

SOIL BORING, MONITORING WELL
INSTALLATION AND
GROUNDWATER
MONITORING REPORT

Cavanaugh Motors Facility
1700 Park Street
Alameda, California

November 18, 1994

Prepared for

Mr. Dave Cavanaugh
Cavanaugh Motors
1700 Park Street
Alameda, California 94501

Prepared by

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Project No.: 101090

CERTIFICATION OF PROFESSIONAL SUPERVISION

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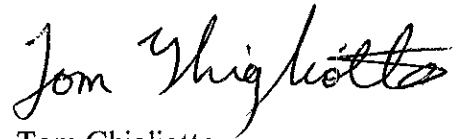
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and Groundwater Monitoring Report
Cavanaugh Motors Facility
1700 Park Street
Alameda, California

TMC ENVIRONMENTAL, Inc. supervised the preparation of this Soil Boring, Monitoring Well Installation and Groundwater Monitoring Report, dated November 18, 1994, for the Cavanaugh Motors facility in the City of Alameda, Alameda County, California. Techniques and standards of care common to the consulting geologic profession in California, where used in the preparation of this report.

This document, signed and stamped with seal, follows section 7835 of the Geologist and Geophysicists Act, Business and Professions Code, State of California and the requirements of the California Regional Water Quality Control Board, San Francisco Bay Region.



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Soil Scientist/Senior Project Manager



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Certified Engineering Geologist No. EG-1380
License expires June 30, 1996.

Date: 11/18/94

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**SOIL BORING, MONITORING WELL INSTALLATION
AND GROUNDWATER MONITORING REPORT**
1700 Park Street, Alameda, California

1.0 SUMMARY OF FINDINGS

In December 1989 and August 1990, two underground storage tanks (a gasoline tank and a waste oil tank) were removed from separate locations on the site. In April, 1990, and January 1991, approximately 120 cubic yards of accessible contaminated soils were excavated from the tank locations. Approximately 120 cubic yards of contaminated soils are being treated on site.

TMC ENVIRONMENTAL, Inc. (TMC) subsequently installed six groundwater monitoring wells at the site and are indicated in this report as MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. Groundwater monitoring well MW-1 is located within the gasoline tank excavation. Monitoring well MW-2 is located up-gradient from the former gasoline tank and is near the southern limits of the site. Monitoring well MW-4 is located in the western portion of the site, "cross-gradient" from the former gasoline tank. Groundwater monitoring well MW-6 is located within the limits of the former waste oil tank excavation inside the existing auto repair shop. Monitoring wells MW-3 and MW-5 are located in the down gradient direction from the former waste oil tank.

Due to the proximity of buildings, not all of the soil contamination was excavated from the former gasoline tank pit. In March, 1993, TMC installed a soil vapor extraction system in the vicinity of the former gasoline tank to remediate gasoline-contaminated soils (associated with the former gasoline tank) remaining at the site. To verify that the soil contamination was remediated, four soil borings were placed within the soil contaminant plume. This work was performed August 31, 1994. Sample results revealed that the soil vapor extraction system was effective in remediating soil contamination that remained in the vicinity of the former gasoline tank.

Per the request of the Alameda County Health Care Services Agency, Department of Environmental Health, Division of Hazardous Materials, TMC installed an additional groundwater monitoring well (August 25, 1994) down gradient from the former gasoline tank. This well was constructed similarly to the existing monitoring wells. This well is indicated as MW-7. Chemical analysis of soil samples recovered from this well revealed non-detectable levels of gasoline and BTEX

Subsequently, TMC recovered groundwater samples from the above-indicated wells. TMC performed this work September 15, 1994. All well samples were chemically analyzed for: total volatile hydrocarbons (TVH) as gasoline and benzene, toluene,

ethylbenzene, and total xylene (BTEX). Additionally, groundwater samples from wells MW-3, MW-5, and MW-6 were tested for diesel, petroleum oil and grease and purgeable halocarbons.

Samples from MW-1 continue to show the presence of gasoline and BTEX's. Well MW-7, located down gradient from the former tank and MW-1, had non-detectable levels of gasoline and BTEX's. Samples from wells, MW-2, MW-3, MW-4, MW-5 and MW-6 continue to have gasoline and BTEX levels below detection limits. The and MW-6 samples revealed detectable levels of Chlorobenzene, however, these levels are below MCL's of 100 ppb. Samples from MW-3 and MW-5 showed non-detectable Chlorobenzene levels. All three wells (MW-3, MW-5 and MW-6) had non-detectable Diesel and Petroleum Oil and Grease levels.

Groundwater gradient and direction was estimated by using water levels measurements from monitoring wells MW-2, MW-3 and MW-5. Recent groundwater data indicates groundwater flows in a northerly direction, with a gradient of 0.080 feet/foot.

2.0 GENERAL SITE INFORMATION

2.1 SITE LOCATION

The Cavanaugh Motors property, called "site" in this report, is at the following address and description (see Plate 1, Site Vicinity Map):

1700 Park Street, City of Alameda
Alameda County, California
Appraisers parcel number: APN 70-192-21-1 and 24
Lots 1, 2, 3, portion of 4, 7 Block E of Alameda
Station Homestead Tract (Book 17 page 60)

The site is at the northeast corner of the intersection of Park Street and Buena Vista Avenue. The corner lot is approximately 150 feet by 200 feet in dimension.

2.2 RESPONSIBLE PARTY

The current property owner's are:

Lee and Dave Cavanaugh
1700 Park Street, Alameda, California 94501

Mr. Dave Cavanaugh is the owner contact, and can be reached at (510) 523-5246.

2.3 CONSULTANT OF RECORD

The consultant of record for this project is:

TMC Environmental Inc. (TMC)
13908 San Pablo Avenue, Suite 101
San Pablo, California 94806

The contacts for TMC are Mr. Tom Ghigliotto, or Mr. Michael Princevalle, Senior Project Manager. Mr. Ghigliotto and Mr. Princevalle can be reached at (510) 232-8366.

2.4 LEAD IMPLEMENTING AGENCY

The enforcing agency authorized by the Regional Water Quality Control Board (RWQCB) to oversee this site is:

Alameda County Health Care Services Agency
Department of Environmental Health
Division of Hazardous Materials
1131 Harbor Bay Parkway, Alameda, California 94501

The officer overseeing this case is: Ms. Juliet Shin. Ms. Shin at can be called at (510) 337-2864.

TMC followed the guidelines by the enforcing agency and the Bay Area Regional Water Quality Control Board (RWQCB) in preparing this report. The investigation, reclamation, and reporting guidelines applicable to leaking underground fuel tanks, available through these agencies, apply to this discharge. These guidelines are available from the Alameda County Health Care Services Agency.

2.5 SITE CONDITION

The site is presently being used as an automobile dealership and repair facility. The property is in a commercial and residential neighborhood. Current activities include: a new car showroom, sales offices, parts storage and distribution, outside car storage, and vehicle repair shop; see Plate 2, Site Plan. No underground storage facilities exist at site

Foot and vehicle traffic is heavy in this neighborhood and site. The site contains a large building with paved parking areas and driveways. Access to the dealership is from both Park Street that borders the property on the northwest and Buena Vista Avenue that borders the property on the southwest. A gasoline station and automobile dealers occur across Park Street to the north. A motor vehicle repair shop bounds the site on the northeast. Adjacent to the site on the south is a residential neighborhood.

Six groundwater monitoring wells exist at the site. These are indicated in this report and on Plate 2, Site Map, as MW-1 MW-2, MW-3, MW-4, MW-5, MW-6 and MW-7. These wells are constructed to monitor the shallow water bearing zone beneath the site. Additionally, four soil extraction wells exist on site, and are indicated as VW1, VW2, VW3 and VW4.

2.6 GEOLOGY

The site is approximately one half mile west of the Oakland Estuary and Inner Harbor Waterway. San Francisco Bay is about one mile west of the site. The Inner Harbor Waterway connects San Leandro Bay and San Francisco Bay. As suggested by U.S. Geological Survey geological publications, the site is on the Alameda Bay Plain that has an alluvial fan environment. The Merritt Sand Formation is the main stratigraphic unit in the upper aquifer. This unit usually has unconsolidated beach sand and near shore deposits. Borings on the site have encountered unconsolidated sands and clayey sands. Lenses of clayey sand occur in the sand. It appears that groundwater in the Merritt Sand Formation is unconfined. Groundwater is approximately eight feet below surface grade (BSG) at the site during most of the year, but may rise to within five feet BSG during winter rainfall.

2.7 ENVIRONMENTAL SITE WORK

2.7.1 PREVIOUS ENVIRONMENTAL SITE WORK

In December, 1989 and August, 1990, two underground storage tanks (one gasoline and one automotive waste oil) were removed from separate locations at the site; see Plate 2. Soil samples recovered during the tank removal activities revealed the presence of petroleum materials. The soils found to be contaminated, and accessible, were excavated and stockpiled on site. Approximately 120 cubic yards of contaminated soil were removed and stockpiled on site. Site conditions prevented the complete removal of contaminated soils associated with the gasoline tank.

Subsequent to the tank removals and soil excavation, TMC performed a subsurface soils and groundwater investigation at the site. As part of the investigation, six groundwater

monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6. Detectable levels of gasoline were found in soils and groundwater in the vicinity of the former gasoline tank. Detectable levels of diesel/kerosene and dichlorobenzene were found in the vicinity of the former waste oil tank. Results of this investigation work and the subsequent quarterly monitoring indicate ground water contamination associated with the former tanks is localized.

During the subsurface investigation work, four vapor extraction wells (VW-1, VW-2, VW-3 and VW-4) were installed at the site. The purpose of the extraction wells was to reembody the contaminated soils in the vicinity of the former gasoline tank. In February, 1993, TMC constructed a vapor extraction system. Initial pilot tests of the system revealed that elevated groundwater levels at the site (due to high rainfall) hampered the effectiveness of the system. The system was then shut off. Once the groundwater levels dropped, the system was again started; July 7, 1993. Its operation continued until soil - vapor readings declined and stabilized to approximately 40 ppm. The system was shut down January 24, 1994.

2.7.2 RECENT ENVIRONMENTAL WORK

On August 25, 1994, TMC drilled four soil borings in the vicinity of MW-1 and the former gasoline tank. These borings are indicated as VB-1, VB-2, VB-3, and VB-4. The purpose of this work was to verify that the soil vapor extraction system was effective in remediating soil contaminated soils associated with the former tank.

where a
side plan

TMC additionally constructed a groundwater monitoring well approximately 10 feet down gradient from the former gasoline tank. This well is indicated as MW-7. This work was required by the Alameda County Health Care Services Agency (ACH).

Verifying borings VB-1, VB-2, and VB-3, and well MW-7 were drilled by a state-licensed drilling contractor, using a mobile drill rig. These bores were drilled using hollow-stern auger. Due to limited access, TMC drilled and sampled VB-4 using hand augering and sampling equipment. TMC recovered two relatively undisturbed soil samples from each bore for chemical analysis. Samples were recovered from near the soil-groundwater interface; 5 ½ to 7 feet. Sample depths are presented in Attachment 1, Logs of Borings.

Soils encountered during the boring and sampling activities were primarily clayey sands or sandy clays, from surface grade down to approximately 7 to 7½ feet. Below these depths, moderately graded sand and sands with clay were encountered. Groundwater in the bores was found at approximately 7½ feet below grade. There was no evidence of staining or petroleum-like odors in the soils. Details of soils encountered are presented in Attachment 1. Upon completion of sampling the verification bores, the bores were back filled with neat cement.

Boring MW-7 was drilled down to 16 feet and completed into a groundwater monitoring well. Construction of this well is similar to the monitoring wells previously installed (MW-1 through MW-6 at the site). Well construction details are presented in Attachment 1. TMC developed this well after placement of the sand filter pack and prior to placement of the sanitary seal.

Results of the soil samples recovered from the verification bores (VB-1 through VB-4) and the groundwater monitoring well MW-7 are presented in Attachment 2, Laboratory Reports. The results revealed detectable levels of Ethyl Benzene in sample VB3-2 (7 - 7½ feet) of 12 parts per billion (ppb). All other soil samples had non-detectable levels of the target analytes. ✓

Soil samples recovered from the bores were transported to a state-certified laboratory; AMER of Sunnyvale, California. The samples were analyzed for TPH Gasoline (TPH Gas; EPA 8015M), and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX; EPA 8020). TMC subsequently provided for surveying of MW-7. Mr. David Logan, a state-licensed surveyor, surveyed the well. This work was completed September 28, 1994.

