



PACIFIC
ENVIRONMENTAL
GROUP, INC.

August 25, 1995
Project 920-018.6A

Mr. Kenneth Kan
Chevron U.S.A. Products Company
6001 Bollinger Canyon, Building L
San Ramon, California 94583-0804

Re: Case Closure Recommendation
Former Chevron U.S.A. Service Station 9-2621
7667 Amador Valley Boulevard at Starward Drive
Dublin, California

Dear Mr. Kan:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC) for Chevron U.S.A. Products Company, recommends case closure for the site referenced above. All tanks, pump islands, and associated piping have been removed from the site.

Hydrocarbon concentrations in groundwater have been in general decline since September 1993. Benzene concentrations in groundwater samples from two of the three on-site wells (MW-1 and MW-2) have been below method detection limits for all sampling events since September 1993. The maximum benzene concentration reported for the remaining on-site well (MW-5) has been 1.5 parts per billion (ppb). Benzene concentrations in groundwater have been below method detection limits for all sampling events since September 1993 for downgradient off-site Well MW-4, and a maximum concentration of 1.9 ppb in off-site Well MW-6 (May 1995).

SITE DESCRIPTION

The former service station site is located on Amador Valley Boulevard in Dublin, California (Plate 1, Attachment A). The site, which was decommissioned in 1976, formerly contained three underground storage tanks (USTs) and one waste oil tank. The location of the former tanks is shown on Plate 2 in Attachment A. The site is currently occupied by the Amador Valley Medical Clinic and an optometry clinic.

PREVIOUS WORK

In 1976 the service station was demolished. As part of the station demolition, three USTs, pump islands and associated piping, and a waste oil tank was removed from the site (Plate 2, Attachment A). No leaks were observed in the tanks, however, all of the product had not been removed from the tanks, and approximately 15 to 20 gallons of gasoline spilled into the 8 foot deep tank pit. The spilled product was removed the next day. No soil samples were collected at this time.

In July 1992, Resna Industries, Inc. (Resna) conducted an environmental site assessment for the Amador Valley Medical Clinic, the present site occupants. This assessment included a review of geologic and hydrologic information, as well as a survey of leaking UST sites within 1/2 mile of the site. Resna found that no leaking USTs were located within a 1/2-mile radius of the site.

In October 1992, Resna drilled Borings B-1 through B-4 in the vicinity of the former USTs and dispenser islands (Plate 2, Attachment A). Boring B-4 was drilled at an angle to collect a sample from beneath the existing building. Selected soil samples collected from Borings B-1 through B-4 were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), TPH calculated as diesel (TPH-d), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and total oil and grease (TOG). Analytical results for all analytes were below method detection limits in all samples except Borings B-1 and B-4. Low levels of hydrocarbons were detected in soil samples collected from Borings B-1 and B-4 at 10 feet below ground surface (bgs); 11 and 65 parts per million (ppm) TPH-g, 0.018 ppm and not detected benzene, and 24 and 1.2 ppm TPH-d, respectively. Soil sampling locations are shown on Plate 2 in Attachment A. Soil analytical data are presented as Attachment B.

In March 1993, PACIFIC drilled hydropunch Borings HP-1 through HP-6 (Plate 2, Attachment A). Selected soil samples collected from Borings HP-1 through HP-4 were sent to a state-certified laboratory and analyzed for the presence of TPH-g, BTEX compounds, and TPH-d. Additional analyses for volatile and semivolatile organic compounds (VOCs and SVOCs) and metals were performed on soil samples collected from Boring HP-1, located near the former waste oil tank. No soil samples were collected from Borings HP-5 and HP-6. No hydrocarbons, VOCs, or SVOCs were detected in soil from Boring HP-1, and no hydrocarbons were detected in soil from Borings HP-2 through HP-4. Low levels of cadmium (2.5 ppm), chromium (14 ppm), nickel (25 ppm), and zinc (45 ppm) were found in soil collected from Boring HP-1. Soil analytical data are presented as Attachment B.

Groundwater collected from Borings HP-1 through HP-6 was sent to a state-certified laboratory and analyzed for the presence of TPH-g, BTEX compounds, and TPH-d (with additional analyses for VOCs and SVOCs for Boring HP-1). No hydrocarbons, VOCs, or SVOCs were found in groundwater collected from Boring HP-1. TPH-g was found in concentrations of 85, 4,500, 730, and 5,500 parts per billion (ppb) in groundwater collected from Borings HP-3 through HP-6, respectively. No TPH-g was found in groundwater collected from Boring HP-2. Benzene concentrations in groundwater collected from Borings HP-2 through HP-6 ranged from 4 to 8 ppb. Groundwater analytical data are presented as Attachment C.

In September 1993, Resna drilled two on-site (B-5 and B-6) and two off-site (B-7 and B-8) soil borings. These borings were converted into groundwater monitoring wells, MW-1 through MW-4. No TPH-g or benzene was detected in the soil or groundwater collected from these borings/wells (Attachments B and C).

In March 1994, Resna drilled two additional off-site borings (B-9 and B-10). Boring B-9 was subsequently converted to groundwater Monitoring Well MW-5, while Boring B-10 was converted to a temporary well. TPH-g and benzene concentrations in groundwater collected from Well MW-5 were 770 and 1.4 ppb, respectively, and have declined over time. TPH-g and benzene were detected in groundwater collected from temporary Well B-10 at concentrations of 23,000 and 120 ppb, respectively. Because this sample was collected from a temporary well and no documentation regarding development of this well could be found, the analytical results are thought to be less reliable than data collected from a properly developed monitoring well. Wells MW-1 through MW-4 were resampled at this time and no hydrocarbons were detected in the groundwater collected from these wells (Attachment C).

In January 1995, temporary Well B-10 was converted to groundwater Monitoring Well MW-6, and at that time was properly developed. The first and second quarter 1995 sampling events showed TPH-g and benzene concentrations in groundwater collected from Well MW-6 had concentrations of 430 and 1.5 ppb (January 1995), and 200 and 1.9 ppb (May 1995), respectively (Attachment C).

Groundwater monitoring has been performed at the site since September 1993. Historical groundwater analytical data are presented as Attachment C.

INVESTIGATIVE METHODS

Soil has been sampled for analytical testing from Borings B-1 through B-10. Borings B-1 through B-10 were drilled using hollow-stem auger drilling equipment. Soil samples were generally collected at 5-foot depth intervals using 2-inch diameter spilt spoon samplers

(RESNA, November 1993 and April 1994). Soil samples were retained in 2.0-inch diameter brass tubes, sealed with aluminum foil, capped, secured with Teflon® tape, labeled, placed on ice in an insulated container, and delivered under chain-of-custody protocol to a state-certified laboratory for analysis.

Borings were converted to monitoring wells by the installation of 2-inch diameter Schedule 40 PVC casing and 0.02-inch slotted well screen. Well construction details are contained on the boring logs included as Attachment D.

The soil and groundwater samples were analyzed by California State-certified laboratories. Soils analysis has included TPH-g by EPA Method 8015 (modified), BTEX compounds by EPA Method 8020, oil and grease by EPA Method 5520, VOCs by EPA Method 8240, and SVOCs by EPA Method 8270. Soil analytical data from borings are presented as Attachment B. Groundwater has been analyzed for TPH-g and BTEX compounds by the above cited methods. Groundwater analytical data are presented as Attachment C.

EXTENT OF HYDROCARBON PRESENCE IN SOIL AND GROUNDWATER

Data from site borings indicate that the extent of soil contamination was limited to a small area in the vicinity of the former USTs and former product islands. Low levels of hydrocarbons were detected in soil samples collected from Borings B-1 and B-4 at 10 feet bgs; 11 and 65 ppm TPH-g, 0.018 ppm and not detected benzene, and 24 and 1.2 ppm TPH-d, respectively. Hydrocarbons were not detected in the samples collected from the remaining 11 on- and off-site borings.

Groundwater impact has been limited to a small in the eastern portion of the site, extending off site towards Amador Valley Boulevard. No hydrocarbons have been detected in downgradient Well MW-4, crossgradient Well MW-1, or upgradient Wells MW-2 and MW-3. TPH-g and benzene concentrations in groundwater collected from Well MW-5 were 140 and 0.89 ppb, respectively, (May 1995). The May 1995, sampling event of Well MW-6 showed TPH-g and benzene concentrations in groundwater of 200 and 1.9 ppb, respectively. No separate-phase hydrocarbons have been detected in any on- or off-site borings or wells.

Hydrocarbon concentrations in site Wells MW-5 and MW-6 have been declining since March 1994. Benzene was found at 1.4 ppb when Well MW-5 was first sampled in March 1994 and at 0.89 ppb in the latest sampling event (May 1995). Benzene concentrations in Well MW-6 has been 1.5 and 1.9 ppb in the January and May 1995, sampling events. Benzene has never been detected in groundwater collected from Wells MW-1 through MW-4. TPH-g in groundwater has been detected in on-site well (MW-5) at a maximum concentration of 140 ppb in 1995.

HYDROGEOLOGIC SITE CONDITIONS

Site borings encountered predominantly clayey silt and silty clay, with minor amounts of clayey sand and sandy clay, to the total depth explored, approximately 19 feet. The sediments are primarily low permeability clayey material, except the silty gravel and gravely sand encountered in Well MW-2 (13.5 to 18.5 feet bgs) and the silty sands encountered in Well MW-3 (5 to 8 feet bgs) and Well MW-5 (12.5 to 17 feet bgs). Because most of the borings were terminated between 10 and 12 feet bgs, it is not known if the higher permeability sediments are laterally extensive beneath the site. Boring logs are presented as Attachment D.

Historic groundwater elevation data collected from 1993 through 1995, documents groundwater fluctuation beneath the site between depths of 2.89 to 10.41 feet bgs (Attachment C). Historic groundwater flow direction has been to the east-southeast at an approximate gradient of 0.007 ft/ft.

BENEFICIAL USES OF GROUNDWATER

Site boring logs show that the small quantity of impacted groundwater is confined within a relatively low permeable layer of silt and clay. Potential for vertical or horizontal migration of contaminated groundwater is very limited. Little or no horizontal movement of hydrocarbons has been detected since groundwater monitoring was initiated in 1993. The fine-grained nature of soils beneath the site are not capable of producing sufficient quantities of groundwater for drinking water supply.

Twenty seven wells used for municipal, industrial, groundwater monitoring, and domestic purposes are located within 1 mile of the site (Attachment E). Of these 27 only 2 wells located downgradient of the site are water-supply wells, and both are located more than 1/2 mile from the site. It is not known if either of these wells are currently in use.

The likelihood for shallow site groundwater to be used as a drinking water source is extremely remote. Drinking water within the City of Dublin is provided by the Dublin-San Ramon Services District who, in turn, is supplied by the Alameda County Flood Control and Water Conservation District (Zone 7). Water provided by Zone 7 is derived from the State Water Project (stored in Del Valle Reservoir) and deep water wells. No drinking water is derived from shallow aquifers. Zone 7 regulates the installation and permitting of water wells in this area. Zone 7 may be notified of a residual plume in an area where potential risks to a water-supply well could be considered before a permit is issued. Zone 7 regulations require deep wells to be properly sealed to prevent entry of shallow water.

REMEDIATION ACTIVITIES AND EFFECTIVENESS

Site remedial activities have focused on source removal. The small quantity of gasoline released into the tank pit was promptly removed. All tanks, pump islands, and associated piping have also been removed from the site.

