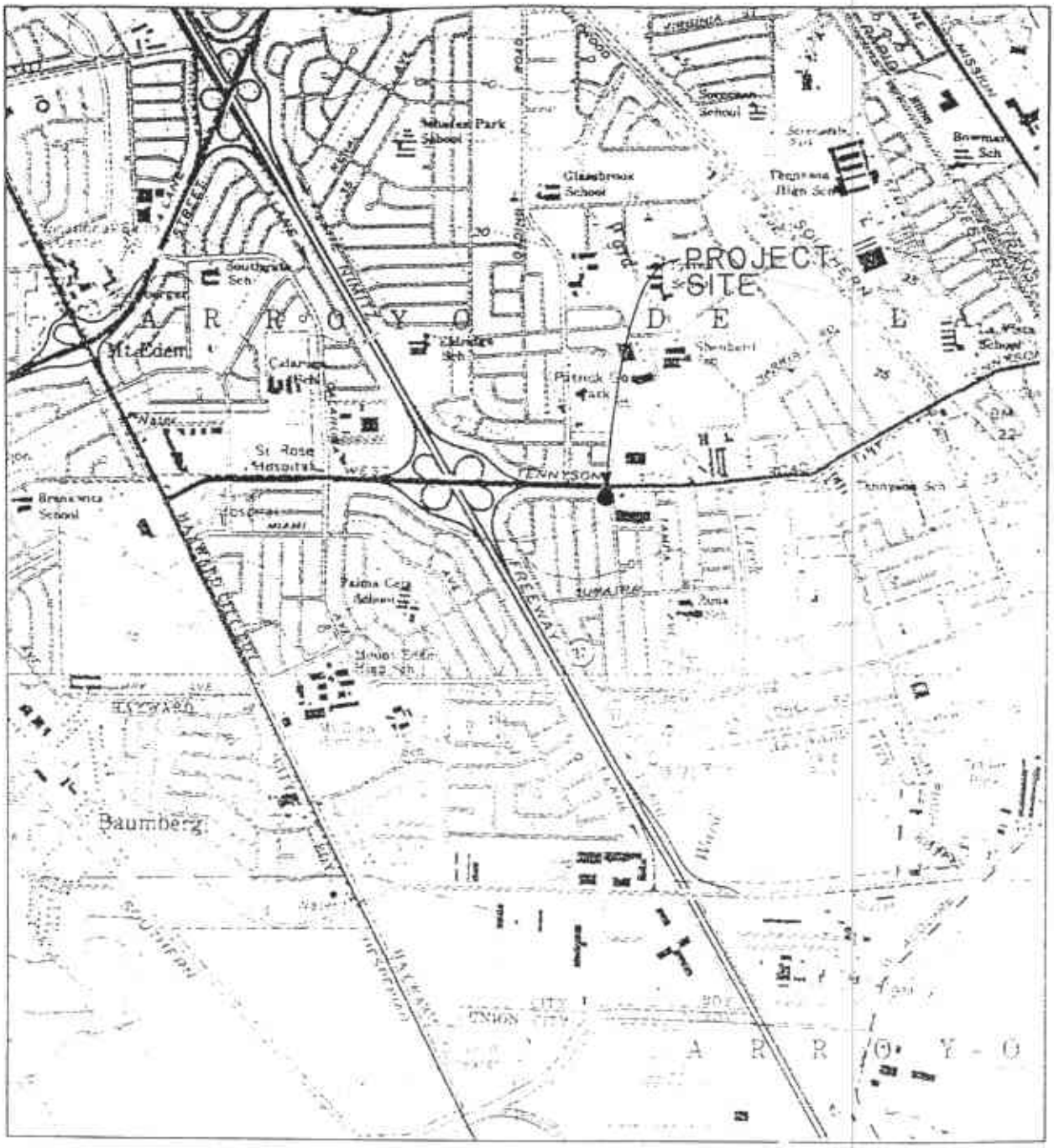
Mr. Mark East
E & G Construction
6433 Oberlin Way
San Jose, CA 95123

Mr. Steven Hill
California Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

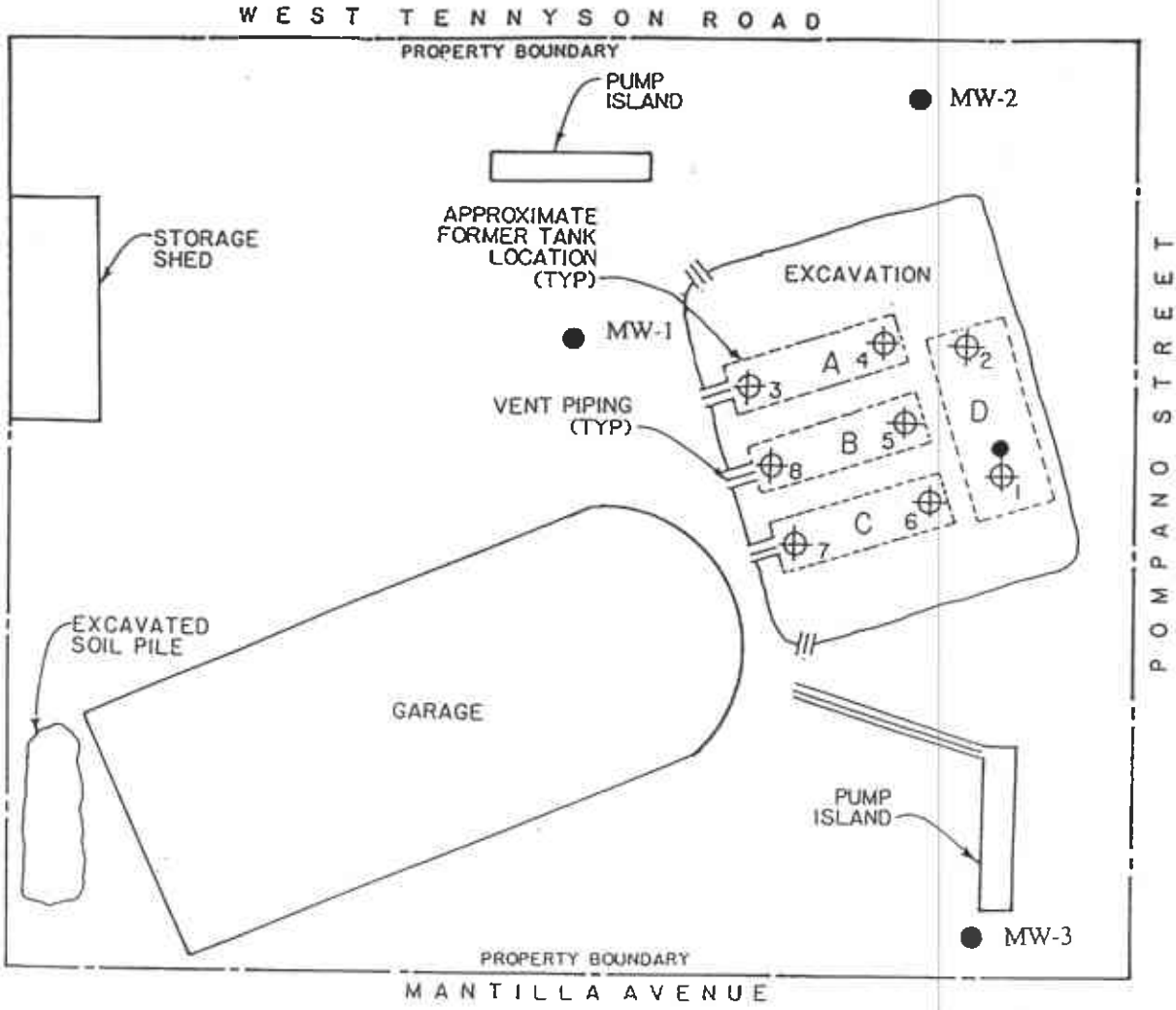
Mr. Kelly Engineer
Five Star Auto Care Facility
1220 West Tennyson Ave.
Hayward, CA

Mr. Hugh Murphy
City of Hayward Hazardous Materials Dept.
22300 Foothill Blvd.
Hayward, AC 94541

Mr. Craig Mayfield
Alameda County Flood Control District
5997 Parkside Dr.
Pleasanton, CA 94588



Artesian Environmental Consultants 100 Shoreline Hwy., Suite 295 B Mill Valley, CA 94941 (415) 381-6456		SITE LOCATION MAP Five Star Auto Care Facility 1220 W. Tennyson Ave. Hayward, California	
Project No.032-01-01	4/30/92	Drawn by: OPJ	Figure No. 1