3.0 GROUNDWATER SAMPLING

On May 26, 1994, TMC recovered groundwater samples from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and MW-7. Samples were chemically analyzed for the target chemicals: total volatile hydrocarbons (TVH) as gasoline, benzene, toluene, ethylbenzene, and total xylene (BTEX). Groundwater samples from wells MW-3, MW-5, and MW-6 were additionally tested for diesel, oil & grease and purgeable halocarbons. The following tables summarize the chemical compounds detected. Table 1, Gasoline Results for Groundwater Samples, lists the gasoline results for groundwater samples.

TABLE 1 GASOLINE RESULTS FOR GROUNDWATER SAMPLES

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
<i>June 1990 Groundwater Sampling</i>						
6-08-90	MW-1	28000	6200	7000	630	6100
6-08-90	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
6-08-90	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
6-08-90	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
<i>December 1990 Groundwater Sampling</i>						
12-17-90	MW-1	7200	620	250	1200	1400
12-17-90	MW-2	ND<50	1.1	ND<0.5	2.3	2.1
12-17-90	MW-3	140	ND<0.5	1.3	1.3	9.1
12-17-90	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
<i>July 1991 Groundwater Sampling</i>						
7-29-91	MW-1	21000	890	1900	320	1700
7-30-91	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-18-91	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-30-91	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-18-91	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	0.9
7-18-91	MW-6	ND<50	1.3	ND<0.5	ND<0.5	1.6
<i>December 1991 Groundwater Sampling</i>						
12-4-91	MW-1	4300	3.2	1.3	88	630
12-4-91	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
12-4-91	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
<i>April 1992 Groundwater Sampling</i>						
4-30-92	MW-1	16000	910	2000	250	1400
4-29-92	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-29-92	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-29-92	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-30-92	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
4-30-92	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>July 1992 Groundwater Sampling</i>						
7-28-92	MW-1	12000	1200	2300	340	1800
7-27-92	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-27-92	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-27-92	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-27-92	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
7-28-92	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>October 1992 Groundwater Sampling</i>						
10-19-92	MW-1	5000	400	710	170	750
10-19-92	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10-19-92	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>February 1993 Groundwater Sampling</i>						
2-24-93	MW-1	8800	780	1200	230	1000
2-24-93	MW-2	ND<50	0.5	ND<0.5	ND<0.5	ND<0.5
2-24-93	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-24-93	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
2-24-93	MW-5	ND<50	ND<0.5	1.8	ND<0.5	ND<0.5
2-24-93	MW-6	ND<50	ND<0.5	6.8	ND<0.5	ND<0.5
<i>May 1993 Groundwater Sampling</i>						
5-19-93	MW-1	24000	2500	4700	560	3100
5-19-93	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-19-93	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>August 1993 Groundwater Sampling</i>						
8-11-93	MW-1	13000	1200	2100	350	2000
8-11-93	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
8-11-93	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
8-11-93	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
8-11-93	MW-5	ND<50	ND<0.5	ND<0.5	0.8	ND<0.5
8-11-93	MW-6	ND<50	ND<0.5	ND<0.5	7.9	ND<0.5
<i>February 1994 Groundwater Sampling</i>						
2-2-94	MW-1	7300	600	920	250	1,000
2-2-94	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
2-2-94	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>May 1994 Groundwater Sampling</i>						
5-26-94	MW-1	15000	1200	2000	370	1500
5-26-94	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Date Sampled	Monitoring Well	TPH gas ug/L	Benzene ug/L	Toluene ug/L	Ethyl benzene ug/L	Xylenes ug/L
5-26-94	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-26-94	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-26-94	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
5-26-94	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
<i>September 1994 Groundwater Sampling</i>						
9-15-94	MW-1	4900	150	340	100	410
9-15-94	MW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5
9-15-94	MW-7	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5

ND- Not detected below reporting limits

Results of the samples show that MW-1 (located in the back fill of the former gasoline tank) continues to have detectable levels of gasoline and BTEX's. Chart 1, MW-1 Quarterly Sampling Results for Gasoline and Chart 2, MW-1 Quarterly Sampling Results for BTEX, show fluctuating Gasoline and BTEX concentrations. All other wells have non-detectable levels of Gasoline.

Table 2 presents results of laboratory analyses for extractable petroleum hydrocarbons (Diesel/Kerosene, Oil and Grease) and purgeable halocarbons (Chlorobenzene).

TABLE 2 DIESEL, OIL & GREASE AND CHLOROBENZENE RESULTS FOR WATER SAMPLES

Date Sampled	Monitoring Well	Diesel ug/L	Kerosene ug/L	Oil & Grease mg/L	Chlorobenzene ug/L
<i>July 1991 Groundwater Sampling</i>					
7-18-91	MW-3	NA	NA	ND<5	NA
7-18-91	MW-5	NA	NA	ND<5	NA

Date Sampled	Monitoring Well	Diesel ug/L	Kerosene ug/L	Oil & Grease mg/L	Chlorobenzene ug/L
7-18-91	MW-6	NA	NA	ND<5	NA
<i>December 199 Groundwater Sampling</i>					
12-4-91	MW-3	ND<50	ND<50	ND<5	ND<1.0
12-4-91	MW-5	ND<50	ND<50	ND<5	4.6
12-4-91	MW-6	1,400	ND<50	ND<5	33
<i>April 1992 Groundwater Sampling</i>					
4-29-92	MW-3	ND<50	ND<50	ND<5	ND<1.0
4-29-92	MW-5	ND<50	ND<50	ND<5	3
4-29-92	MW-6	670	ND<50	ND<5	7
<i>July 1992 Groundwater Sampling</i>					
7-28-92	MW-3	ND<50	ND<50	ND<5	ND<1.0
7-28-92	MW-5	ND<50	ND<50	ND<5	2
7-28-92	MW-6	1,700	ND<50	ND<5	17
<i>October 1992 Groundwater Sampling</i>					
10-19-92	MW-3	ND<50	ND<50	ND<5	ND<1.0
10-19-92	MW-5	ND<50	ND<50	ND<5	2
10-19-92	MW-6	500	ND<50	ND<5	26
<i>February 1993 Groundwater Sampling</i>					
2-24-93	MW-3	ND<50	ND<50	ND<5	ND<1.0
2-24-93	MW-5	ND<50	ND<50	ND<5	1
2-24-93	MW-6	ND<50	170 +	ND<5	6
<i>May 1993 Groundwater Sampling</i>					
5-19-93	MW-3	ND<50	ND<50	ND<5	ND
5-19-93	MW-5	ND<50	ND<50	ND<5	2
5-19-93	MW-6	670	ND<50	ND<5	4
<i>August 1993 Groundwater Sampling</i>					

Date Sampled	Monitoring Well	Diesel ug/L	Kerosene ug/L	Oil & Grease mg/L	Chlorobenzene ug/L
8-11-93	MW-3	ND<50	ND<50	ND<5	ND<1
8-11-93	MW-5	ND<50	ND<50	ND<5	ND<1
8-11-93	MW-6	80	*	7.0	10
<i>February 1994 Groundwater Sampling</i>					
2-2-94	MW-3	ND<50	ND<50	ND<05	ND<1
2-2-94	MW-5	ND<50	ND<50	ND<5	ND<1
2-2-94	MW-6	ND<50	220	ND<5	3
<i>May 1994 Groundwater Sampling</i>					
5-24-94	MW-3	ND<50	N/A	ND<5	ND<0.4
5-24-94	MW-5	ND<50	N/A	ND<5	0.6
5-24-94	MW-6	ND<50	N/A	ND<5	5.5
<i>September 1994 Groundwater Sampling</i>					
9-15-94	MW-3	ND<50	N/A	ND<5	ND<0.4
9-15-94	MW-5	ND<50	N/A	ND<5	ND<0.4
9-15-94	MW-6	ND<50	N/A	ND<5	4.6

ND - NOT DETECTED BELOW REPORTING LIMITS

NA - NOT ANALYZED BY LABORATORY

+ - DOES NOT MATCH DIESEL STANDARD (POSSIBLE MOTOR OIL HYDROCARBONS)

* - KEROSENE RANGE NOT REPORTED DUE TO OVERLAP OF HYDROCARBON RANGES

Samples from well MW-6 (located in the pit back fill of a former waste oil tank) revealed non-detectable levels of Kerosene or Diesel; see Chart 3, MW-6 Quarterly Sampling Results for Diesel/Kerosene.

Samples from monitoring wells MW-3, MW-5 and MW-6 continue to show non-detectable levels of Oil and Grease. Diesel levels of MW-6 are now below detection limits, with wells MW-3, MW-5, and MW-6 continue to be below detection limits.

Chlorobenzene was reported in soil samples recovered during the waste oil tank removal. Previous groundwater sampling show detectable levels of Chlorobenzene in monitoring wells MW-5 and MW-6; with non-detectable levels in MW-3. In this latest sampling (September 15,

1994) results show the continuing presence of Chlorobenzene in these two wells; see Chart 4, MW-5 and MW-6 Quarterly Sampling Results for Chlorobenzene. The Chlorobenzene levels, however, are well below water Maximum Contaminant Levels (MCL's) of 100 parts per billion or 0.10 parts per million.

4.0 GROUNDWATER MEASUREMENTS

Once the wells were uncapped for sampling each was allowed to equilibrate with atmospheric pressure. The wells were periodically measured until two successive measurements of the water elevation in each well agreed within 0.01 of a foot. Groundwater levels were measured with an electronic sounder. Details of groundwater measuring are in Attachment 3, Records of Water Sample Collection. By measuring the water levels in three groundwater monitoring wells, MW-2, MW-3, and MW-4, TMC calculated the down gradient direction and horizontal gradient. Table 3 summarizes groundwater level data collected over the thirteen sampling episodes.

TABLE 3 GROUNDWATER MEASUREMENTS FROM MONITORING WELLS

<i>Date</i>	<i>Well Label</i>	<i>Water Level</i>	<i>Casing Elevation (msl)</i>	<i>Water Elevation (msl)</i>
6-20-90	MW2	-7.16	16.73	9.57
6-20-90	MW3	-7.37	15.89	8.52
6-20-90	MW4	-7.60	16.39	8.79
9-13-90	MW2	-8.78	16.73	7.95
9-13-90	MW3	-8.70	15.89	7.19
9-13-90	MW4	-8.80	16.39	7.59
12-17-90	MW2	-8.78	16.73	7.95
12-17-90	MW3	-8.42	15.89	7.47
12-17-90	MW4	-8.61	16.39	7.78
12-4-91	MW2	-7.99	16.73	8.74
12-4-91	MW3	-8.18	15.89	7.71
12-4-91	MW4	-8.26	16.39	8.13
4-29-92	MW2	-6.05	16.73	10.68
4-29-92	MW3	-6.73	15.89	9.16

<i>Date</i>	<i>Well Label</i>	<i>Water Level</i>	<i>Casing Elevation (msl)</i>	<i>Water Elevation (msl)</i>
4-29-92	MW4	-6.81	16.39	9.58
8-29-92	MW1	-7.92	16.39	8.47
8-29-92	MW2	-7.82	16.73	8.91
8-29-92	MW3	-8.21	15.89	7.68
8-29-92	MW4	-8.14	16.39	8.25
8-29-92	MW5	-7.57	15.13	7.56
8-29-92	MW6	-8.00	15.98	7.98
10-19-92	MW1	-8.44	16.39	7.95
10-19-92	MW2	-8.37	16.73	8.36
10-19-92	MW3	-8.58	15.89	7.31
10-19-92	MW4	-8.53	16.39	7.86
10-19-92	MW5	-7.96	15.13	7.17
10-19-92	MW6	-8.44	15.98	7.54
2-24-93	MW1	-5.36	16.39	11.03
2-24-93	MW2	-5.42	16.73	11.31
2-24-93	MW3	-6.11	15.89	9.78
2-24-93	MW4	-6.30	16.39	10.09
2-24-93	MW5	-5.32	15.13	9.81
2-24-93	MW6	-5.40	15.98	10.58
5-19-93	MW-1	-6.35	16.39	10.04
5-19-93	MW-2	-6.35	16.73	10.38
5-19-93	MW-3	-7.14	15.89	8.75
5-19-93	MW-4	-7.09	16.39	9.30
5-19-93	MW-5	-6.38	15.13	8.77
5-19-93	MW-6	-6.57	15.98	9.41
8-11-93	MW-1	-8.06	16.39	8.33
8-11-93	MW-2	-8.09	16.73	8.64

Date	Well Label	Water Level	Casing Elevation (msl)	Water Elevation (msl)
8-11-93	MW-3	-8.45	15.89	7.44
8-11-93	MW-4	-8.31	16.39	8.08
8-11-93	MW-5	-7.68	15.13	7.45
8-11-93	MW-6	-8.16	15.98	7.82
2-2-94	MW-1	-7.43	16.39	8.96
2-2-94	MW-2	-7.48	16.73	9.25
2-2-94	MW-3	-7.69	15.89	8.20
2-2-94	MW-4	-7.83	16.39	8.56
2-2-94	MW-5	-6.98	15.13	8.15
2-2-94	MW-6	-7.40	15.98	8.58
5-26-94	MW-1	-6.95	16.39	9.44
5-26-94	MW-2	-6.97	16.73	9.76
5-26-94	MW-3	-7.39	15.89	8.50
5-26-94	MW-4	-7.44	16.39	8.95
5-26-94	MW-5	-6.72	15.13	8.41
5-26-94	MW-6	-7.01	15.98	8.97
9-15-94	MW-1	-8.04	16.34	8.30
9-15-94	MW-2	-7.95	16.72	8.77
9-15-94	MW-3	-8.28	15.89	7.61
9-15-94	MW-4	-8.15	16.35	8.20
9-15-94	MW-5	-7.68	15.13	7.45
9-15-94	MW-6	-8.10	15.98	7.88
9-15-94	MW-7	-8.13	16.31	8.18

Table 4 summarizes the estimated groundwater down flow direction and horizontal gradient. TMC used a three point solution to estimate the direction and gradient. Ground water level data from MW-2, MW-3 and MW-4 were used in the estimate.