Impact to groundwater has been very limited. Low levels of hydrocarbons have been present in the groundwater beneath the site since 1976, however, no hydrocarbons have been detected in downgradient Well MW-4. The low-permeability clay-rich soils have contained the plume, prevented extensive migration of hydrocarbons, and provided time for natural mechanisms (primarily biodegradation and volatilization), to degrade the hydrocarbons beneath the site.

The extent of the hydrocarbon plume has been defined since 1994. Groundwater quality has been monitored since 1993 and the groundwater plume has been determined to have been decreasing in concentration since 1993.

RATIONALE FOR SITE CLOSURE

Request for closure at this site is based on the following rationale:

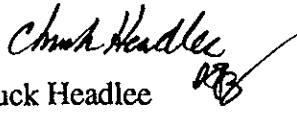
- The source of the hydrocarbons was a 1976 a release of approximately 15 to 20 gallons of product into the tank pit. The gasoline was promptly removed; eliminating the potential for future degradation of underlying groundwater.
- Any small quantities of hydrocarbons remaining in soils are contained in fine-grained, low permeability silty clay deposits, which tend to prevent extensive migration of hydrocarbons.
- The extent of the hydrocarbon plume in groundwater has been defined since 1994. The groundwater plume has been decreasing in concentration since 1993.
- Benzene concentrations in groundwater have not been detected in Wells MW-1 through MW-4, and have ranged from not detect (ND) to 1.5 ppb in Well MW-5, and 1.5 to 1.9 ppb in Well MW-6 since 1993.
- In the site vicinity, groundwater is not used as a drinking water resource.


PACIFIC, based on the above data, recommends site closure.

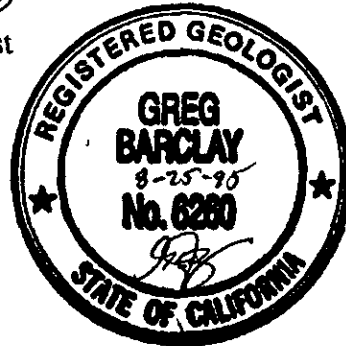
Please call if you have any questions regarding this letter.

Sincerely,

Pacific Environmental Group, Inc.


Chuck Headlee
Senior Staff Geologist


Greg Barclay
Senior Geologist
RG 6260



REFERENCES

Weiss Associates, *Comprehensive Site Evaluation and Proposed Future Action Plan*,
June 23, 1994.

Resna Industries, Inc., *Additional Subsurface Investigation, Former Chevron Service
Station 9-2621, 7667 Amador Valley Boulevard, Dublin, California*, November
1993.

Resna Industries, Inc., *Additional Subsurface Investigation, Former Chevron Service
Station 9-2621, 7667 Amador Valley Boulevard, Dublin, California*, April 1994.

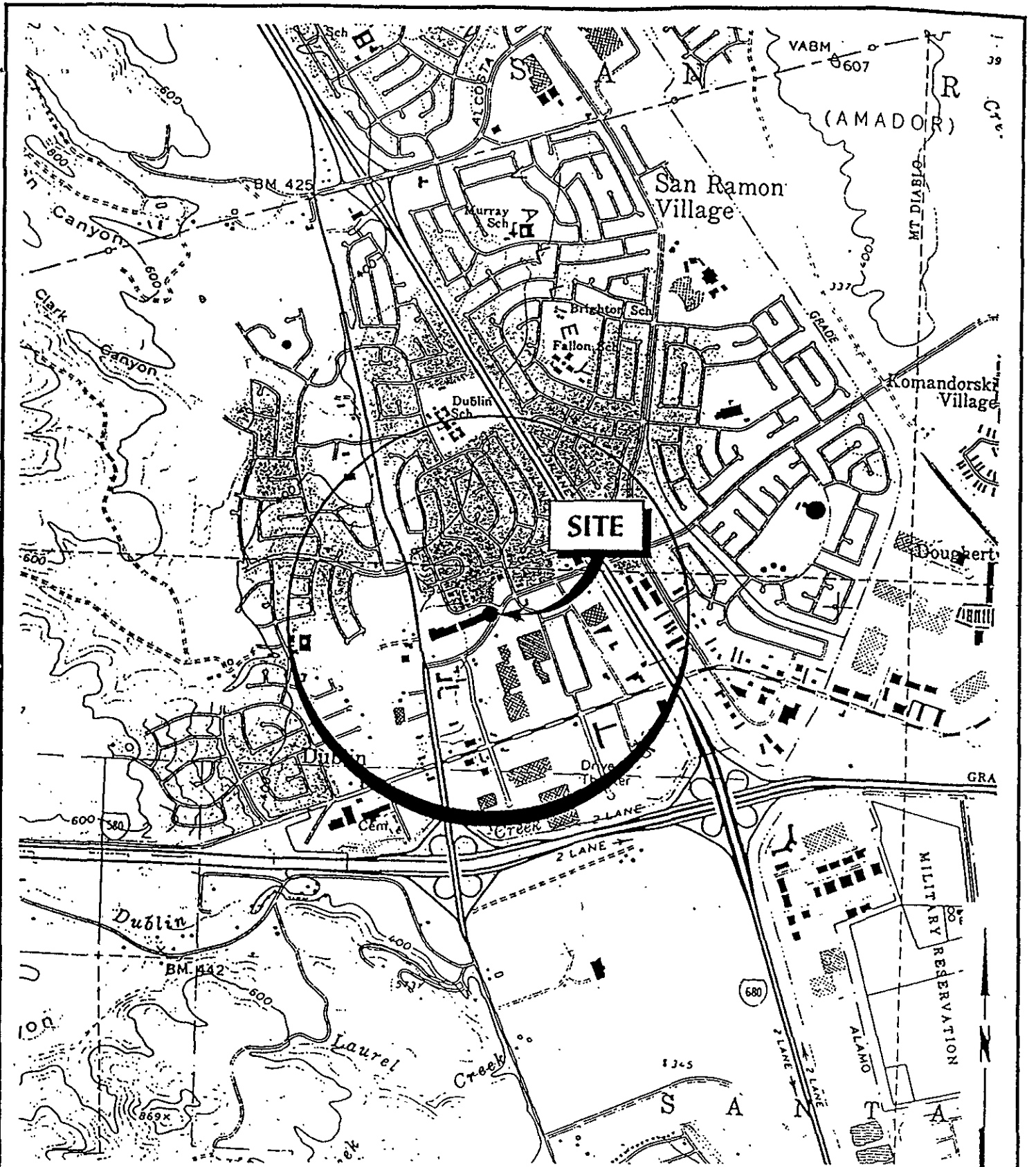
Gettler-Ryan Inc., *Second Quarter Monitoring and Sampling Report*, June 23, 1995.

Attachments: Attachment A - Site Maps
 Attachment B - Soil Analytical Data
 Attachment C - Groundwater Elevation and Analytical Data
 Attachment D - Boring Logs
 Attachment E - Well Search

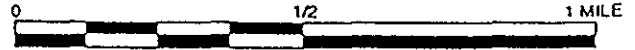
cc: Ms. Eva Chu, Alameda County Environmental Health Department,
 Hazardous Materials Division
 Mr. Richard Hiatt, Regional Water Quality Control Board -
 San Francisco Bay Region

ATTACHMENT A

SITE MAPS



Source: USGS Topographic Map, 7.5 minute series, Dublin, Calif. quadrangle, 1980



RESNA

SITE VICINITY MAP

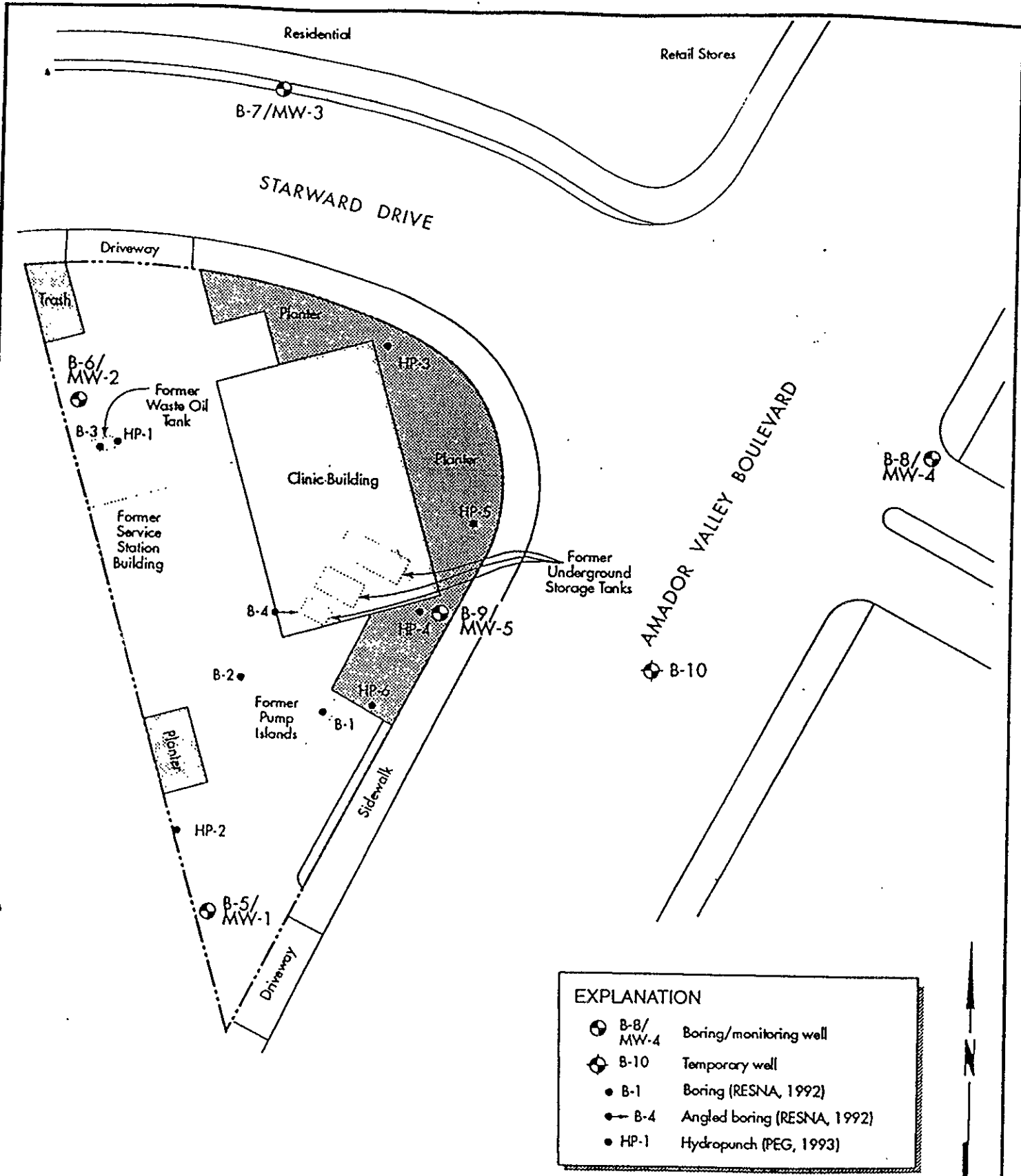
Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California

PLATE

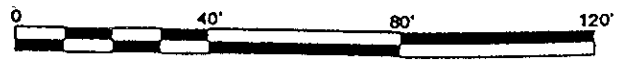
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PROJECT NO. 170111.01

6/93



Source: Site Map by Pacific Environmental Group, Inc., well location survey by Ron Archer, Civil Engineer, Inc., 1993



EXPLANATION	
	B-8/MW-4 Boring/monitoring well
	B-10 Temporary well
	B-1 Boring (RESNA, 1992)
	B-4 Angled boring (RESNA, 1992)
	HP-1 Hydropunch (PEG, 1993)



PROJECT NO. 170111.02

1/94

GENERALIZED SITE PLAN
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

PLATE
2

ATTACHMENT B
SOIL ANALYTICAL DATA

TABLE 1
SOIL ANALYSES DATA
for
AMADOR VALLEY MEDICAL CLINIC

Sample Number	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total xylenes (ppm)	TPHd (ppm)	TOG (mg/kg)
B1-1	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NR
B1-2	11	0.018	0.054	0.036	0.016	24	NR
B2-1	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NR
B2-2	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NR
B3-1	<1.0	<0.005	<0.005	<0.005	<0.005	NR	<50
B3-2	<1.0	<0.005	<0.005	<0.005	<0.005	NR	<50
B4-1	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NR
B4-2	65	<0.005	0.14	0.086	0.032	1.2	NR
B4-3	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	NR

ppm = Parts per million = mg/kg = milligrams per kilogram.