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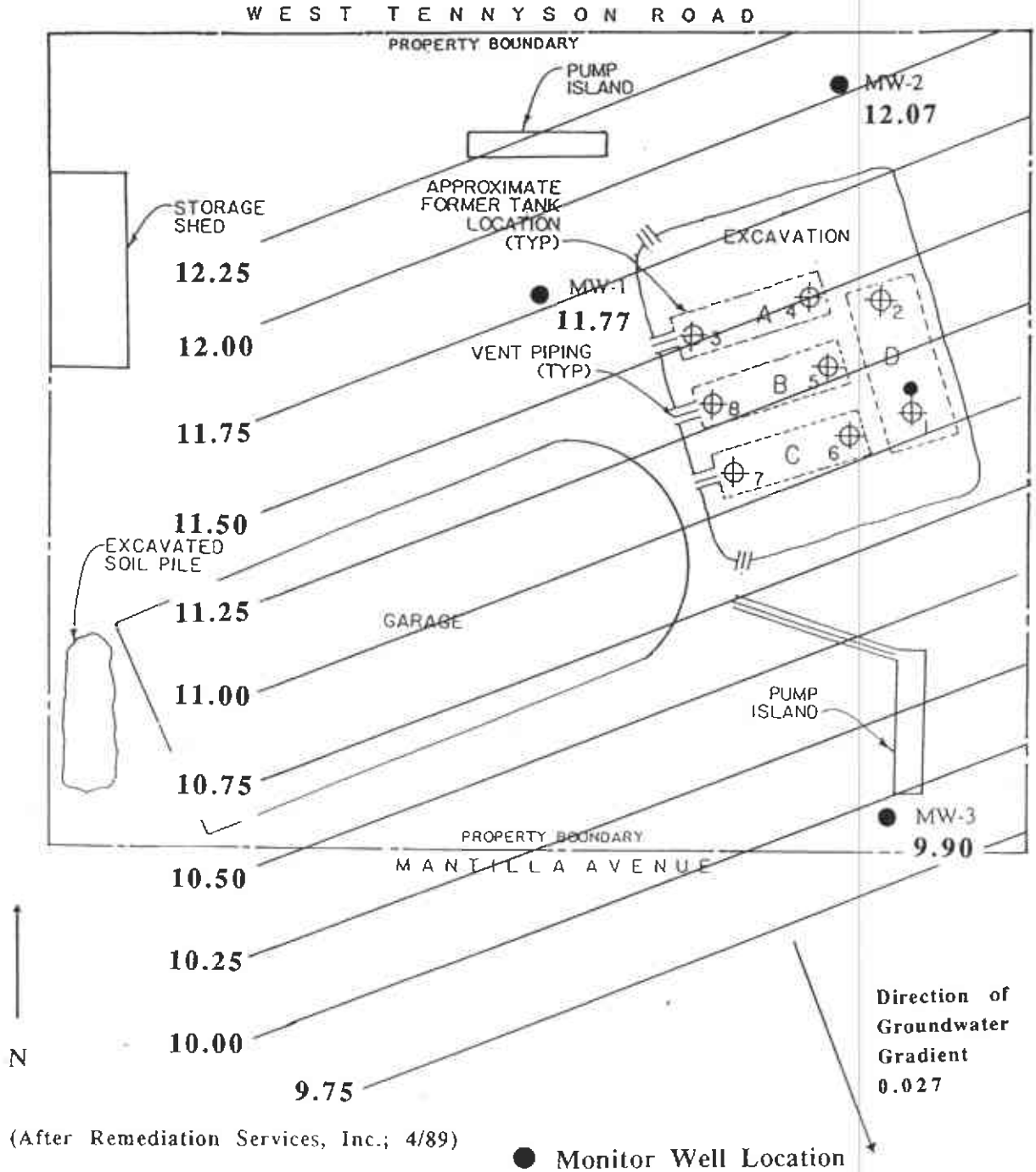
Scale 1"=18.43

(After Remediation Services, Inc.; 4/89)

● Monitor Well Location

Artesian Environmental Consultants 100 Shoreline Hwy., Suite 295 B Mill Valley, CA 94941 (415) 381-6456		**WELL LOCATION MAP** Five Star Auto Care Facility 1220 W. Tennyson Ave. Hayward, California	
Project No.032-01-01	4/30/92	Drawn by: OPJ	Figure No. 2



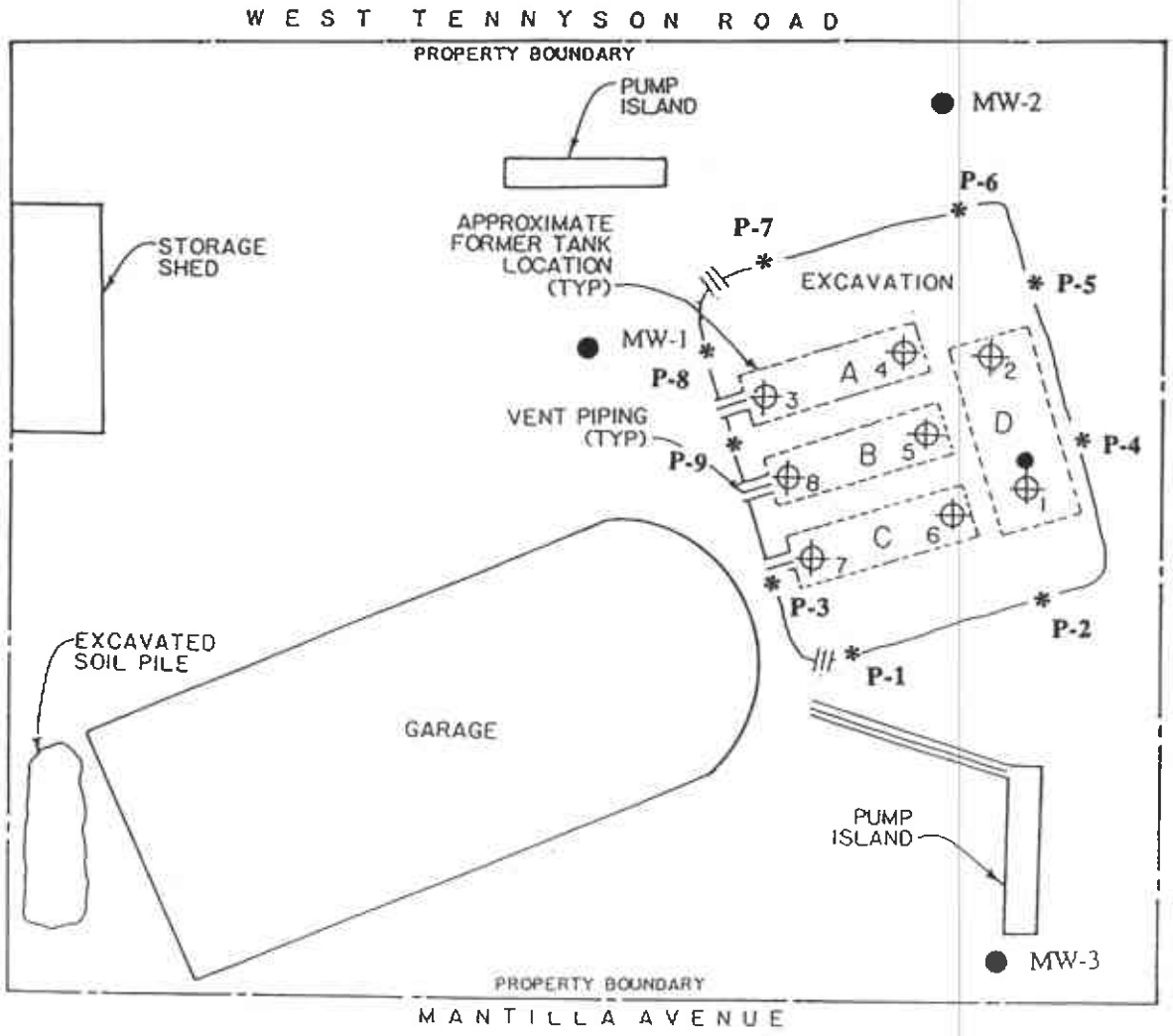
(After Remediation Services, Inc.; 4/89)

Scale 1"=18.43

● Monitor Well Location

12.25 Height Above Mean Sea Level

Artesian Environmental Consultants 100 Shoreline Hwy., Suite 295 B Mill Valley, CA 94941 (415) 381-6456		**GROUNDWATER (POTENTIOMETRIC) MAP** Five Star Auto Care Facility 1220 W. Tennyson Ave. Hayward, California	
Project No.032-01-01	4/30/92	Drawn by: OPJ	Figure No. 3



Artesian Environmental Consultants 100 Shoreline Hwy., Suite 295 B Mill Valley, CA 94941 (415) 381-6456		**EXCAVATION PIT SAMPLE LOCATIONS** Five Star Auto Care Facility 1220 W. Tennyson Ave. Hayward, California	
Project No.032-01-01	4/30/92	Drawn by: OPJ	Figure No. 4

TABLE 1- SUMMARY OF ANALYTICAL DATA: SOIL

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, CA

Sample	Depth units	TPH-g ppm	B ppb	T ppb	E ppb	X ppb
B-1-5.5	5.5	ND	11	ND	ND	ND
B-1-10.5	10.5	34	440	460	270	2100
B-2-5.5	5.5	ND	ND	ND	ND	ND
B-2-10.5	10.5	1.3	240	ND	ND	ND
B -3-5.5	5.5	ND	240	ND	7.0	6.3
B-3-10.5	10.5	530	4000	13000	7600	56000
B-3-12.0	12.0	680	8100	15000	11000	73000

NOTES:
Samples collected 3/3/92
ND= not detected
TPH-g= total petroleum hydrocarbons as gasoline
B= benzene
T= toluene
E= ethylbenzene
X= xylenes
ppm=parts per million
ppb=parts per billion