TABLE 4 GROUNDWATER GRADIENT AND DIRECTION

<i>Measurement Date</i>	<i>Down Gradient Direction</i>	<i>Horizontal Gradient</i>	<i>Average Water Level feet above msl</i>
6-20-90	North 26 degrees West	0.009 ft/ft	9.0
9-13-90	North 2 degrees East	0.005 ft/ft	7.9
12-17-90	North 19 degrees East	0.003 ft/ft	8.1
12-4-91	North 12 degrees West	0.008 ft/ft	8.5
4-29-92	North 20 degrees West	0.012 ft/ft	9.8
8-29-92	North 5 degrees West	0.009 ft/ft	8.1
10-19-92	North 2 degrees East	0.007 ft/ft	7.7
2-24-93	North 31 degrees West	0.014 ft/ft	10.4
5-19-93	North 7 degrees West	0.014 ft/ft	9.4
8-11-93	North 4 degrees West	0.008 ft/ft	7.96
2-24-94	North 12 degrees West	0.008 ft/ft	8.69
5-26-94	North 10 degrees West	0.01 ft/ft	8.91
9-15-94	North 1.5 degrees West	0.008 ft/ft	8.19

Review of previous groundwater measurements indicate the down gradient direction and the horizontal gradient vary between groundwater sampling measurement episodes. The variation is relatively low for measurements of this type. The changing groundwater gradient indicates the shallow water is sensitive to seasonal changes in rainfall.

The most recent data indicate a North 1.5 degrees West flow direction at an average horizontal gradient of 0.008 ft/ft. The horizontal gradient is similar to the topographic slope of the lot. An average of the 13 groundwater measurement episodes indicate a range of flow direction from N31°W to N20°E, and a range of horizontal gradient from 0.005 to 0.014 ft/ft. Plate 3, Groundwater Gradient Map, illustrates the most recent (September, 1994) horizontal gradient calculated across the site.

5.0 SOIL AND WATER SAMPLE DATA QUALITY

The quality assurance and quality control (QA/QC) review of the new sample data for this report indicates that the data is acceptable for the purpose and objectives of this project. TMC did not review data summarized from previous reports. The U.S. Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) and the California Department of Health Services (DOHS) Leaking Underground Fuel Tank (LUFT) Manual were used to evaluate the sampling data since the SW-846 and LUFT methodologies were primarily used to analyze the samples. The samples were analyzed by AMER of Sunnyvale, California. The certified laboratory reports and chain-of-custody forms are presented in the attachments.

5.1 QUALITY OF GROUNDWATER SAMPLES

During sampling, all monitoring wells were purged of at least 3 bore volumes of water, in accordance with EPA protocol. At the end of purging, the well water was clear in all wells. The deionized water equipment blank for the sampling reported no detectable compounds.

5.2 CHAIN OF CUSTODY DOCUMENTATION

Complete chain-of-custody forms were maintained for all samples from the time of their collection until their submission to the laboratory. No errors in chain-of-custody protocol were noted.

5.3 PURGEABLE HALOCARBONS

Based on the QC data reviewed, the results of analyses for halogenated volatile organic hydrocarbons by EPA SW-846 Method 8010 appear reasonably representative. Groundwater samples were analyzed within the EPA-specified maximum holding time. Surrogate spike recoveries were judged acceptable based on professional judgement. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences (RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist.

5.4 TOTAL VOLATILE HYDROCARBONS WITH BTEX

Based on the QC data reviewed, total volatile hydrocarbons (TVH) as gasoline analysis by LUFT methods and benzene, toluene, ethylbenzene, and total xylenes (BTEX) analyses by EPA SW-846 Methods modified 5030/8020 appear reasonably representative. Samples were analyzed within the Regional Water Quality Control Board specified 7-day maximum holding time for water samples. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences

(RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist.

5.5 EXTRACTABLE PETROLEUM HYDROCARBONS

Based on the QC data review, extractable petroleum hydrocarbons (TEH) analysis by LUFT methods appear reasonably representative. Samples were analyzed within the Regional Water Quality Control Board specified 14 day maximum holding time for water samples. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences (RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist.

5.6 HYDROCARBON OIL & GREASE

Based on the QC data reviewed, the results of analyses for hydrocarbon oil & grease by EPA method 5520 F analysis appear reasonably representative. Groundwater samples were analyzed within the EPA-specified maximum holding time. Surrogate spike recoveries were judged acceptable based on professional judgement. Matrix spike/matrix spike duplicate percent recoveries and relative percent differences (RPD's) were either within EPA-specified limits or were within limits set by professional judgment where no EPA limits exist. No hydrocarbon oil & grease was detected in the method blanks.

6.0 COMMENTS AND SCHEDULE OF ACTIVITIES

Results from the verifying soil bore samples and MW-7 indicate that the gasoline contaminated soils (surrounding the former gasoline tank and excavation) were removed by the soil vapor extraction system. Groundwater samples from monitoring well MW-1 (placed in the former tank pit), however, continue to show detectable levels of gasoline and BTEX's. Groundwater samples from MW-7 (placed approximately 10 feet down gradient from MW-1) show non-detectable gasoline BTEX levels. TMC, therefore, believes that a pocket of gasoline contamination remains in capillary fringe in the vicinity of MW-1, and is not subject to vapor or groundwater extraction remediation. TMC proposes to excavate the contaminated materials surrounding MW-1, estimated to be 10 cubic yards. The contaminated soils will be stockpiled on the existing soil pile and treated.

provide data of VE

TMC will destroy MW-1 (prior to excavation) and the existing soil vapor recovery wells. This work will be performed by a state-licensed drilling contractor and under the supervision of a state registered geologist or civil engineer.

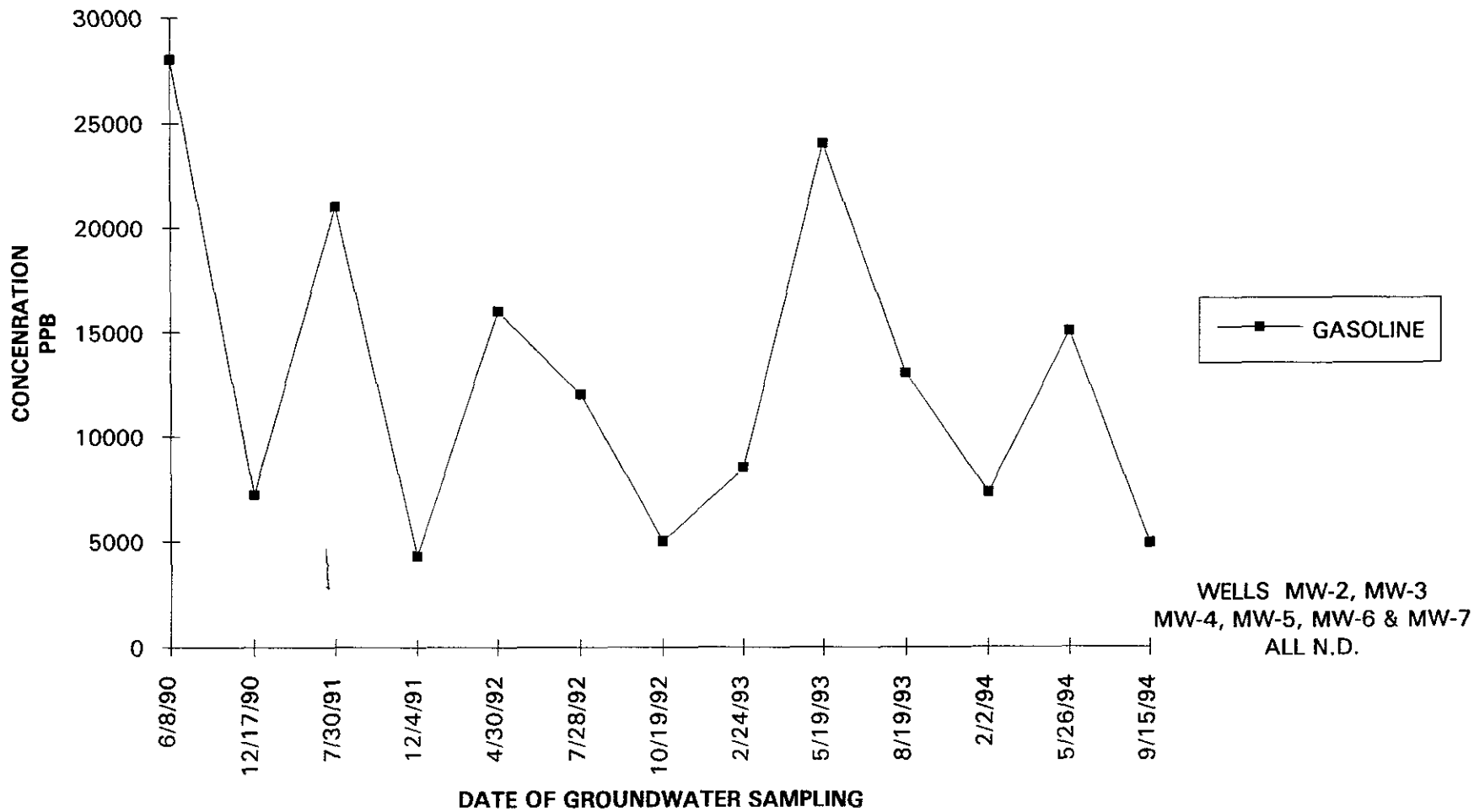
Review of groundwater sampling episodes reveal little or no change in the levels of target analytes or groundwater gradient. TMC, therefore, proposes to sample and gauge the monitoring wells on a semi-annual basis, and submit the samples for the chemical analysis of the target analytes.

7.0 LIMITATIONS

The procedures and opinions in this report agree with professional practice as provided in the guidelines of the California Regional Water Quality Control Board for addressing fuel leaks from underground tanks. This report is only part of the ongoing work required by the lead implementing agency at this site. The lab test results rely on limited data collected at the sampling location only. Budget constraints restrict the amount of testing allowed. The lab test results do not apply to the general site as a whole. Therefore, TMC Environmental Inc. cannot have complete knowledge of the underlying conditions. We provide the information in the resulting report to our client so he may make a more informed decision about site conditions. The professional opinion and judgement in the reports is subject to revisions in light of new information. We do not state or imply any guarantees or warranties that the subject property is or is not free of environmental impairment. Monitoring wells and soil venting wells are temporary sampling and remediation wells that eventually must be permitted and destroyed by a licensed driller at the clients expense.