< 0.005 Not detected. Number following < indicates applicable laboratory detection limit.

NR Analysis not requested.

Table 1
Soil Analytical Data
 Total Petroleum Hydrocarbons
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Former Chevron Service Station 9-2621
 7667 Amador Valley Boulevard at Starward Drive
 Dublin, California

Sampling Date: March 17, 1993

Boring Number	Depth (feet)	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
HP-1	4-6	ND	ND	ND	ND	ND	ND
HP-2	4-5	ND	ND	ND	ND	ND	NA
HP-3	4-5	ND	ND	ND	ND	ND	NA
HP-4	4-5	ND	ND	ND	ND	ND	NA

ppm = Parts per million
 ND = Not detected
 NA = Not analyzed
 For detection limits see certified analytical reports.

Table 2
Soil Analytical Data
Halogenated Hydrocarbons (VOCs) and
Semi-Volatile Organic Compounds (SVOCs)

Former Chevron Service Station 9-2621
7667 Amador Valley Boulevard at Starward Drive
Dublin, California

Boring Number	Date Sampled	Depth (feet)	VOCs (All compounds) (ppm)	SVOCs (All compounds) (ppm)
HP-1	03/17/93	4-6	ND	ND
ppm = Parts per million ND = Not detected				

Table 3
Soil Analytical Data
Metals

Former Chevron Service Station 9-2621
7667 Amador Valley Boulevard at Starward Drive
Dublin, California

Boring Number	Sample Date	Depth (feet)	Cadmium (ppm)	Chromium (ppm)	Lead (ppm)	Nickel (ppm)	Zinc (ppm)
HP-1	03/17/93	4-6	2.5	14	ND	25	45

ppm = Parts per million
ND = Not detected

Table 2

SOIL ANALYTICAL RESULTS
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

Sample	Date	TPHg	B	T	E	X	TOC
S-3.5-B5	9/21/93	<1	<0.005	0.006	<0.005	<0.015	NA
S-6.5-B5	9/21/93	<1	<0.005	0.006	<0.005	<0.015	NA
S-5.3-B6	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	1,800
S-4.7-B7	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	NA
S-3.5-B8	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	NA
S-6.3-B8	9/21/93	<1	<0.005	<0.005	<0.005	<0.015	NA

Notes:

All results in parts per million (ppm)

- S = Soil sample
- 6.5 = Sample depth in feet
- B-1 = Boring 1
- TPHg = Total petroleum hydrocarbons as gasoline.
- TOC = Total organic carbon
- B = Benzene
- T = Toluene
- E = Ethylbenzene
- X = Total xylenes
- < = Less than indicated detection limit established by the laboratory

Table 2

SOIL ANALYTICAL RESULTS
 Former Chevron Service Station 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

Sample	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TOC
S-6.0-B9	3/12/94	<1	<0.005	<0.005	<0.005	<0.015	NA
S-3.0-B10	3/12/94	<1	<0.005	<0.005	<0.005	<0.015	NA
S-5.0-B10	3/12/94	<1	<0.005	<0.005	<0.005	<0.015	13,000

Notes:

All results in parts per million (ppm)

- S = Soil sample
- 6.5 = Sample depth in feet
- B9 = Boring B-9
- TPHg = Total petroleum hydrocarbons as gasoline.
- TOC = Total organic carbon
- < = Less than indicated detection limit established by the laboratory
- NA = Sample not analyzed

ATTACHMENT C
GROUNDWATER ELEVATION AND ANALYTICAL DATA

Table 4
Groundwater Analytical Data
Total Petroleum Hydrocarbons
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Former Chevron Service Station 9-2621
 7667 Amador Valley Boulevard at Starward Drive
 Dublin, California

Boring Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	TPH as Diesel (ppb)
HP-1	03/17/93	ND	ND	ND	ND	ND	ND
HP-2	03/17/93	ND	5	9	1	10	NA
HP-3	03/17/93	85	6	15	3	18	NA
HP-4	03/17/93	4,500	8	17	23	15	NA
HP-5	03/17/93	730	4	7	0.6	5	NA
HP-6	03/17/93	5,500	5	ND	2	8	NA

ppm = Parts per billion
 ND = Not detected
 NA = Not analyzed
 For detection limits see certified analytical reports.

Table 5
Groundwater Analytical Data
Halogenated Hydrocarbons (VOCs) and
Semi-Volatile Organic Compounds (SVOCs)

Former Chevron Service Station 9-2621
7667 Amador Valley Boulevard at Starward Drive
Dublin, California.

Boring Number	Date Sampled	VOCs (All Compounds) (ppb)	SVOCs (All Compounds) (ppb)
HP-1	03/17/93	ND	ND
ppb = Parts per billion ND = Not detected			

Table 3

GROUNDWATER ANALYTICAL RESULTS
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

Sample Number	Date Sampled	TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes
W-6-MW1	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
W-8-MW2	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
W-7-MW3	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
W-5-MW4	9/23/93	<50	<0.5	<0.5	<0.5	<1.5
TB-LB	9/23/93	<50	<0.5	<0.5	<0.5	<1.5

Notes:

All results in parts per billion (ppb)

- W = Water sample
- 5 = Water level elevation
- MW1 = Monitoring Well MW-1
- TPHg = Total petroleum hydrocarbons as gasoline.
- < = Less than detection limit established by the laboratory
- TB-LB = Travel blank

Table 3

GROUNDWATER ANALYTICAL RESULTS
Former Chevron Service Station 9-2621
7667 Amador Valley Boulevard
Dublin, California

Sample Number	Date Sampled	Ethyl-TPHg	Total Benzene	Toluene	Benzene	Xylenes
B-10	3/4/94	23000	120	180	1500	730
MW1	3/11/94	<50	<0.5	<0.5	<0.5	<0.5
MW2	3/11/94	<50	<0.5	<0.5	<0.5	<0.5
MW3	3/11/94	<50	<0.5	<0.5	<0.5	<0.5
MW4	3/11/94	<50	<0.5	<0.5	<0.5	<0.5
MW5	3/11/94	770	1.4	37	5.6	10
TB-LB	3/4/94	<50	<0.5	<0.5	<0.5	<0.5
TB-LB	3/11/94	<50	<0.5	<0.5	<0.5	<0.5

Notes:

All results in parts per billion (ppb)

W	=	Water sample
S	=	Water level elevation
MW1	=	Monitoring Well MW-1
TPHg	=	Total petroleum hydrocarbons as gasoline.
<	=	Less than detection limit established by the laboratory
TB-LB	=	Travel blank

Table 1

GROUNDWATER ELEVATION DATA
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

WELL NUMBER	DATE MEASURED	TOC	DTW	ELEV./P.S.
MW-1	9-23-93	346.73	6.62	340.11
MW-2	9-23-93	348.41	8.11	340.30
MW-3	9-23-93	347.14	7.04	340.10
MW-4	9-23-93	343.52	5.12	338.40

Notes:

- TOC = Top-of-Casing elevation feet above sea level (feet)
- DTW = Depth to Water (feet)
- ELEV./P.S. = Groundwater/Potentiometric Surface elevation above mean sea level (feet)



Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Service Station #9-2621, 7667 Amador Valley Boulevard, Dublin, California

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	Analytic Method	←-----ppb----->				
						TPPH(G)	B	T	E	X
MW-1/ 346.73	9/23/93	6.62	340.11	0	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	3/11/94	7.16	339.57	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/15/94	7.54	339.19	0	8015/8020	<50	<0.5	0.8	<0.5	2.0
	11/1/94	8.94	337.79	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	1/30/95 ²	5.42	341.31	0	---	---	---	---	---	---
	5/15/95	3.29	343.44	0	8015/8020	<50	<0.50	<0.50	<0.50	<0.50
MW-2/ 348.41	9/23/93	8.11	340.30	0	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	3/11/94	8.60	339.70	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/15/94	8.95	339.46	0	8015/8020	<50	0.5	0.7	<0.5	2.2
	11/1/94	10.41	338.00	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	1/30/95 ²	6.79	341.62	0	---	---	---	---	---	---
	5/15/95	4.39	344.02	0	8015/8020	<50	<0.50	<0.50	<0.50	<0.50
MW-3/ 347.14	9/23/93	7.04	340.10	0	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	3/11/94	7.44	339.70	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/15/94	7.83	339.31	0	8015/8020	<50	<0.5	0.6	<0.5	2.0
	11/1/94	9.15	337.99	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	1/30/95 ²	5.60	341.54	0	---	---	---	---	---	---
	5/15/95	3.39	343.75	0	8015/8020	<50	<0.50	<0.50	<0.50	<0.50
MW-4/ 343.52	9/23/93	5.12	338.40	0	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	3/11/94	5.45	338.07	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/15/94	5.82	337.70	0	8015/8020	<50	<0.5	0.7	<0.5	2.2
	11/1/94	6.65	336.87	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	1/30/95 ²	4.28	339.24	0	---	---	---	---	---	---
	5/15/95	3.71	339.81	0	8015/8020	<50	<0.50	<0.50	<0.50	<0.50
MW-5/ 345.51	3/11/94	6.10	339.41	0	8015/8020	770	1.4	37	5.6	10
	6/15/94	6.48	339.03	0	8015/8020	650	1.5	38	12	5.5
	11/1/94	7.78	337.73	0	8015/8020	310 ¹	<0.5	0.6	4.4	<0.5
	1/30/95 ²	4.52	340.99	0	---	---	---	---	---	---
	5/15/95	2.89	342.62	0	8015/8020	140	0.89	<0.50	0.76	<0.50
MW-6 ² / 345.51	1/30/95	4.71	340.54	0	8015/8020	430	1.5	0.79	4.4	3.3



Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Service Station #9-2621, 7667 Amador Valley Boulevard, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	Analytic Method	TPPH(G) B T E X				
						←—————ppb—————→				
345.25	5/15/95	3.36	341.89	0	8015/8020	200	1.9	<0.50	<0.50	4.2
TB-LB	9/23/93	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<1.5
	3/11/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	6/15/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	11/1/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5
	5/15/95	—	—	—	8015/8020	<50	<0.50	<0.50	<0.50	<0.50
BB-1 ²	1/30/95	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5

EXPLANATION:

DTW = Depth to water
 TOC = Top of casing elevation
 GWE = Groundwater elevation
 msl = Measurements referenced relative to mean sea level
 TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 ppb = Parts per billion
 — = Not applicable/not available