TABLE 2- SUMMARY OF ANALYTICAL DATA: GROUNDWATER

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, CA

Well	Sample ID	Data units	TPH-g ppb	B ppb	T ppb	E ppb	X ppb
MW-1	AQ-2	4/7/92	ND	2.1	0.56	ND	1.4
MW-2	AQ-1	4/7/92	2,100	450	200	45	360
MW-3	AQ-3	4/7/92	59,000	13,000	12,000	1,600	13,000

Samples collected 4/7/92
ND= not detected
TPH-g= total petroleum hydrocarbons as gasoline
B= benzene
T= toluene
E= ethylbenzene
X= xylenes
ppb=parts per billion

TABLE 3- GROUNDWATER ELEVATION DATA

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, CA

Well #	Date	Surveyed Top	Depth to Water (bgs)	Sounded Well Depth	Groundwater Height above MSL
MW-1	4/7/92	21.86	10.085 feet	15.35 feet	11.77 feet
MW-2	4/7/92	21.56	9.49 feet	15.71 feet	12.07 feet
MW-3	4/7/92	20.54	10.635 feet	18.99 feet	9.905 feet

MSL=Mean Sea Level
bgs=below ground surface

TABLE 4- EXCAVATION PIT SOIL ANALYSES

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, CA

Date: 3/3/92		TPH-g	B	T	E	X
Sample #	Depth Bgs	ppm	ppb	ppb	ppb	ppb
P-1	11'9"	2600	4200	60000	28000	280000
P-2	11'8"	1700	12000	160000	35000	420000
P-3	12'2"	920	390	3300	3500	80000
P-4	11'2"	ND	ND	ND	ND	ND
P-5	11'1"	ND	ND	ND	ND	ND
P-6	11'0"	ND	ND	ND	ND	ND
P-7	11'0"	ND	ND	ND	ND	ND
P-8	11'7"	130	ND	180	ND	6500
P-9	11'6"	2900	12000	78000	18000	330000

TPH-g= Total petroleum hyrocarbons as gasoline
B= Benzene
T= Toluene
E=Ethylbenzene
X= Xylenes
ppm= parts per million
ppb= parts per billion
ND= non detect
Bgs= Below ground surface

Artesian Environmental Consultants, Inc.

Standard Operating Procedures

SOIL BORINGS AND SAMPLING

Soil borings are lithologically logged by Artesian staff under the direction and supervision of a state-registered geologist using the Unified Soil Classification System (USCS). During drilling, discrete soil samples are collected at approximately 5.0 foot depth intervals to the top of groundwater for lithologic and hydrogeologic description and possible chemical analysis.

Soil samples for chemical analysis are collected in pre-cleaned, thin-walled brass tubes, 6-inches long and 2-inches in the outside diameter. Three of these sample tubes are set in a 2-inch inside diameter, 18-inch modified California split-barrel sampler. The split-barrel sampler is driven its entire length using a drop hammer, typically 140 pounds. The sampler is extracted from the borehole and the brass tubes, containing the soil samples are removed. The third soil sample is screened in the field immediately after retrieval of the split-barrel sampler using an organic vapor analyzer (OVA) or a photoionization detector (PID). For procedures, please refer to the Artesian Environmental Consultants, Inc. Standard Operating Procedures for Collecting Organic Vapor Data from Soil Samples. Soil sampling is performed in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, and local regulatory guidelines.

Upon removal from the sampler, the selected brass tubes are immediately capped on both open ends with Teflon tape, trimmed and capped with plastic caps. The samples are then labeled and placed in individual see-through ziplock plastic bags. The samples are stored in an ice chest with crushed ice to maintain a constant temperature of 4 degrees Celsius. A thermometer is kept in the ice chest to ensure that the proper temperature is maintained. The samples are then delivered under chain-of-custody to a state-certified hazardous materials testing laboratory. The above mentioned procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOC) prior to chemical analysis.

The sampling equipment is cleaned with an Alconox detergent wash and two dionized water rinses between samples and steam-cleaned with all the other drilling equipment between borings to prevent cross-contamination.

Artesian Environmental Consultants, Inc.

Standard Operating Procedures

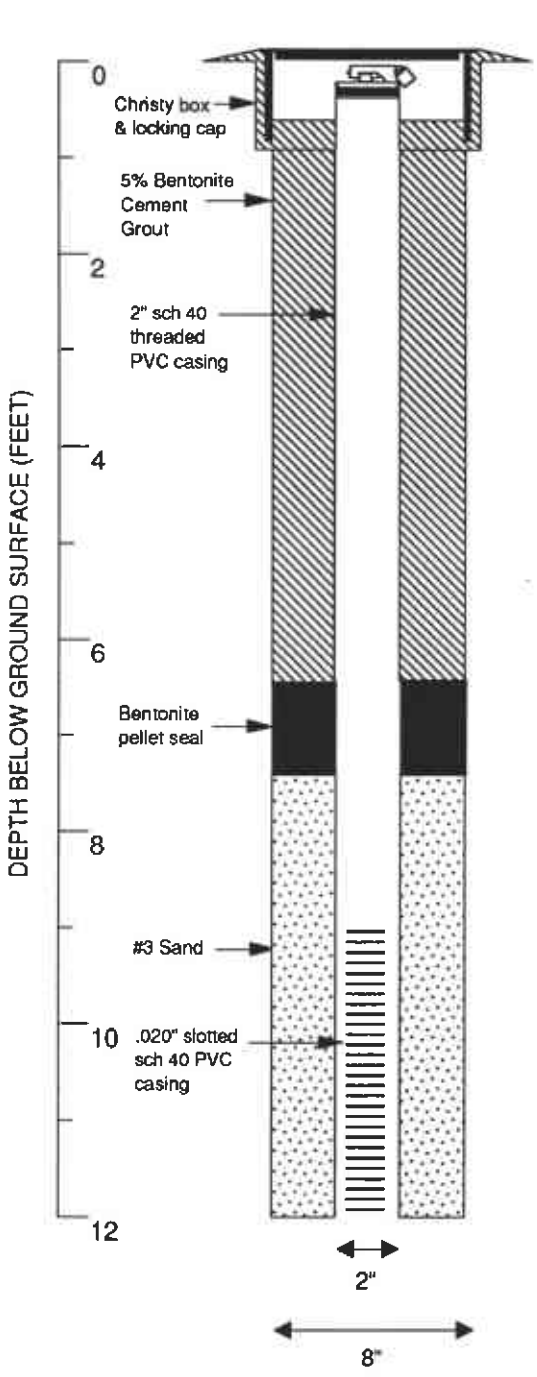
COLLECTING ORGANIC VAPOR DATA FROM SOIL SAMPLES

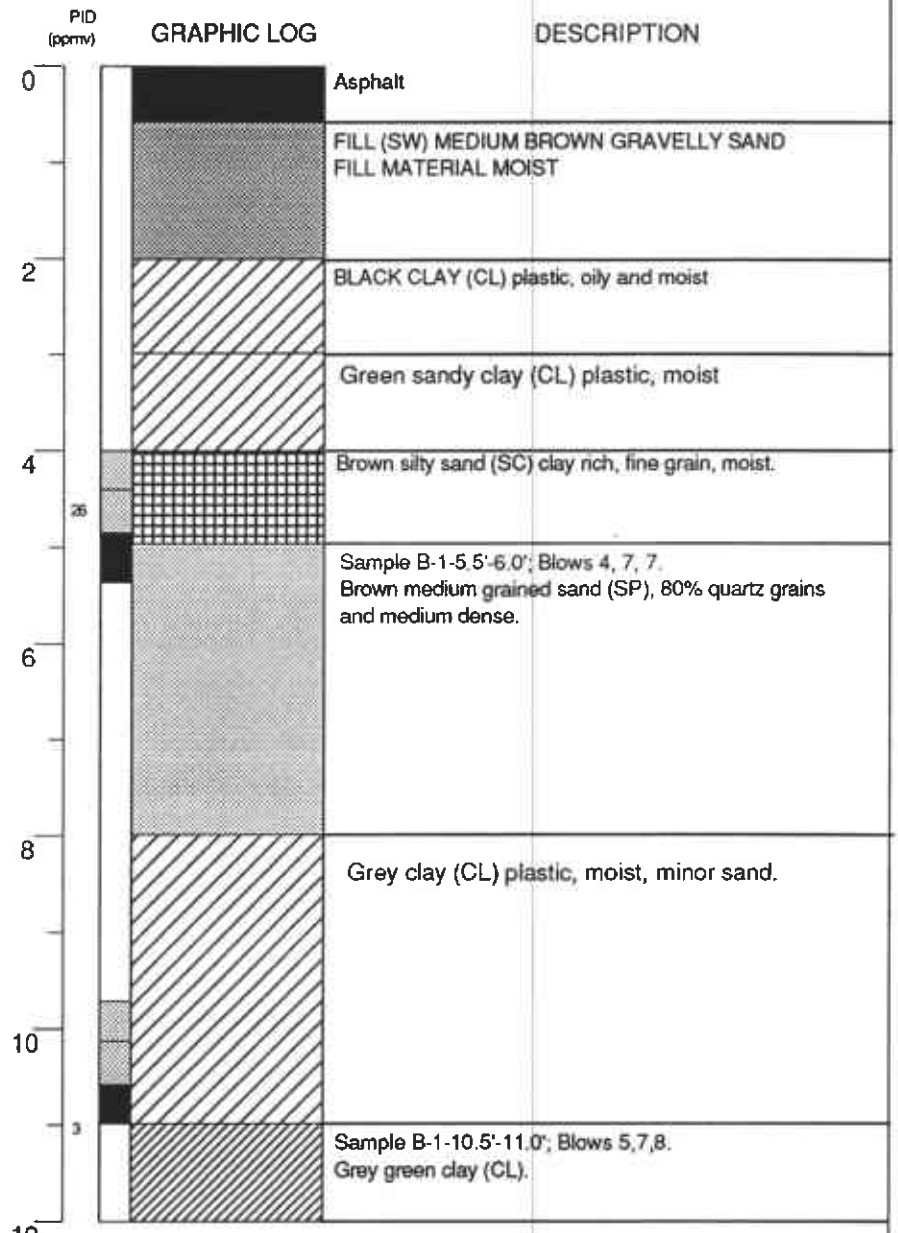
Soil samples from drill cuttings, soil piles or tank excavations are placed with minimal disturbance into pre-cleaned standard soil sample collection jars. The jars are filled to approximately one half full. The soil samples are broken up to provided sufficient surface area to allow for volatilization. Aluminum foil is placed over the mouth of the jar. The jar mouth is then capped with the lid.