CHART 1
MW1 QUARTERLY SAMPLING RESULTS FOR GASOLINE

CAVANAUGH MOTORS



**CHART 2
MW1 QUARTERLY SAMPLING RESULTS FOR BTEX**

CAVANAUGH MOTORS

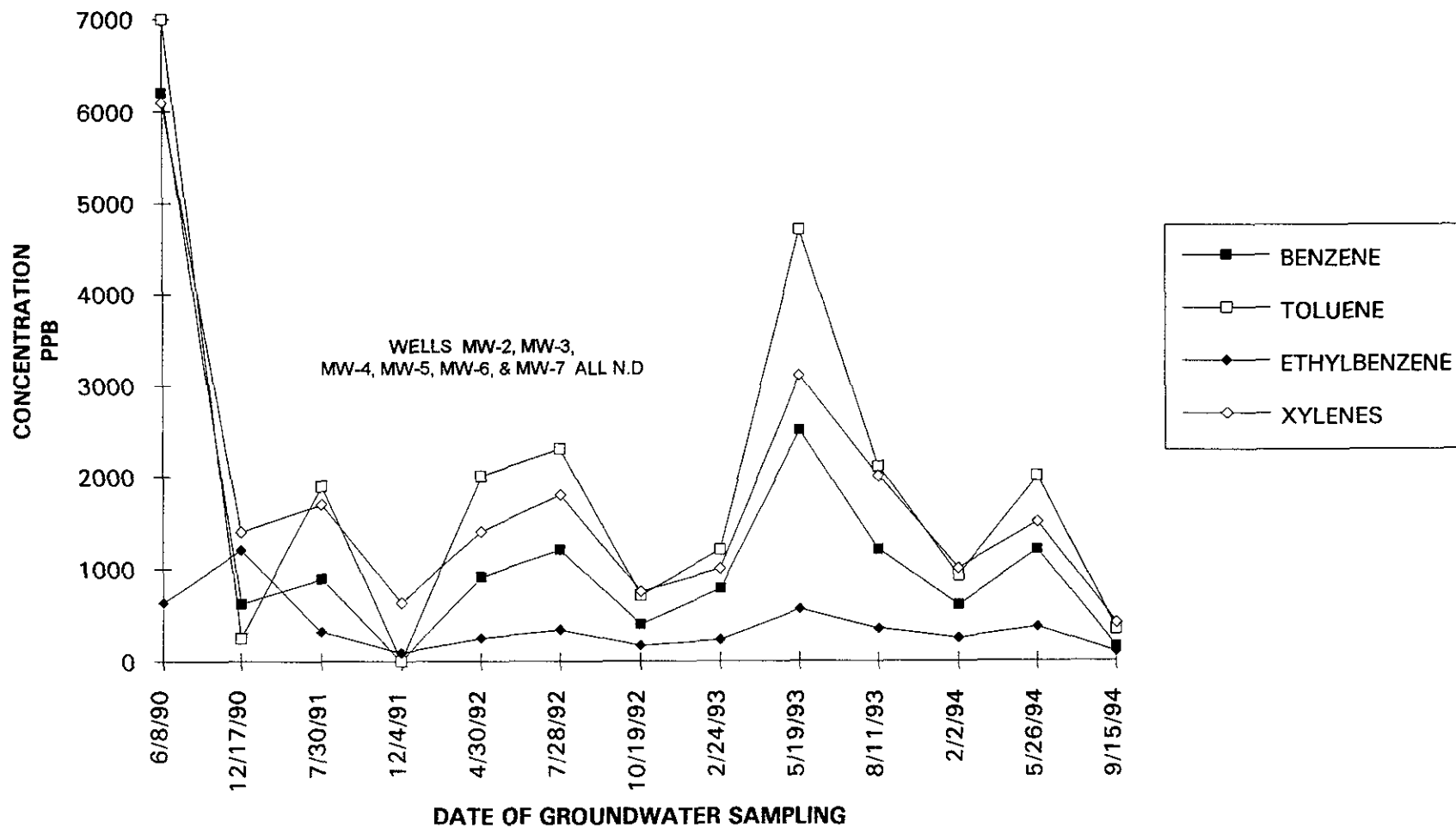


CHART 3
MW-6 QUARTERLY SAMPLING RESULTS FOR DIESEL

CAVANAUGH MOTORS

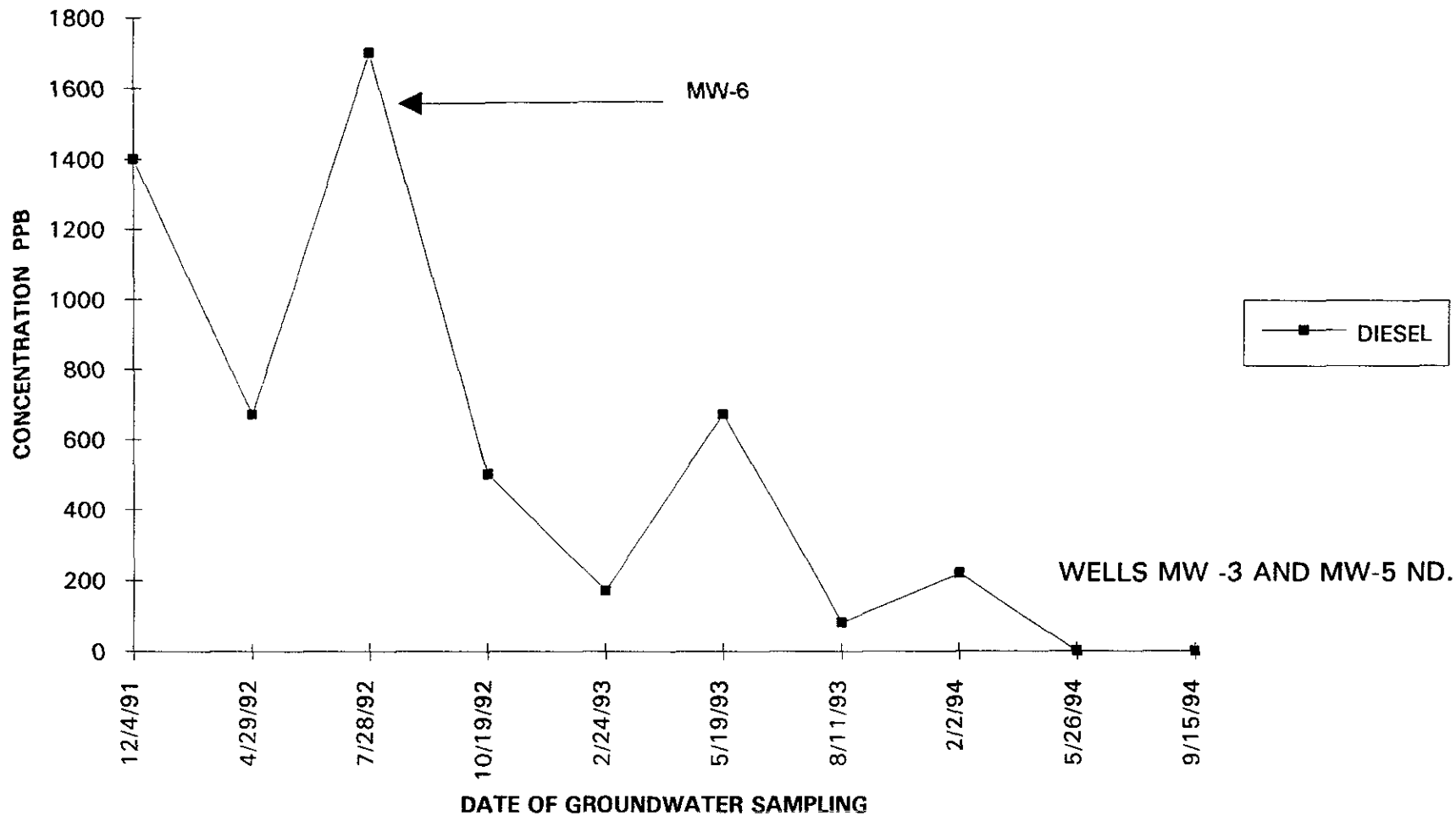
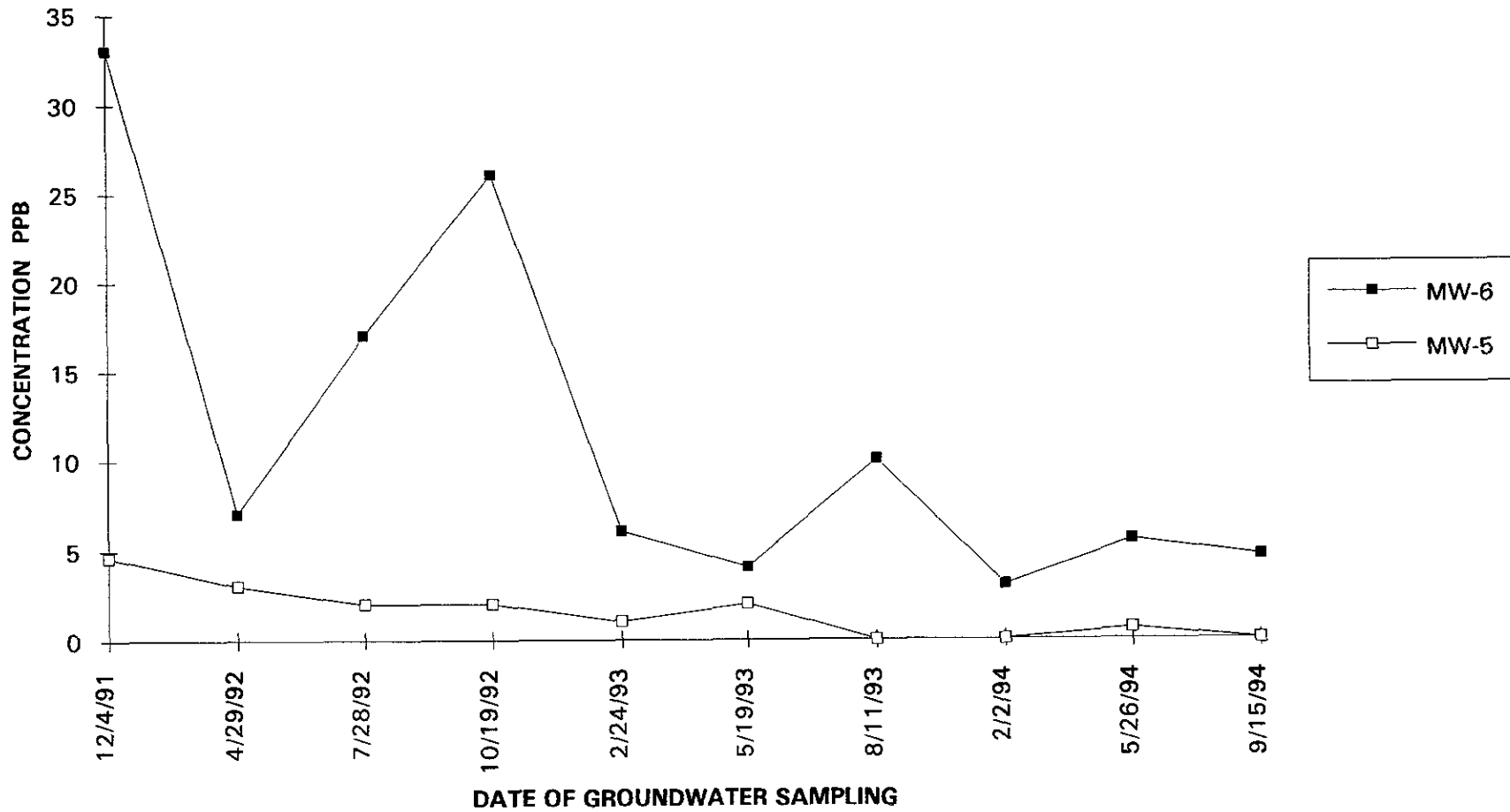
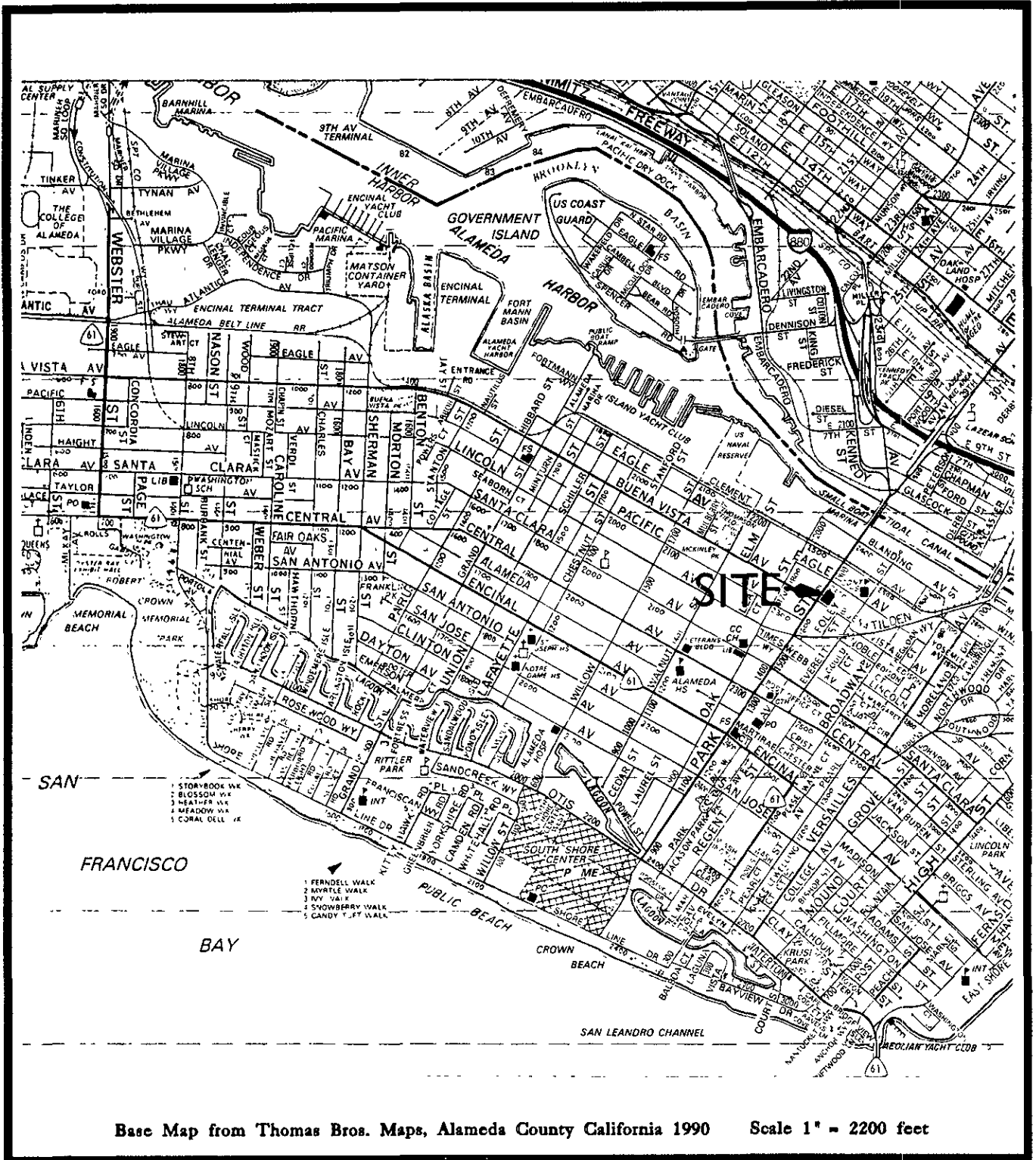