ANALYTIC METHODS:

8015 = EPA Method 8015/5030 for TPPH(G)
 8015 = Modified EPA Method 8015 for TPH(D)
 8020 = EPA Method 8020 for BTEX

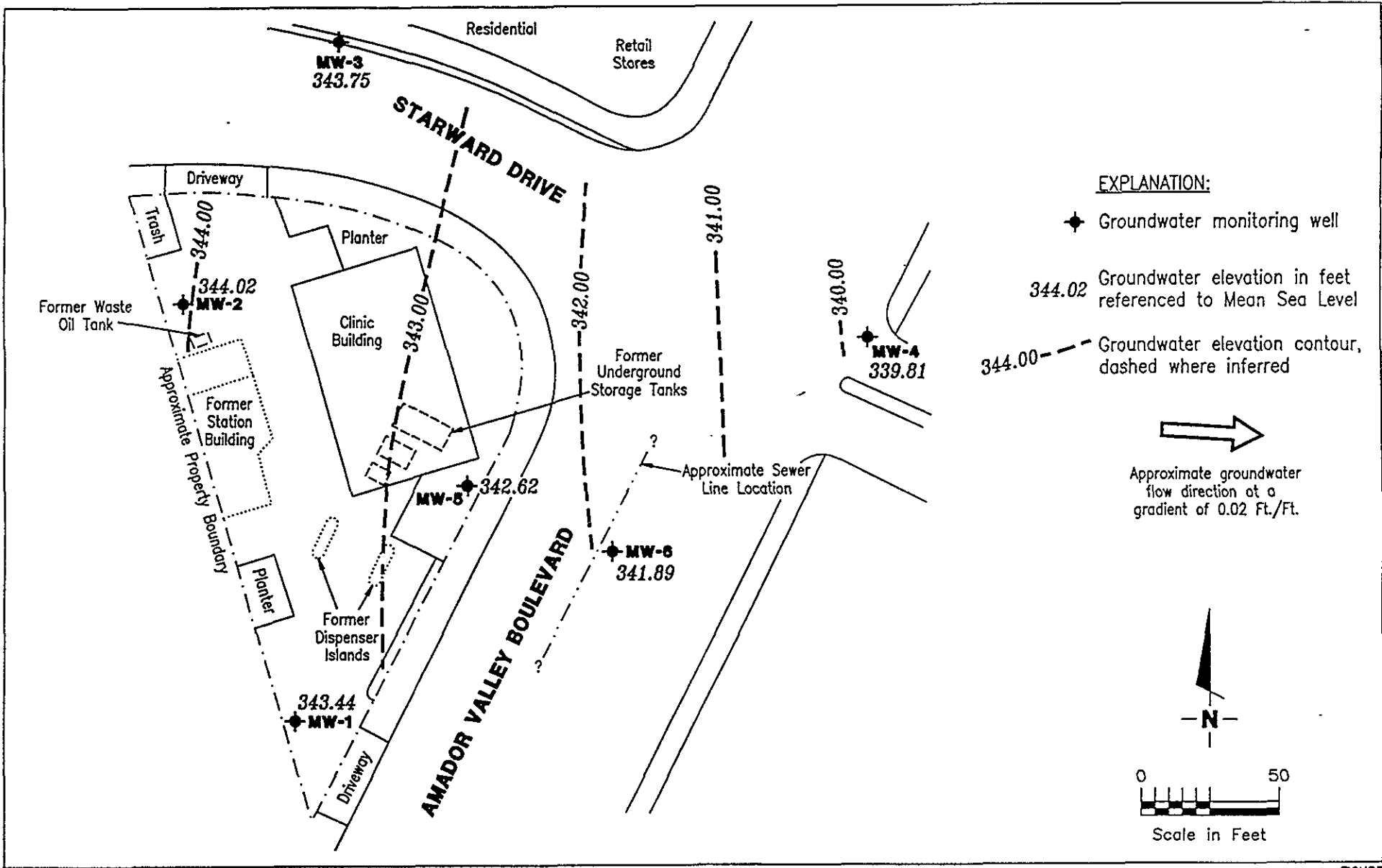
NOTES:

Water level elevation data and laboratory analytic results prior to May 15, 1995 were compiled from Quarterly Monitoring Reports prepared for Chevron by Sierra Environmental Services.

* Product thickness was measured on and after June 15, 1994 with an MMC flexi-dip interface probe.

¹ Does not match typical gasoline pattern.

² Water level data and analytic results from the January 30, 1995 event compiled from the Canonic Environmental Well Installation Report prepared for Chevron, February 22, 1995.



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (510) 551-7555
 Dublin, CA 94568

POTENTIOMETRIC MAP
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

FIGURE
1

JOB NUMBER
 5102.80

REVIEWED BY

DATE
 May 15, 1995

REVISED DATE

ATTACHMENT D
BORING LOGS

RESNA EXPLORATORY BORING LOG

Project Name: Amador Valley Medical Clinic
 7667 Amador Valley Boulevard
 Dublin, CA 94568

Boring No. B-1

Date Drilled: 10/15/92

Project Number: F9234.11

Logged By: S. Fontaine

Depth (ft.)	Sample No.	Blows/Foot 140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OVM Reading (ppm)	Well Construction
1	B1-1	34		3" Asphalt		0.0	Bentonite
2				7" gravelly sand base			
3			CL	SILTY CLAY with trace fine sand, gray to black, damp; cuttings			
4				SILTY CLAY, trace fine sand, light gray, damp; cuttings			
5			CL	SILTY CLAY, trace fine to medium sand, medium brown, damp, moderate plasticity, stiff			
6				Product odor in cuttings			
7							
8							
9							
10	B1-2	42	CL	SILTY CLAY with 5% coarse sand/fine gravel, medium brown, damp, moderate plasticity, very stiff, strong product odor		over 9999	
11				Bottom of boring at 10.5 feet			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							

Asphalt

RESNA EXPLORATORY BORING LOG

Project Name: Amador Valley Medical Clinic
 7667 Amador Valley Boulevard
 Dublin, CA 94568

Boring No. B-2

Date Drilled: 10/15/92

Project Number: F9234.11

Logged By: S. Fontaine

Depth (ft.)	Sample No.	Blows/Foot	140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OM Reading (ppm)	Well Construction
1					3" Asphalt			Asphalt
2					6" gravelly sand base			
3				CL	SILTY CLAY with 10% fine sand, medium to dark brown, slightly damp, moderate plasticity, very stiff			Bentonite
4								
5	B2-1	43			Grading to less sand		37.7	
6					Slight product odor			
7								Bentonite
8								
9								Bentonite
10	B2-2	35		CL	SILTY CLAY no sand, dark brown with gray mottling, damp, moderate plasticity, very stiff, slight odor		45.6	
11					Bottom of boring at 10.5 feet			
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								

REVIEWED BY R.G./C.E.G. *[Signature]*

RESNA EXPLORATORY BORING LOG

Project Name: Amador Valley Medical Clinic
 7667 Amador Valley Boulevard
 Dublin, CA 94568

Boring No. B-3

Date Drilled: 10/15/92

Project Number: F9234.11

Logged By: S. Fontaine

Depth (ft.)	Sample No.	Blows/Foot 140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OVM Reading (ppm)	Well Construction
1				3" Asphalt			Asphalt
				7" gravelly sand base			
2			SC	CLAYEY SAND with silt, fine to medium grained, dark to medium brown, granular; fill			Bentonite
3							
4							
5	B3-1	27	CL	SILTY CLAY, 5% fine sand, medium brown with gray mottling, slightly damp, stiff		75.6	
6							
7							
8							
9							
10	B3-2	25	CL	SILTY CLAY, trace fine sand, medium brown, damp, stiff		107	
11				Bottom of boring at 10.5 feet			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							

REVIEWED BY R.G./C.E.G.
(Signature)

RESNA EXPLORATORY BORING LOG

Project Name: Amador Valley Medical Clinic
 7667 Amador Valley Boulevard
 Dublin, CA 94568

Boring No. B-4

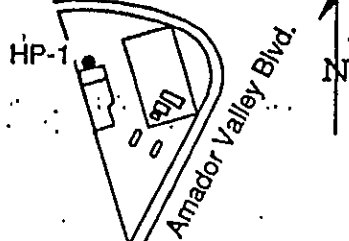
Date Drilled: 10/15/92

Project Number: F9234.11

Logged By: S. Fontaine

Depth (ft.)	Sample No.	Blows/Foot 140 ft/lbs.	Unified Soil Classification	SOIL DESCRIPTION	Water Level	OVM Reading (ppm)	Well Construction
1				4" Asphalt			Asphalt
				6" gravelly sand base			
2			CL	SILTY CLAY with 10-15% fine sand, dark gray to black, granular; cuttings			Bentonite
3				SILTY CLAY with 5% fine sand, light gray, granular; cuttings			
4							
5	B4-1	42	CL	SILTY CLAY, trace fine sand, medium brown with some gray mottling, damp, moderate plasticity, very stiff; rootholes		81.5	
6							
7							
8				Gray, product odor			
9							
10							
11	B4-2	30	CL	SILTY CLAY, trace fine sand, dark brown to black, damp, moderate plasticity, very stiff, very strong product odor		over 9999	
12							
13							
14							
15							
16	B4-3	26	CL	SILTY CLAY, medium brown, very moist, moderate plasticity; stiff		35.6	
17				Bottom of boring at 16.5 feet (angled)			
18							
19							
20							
21							

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. HP-1
PAGE 1 OF 1

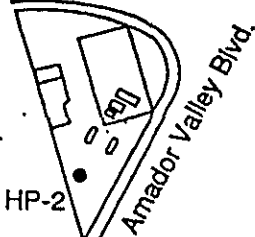
PROJECT NO. 325-35.01
 LOGGED BY: CM
 DRILLER: ECA
 DRILLING METHOD: HAMMER
 SAMPLING METHOD: 1" CORE
 CASING TYPE: NA
 SLOT SIZE: NA
 GRAVEL PACK: NA

CLIENT: CHEVRON U.S.A.
 DATE DRILLED: 3-17-93
 LOCATION: 7667 Amador Valley
 HOLE DIAMETER: 2"
 HOLE DEPTH: 10'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Back Filled With Cement				1				2" ASPHALT; BASEROCK
				2			SC	CLAYEY SAND: olive; 20-25% clay; no product odor.
				3				
				4				
		Mst	0	5				
				6				
				7			CL	SILTY CLAY: olive; 10-15% silt; moderate to high plasticity; no product odor.
				8				@8-10': olive gray; high plasticity; <5% silt.
		Mst	0	9				
				10				
			11					
			12					
			13					
			14					
			15					
			16					
			17					
			18					
			19					
			20					
			21					
			22					

BOTTOM OF BORING AT 10'

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

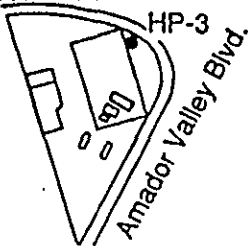
BORING NO. HP-2
PAGE 1 OF 1

PROJECT NO. 325-35.01
 LOGGED BY: CM
 DRILLER: ECA
 DRILLING METHOD: HAMMER
 SAMPLING METHOD: 3/4" CORE
 CASING TYPE: NA
 SLOT SIZE: NA -
 GRAVEL PACK: NA