The jars are then placed out of direct sunlight and allowed to sit undisturbed for a minimum of twenty minutes; allowing time for the air in the headspace and soil to equilibrate.

An organic vapor analyzer (OVA) or photoionization detector (PID) is to be calibrated and the batteries checked prior to each use. After the headspace within the sample jar and soil vapor has equilibrated, the probe of the organic vapor analyzer or photoionization detector should be inserted into the jar, puncturing the aluminum foil. The presence of any organic vapor detected should be measured and recorded in parts per million (ppm).

The samples used for collecting organic vapor data are never submitted for analytical testing.





Logged by:	James A. Jacobs, R.G.	Drilling Company:	K & L Drilling	Well Head Completion:	Christy box & locking cap
Inspector:	Hugh Murphy	Drilling Method:	8" Hollow stem auger, CME 45	Type of Sampler:	California Split Spoon
Dates Drilled:	3/3/92	Driller:	Ken Link	TD (Total Depth):	22.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

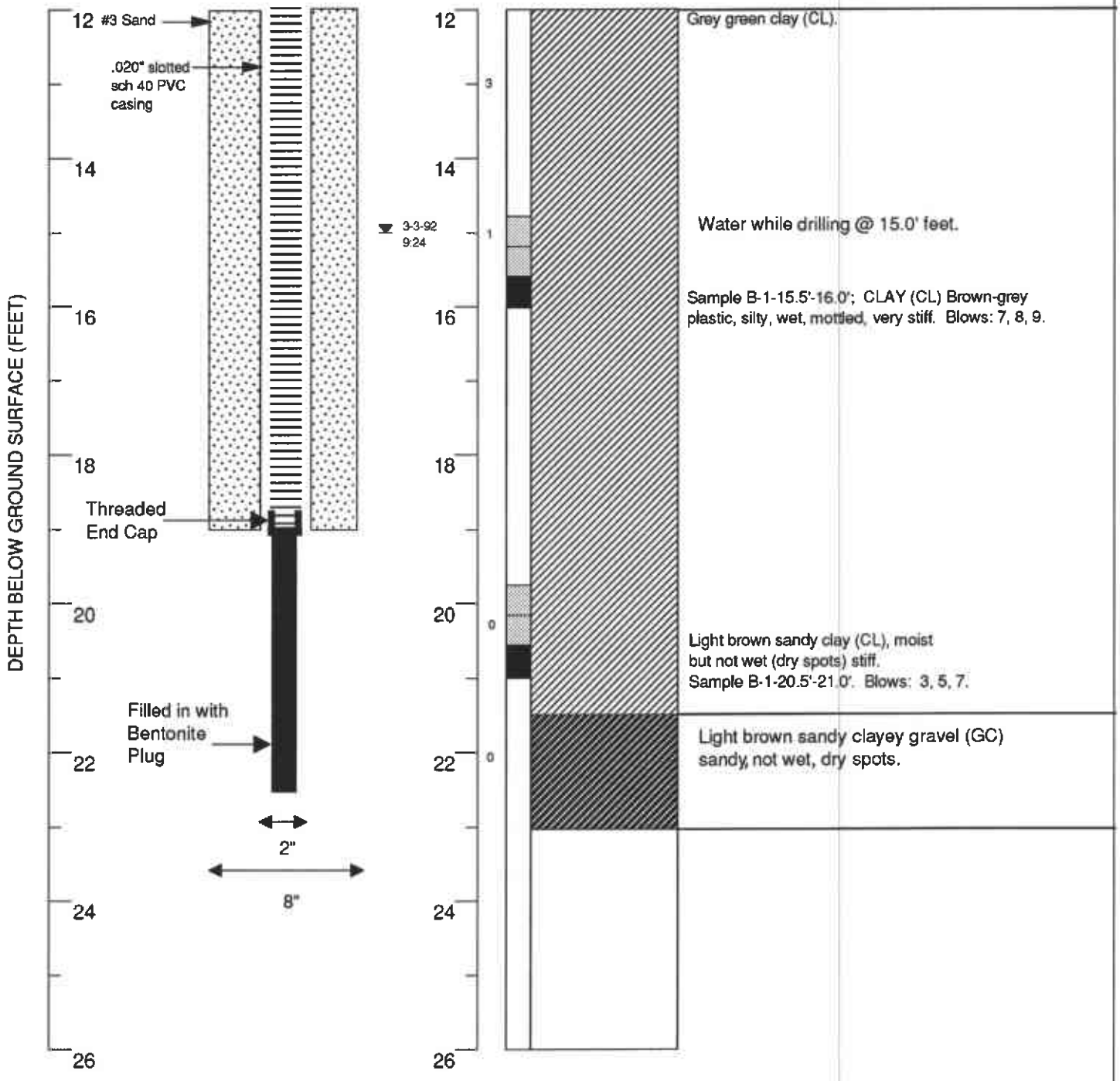
Boring Log and Well Completion Details
MW-1 (Boring B-1)

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, California

MONITOR WELL
1

ARTESIAN ENVIRONMENTAL CONSULTANTS
100 SHORELINE HIGHWAY #295B, MILL VALLEY, CALIFORNIA 94941 (415) 381-6456

032-02-01



Final Page

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- ..... Dotted where approximate
- – – – Dashed where uncertain
- ////// Hachured where gradational
- est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR No recovery

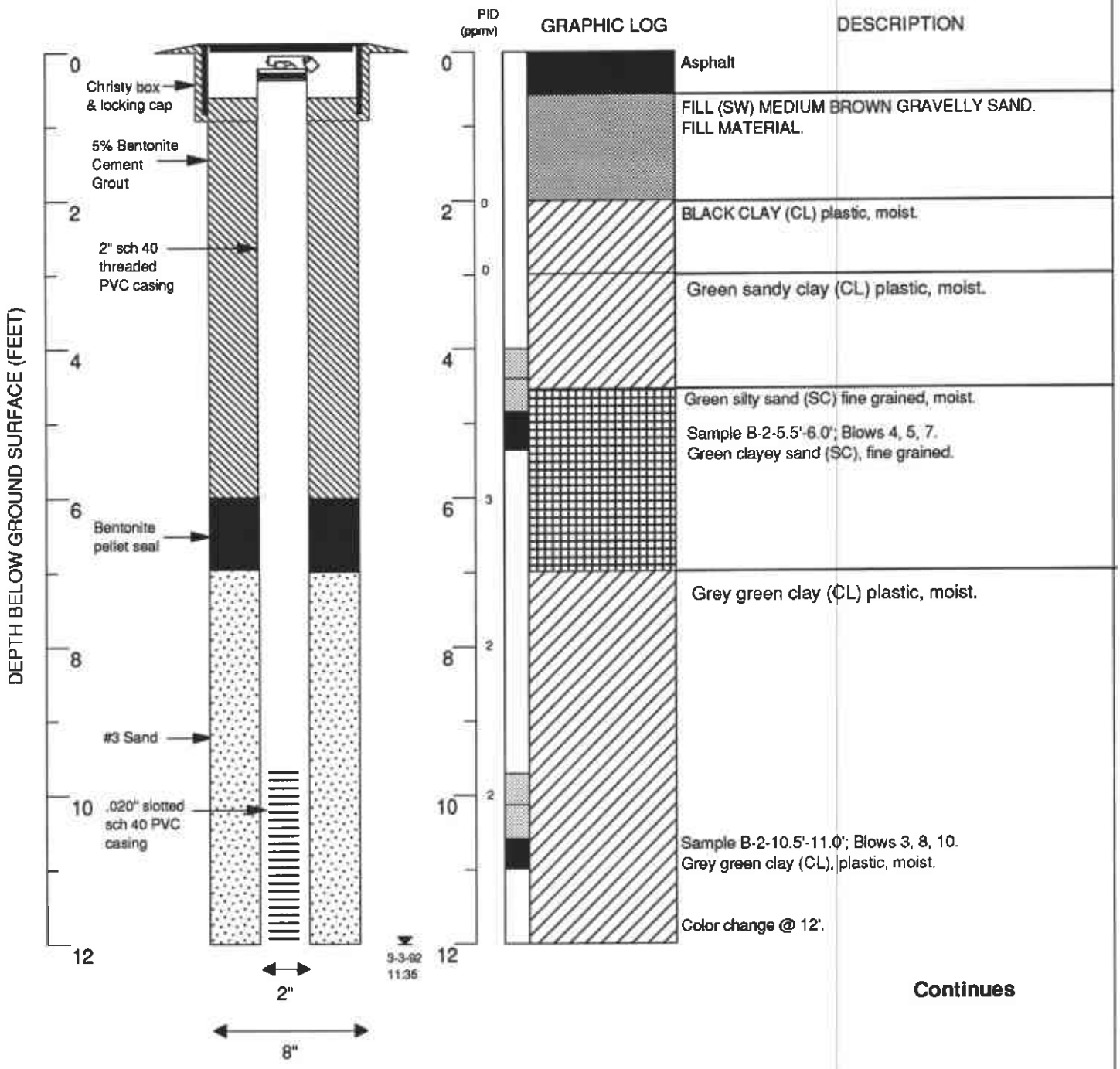
Boring Log and Well Completion Details
MW-1 (Boring B-1)