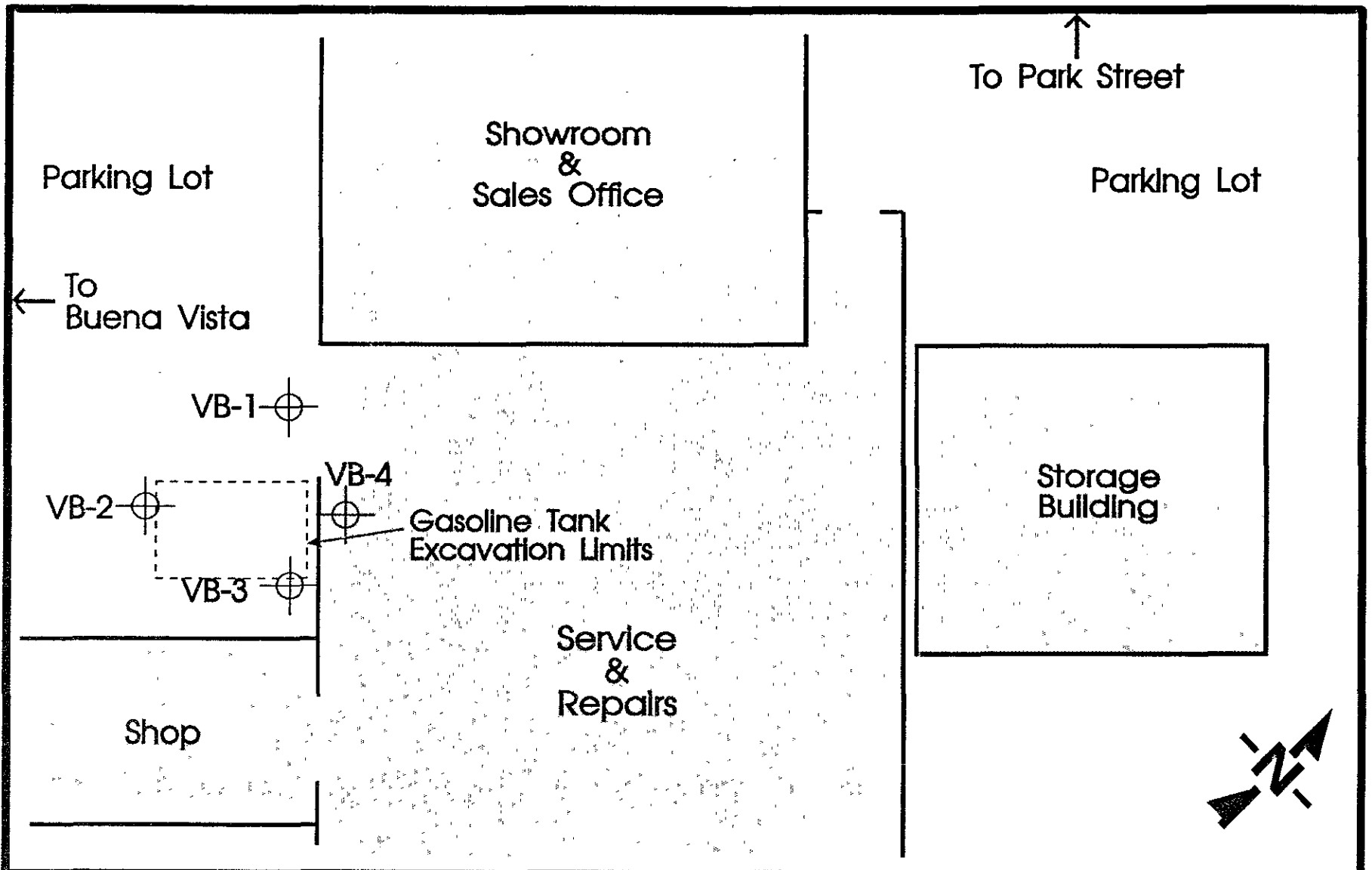
CHART 4
MW-5 AND MW-6 QUARTERLY SAMPLING
RESULTS FOR CHLOROBENZENE

CAVANAUGH MOTORS





<h1>SITE VICINITY MAP</h1> <h2>Cavanaugh Motors</h2> <p>1700 Park Street Alameda, California</p> <p>Project No. 109001 May 1992</p>		<h1>PLATE</h1> <h1>1</h1>
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LEGEND

VB-0 Verifying Boring Location



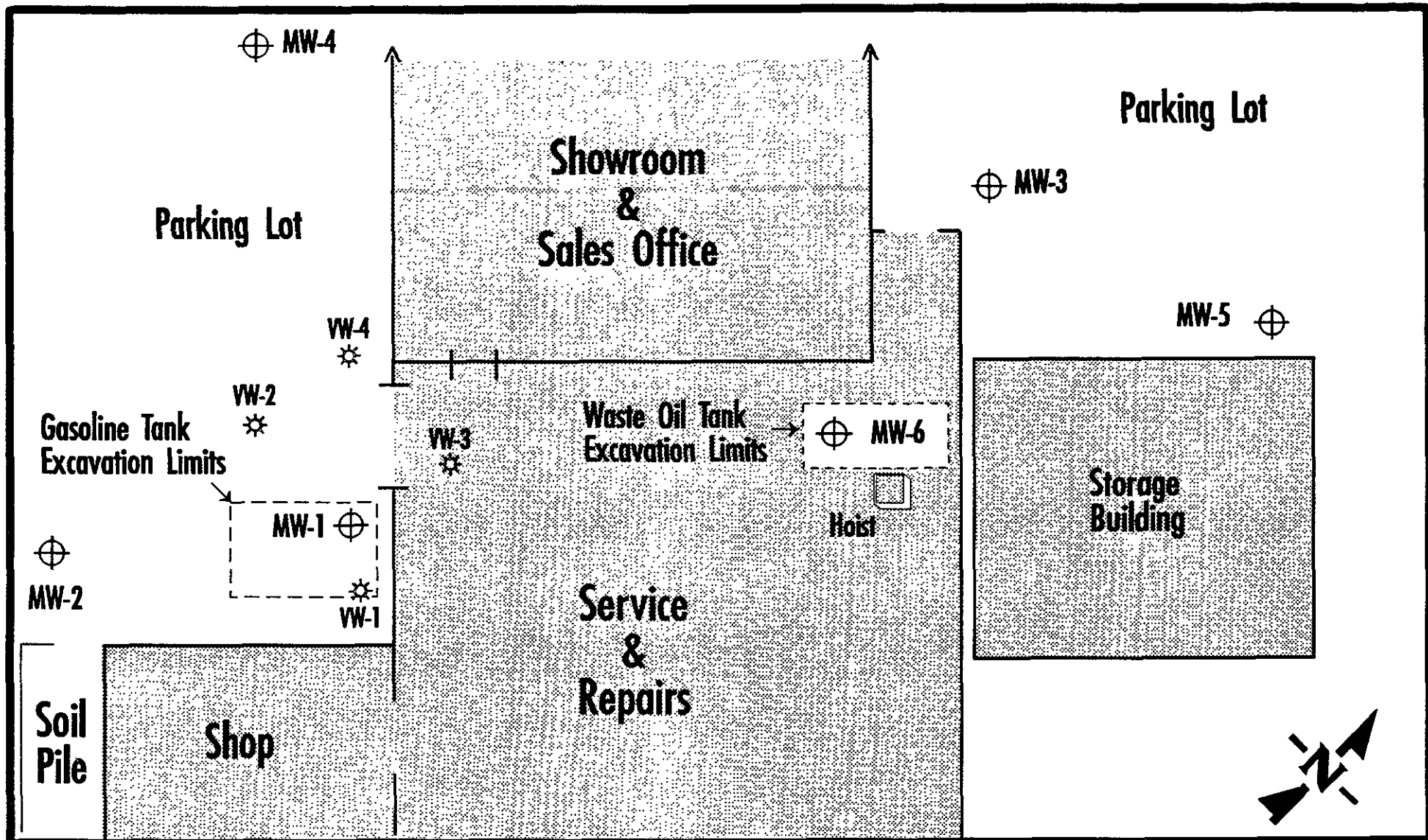
Project No. 101090

Sept. 15, 1994

Scale 1 Inch = 20 feet

LOCATIONS OF VERIFYING BORINGS
Cavanaugh Motors

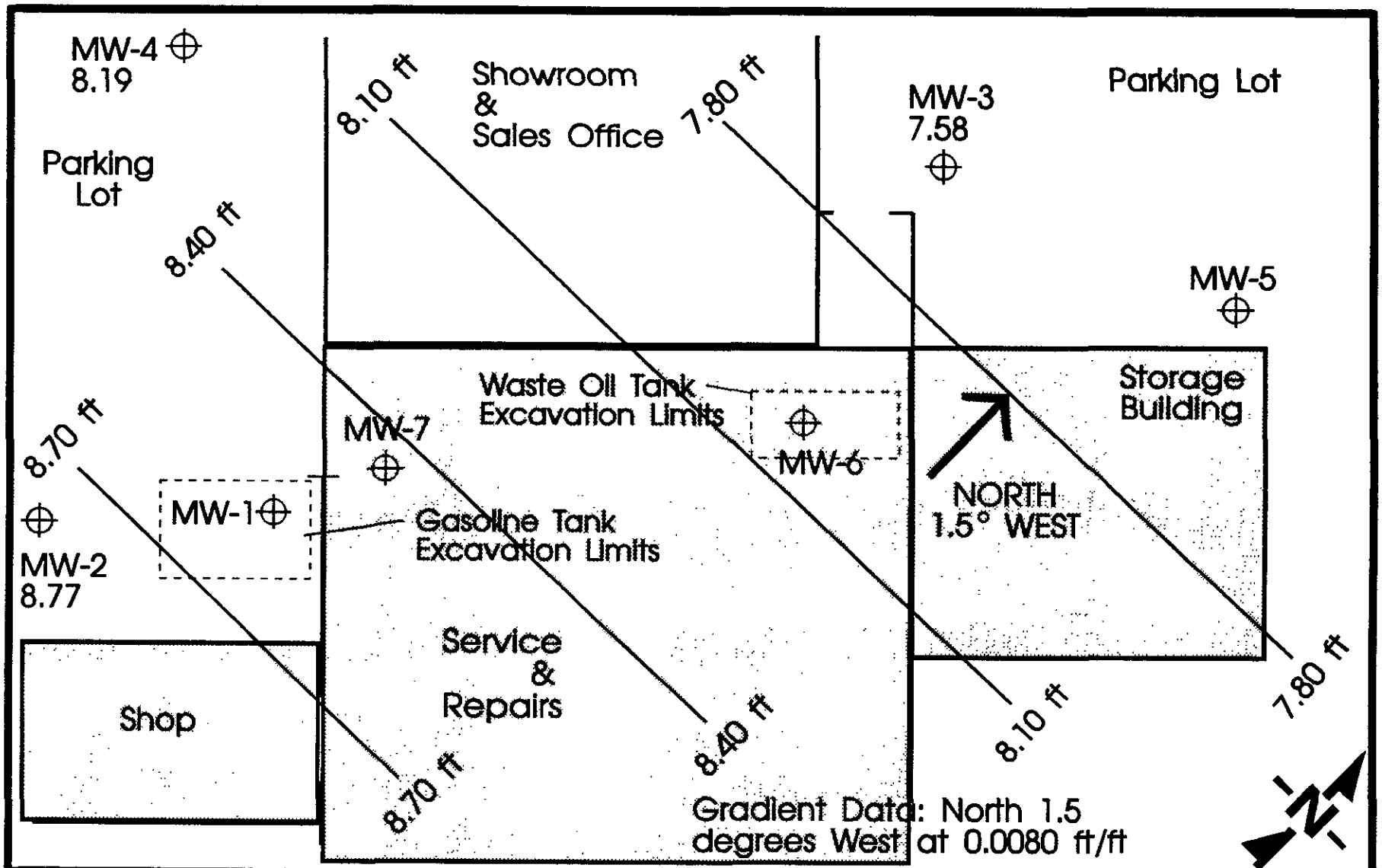
1700 Park Street, Alameda California




LEGEND	
MW-0	Monitoring Well
VW-1	Vapor Extraction Well
[Stippled Box]	Building Interiors