CLIENT: CHEVRON U.S.A.
 DATE DRILLED: 3-17-93
 LOCATION: 7667 Amador Valley
 HOLE DIAMETER: 1 1/2"
 HOLE DEPTH: 10'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Back Filled With Cement				1				2" ASPHALT; BASEROCK
				2			SC	CLAYEY SAND: olive; 15-25% clay; no product odor.
				3				
				4				
		Mst	0	5				
				6				
				7			CL	SILTY CLAY: dark gray; 10-15% silt; moderate plasticity; no product odor.
				8				
		Mst	0	9				
				10				
			11					
			12					
			13					
			14					
			15					
			16					
			17					
			18					
			19					
			20					
			21					
			22					
								BOTTOM OF BORING AT 10'

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. HP-3
PAGE 1 OF 1

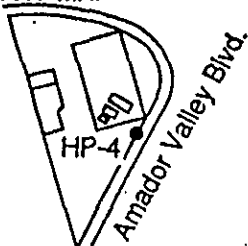
PROJECT NO. 325-35.01
 LOGGED BY: CM
 DRILLER: ECA
 DRILLING METHOD: HAMMER
 SAMPLING METHOD: 3/4" CORE
 CASING TYPE: NA
 SLOT SIZE: NA
 GRAVEL PACK: NA

CLIENT: CHEVRON U.S.A.
 DATE DRILLED: 3-17-93
 LOCATION: 7667 Amador Valley
 HOLE DIAMETER: 1 1/2"
 HOLE DEPTH: 10'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS				
Back Filled With Cement	Mst	0		1			FL	Planter Topsoil				
				2			SC	FILL: gravel. CLAYEY SAND: olive; 20-25% clay; fine sand; no product odor.				
				3								
				4								
				5								
				6								
				7								
				8								
				9								
				10								
				11								
				12								
				13								
				14								
				15								
				16								
				17								
				18								
				19								
				20								
				21								
				22								

BOTTOM OF BORING AT 10'

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

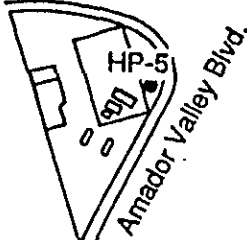
BORING NO. HP-4
PAGE 1 OF 1

PROJECT NO. 325-35.01
 LOGGED BY: CM
 DRILLER: ECA
 DRILLING METHOD: HAMMER
 SAMPLING METHOD: 3/4" CORE
 CASING TYPE: NA
 SLOT SIZE: NA
 GRAVEL PACK: NA

CLIENT: CHEVRON U.S.A.
 DATE DRILLED: 3-17-93
 LOCATION: 7667 Amador Valley
 HOLE DIAMETER: 1 1/2"
 HOLE DEPTH: 10'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Back Filled With Cement				1			FL	Planter Topsoil
				2			SC	FILL: gravel.
				3				CLAYEY SAND: olive; 15-20% clay; fine sand; moderate product odor.
				4				
		Mst	0	5				
				6				
				7				
				8			CL	CLAY: olive gray; high plasticity; 0-5% silt; moderate product odor.
		Wt	6	9				
				10				
			11					BOTTOM OF BORING AT 10'
			12					
			13					
			14					
			15					
			16					
			17					
			18					
			19					
			20					
			21					
			22					

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

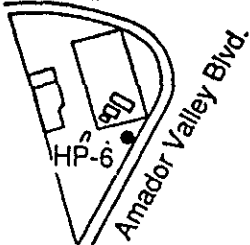
BORING NO. HP-5
PAGE 1 OF 1

PROJECT NO. 325-35.01
 LOGGED BY: CM
 DRILLER: ECA
 DRILLING METHOD: HAMMER
 SAMPLING METHOD: 3/4" CORE
 CASING TYPE: NA
 SLOT SIZE: NA
 GRAVEL PACK: NA

CLIENT: CHEVRON U.S.A.
 DATE DRILLED: 3-17-93
 LOCATION: 7667 Amador Valley
 HOLE DIAMETER: 1 1/2"
 HOLE DEPTH: 10'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Back Filled With Cement				1			FL	Planter Topsoil
				2			FL	FILL: gravel.
				3			SC	CLAYEY SAND
				4				
				5				
				6				
				7			CL	CLAY: dark gray; 0-5% silt; moderate product odor.
		Mst	5	8				
				9				
				10				
			11					BOTTOM OF BORING AT 10'
			12					
			13					
			14					
			15					
			16					
			17					
			18					
			19					
			20					
			21					
			22					

LOCATION MAP



NORTHING EASTING ELEVATION

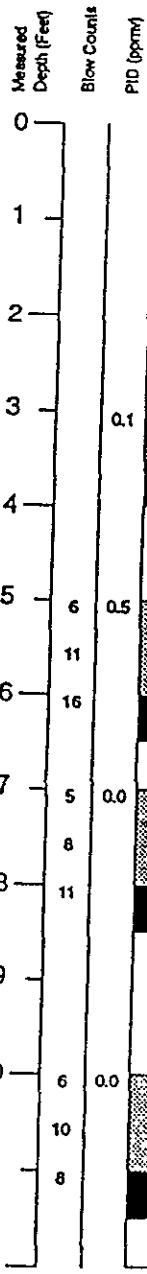
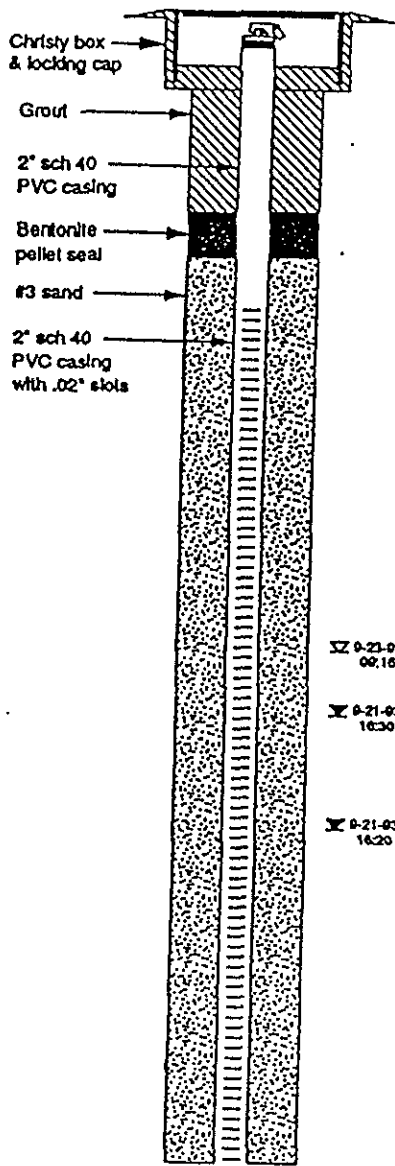
PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. HP-6
PAGE 1 OF 1

PROJECT NO. 325-35.01
 LOGGED BY: CM
 DRILLER: ECA
 DRILLING METHOD: HAMMER
 SAMPLING METHOD: 3/4" CORE
 CASING TYPE: NA
 SLOT SIZE: NA
 GRAVEL PACK: NA

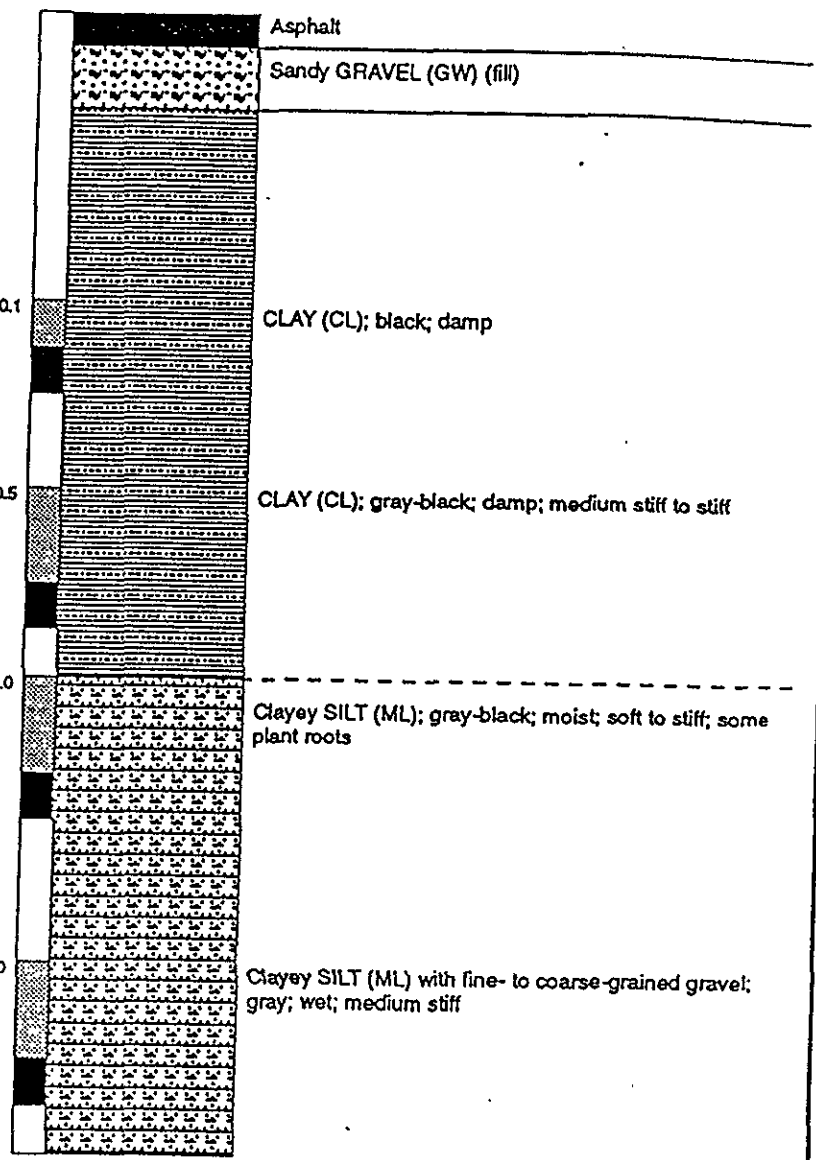
CLIENT: CHEVRON U.S.A.
 DATE DRILLED: 3-17-93
 LOCATION: 7667 Amador Valley
 HOLE DIAMETER: 1 1/2"
 HOLE DEPTH: 10'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Back Filled With Cement				1			FL	Planter Topsoil
				2			CL	FILL: gravel. SANDY CLAY
				3				
				4				
				5				
				6				
				7			CL	CLAY: dark gray; moderate plasticity; 10-20% silt; faint product odor.
		Mst	3	8				
				9				
				10				
			11				BOTTOM OF BORING AT 10'	
			12					
			13					
			14					
			15					
			16					
			17					
			18					
			19					
			20					
			21					
			22					