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, California

MONITOR WELL
1

ARTESIAN ENVIRONMENTAL CONSULTANTS
100 SHORELINE HIGHWAY #295B, MILL VALLEY, CALIFORNIA 94941 (415) 381-6456

032-02-01



Logged by:	James A. Jacobs, R.G.	Drilling Company:	K & L Drilling	Well Head Completion:	Christy box & locking cap
Inspector:	Hugh Murphy	Drilling Method:	8" Hollow stem auger, CME 45	Type of Sampler:	California Split Spoon
Dates Drilled:	3/3/92	Driller:	Ken Link	TD (Total Depth):	19.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

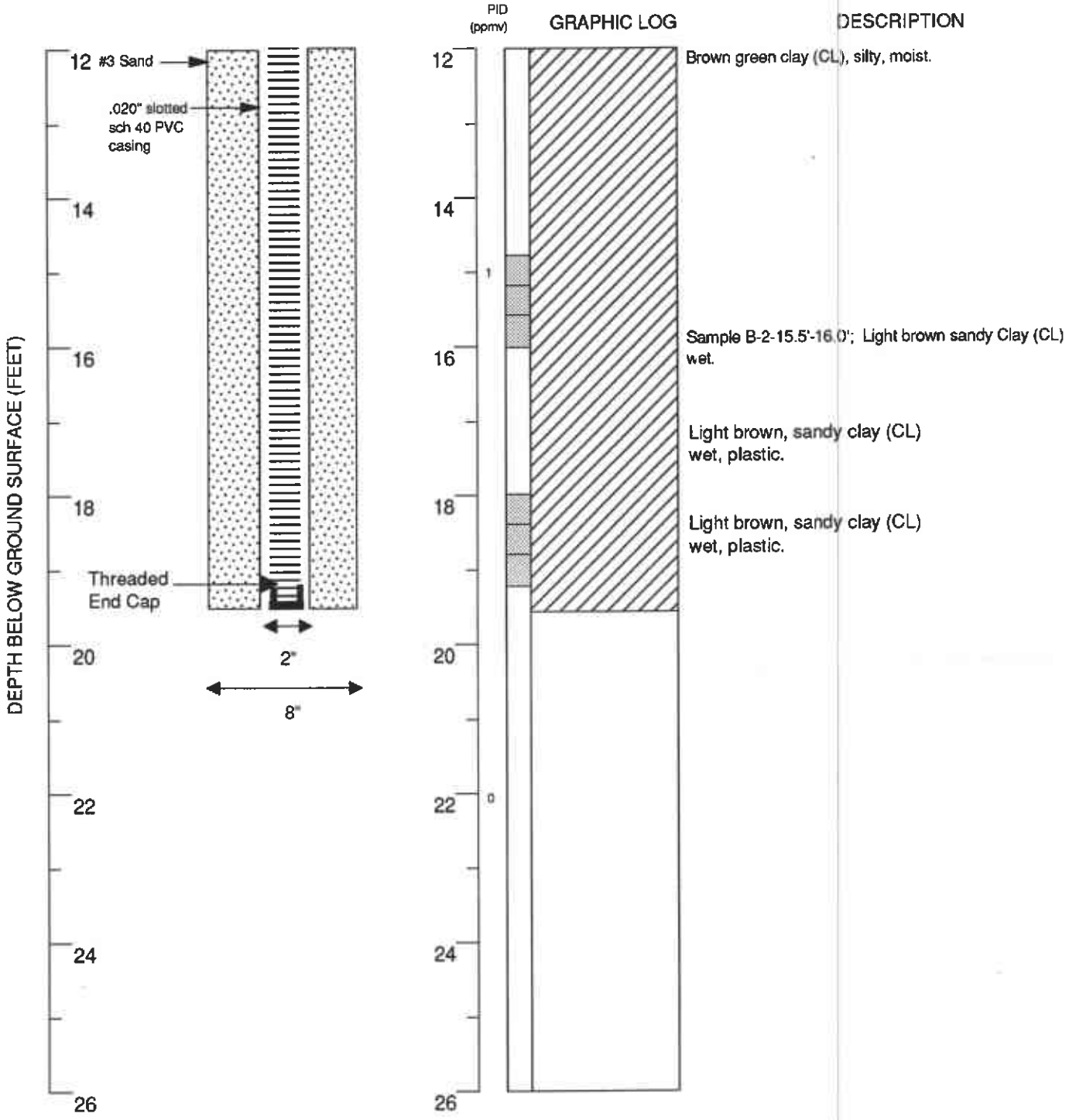
Boring Log and Well Completion Details
MW-2 (Boring B-2)

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, California

MONITOR WELL
2

ARTESIAN ENVIRONMENTAL CONSULTANTS
100 SHORELINE HIGHWAY #295B, MILL VALLEY, CALIFORNIA 94941 (415) 381-6456

032-02-01



Final Page

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

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NR — No recovery

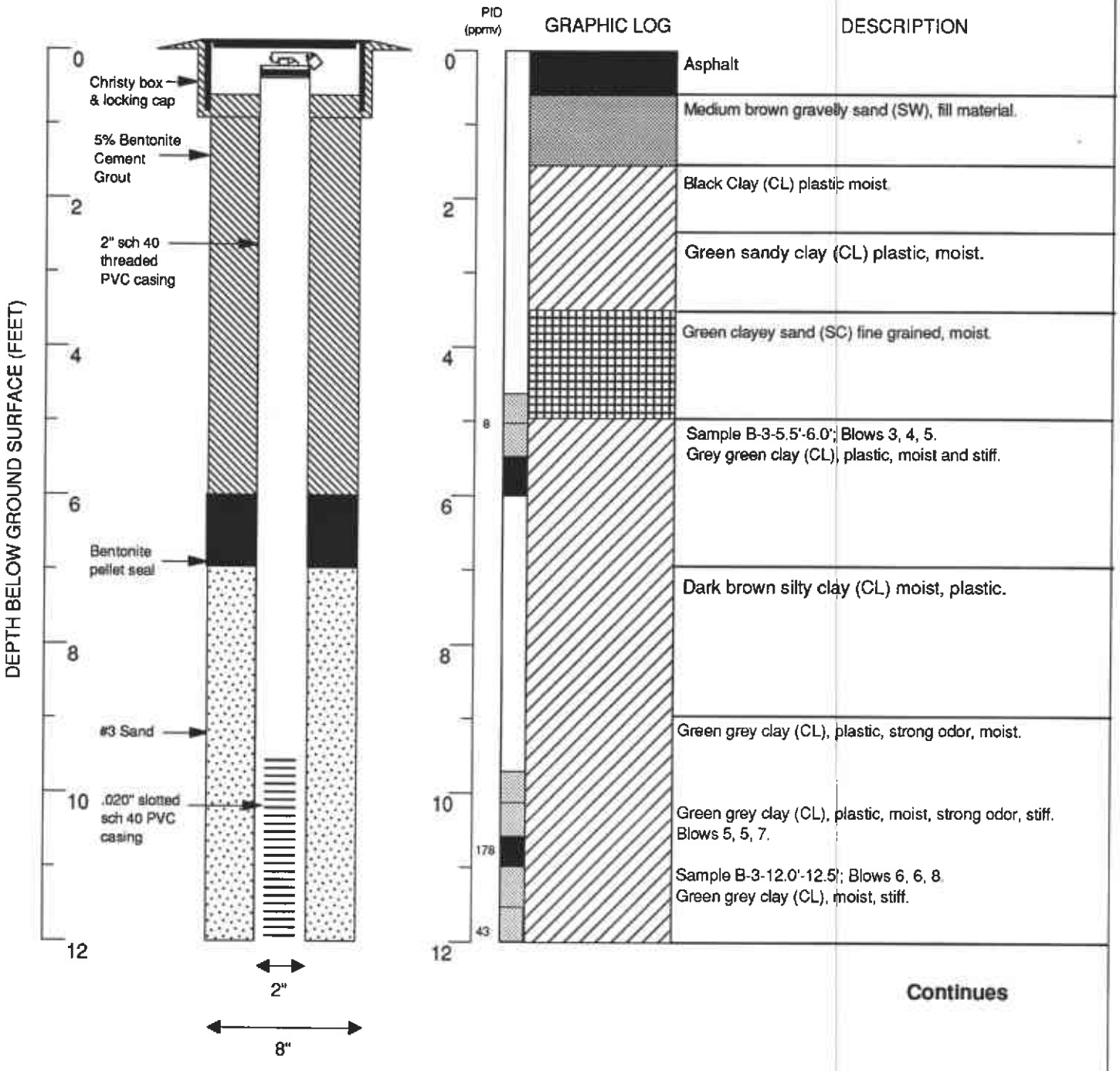
Boring Log and Well Completion Details
MW-2 (Boring B-2)