Project No. 101090
 July, 1994
 Scale 1 inch = 20 feet

SITE PLAN
Cavanaugh Motors
 1700 Park Street, Alameda California



LEGEND


 MW-0
 1.00 ft
 Monitoring Well with elevation
 of groundwater in feet MSL.

Project# 101090 Sept. 1994
 Scale 1 inch = 20 feet

**GROUNDWATER GRADIENT
 MAP**
Cavanaugh Motors
 1700 Park Street, Alameda Ca

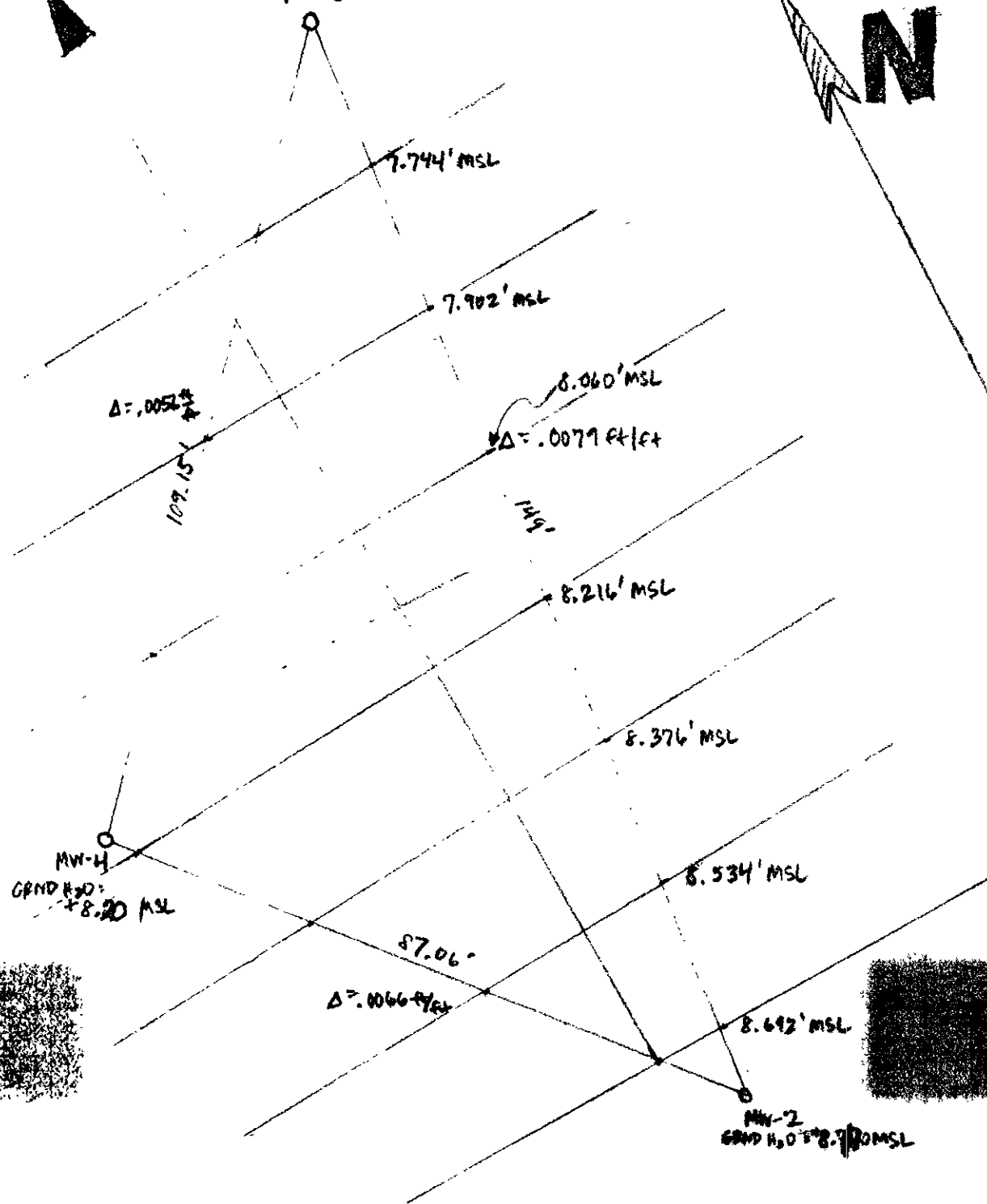
CAVANAUGH 101090
GROUNDWATER WORKSHEET

SCALE 1" = 20'

9/15/94

AVERAGE GRADIENT =
0.0080 ft/ft 115° W

GRND H₂O: +7.61' MSL
MW-3



ATTACHMENT 1
LOGS OF BORINGS



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

6997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Cavanaugh Motors
700 Park Street
Alameda, CA 94501

PERMIT NUMBER 94486
LOCATION NUMBER

AGENT
Name Dave Cavanaugh
Address same
City Zip

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name TMC Environmental Inc.
Address 13909 San Pablo Ave Ste 101
City San Pablo
Phone 510-232-8366
Zip 94806
FAX: (510) 232-5133

A. GENERAL

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

TYPE OF PROJECT
Construction Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination
Monitoring X Well Destruction

B. WATER WELLS, INCLUDING PIEZOMETERS

- 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for domestic and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE
Domestic Industrial Other
Municipal Irrigation

DRAINAGE METHOD:
Rotary Air Rotary Auger X
Other

DRILLER'S LICENSE NO. C-57 582696

WELL PROJECTS
Drill Hole Diameter 8 1/4 in. Maximum Depth 15 ft.
Casing Diameter 5 in. Number 1
Surface Seal Depth 4 ft.

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

ESTIMATED STARTING DATE 8-25-94
ESTIMATED COMPLETION DATE 8-25-94

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

APPLICANT'S SIGNATURE Tom Gheysen Date 8-24-94

Approved Wyman Hong Date 24 Aug 94

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

SUBSURFACE LOG OF BORING NUMBER

VB-1

PROJECT NAME: Cavanaugh Motors		PROJECT #: 101090	SHEET 1 OF 1
LOCATION: 1700 Park Street, Alameda, California			DATE: 08-25-1994
DRILLER: Solis Exploration Services		LICENSE #: C57582696	
DRILL METHOD: CME 55 8" Hollow Stem Auger		SAMPLE METHOD: Split spoon; 2" x 18"; 140# @ 30"	
AGENCY: Alameda County Zone 7		INSPECTOR: N/A	BORING DIA: ~8"
LOGGER: Michael Princevalle	AGENCY PERMIT NO. : 94486	TOTAL DEPTH: 7'	

**** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIONS ****

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	USCS	DESCRIPTION	STAIN/ OTHER
						2.5		Surface: Concrete 0 - 3"	
VB1-1	5 - 5 1/2'	80	12	2.5		5		Sandy CLAY; Brown with red-orange mottles; Very firm; Moist.	No
VB1-2	6 1/2 - 7'	80	14	3		7.5		SAND; moderately graded, with fingers of clayey sand; Brown with red-orange and grey mottles; Firm; Very moist.	No
						10			

THIS LOG OF SUBSURFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

SUBSURFACE ENVIRONMENTAL LOG OF BORING NUMBER VB-2

PROJECT NAME: Cavanaugh Motors		PROJECT NUMBER: 101090	SHEET 1 OF 1
LOCATION: 1700 Park Street, Alameda, California		DATE: 8-25-94	
DRILLER: Soils Exploration Svcs.	DRILL METHOD: CME 55 8" Hollow Stem Auger		
LICENSE #: C57582696	SAMPLE METHOD: Split spoon, 2" x 18"; 140# @ 30"		
AGENCY: Alameda County Zone 7	INSPECTOR: N/A	BORING DIA.: 8"	
LOGGER: Michael Princevalle	APPROVED: Michael Princevalle	TOTAL DEPTH: 7 1/2'	

** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIONS **

SAMPLE LABEL	SAMPLE DEPTH	REC /FT	BLOWS	VAPOR PPM	MODE	DEPTH FEET	SOIL TYPE	DESCRIPTION	STAIN/OTHER
						0		Surface: Concrete 0 - 4"	
						2.5			
VB2-1	5-5½'	1?	2			5		Sandy CLAY; Brown with red-orange mottles; Very firm; Moist.	No

VB2-2	6½-7'	12	2			7.5		Medium-grain SAND, with some fines; Brown with red-orange mottles; Friable; Very Moist.	No
						10			

THIS LOG OF SUBSURFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRANTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

SUBSURFACE LOG OF BORING NUMBER

VB-3

PROJECT NAME: Cavanaugh Motors		PROJECT #: 101090	SHEET 1 OF 1
LOCATION: 1700 Park Street, Alameda, California			DATE: 08-25-1994
DRILLER: Soils Exploration Services		LICENSE #: C57582696	
DRILL METHOD: CME 55 8" Hollow Stem Auger		SAMPLE METHOD: Split spoon; 2" x 18"; 140# @ 30"	
AGENCY: Alameda County Zone 7		INSPECTOR: N/A	BORING DIA: ~ 8"
LOGGER: Michael Princevalle	AGENCY PERMIT NO.: 94486	TOTAL DEPTH: 7 1/2'	

**** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIONS ****

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	USCS	DESCRIPTION	STAIN/ OTHER
						2.5		Surface: Concrete 0 - 3"	
VB3-1	5 - 5 1/2'	75	12	2		5		SAND, medium-grain, moderately graded; Brown with red-orange mottles; Moist; Loose.	No
VB3-2	7 - 7 1/2'	80	12	2.5		7.5		Clayey, medium-grain SAND; Gray-brown; with few, faint red-orange mottles; Very moist; Firm.	No
						10			

THIS LOG OF SUBSURFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

SUBSURFACE ENVIRONMENTAL LOG OF BORING NUMBER VB-4

PROJECT NAME: Cavanaugh Motors		PROJECT NUMBER: 101090	SHEET 1 OF 1
LOCATION: 1700 Park Street, Alameda, California		DATE: 8-25-94	
DRILLER: TMC Environmental, Inc. Tom Ghigliotto	DRILL METHOD: Hand Auger		
LICENSE #: C57582696	SAMPLE METHOD: Hand-driven split spoon 2" x 6"		
AGENCY: Alameda County Zone 7	INSPECTOR: N/A	BORING DIA.: 4"	
LOGGER: Michael Princevalle	APPROVED: Michael Princevalle	TOTAL DEPTH: 7½'	

** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIONS **

SAMPLE LABEL	SAMPLE DEPTH	REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	SOIL TYPE	DESCRIPTION	STAIN/OTHER
						0		Surface: Concrete 0 - 8"	
						2.5		SAND; Brown; Moist; Loose.	No
VB4-1	5 3/4-6'	100	---	3.5		5		SAND; Brown; Moist; Loose.	No
VB4-2	7-7½'	100	---	2		7.5		Clayey SAND: Brown, gray-brown; Very moist; Friable.	No
						10			

THIS LOG OF SUBSURFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRANTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