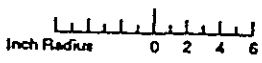


GRAPHIC LOG

DESCRIPTION



9-23-93 09:16
 9-21-93 16:30
 9-21-93 16:20



continues

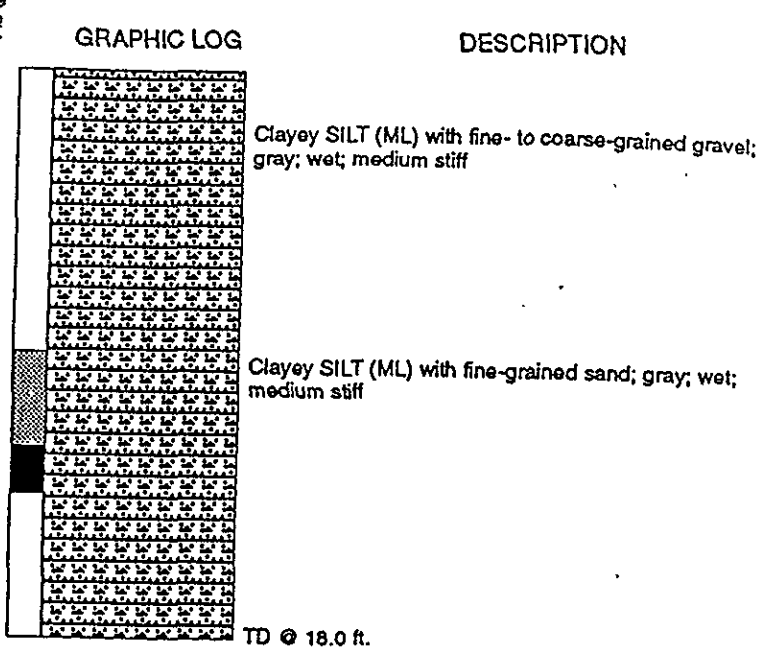
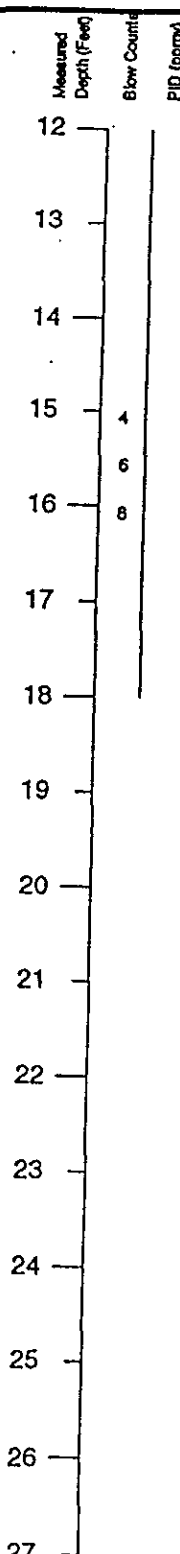
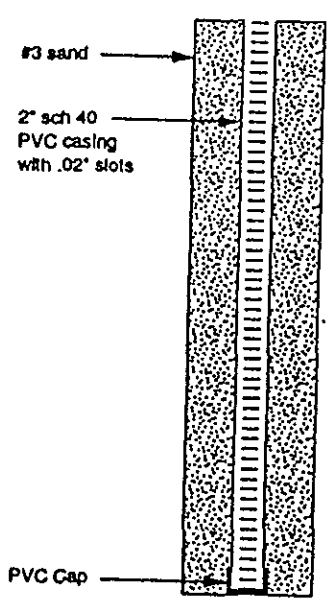
EXPLANATION			CONTACTS:	
	Recovered drill sample	est K	Estimated permeability (hydraulic conductivity)	— Solid where certain
	Sample sealed for chemical analysis	1K = primary 2K = secondary	 Dotted where approximate
	Slave sample	NR	No recovery	- - - Dashed where uncertain
	Grab sample	W	Water level during drilling	////// Hatched where gradational
	Core sample	W	Water level in completed well	

Logged by: Erich Neupert
 Project Mgr: Justin Power
 Dates Drilled: 9/21/93
 Drilling Company: Kvilhaug
 Drilling Method: 8" Hollow Stem Auger
 Driller: Paul Santos
 Well Head Completion: Christy box & locking cap
 Type of Sampler: 1 1/2" & 2 1/2" split spoon
 TD (Total Depth): 18.0 feet



BORING LOG—Boring B-5 (Monitoring Well MW-1)
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

BORING
B-5

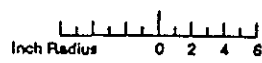
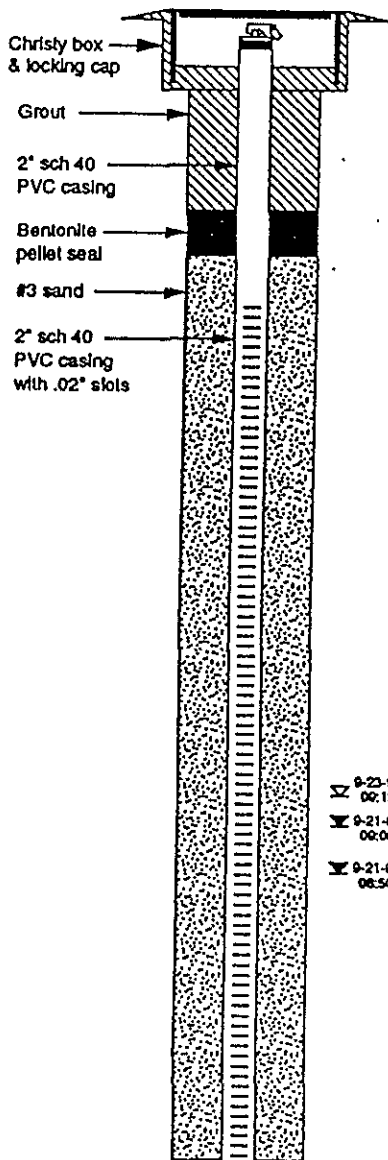


EXPLANATION		CONTACTS:	
	Recovered drill sample	—	Solid where certain
	Sample sealed for chemical analysis	Dotted where approximate
	Sieve sample	- - -	Dashed where uncertain
	Grab sample	////	Hatched where gradational
	Core sample		
est K	Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary		
NR	No recovery		
W	Water level during drilling		
Σ	Water level in completed well		

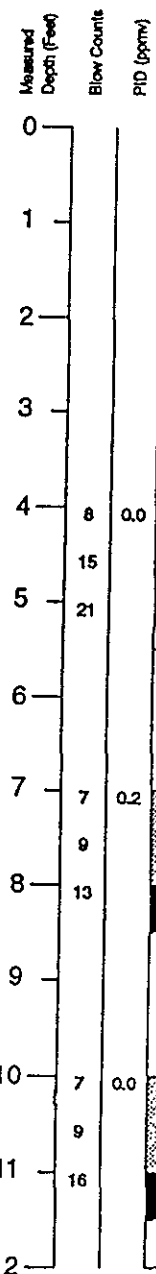


BORING LOG—Boring B-5 (Monitoring Well MW-1)
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

**BORING
 B-5**

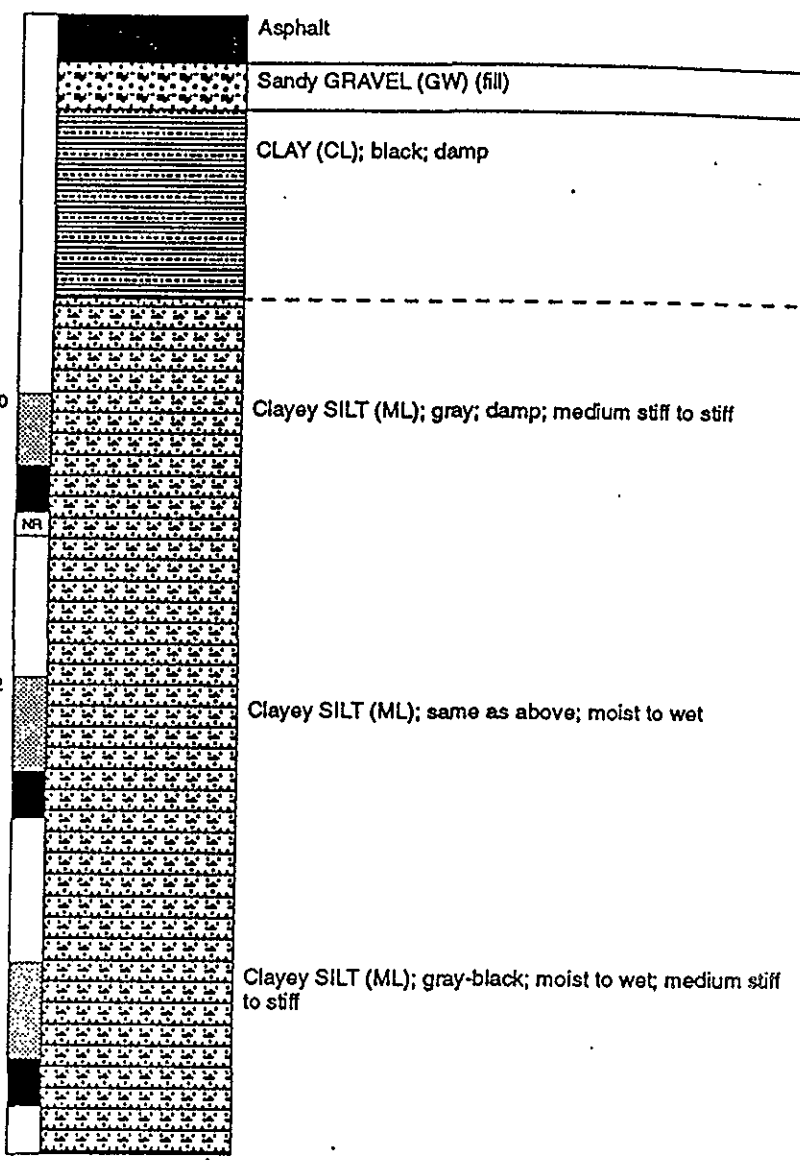


M 9-23-93 09:12
 M 9-21-93 09:06
 M 9-21-93 08:50



GRAPHIC LOG

DESCRIPTION



continues

EXPLANATION

- Recovered drill sample
- Sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Core sample
- est K Estimated permeability (hydraulic conductivity)
1K = primary 2K = secondary
- NR No recovery
- W Water level during drilling
- SZ Water level in completed well

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hatched where gradational

Logged by: Erich Neupert
 Project Mgr: Justin Power
 Dates Drilled: 9/21/93
 Drilling Company: Kvilhaug
 Drilling Method: 8" Hollow Stem Auger
 Driller: Paul Santos
 Well Head Completion: Christy box & locking cap
 Type of Sampler: 1 1/2" & 2 1/2" split spoon
 TD (Total Depth): 19.0 feet



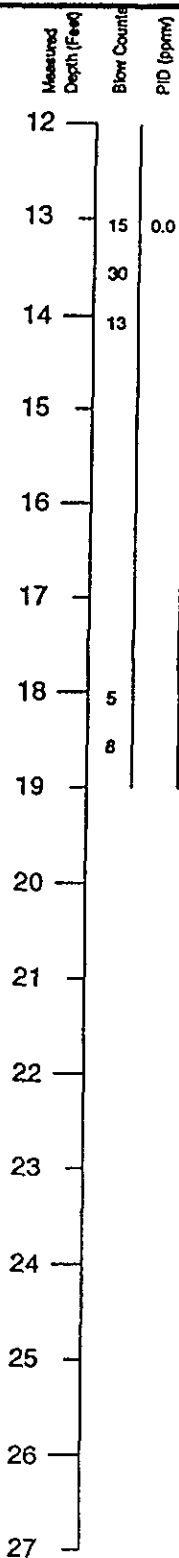
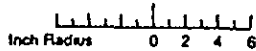
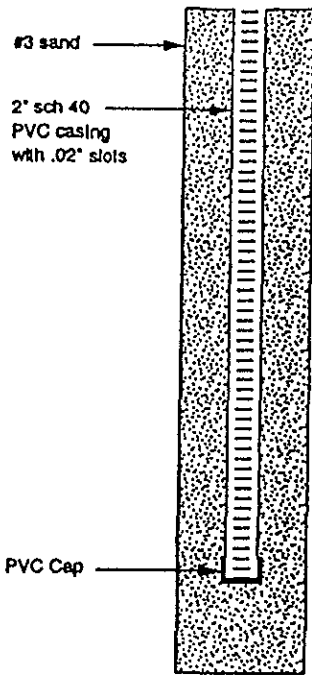
BORING LOG—Boring B-6 (Monitoring Well MW-2)

Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

BORING
B-6

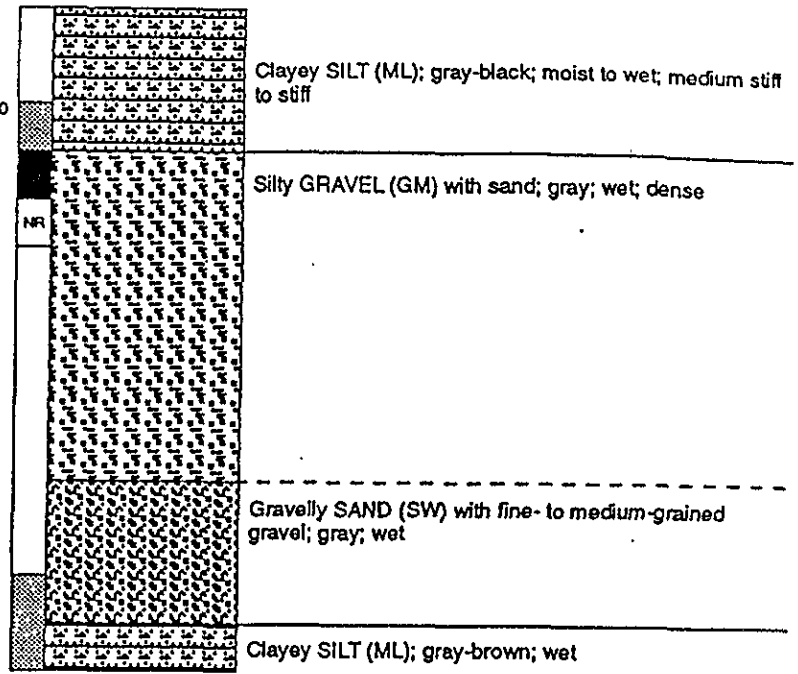
PROJECT NO. 170111.01

9/93



GRAPHIC LOG

DESCRIPTION



TD @ 19.0 ft.

EXPLANATION

- | | | | |
|--|-------------------------------------|-----------------------------|-------------------------------------------------|
| | Recovered drill sample | est K | Estimated permeability (hydraulic conductivity) |
| | Sample sealed for chemical analysis | 1K = primary 2K = secondary | |
| | Sieve sample | NR | No recovery |
| | Grab sample | ∞ | Water level during drilling |
| | Core sample | ∞ | Water level in completed well |

CONTACTS.

- | | |
|--|---------------------------|
| | Solid where certain |
| | Dotted where approximate |
| | Dashed where uncertain |
| | Hatched where gradational |



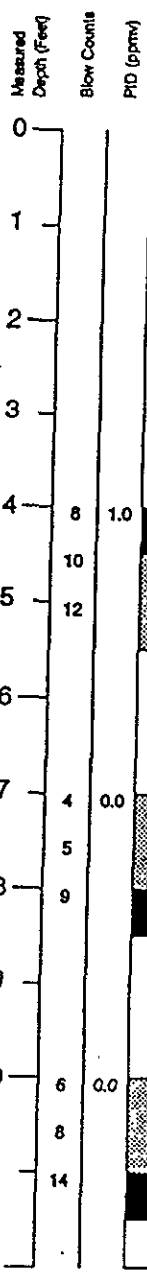
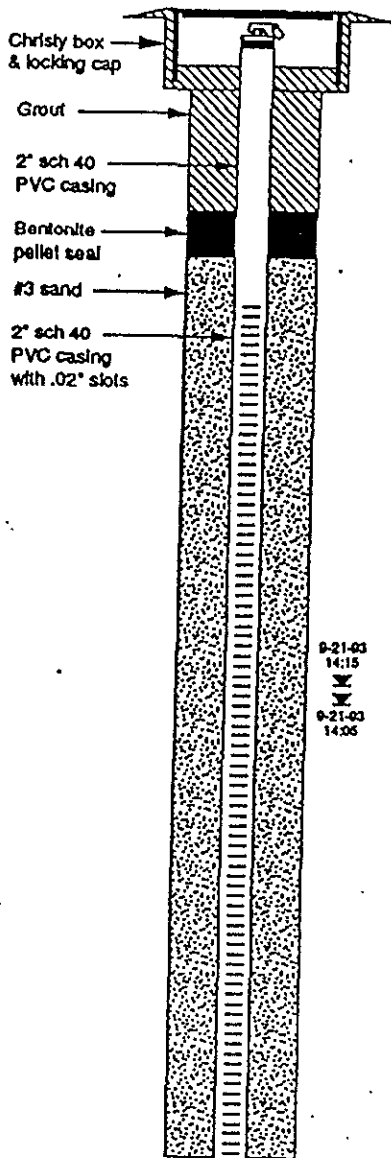
BORING LOG—Boring B-6 (Monitoring Well MW-2)
Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California

BORING

B-6

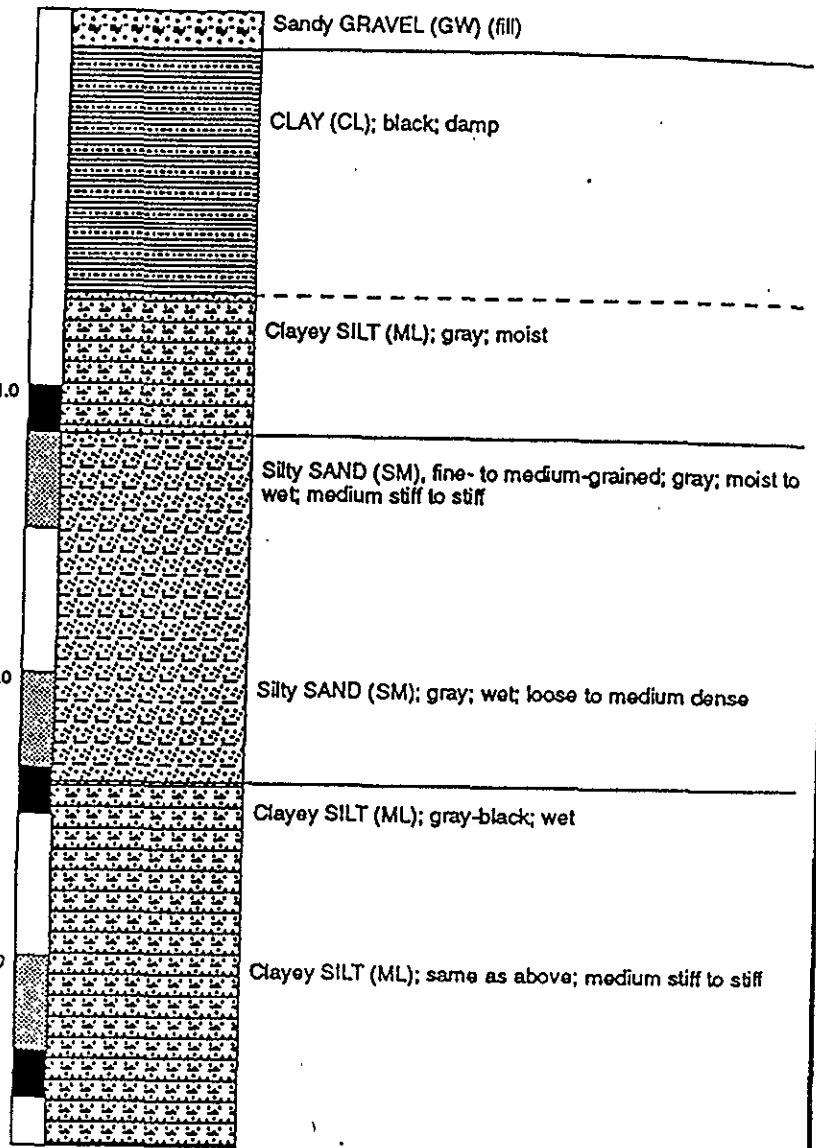
PROJECT NO. 170111.01

9/93



GRAPHIC LOG

DESCRIPTION



9-21-93 14:15
 9-23-93 09:06
 9-21-93 14:05

continues

EXPLANATION	
	Recovered drill sample
	Sample sealed for chemical analysis
	Sieve sample
	Grab sample
	Core sample
est K	Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
NR	No recovery
Σ	Water level during drilling
Σ	Water level in completed well
CONTACTS:	
	Solid where certain
	Dotted where approximate
	Dashed where uncertain
	Hatched where gradational

Logged by:	Erich Neupert
Project Mgr:	Justin Power
Dates Drilled:	9/21/93
Drilling Company:	Kvilhaug
Drilling Method:	8" Hollow Stem Auger
Driller:	Paul Santos
Well Head Completion:	Christy box & locking cap
Type of Sampler:	1 1/2" & 2 1/2" split spoon
TD (Total Depth):	17.0 feet

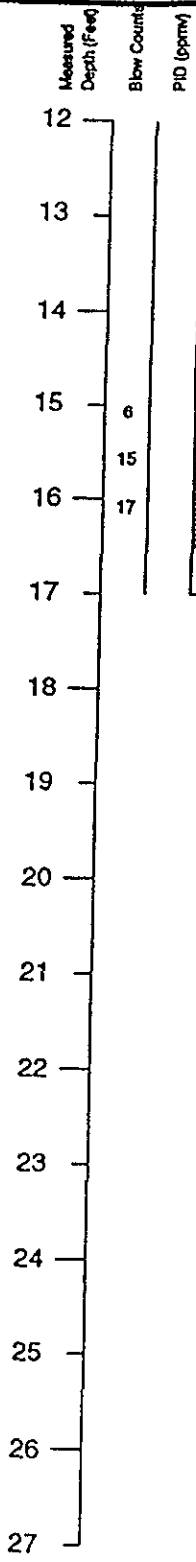
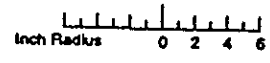
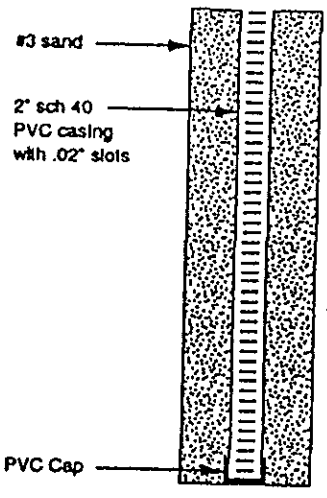


BORING LOG—Boring B-7 (Monitoring Well MW-3)
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

**BORING
 B-7**

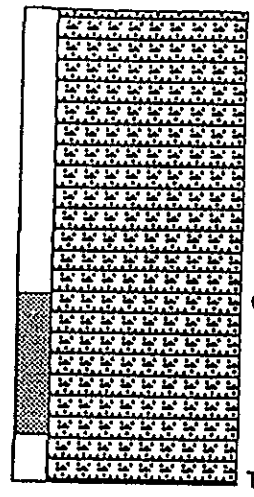
PROJECT NO. 170111.01

9/93



GRAPHIC LOG

DESCRIPTION



Clayey SILT (ML); gray-black; wet; medium stiff to stiff

Clayey SILT (ML); gray; wet; medium stiff to very stiff

TD @ 17.0 ft.