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, California

MONITOR WELL
2

ARTESIAN ENVIRONMENTAL CONSULTANTS
100 SHORELINE HIGHWAY #295B, MILL VALLEY, CALIFORNIA 94941 (415) 381-6456

032-02-01



Logged by:	James A. Jacobs, R.G.	Drilling Company:	K & L Drilling	Well Head Completion:	Christy box & locking cap
Inspector:	Hugh Murphy	Drilling Method:	8" Hollow stem auger, CME 45	Type of Sampler:	California Split Spoon
Dates Drilled:	3/3/92	Driller:	Ken Link	TD (Total Depth):	19.5 ft.

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary

NR — No recovery

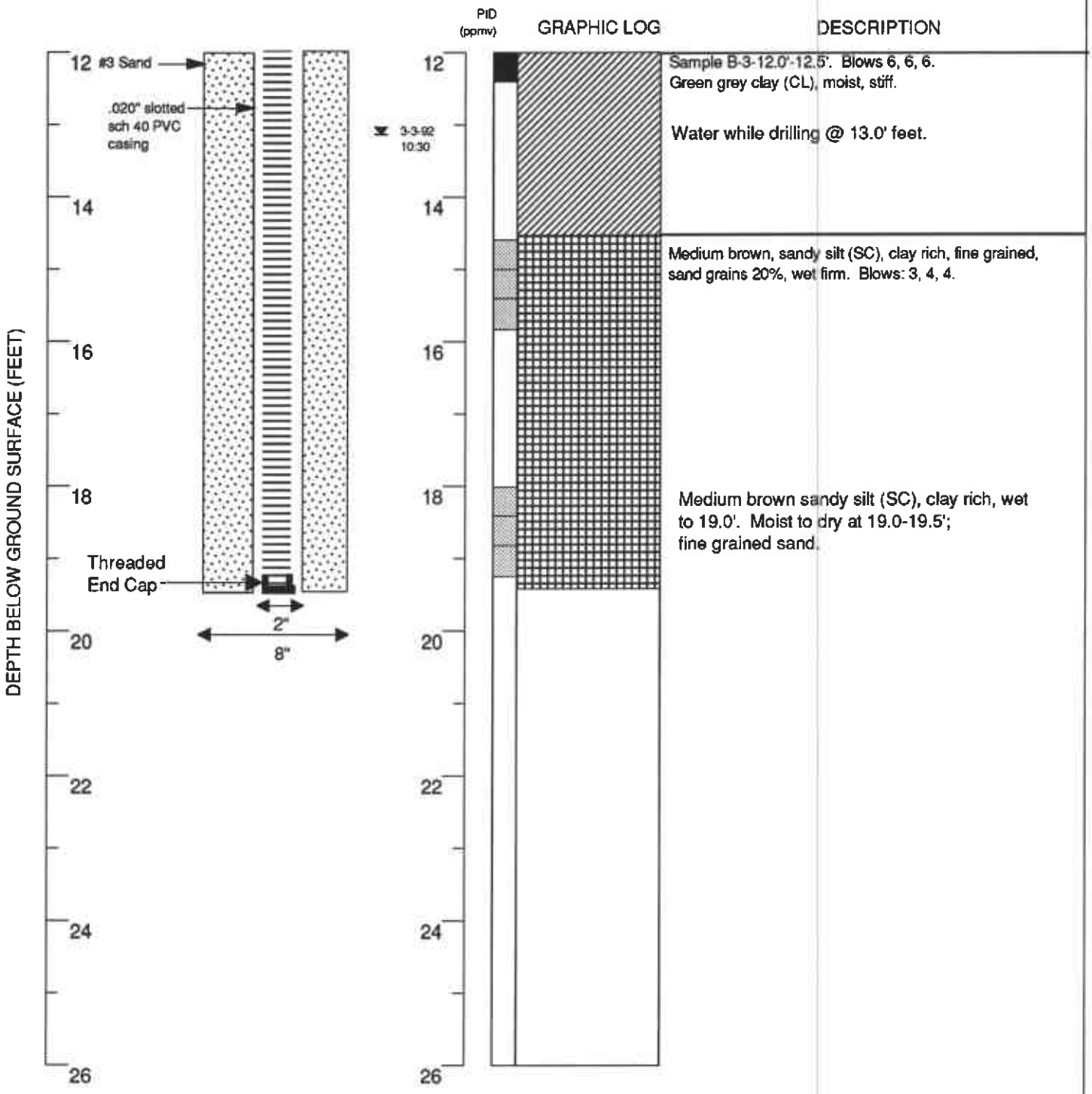
Boring Log and Well Completion Details
MW-3 (Boring B-3)

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, California

MONITOR WELL
3

ARTESIAN ENVIRONMENTAL CONSULTANTS
100 SHORELINE HIGHWAY #295B, MILL VALLEY, CALIFORNIA 94941 (415) 381-6456

032-02-01



Final Page

EXPLANATION

- Water level during drilling
- Water level in completed well
- Location of drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample

Contacts:
- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

- est K — Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR — No recovery

Boring Log and Well Completion Details
MW-3 (Boring B-3)

Five Star Auto Care Facility
1220 West Tennyson Avenue
Hayward, California

MONITOR WELL
3

ARTESIAN ENVIRONMENTAL CONSULTANTS
100 SHORELINE HIGHWAY #295B, MILL VALLEY, CALIFORNIA 94941 (415) 381-6456

032-02-01

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		G W	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				G P	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		G M	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				G C	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND (LITTLE OR NO FINES)		S W	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		S M	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50			M L	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50			M H	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				C H	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

KEY TO LOG OF BORINGS

SAMPLES & BLOWCOUNTS

30	HAMMER BLOWS PER FOOT OF PENETRATION
■	INDICATES UNDISTURBED SAMPLE
⊠	INDICATES DISTURBED SAMPLE
◪	STANDARD PENETRATION TEST SAMPLE
NR	INDICATES NO RECOVERY
	SAMPLES DRIVEN WITH A 140-POUND HAMMER DROPPING 30 INCHES

LABORATORY TESTS

AL	ATTERBERG LIMITS TEST
DSCU	DIRECT SHEAR TEST (Consolidated, Undrained)
CBR	CALIFORNIA BEARING RATIO TEST
COMP	COMPACTION TEST
CON	CONFINED COMPRESSION (Consolidation Test)
-200	PERCENT PASSING NO. 200 SIEVE (Test Results in Parentheses)

ARTESIAN ENVIRONMENTAL CONSULTANTS
100 SHORELINE HIGHWAY, #295B
MILL VALLEY, CA 94941 (415) 381-6456

Artesian Environmental Consultants, Inc.

Standard Operating Procedures

GROUNDWATER MONITOR / EXTRACTION WELL INSTALLATION AND DEVELOPMENT

WELL INSTALLATION

The boreholes for monitor / extraction wells are drilled using a truck-mounted hollow-stem auger drill rig. The diameter of the borehole is a minimum of four inches larger than the outside diameter of the casing when installing the well screen (DWR Publication 74-81). The hollow-stem auger provides minimal interuption of drilling while permitting soil sampling at the desired intervals. All wells are installed by state-licensed drillers.

The monitor / extraction wells are cased with threaded, factory-slotted, blank schedule 40 polyvinyl chhloride (PVC). The perforated interval consists of slotted casing, generally 0.020-inch wide by 1.5-inch long slot size, with 42 slots per foot. A threaded PVC cap is fastened to the bottom of the casing. Centering devices may be fastened to the casing to assure even distribution of filter material and grout within the borehole annulus. The well casing is thoroughly washed and steam-cleaned prior to installation.

After setting the casing inside the hollow stem, sand or gravel filter material is poured into the annular space to fill from the bottom of the boring to 1 foot above the slotted interval. A 1 to 2 foot thick bentonite plug is placed above the filter material to prevent the grout from infiltrating down into the filter material. Neat cement, containing about 5% bentonite, is then tremied into the annular space from the top of the bentonite plug to the surface. A lockable PVC cap is placed on each wellhead. Traffic-rated flush-mounted steel covers are installed around wellheads for wells in parking lots and driveways, while steel stove pipes are usually set over wellheads in landscaped areas.

WELL DEVELOPMENT

After installation, the wells are thoroughly developed to remove residual drilling materials from the wellbore, and to improve well performance by removing any fine material in the filter pack that can pass from the formation into the well. Well development is performed in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites* , and local regulatory guidelines. Well development techniques include pumping, bailing, surging, swabbing, jetting, flushing, and airlifting. During well development from three to ten well volumes are evacuated from the well, allowing pH, specific conductivity, temperature and sediment content of the water to stabilize. All development water and rinseate is collected for temporary storage in labeled 55-gallon containers or proper storage tanks, and is then disposed of properly depending on analytical results. To assure that cross-contamination does not occur between wells during drilling and development, all development equipment is either steam cleaned or cleaned using Alconox and rinsed twice with dionized water.

Artesian Environmental Consultants, Inc.

Standard Operating Procedures

GROUNDWATER LEVEL MEASURING, PURGING AND SAMPLING

Prior to groundwater sampling, static water level measurements are recorded for each well using a battery-powered sounder with a precision of plus or minus 0.01 feet. All measurements are recorded as depth-to-water from the surveyed measuring point at the top-of-casing. Depth-to-water readings are converted to water level elevations referenced to the USGS mean sea level datum.

Then each well is purged by evacuating a minimum of three to five well-casing volumes of groundwater using either a dedicated polyvinyl chloride (PVC) bailer, sterile disposable bailer or a stainless steel pump. During the purging of each well and prior to sampling, discharge water temperature, specific conductivity, and pH measurements are recorded and are allowed to stabilize. Stabilized measurements indicate that formation water has entered the well. The groundwater sample is taken when the water level in the well recovers to 80% of its static level.

Following purging, a groundwater sample is collected in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites* , and local regulatory guidelines.

A groundwater sample is first collected and checked for the presence of free product in the sampling bailer. Thickness of possible free product is measured using an electronic interface probe with a plus or minus 0.01 foot detection limit. Groundwater samples are collected using a pre-cleaned teflon or stainless steel bailer equipped with a ball-check valve, and sample containers are filled directly from the bailer as soon after purging as possible.

Agitation is minimized during sample retrieval and sample transfer to laboratory prepared sample containers in order to minimize sample aeration. Groundwater samples to be analyzed are carefully decanted into laboratory-prepared, 40-milliliter volatile organic analysis (VOA) vials. The VOA vials are filled completely, leaving no headspace, and are capped and sealed with Teflon-lined lids. Additional groundwater samples may be collected in 1 liter bottles. All samples are labeled and stored in an ice chest with crushed ice to maintain a constant temperature of 4 degrees Celsius. A thermometer is kept in the ice chest to ensure that the proper temperature is maintained. The samples are then delivered under chain-of-custody to a state-certified hazardous materials testing laboratory.

Monitor well purge water is properly stored on-site pending off-site disposal.

WATER SAMPLING DATA FORM

ARTESIAN ENVIRONMENTAL CONSULTANTS, INC.

Project Name	Project No.	Well Name	Date	Time	Name	Page of
1222 W Tennyson E+G Hayward, CA	033-002-01	MW-	4-7-92	15:00	MHG	

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
19.5	15.35	☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.) 10.085	Date/Time 15:40 4-7-92	
Well Diam. (in.) 2	LHC Present? ☐ Yes ☒ No	LHC Thickness none

	Time	pH Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

Initial Height of Water in Casing (ft)	Formulas and Conversions	Sampling Equipment
5.27	r = well radius in ft. h = ht. of water column in ft. vol. of column = $r^2 h$ 7.48 gal / ft³	Dedicated System ☐ Bladder Pump ☐ Bailer
Volume (gal) 0.858	V_2 " casing = 0.163 gal / ft.	PVC Bailer ☐ 1/2 in. ☒ 1 1/4 in. ☐ 3 in.
Volume to be Evacuated ☒ x 3 ☒ x 4 2.57 \ 3.43	V_3 " casing = 0.367 gal / ft. V_4 " casing = 0.653 gal / ft. $V_{4.5}$ " casing = 0.826 gal / ft. V_6 " casing = 1.470 gal / ft. V_8 " casing = 2.610 gal / ft. V_{10} " casing = 4.080 gal / ft.	Sampling Port No.
		Volume (gal) / Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	16:23			
Start Time	16:21			
Minutes				
Amt Evacuated	4.0 gal	gal	gal	gal

Total Evacuated: ____ gal

Total Minutes: ____ min

Evacuation Rate: 2.0 gpm

Pumped Dry?	After (gal)
☐ Yes ☒ No	
Depth to Water During Pumping (ft)	Time
Depth to Water for 80% Recovery 11.14	Recovery Rate (gpm)
Sampled After: ☒ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling

Recovery

	Time	DTW
1	16:25	13.13
2	16:27	12.32
3	16:37	10.98
4		
5		

Point of Collection	Time Samples Taken	Date
☐ PE Hose ☒ End of Bailer ☐ Other:	17:44	4-7-92
Depth to Water (ft) 10.14	Refrigerated? ☒ Yes ☐ No	
Sample Color lt brown/muddy	Odor None	
Sediment / Foreign Matter yes silt,		
Sampling Sequence		

Sample ID No.	Volume (ml/L)	Time	Preservative	Analysis	Lab
AQ-2.1	40ml	17:47	HCl	TPH g	
AQ-2.2	"	17:48	"	"	
AQ-2.3	"	17:48	"	BTXE	
AQ-2.4	"	17:49	"	BTXE	

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, ml = milliliter, L = liter, Other: Describe

Notes:

WATER SAMPLING DATA FORM

ARTESIAN ENVIRONMENTAL CONSULTANTS, INC.

Project Name	Project No.	Well Name	Date	Time	Name	Page of
1222 W. Tennyson E-6 Hayward Hayward CA	033-002-01	MW-	4-7-92	15:00	MHW	1 / 1

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
19.3	15.71	☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.)	**Date/Time**	
9.49	4-7-92 15:37	
Well Diam. (in.)	**LHC Present?**	**LHC Thickness**
2	☐ Yes ☒ No	none

	Time	pH Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

Initial Height of Water in Casing (ft)	Formulas and Conversions	Sampling Equipment
6.22	r = well radius in ft. h = ht. of water column in ft. vol. of column = $r^2 h$ 7.48 gal / ft³	Dedicated System ☐ Bladder Pump ☐ Bailer PVC Bailer ☐ 1/2 in. ☒ 1 1/4 in. ☐ 3 in.
Volume (gal)	V_2 " casing = 0.163 gal / ft.	
1.01	V_3 " casing = 0.367 gal / ft.	
Volume to be Evacuated ☒ x 3 ☒ x 4	V_4 " casing = 0.653 gal / ft.	**Sampling Port No.**
3.04 / 4.06	$V_{4.5}$ " casing = 0.826 gal / ft.	**Volume (gal)** / **Rate (gpm)**
	V_6 " casing = 1.470 gal / ft.	
	V_8 " casing = 2.610 gal / ft.	
	V_{10} " casing = 4.080 gal / ft.	

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	16:04			
Start Time	16:01			
Minutes	3			
Amt Evacuated	4.5 gal	gal	gal	gal
Total Evacuated	4.5 gal			
Total Minutes	min			
Evacuation Rate	gpm			

Pumped Dry?	After (gal)
☐ Yes ☒ No	
Depth to Water During Pumping (ft)	**Time**
Depth to Water for 80% Recovery	**Recovery Rate (gpm)**
10.73	
Sampled After: ☒ 80% Rec. ☐ 2 hours	**% Recovery at Time of Sampling**

Recovery

	Time	DTW
1	16:06	10.14
2	16:09	9.53
3	17:17	9.45
4		
5		

Point of Collection	Time Samples Taken	Date
☐ PE Hose ☒ End of Bailer ☐ Other:	17:17	4-7-92
	Depth to Water (ft) 9.45	**Refrigerated?** ☒ Yes ☐ No
Sample Color cloudy	**Odor** None	
Sediment / Foreign Matter yes - silty		
Sampling Sequence		

Sample ID No.	Volume (ml/L)	Time	Preservative	Analysis	Lab
AQ-1.1	40ml	17:18	HCl	TPH g	
AQ-1.2	〃	17:20	〃	〃	
AQ-1.3	〃	17:22	〃	BTXE	
AQ-1.4	〃	17:24	〃	〃	

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, ml = milliliter, L = liter, Other: Describe

Notes:

WATER SAMPLING DATA FORM

ARTESIAN ENVIRONMENTAL CONSULTANTS, INC.