EXPLANATION

	Recovered drill sample	est K	Estimated permeability (hydraulic conductivity)	CONTACTS:	
	Sample sealed for chemical analysis	1K = primary 2K = secondary			
	Sieve sample	NR	No recovery		Dotted where approximate
	Grab sample	W	Water level during drilling		Dashed where uncertain
	Core sample	Σ	Water level in completed well		Hatched where gradational

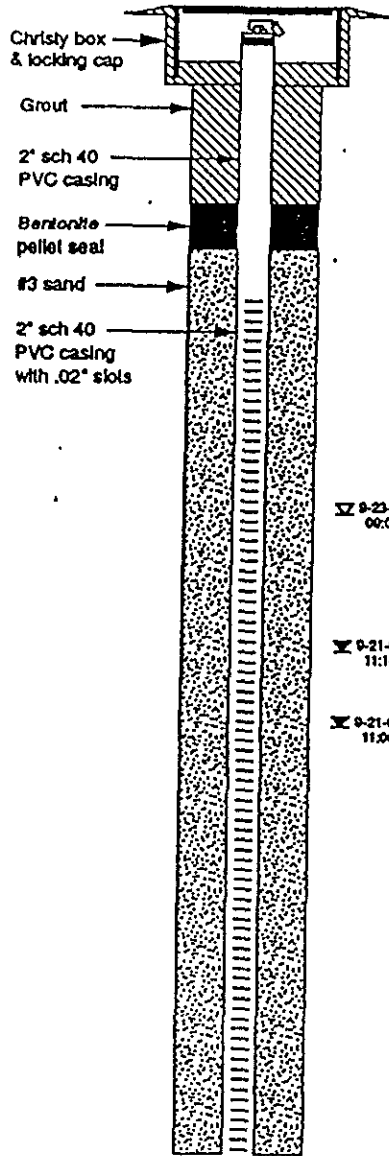


BORING LOG—Boring B-7 (Monitoring Well MW-3)
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

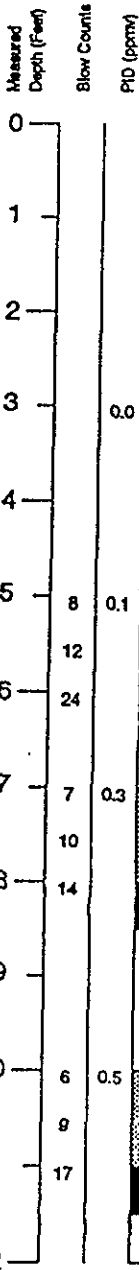
BORING
B-7

PROJECT NO. 170111.01

9/93

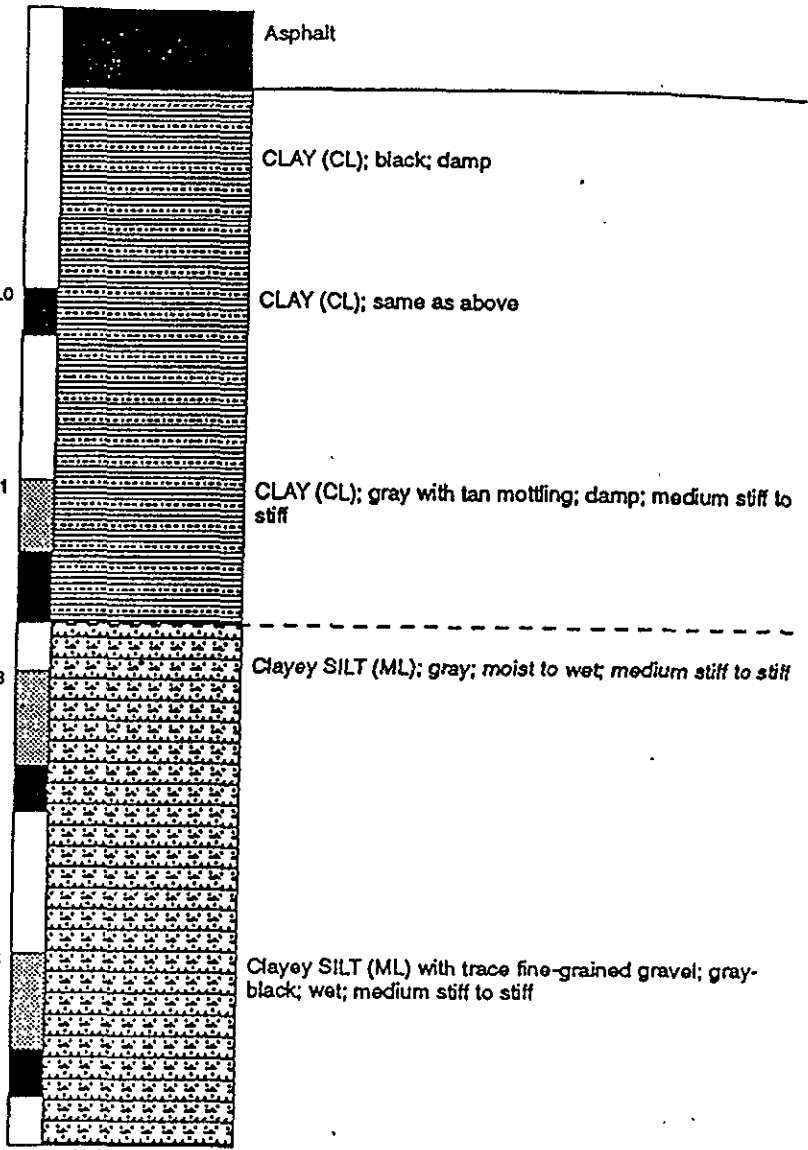


9-23-93 09:05
 9-21-93 11:10
 9-21-93 11:00



GRAPHIC LOG

DESCRIPTION



continues

EXPLANATION

- Recovered drill sample
- Sample sealed for chemical analysis
- Sieve sample
- Grab sample
- Core sample
- est K Estimated permeability (hydraulic conductivity)
1K = primary 2K = secondary
- NR No recovery
- Water level during drilling
- Water level in completed well

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hatched where gradational

Logged by: Erich Neupert
 Project Mgr: Justin Power
 Dates Drilled: 9/21/93
 Drilling Company: Kvilhaug
 Drilling Method: 8" Hollow Stem Auger
 Driller: Paul Santos
 Well Head Completion: Christy box & locking cap
 Type of Sampler: 1 1/2" & 2 1/2" split spoon
 TD (Total Depth): 18.0 feet



BORING LOG—Boring B-8 (Monitoring Well MW-4)

Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

BORING

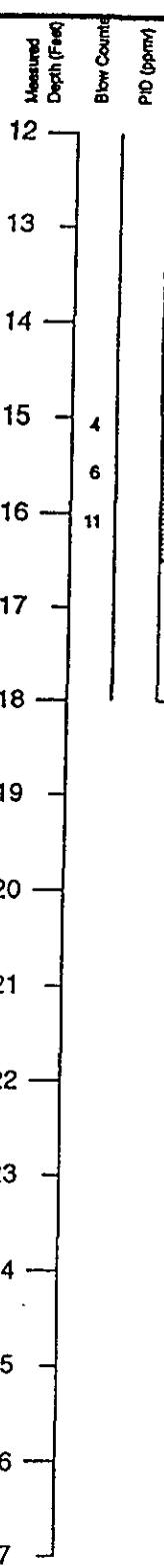
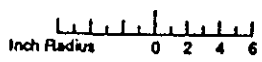
B-8

PROJECT NO. 170111.01

9/93

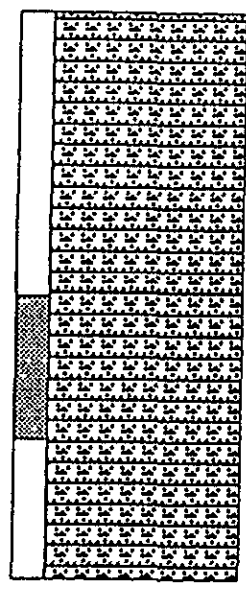
#3 sand
 2" sch 40
 PVC casing
 with .02" slots

PVC Cap



GRAPHIC LOG

DESCRIPTION



Clayey SILT (ML); gray; wet; medium stiff to stiff

TD @ 18.0 ft.

EXPLANATION			CONTACTS:	
	Recovered drill sample	est K	Estimated permeability (hydraulic conductivity)	— Solid where certain
	Sample sealed for chemical analysis	1K	= primary 2K = secondary Dotted where approximate
	Sieve sample	NR	No recovery	- - - Dashed where uncertain
	Grab sample	W	Water level during drilling	////// Hachured where gradational
	Core sample	SZ	Water level in completed well	



BORING LOG—Boring B-8 (Monitoring Well MW-4)
 Amador Valley Medical Center
 7667 Amador Valley Boulevard
 Dublin, California

BORING
B-8

Total depth of boring: 17 Feet Diameter of boring: 8 Inch Date drilled: 3/4/94
 Casing diameter: 2 Inch Length: 17 Feet Slot size: 0.020 Inch
 Screen diameter: 2 Inch Length: 12 Feet Material type: PVC
 Drilling Company: Woodward Drilling Driller: Charlie Lawrence
 Method Used: Hollow-stem auger; California modified split-spoon Field Geologist: C.L.
 Signature of Registered Professional: _____
 Registration No.: _____ State: California

MEASURED DEPTH	SAMPLE NO.	BLOWS	P.I.D.	USCS CODE	DESCRIPTION	WELL CONST.
0						
2				CL	Clay, brown.	
4						
6	S-5	17	3.5 ppmv		Clay, brown, damp, stiff, no odor.	
8	S-8	15	650 ppmv	ML	Clayey silt, brown to gray, damp, stiff, hydrocarbon odor.	
10	S-10	19	150 ppmv		Becoming moist.	
12						
14						
16	S-15	15	15 ppmv	SM	Silty sand, brown, no odor, wet, dense.	
18					Boring terminated at 17 Feet. Boring Converted to monitoring well.	



LOG OF BORING: B-9/MW-5
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

PLATE

PROJECT NO. 170111.02

FILE NO
0111B2A

Total depth of boring: 10 Feet Diameter of boring: 4 Inch Date drilled: 3/4/94
 Casing diameter: NA Length: NA Slot size: NA
 Screen diameter: NA Length: NA Material type: NA
 Drilling Company: Woodward Drilling Driller: Stephen Leach
 Method Used: Hollow-stem auger; California modified split-spoon Field Geologist: SL
 Signature of Registered Professional: _____
 Registration No.: _____ State: California

MEASURED DEPTH	SAMPLE NO.	BLOWS	P.I.D.	USCS CODE	DESCRIPTION	WELL CONST.
0					Asphalt	
2	S-3		0 ppmv	CL	Cloy, brown.	●●●●●●●●●●
4	S-5		0 ppmv		Cloy, brown, damp.	
8	S-7		16 ppmv	ML ▼ ≡	Clayey silt, brown, moist.	
10					Boring terminated at 10 feet. Boring backfilled with cement bentonite slurry.	
12						
14						
16						
18						



LOG OF BORING: B-10
 Former Chevron Service Station No. 9-2621
 7667 Amador Valley Boulevard
 Dublin, California

PLATE

PROJECT NO. 170111.02

FILE NO
 0111B3A

ATTACHMENT E
WELL SEARCH