Project Name	Project No.	Well Name	Date	Time	Name	Page of
E+G Hayward Hagiwara 1222 W Tennyson	033-002-01	MW-1	4-7-92	15:00	MHW	1/1

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
19.0	18.99	☒ Monitor Well
DTW (ft.)	Date/Time	☐ Sampling Port
10.635	4-7-92 1544	☐ Other (describe)
Well Diam. (in.)	LHC Present?	LHC Thickness
2	☐ Yes ☒ No	none

	Time	pH Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

Initial Height of Water in Casing (ft)	Formulas and Conversions	Sampling Equipment
8.36	r = well radius in ft. h = ht. of water column in ft. vol. of column = $r^2 h$ 7.48 gal / ft³	Dedicated System ☐ Bladder Pump ☐ Bailer
Volume (gal)	V_2 " casing = 0.163 gal / ft.	PVC Bailer ☐ 1/2 in.
1.36	V_3 " casing = 0.367 gal / ft.	☒ 1 1/4 in.
Volume to be Evacuated	V_4 " casing = 0.653 gal / ft.	☐ 3 in.
☒ x 3 ☐ x 4	$V_{4.5}$ " casing = 0.826 gal / ft.	Sampling Port No.
4.09 \ 5.44	V_6 " casing = 1.470 gal / ft.	Volume (gal) / Rate (gpm)
	V_8 " casing = 2.610 gal / ft.	
	V_{10} " casing = 4.080 gal / ft.	

Point of Collection	Time Samples Taken	Date
☐ PE Hose ☒ End of Bailer ☐ Other:	17:57	4-7-92
Depth to Water (ft) 10.66	Refrigerated? ☒ Yes ☐ No	
Sample Color: Milky	Odor: yes, Hydrocarbons	
Sediment / Foreign Matter: slight - cloudy		
Sampling Sequence		

Sample ID No.	Volume (ml/L.)	Time	Preservative	Analysis	Lab
AQ-3.1	40ml	17:59	HCl	TPHg	
AQ-3.2	"	18:00	"	"	
AQ-3.3	"	18:01	"	BTXE	
AQ-3.4	"	18:07	"	"	

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, ml = milliliter, L = liter, Other: Describe

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	16:40			
Start Time	16:37			
Minutes	3			
Amt Evacuated	4.5 gal	gal	gal	gal
Total Evacuated	4.5 gal			
Total Minutes	min			
Evacuation Rate	gpm			

Pumped Dry?	After (gal)
☐ Yes ☒ No	
Depth to Water During Pumping (ft)	Time
Depth to Water for 80% Recovery: 12.31	Recovery Rate (gpm)
Sampled After: ☐ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling

Recovery	Time	DTW
1	16:47	11.19
2	16:43	10.80
3	16:51	10.70
4		
5		

Notes: Hydrocarbon odor while pumping well

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

March 12, 1992 ChromaLab File No.: 0392053

ARTESIAN ENVIRONMENTAL CONSULTANTS

Attn: James Jacobs

RE: Sixteen soil samples for Gas/BTEX analysis

Project Name: E&G HAYWARD
Project Location: 1220 West Tennyson, Hayward, CA
Borings and Monitor Wells
Project Number: 032-002-01
Date Sampled: Mar. 3, 1992 Date Submitted: Mar. 5, 1992
Date Extracted: Mar. 9, 1992 Date Analyzed: Mar. 9, 1992

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
B-1-5.5	N.D.	11	N.D.	N.D.	N.D.
B-1-10.5	34	440	460	270	2100
B-2-5.5	N.D.	N.D.	N.D.	N.D.	N.D.
B-2-10.5	1)	240	N.D.	N.D.	N.D.
B-3-5.5	N.D.	240	N.D.	7.0	6.3
B-3-10.5	530	4000	13000	7600	56000
B-3-12.0	680	8100	15000	11000	73000
P-1	2600	4200	60000	28000	280000
P-2	1700	12000	160000	35000	420000
P-3	920	390	3300	3500	80000
P-4	N.D.	N.D.	N.D.	N.D.	N.D.
P-5	N.D.	N.D.	N.D.	N.D.	N.D.
P-6	N.D.	N.D.	N.D.	N.D.	N.D.
P-7	N.D.	N.D.	N.D.	N.D.	N.D.
P-8	130	N.D.*	180	N.D.*	6500
P-9	2900	12000	78000	18000	330000
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	103%	117%	110%	104%	102%
DUP. SPIKE RECOVERY	89%	94%	90%	92%	90%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

*Detection Limit = 100 µg/Kg due to dilution needed.

ChromaLab, Inc.

Ronald Halsne
Analytical Chemist

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 15, 1992 ChromaLab File No.: 0492085

E & G CONSTRUCTION

Attn: Mark East

RE: Three water samples for Gasoline/BTEX analysis

Project Name: MONITORING WELL SAMPLES, 1ST EVENT
Project Location: 1220 W. Tennyson Dr., Hayward, CA
Date Sampled: April 7, 1992 Date Submitted: April 8, 1992
Date Analyzed: April 14, 1992

RESULTS:

Sample I.D.	Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
AQ-1	2100	450	200	45	360
AQ-2	N.D.	2.1	0.56	N.D.	1.4
AQ-3	59000	13000	12000	1600	13000
BLANK	N.D.	N.D.	N.D	N.D.	N.D.
SPIKE RECOVERY	81%	87%	81%	79%	90%
DUP. SPIKE RECOVERY	----	106%	95%	97%	111%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/8015	602	602	602	602

ChromaLab, Inc.

Mary Cappelli
Analytical Chemist

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHAIN OF CUSTODY

CHROMALAB FILE # 392053
ORDER # 5669

SAMPLERS: (Signature) James A Jacobs

PROJECT NAME: E+G Hayward JOB NUMBER: 032-002-01

DESCRIPTION: 1220 West Tennyson Boring + Mon. of Wells

ADDRESS: Hayward CA

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER		STATION LOCATION	TOTAL PETROLEUM HYDROCARBONS	BTX & E	VOC - EPA 8240	TOTAL OIL & GREASE	TETRAETHYL LEAD			REMARKS
						ANALYSIS REQUESTED								Normal turnaround
B-1-5.5	3/3/92	0906	X			BORING B-1	X	X						Run
B-1-10.5		0914	X			" "	X	X						Run
B-1-15.5		0924	X			" " (in water)	X	X						~~Hold~~ Hold
B-2-5.5		1115	X			Boring B-2	X	X						Run
B-2-10.5		1125	X			" "	X	X						Run
B-3-5.5		1354				Boring B-3	X	X						Run
B-3-10.5		1414				" "	X	X						Run
B-3-12.0		1420				" "	X	X						Run

RELINQUISHED BY: (Signature) James A Jacobs	DATE 0700 3/5/92	RECEIVED BY: (Signature) Matthew Walker	DATE 3/5/92 TIME 0700
RELINQUISHED BY: (Signature) Matthew Walker	DATE 3-5-92 TIME 16:45	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE 3/5/92 TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED FOR LABORATORY BY: (Signature) Refaat A. Mankarious	DATE 3/5/92 TIME 1650

CHAIN OF CUSTODY

SAMPLERS: (Signature) James A Jacobs

PROJECT NAME: E+G Hayward

JOB NUMBER: 032-002-02

DESCRIPTION: 1220 West Tennyson Tank Pit Samples

ADDRESS: Hayward CA

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER		STATION LOCATION	TOTAL PETROLEUM HYDROCARBONS Gas	BTX & E	VOC - EPA 8240	TOTAL OIL & GREASE	TETRAETHYL LEAD			REMARKS
P-1	3/4/92	1155	X			Tank Pit 11' 9"	X	X						Normal Time
P-2		1225	X			11'8"	X	X						
P-3		1233	X			12'2"	X	X						
P-4		1236	X			11'2"	X	X						
P-5		1311	X			11'1"	X	X						
P-6		1244	X			11'0"	X	X						
P-7		1255	X			11'0"	X	X						
P-8		1302	X			11'7"	X	X						
P-9		1214	X			11'6"	X	X						

ANALYSIS REQUESTED

RELINQUISHED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
James A Jacobs	07:00 3/5/92	X Matthew A Wahrm	0700 3/5/92
RELINQUISHED BY: (Signature) Matthew A Wahrm	3-5-92 16:45	RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		RECEIVED FOR LABORATORY BY: (Signature) Rebecca A. Markum	3/5/92 16:30

CHAIN OF CUSTODY

SAMPLERS: (Signature) Matthew H Walraven — Matthew H Walraven

PROJECT NAME: — JOB NUMBER:

DESCRIPTION: Monitoring well samples, 1st event

ADDRESS: 1220 W. Tennyson Dr. Hayward CA

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER		STATION LOCATION	TOTAL PETROLEUM HYDROCARBONS gas	BTX & E	VOC - EPA 8240	TOTAL OIL & GREASE	TETRAETHYL LEAD			REMARKS
AQ-1	4-7-92	17:20		X		MW-3	X	X						4 containers (40ml)
AQ-2	4-7-92	17:48		X		MW-2	X	X						"
AQ-3	4-7-92	18:00		X		MW-1	X	X						"

ANALYSIS REQUESTED

	DATE	TIME		DATE	TIME
RELINQUISHED BY: (Signature) Matthew H Walraven	4-7-92	19:40	RECEIVED BY: (Signature) Olivia Jacobs	4-7-92	19:40
RELINQUISHED BY: (Signature) Olivia Jacobs	4-8-92	11:53	RECEIVED BY: (Signature)		
RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)		
RELINQUISHED BY: (Signature)			RECEIVED FOR LABORATORY BY: (Signature)	4/8/92	12:00