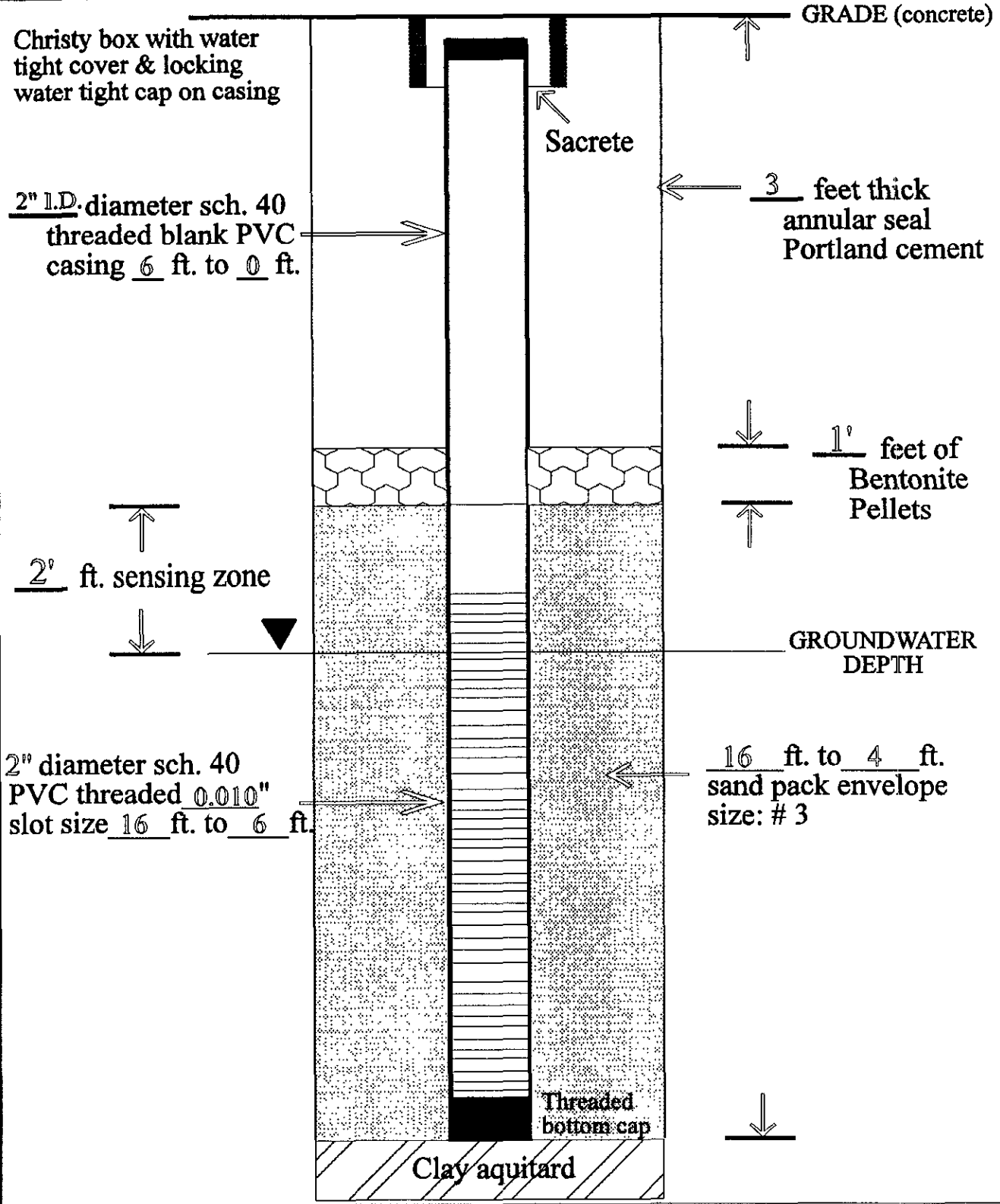
SUBSURFACE ENVIRONMENTAL LOG OF BORING NUMBER MW-7

PROJECT NAME: Cavanaugh Motors		PROJECT NUMBER: 101090	SHEET 1 OF 1
LOCATION: 1700 Park Street, Alameda, California		DATE: 8-25-94	
DRILLER: Soils Exploration Services		DRILL METHOD: CME 55; 8" Hollow Stem Auger	
LICENSE #: C57582696		SAMPLE METHOD: Split spoon; 2" x 18'; 140# @ 30"	
AGENCY: Alameda County Zone 7		INSPECTOR: N/A	BORING DIA.: 8"
LOGGER: Michael Princevalle	APPROVED: Michael Princevalle	TOTAL DEPTH: 16'	

** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIONS **

SAMPLE LABEL	SAMPLE DEPTH	REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	SOIL TYPE	DESCRIPTION	STAIN/ OTHER
						0		Surface: Contrete 0 - 5"	
						2.5			
MW7-1	5-5½'	80	14	2		5		Clayey medium-grain SAND; Brown, with many red-orange mottles; firm; moist.	No
						7.5		Same; Less % Clay; Very moist.	No
	6½-7'	80	--	2		10		SAND, well graded; Brown; Friable; Wet.	No
	10-11½'	80	32			12.5			
	13½-15'	80	30			15		SAND; moderately graded, finer than above; Brown, with red-orange striations; Friable; Wet.	
						17.5		Bottom of hole @ 16'. Well Construction: Sch. 40 PVC; 2" I.D. Slot: 6-16; 0.010" Slot Size, Blank; 0-6' Sand: 2½ sacks #3 Lonestar; 4-16'. Bentonite: 3-4' Portland Cement Grout: 0-3'.	

THIS LOG OF SUBSURFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRANTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.



WELL CONSTRUCTION DIAGRAM



ATTACHMENT 2
LABORATORY REPORTS

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8020

CLIENT:

TMC Environmental, Inc.
13908 San Pablo Ave., Suite #101
San Pablo, CA 94806

DATE SAMPLED: 09-15-94

DATE RECEIVED: 09-16-94

DATE REPORTED: 09-27-94

MATRIX: WATER

AMER ID: E513

PROJECT MANAGER: Tom Ghigliotto

PROJECT: 1700 Park St., #101090

Client I.D.	AMER I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	DF
MW-2	E4091617	ND	ND	ND	ND	1
MW-4	E4091618	ND	ND	ND	ND	1
MW-3	E4091619	ND	ND	ND	ND	1
MW-5	E4091620	ND	ND	ND	ND	1
MW-6	E4091621	ND	ND	ND	ND	1
MW-7	E4091622	ND	ND	ND	ND	1
MW-1	E4091623	150	340	100	410	1

Units ug/l ug/l ug/l ug/l

Detection Limits (DL) 0.5ug/l 0.5ug/l 0.5ug/l 0.5ug/l

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection. Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor.

Reviewed By



Lei Chen, Laboratory Manager

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:

TMC Environmental, Inc.
13908 San Pablo Ave., Suite #101
San Pablo, CA 94806

DATE SAMPLED: 09-15-94

DATE RECEIVED: 09-16-94

DATE REPORTED: 09-27-94

MATRIX: WATER

AMER ID: E513

PROJECT MANAGER: Tom Ghigliotto

PROJECT: 1700 Park St., #101090

Client I.D.	AMER I.D.	8015M/ TPH-GASOLINE	DF
MW-2	E4091617	ND	1
MW-4	E4091618	ND	1
MW-3	E4091619	ND	1
MW-5	E4091620	ND	1
MW-6	E4091621	ND	1
MW-7	E4091622	ND	1
MW-1	E4091623	4900	1

Units ug/l

Detection Limits (DL) 50ug/l

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.
Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor.

Reviewed By



Lei Chen, Laboratory Manager

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:

TMC Environmental, Inc.
13908 San Pablo Ave., Suite #101
San Pablo, CA 94806

DATE SAMPLED: 09-15-94

DATE RECEIVED: 09-16-94

DATE REPORTED: 09-27-94

MATRIX: WATER

AMER ID: E513

PROJECT MANAGER: Tom Ghigliotto

PROJECT: 1700 Park St., #101090

Client I.D.	AMER I.D.	8015M/ TPH-DIESEL	DF
MW-3	E4091619	ND	1
MW-5	E4091620	ND	1
MW-6	E4091621	ND	1
Units		ug/l	
Detection Limits (DL)		50ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By



Lei Chen, Laboratory Manager

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHODS 5520F (TOG)

CLIENT:

TMC Environmental, Inc.
13908 San Pablo Ave., Suite #101
San Pablo, CA 94806

DATE SAMPLED: 09-15-94

DATE RECEIVED: 09-16-94

DATE REPORTED: 09-27-94

MATRIX: WATER

AMER ID: E513

PROJECT MANAGER: Tom Ghigliotto

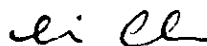
PROJECT: 1700 Park St., #101090

Client I.D.	AMER I.D.	5520F TOG	DF
MW-3	E4091619	ND	1
MW-5	E4091620	ND	1
MW-6	E4091621	ND	1

Units mg/l

Detection Limits (DL) 5.0mg/l

Reported by:



Lei Chen, Laboratory Manager

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT (ELAP Certificate No. 1909) EPA METHODS 601

Client: TMC Environmental
Proj. Manager: Tom Ghigliotto
Matrix: WATER

Date Sampled: 09-15-94
Date Received: 09-16-94
Date Reported: 09-27-94
Lab. Report #: E513

Sample Name: MW-3, E4091619
PROJECT: 1700 Park Street, #101090

ANALYTES	RESULTS	MDL	ANALYTES	RESULTS	MDL
	ug/l	ug/l		ug/l	ug/l
Bromodichloromethane	ND	0.8	trans-1,2-Dichloroethene	ND	0.4
Bromoform	ND	0.8	1,2-Dichloropropane	ND	0.4
Bromomethane	ND	1.2	cis-1,3-Dichloropropene	ND	0.8
Carbon tetrachloride	ND	0.4	trans-1,3-Dichloropropene	ND	0.8
Chlorobenzene	ND	0.4	Methylene Chloride	ND	2.0
Chloroethane	ND	0.5	1,1,2,2-Tetrachloroethane	ND	0.4
2-Chloroethylvinyl ether	ND	0.4	tetrachloroethene	ND	0.4
Chloroform	ND	0.4	1,1,1-Trichloroethane	ND	0.4
Chloromethane	ND	1.2	1,1,2-Trichloroethane	ND	0.5
Dibromochloromethane	ND	0.8	Trichloroethene	ND	0.4
1,2-Dichlorobenzene	ND	0.8	Trichlorofluoromethane	ND	0.8
1,3-Dichlorobenzene	ND	0.4	Vinyl Chloride	ND	0.5
1,4-Dichlorobenzene	ND	0.4			
Dichlorobenzene	ND	1.2	Benzene	NR	0.5
1,1-Dichloroethane	ND	0.4	Toluene	NR	0.5
1,2-Dichloroethane	ND	0.8	Ethyl benzene	NR	0.5
1,1-Dichloroethene	ND	0.4	Total Xylene	NR	0.5

NOTES

* Indicates extra compound requested by the client

NR-Analysis not requested

COC-Chain of Custody

ND- Analytes not detected at, or above the stated detection limit

ppb- ug/l for waters, ug/kg for soils

DL- Detection Limit Factor

SDL- Sample Detection Limit - Multiply DL by the DL Factor to obtain the detection limit for a specific analyte

MDL- Method Detection Limit

Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor

PROCEDURES:

This analysis was performed in using EPA Method 8010, EPA Method 8020, and EPA Method 5030

CERTIFICATION:

California Department of Health Services ELAP Certificate #1909

Reported by:



Lei Chen, Laboratory Manager

AMER

Advanced Materials Engineering Research, Inc.

**ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHODS 601**

Client: TMC Environmental
Proj. Manager: Tom Ghigliotto
Matrix: WATER

Date Sampled: 09-15-94
Date Received: 09-16-94
Date Reported: 09-27-94
Lab. Report #: E513

**Sample Name: MW-5, E4091620
PROJECT: 1700 Park Street, #101090**

ANALYTES	RESULTS	MDL	ANALYTES	RESULTS	MDL
	ug/l	ug/l		ug/l	ug/l
Bromodichloromethane	ND	0.8	trans-1,2-Dichloroethene	ND	0.4
Bromoform	ND	0.8	1,2-Dichloropropane	ND	0.4
Bromomethane	ND	1.2	cis-1,3-Dichloropropene	ND	0.8
Carbon tetrachloride	ND	0.4	trans-1,3-Dichloropropene	ND	0.8
Chlorobenzene	ND	0.4	Methylene Chloride	ND	2.0
Chloroethane	ND	0.5	1,1,2,2-Tetrachloroethane	ND	0.4
2-Chloroethylvinyl ether	ND	0.4	tetrachloroethene	ND	0.4
Chloroform	ND	0.4	1,1,1-Trichloroethane	ND	0.4
Chloromethane	ND	1.2	1,1,2-Trichloroethane	ND	0.5
Dibromochloromethane	ND	0.8	Trichloroethene	ND	0.4
1,2-Dichlorobenzene	ND	0.8	Trichlorofluoromethane	ND	0.8
1,3-Dichlorobenzene	ND	0.4	Vinyl Chloride	ND	0.5
1,4-Dichlorobenzene	ND	0.4			
Dichlorobenzene	ND	1.2	Benzene	NR	0.5
1,1-Dichloroethane	ND	0.4	Toluene	NR	0.5
1,2-Dichloroethane	ND	0.8	Ethyl benzene	NR	0.5
1,1-Dichloroethene	ND	0.4	Total Xylene	NR	0.5

NOTES

* Indicates extra compound requested by the client

NR-Analysis not requested

COC-Chain of Custody

ND- Analytes not detected at, or above the stated detection limit

ppb- ug/l for waters, ug/kg for soils

DL- Detection Limit Factor

SDL- Sample Detection Limit - Multiply DL by the DL Factor to obtain the detection limit for a specific analyte

MDL- Method Detection Limit

Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor

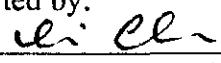
PROCEDURES:

This analysis was performed in using EPA Method 8010, EPA Method 8020, and EPA Method 5030

CERTIFICATION:

California Department of Health Services ELAP Certificate #1909

Reported by:


Lei Chen, Laboratory Manager

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHODS 601

Client: TMC Environmental
Proj. Manager: Tom Ghigliotto
Matrix: WATER

Date Sampled: 09-15-94
Date Received: 09-16-94
Date Reported: 09-27-94
Lab. Report #: E513

Sample Name: MW-6, E4091621
PROJECT: 1700 Park Street, #101090

ANALYTES	RESULTS	MDL	ANALYTES	RESULTS	MDL
	ug/l	ug/l		ug/l	ug/l
Bromodichloromethane	ND	0.8	trans-1,2-Dichloroethene	ND	0.4
Bromoform	ND	0.8	1,2-Dichloropropane	ND	0.4
Bromomethane	ND	1.2	cis-1,3-Dichloropropene	ND	0.8
Carbon tetrachloride	ND	0.4	trans-1,3-Dichloropropene	ND	0.8
Chlorobenzene	4.6	0.4	Methylene Chloride	ND	2.0
Chloroethane	ND	0.5	1,1,2,2-Tetrachloroethane	ND	0.4
2-Chloroethylvinyl ether	ND	0.4	tetrachloroethene	ND	0.4
Chloroform	ND	0.4	1,1,1-Trichloroethane	ND	0.4
Chloromethane	ND	1.2	1,1,2-Trichloroethane	ND	0.5
Dibromochloromethane	ND	0.8	Trichloroethene	ND	0.4
1,2-Dichlorobenzene	ND	0.8	Trichlorofluoromethane	ND	0.8
1,3-Dichlorobenzene	ND	0.4	Vinyl Chloride	ND	0.5
1,4-Dichlorobenzene	ND	0.4			
Dichlorobenzene	ND	1.2	Benzene	NR	0.5
1,1-Dichloroethane	ND	0.4	Toluene	NR	0.5
1,2-Dichloroethane	ND	0.8	Ethyl benzene	NR	0.5
1,1-Dichloroethene	ND	0.4	Total Xylene	NR	0.5

NOTES

* Indicates extra compound requested by the client

NR-Analysis not requested

COC-Chain of Custody

ND- Analytes not detected at, or above the stated detection limit

ppb- ug/l for waters, ug/kg for soils

DL- Detection Limit Factor

SDL- Sample Detection Limit - Multiply DL by the DL Factor to obtain the detection limit for a specific analyte

MDL- Method Detection Limit

Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor


PROCEDURES:

This analysis was performed in using EPA Method 8010, EPA Method 8020, and EPA Method 5030

CERTIFICATION:

California Department of Health Services ELAP Certificate #1909

Reported by:


Lei Chen, Laboratory Manager

EPA M. 8015/8020 TEST QA/QC TABLE

AMER WORKORDER: E513

AMER I.D. Number: E4091609-SP & E4091619-MSP
 TEM, Project: #101090
 Ext/Prep. Method: EPA 5030, EPA 3510, DHS TPH
 Date: 09-20-94
 Analyst: RL

Analytical Method: EPA M. 8015/8020
 Analysis date: 09-20-94
 Analyst: RL
 Matrix: Water
 Unit: ug/l

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
Benzene	0.00	20.00	16.89	84	15.21	76	80	76	127	10	11
Toluene	0.00	20.00	17.23	86	16.33	82	84	76	125	5	13
Chlorobenzene	0.00	20.00	16.72	84	15.71	79	81	75	130	6	13
TPH-Gasoline	0.00	500.00	408.60	82	416.90	83	83	70	130	2	30
TPH - Diesel	0.00	1000.00	951.00	77	967.00	64	71	70	125	18	30

Notes:

- Spike Level- Level of Concentration Added to the Sample
- MS Result- Matrix Spike Result
- MS %R- Matrix Spike Percent Recovery
- MSD Result- Matrix Spike Duplicate Result
- MSD %R- Matrix Spike Duplicate Percent Recovery
- LCL- Lower Criteria Level
- UCL- Upper Criteria Level
- RPD- Relative Percent Difference



TMC Environmental, Inc.
 13908 San Pablo Ave.
 Suite 101
 San Pablo, California
 (510) 232-8366

CHAIN OF CUSTODY RECORD
ANALYSIS REQUEST FORM
 FOR
ENVIRONMENTAL SAMPLING

JOB # 101090	JOB ADDRESS: 1700 Park Street Alameda, CA	SAMPLER: Tom Ghigliotto - <i>DON CHUNG</i> <i>JEFF GORKE</i>
LABORATORY NAME: Advanced Materials Engineering Research, Inc. Sunnyvale, CA 94086		

LAB ID NO.	SAMPLE LABEL	SOIL	WATER	DATE	TIME	TVH-GAS	TEH-DIESEL	BTEX-8020	FULL SCAN	EPA 8010	EPA 8240	EPA 8270	OIL & GREASE	
EQB-1	EQB-2		X	9/15/94	1142									6 WA 1 Lit
	MW-2		X	9/15/94	1158	X		X						3 WA
	MW-4		X	9/15/94	1230	X		X						3 WA
	MW-3		X	9/15/94	1323	X	X	X		X			X	6 WA 2 Lit
	MW-5		X	9/15/94	1400	X	X	X		X			X	6 WA 2 Lit
	MW-6		X	9/15/94	1548	X	X	X		X			X	6 WA 2 Lit
	MW-7		X	9/15/94	1630	X		X						3 WA
	MW-1		X	9/15/94	1245	X		X						3 WA

Special Instructions:

Relinquished By:

Received By:

(Print Name) DONALD CHUNG	Date: 9/16/94	(Print Name) Jennifer Alvarez
(Signature) <i>Donald Chung</i>	Time: 8:55 am	(Signature) <i>Jennifer Alvarez</i>
(Print Name) Jennifer Alvarez	Date: 9/16/94	(Print Name) <i>Esteban Lopez</i>
(Signature) <i>Jennifer Alvarez</i>	Time: 11:32 am	(Signature) <i>[Signature]</i>
(Print Name)	Date: 9/16/94	(Print Name) Lei Chen
(Signature)	Time: 12:59 pm	(Signature) <i>Lei Chen</i>
(Print Name)	Date:	(Print Name)
(Signature)	Time:	(Signature)

LABORATORY NOTES: _____ DAYS TURNAROUND TIME FOR ANALYSIS RESULTS
 PLEASE INCLUDE SAMPLE CONDITION REPORT WITH RESULTS

PLEASE FAX A COPY OF THE ANALYTICAL RESULTS TO THE FOLLOWING:

TMC ENVIRONMENTAL, INC. AT (510) 232-5133

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8020

CLIENT:

TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806

DATE SAMPLED: 08-25-94

DATE RECEIVED: 08-26-94

DATE REPORTED: 09-06-94

MATRIX: SOIL

AMER ID: E413

PROJECT MANAGER: Tom Ghigliotto

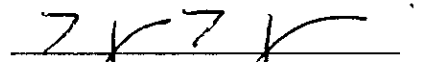
PROJECT: Cavanaugh, #101090

Client I.D.	AMER I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	DF
MW7-1	E4082621	ND	ND	ND	ND	1
MW7-2	E4082622	ND	ND	ND	ND	1
VB1-1	E4082623	ND	ND	ND	ND	1
VB1-2	E4082624	ND	ND	ND	ND	1
VB2-1	E4082625	ND	ND	ND	ND	1
VB2-2	E4082626	ND	ND	ND	ND	1
VB3-1	E4082627	ND	ND	ND	ND	1
VB3-2	E4082628	ND	ND	12	ND	1
VB4-1	E4082629	ND	ND	ND	ND	1
VB4-2	E4082630	ND	ND	ND	ND	1

Units	ug/kg	ug/kg	ug/kg	ug/kg
Detection Limits (DL)	5.0ug/kg	5.0ug/kg	5.0ug/kg	5.0ug/kg

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection. Sample Detection Limit is equal to the Method Detection Limit X the Dilution Factor.

Reviewed By


Kayvan Kimyai, Senior Chemist

AMER

Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:

TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806

DATE SAMPLED: 08-25-94

DATE RECEIVED: 08-26-94

DATE REPORTED: 09-06-94

MATRIX: SOIL

AMER ID:E413

PROJECT MANAGER: Tom Ghigliotto

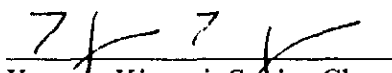
PROJECT: Cavanaugh, #101090

Client I.D.	AMER I.D.	8015M/ TPH-GASOLINE	DF
MW7-1	E4082621	ND	1
MW7-2	E4082622	ND	1
VB1-1	E4082623	ND	1
VB1-2	E4082624	ND	1
VB2-1	E4082625	ND	1
VB2-2	E4082626	ND	1
VB3-1	E4082627	ND	1
VB3-2	E4082628	ND	1
VB4-1	E4082629	ND	1
VB4-2	E4082630	ND	1

Detection Limits (DL) 1.0 mg/kg

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By


Kayvan Kimyai, Senior Chemist

EPA M. 8015/8020 TEST QA/QC TABLE

AMER WORKORDER: E413

AMER I.D. Number: E4082501-MSP
 TMC Environmental, Project: #101-14.1
 Ext/Prep. Method: EPA 5030, DHS TPH
 Date: 08-31-94
 Analyst: RL

Analytical Method: EPA M. 8015/8020
 Analysis date: 08-31-94
 Analyst: RL
 Matrix: Soil
 Unit: mg/kg

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
Benzene	0.00	0.050	0.045	90	0.046	92	91	66	142	2	21
Toluene	0.00	0.050	0.046	92	0.045	90	91	59	139	2	21
Chlorobenzene	0.00	0.050	0.045	90	0.046	92	91	60	133	2	21
TPH -g	0.00	1.250	0.887	71	0.763	61	66	60	130	15	30

Notes:

- Spike Level- Level of Concentration Added to the Sample
- MS Result- Matrix Spike Result
- MS %R- Matrix Spike Percent Recovery
- MSD Result- Matrix Spike Duplicate Result
- MSD %R- Matrix Spike Duplicate Percent Recovery
- LCL- Lower Criteria Level
- UCL- Upper Criteria Level
- RPD- Relative Percent Difference



TMC ENVIRONMENTAL, INC.
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 101090	Project Name: CAUNAUGH	Project Contact: Tom Ghigliotto	Sampler: Tom Ghigliotto	Page 1 of 1
Project Address: 1700 PARK STREET, ALAMEDA CA			Turnaround Time: 5 days	

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TVH-GAS BTEX	TEH-DIESEL	BTEX	ORGANIC LEAD	REMARKS ADDITIONAL ANALYSIS
	8/25/94	9:50A	X		MW 7-1	X				
	8/25/94	10:05	X		MW 7-2	X				
	8/25/94	12:50	X		VB1-1	X				
	8/25/94	12:55	X		VB1-2	X				
	8/25/94	1:38	X		VB2-1	X				
	8/25/94	1:45	X		VB2-2	X				
	8/25/94	2:42	X		VB3-1	X				
	8/25/94	2:50	X		VB3-2	X				
	8/25/94	3:10	X		VB4-1	X				
	8/25/94	3:15	X		VB4-2	X				

Relinquished by, Print Name: Tom Ghigliotto Signature: <i>Tom Ghigliotto</i>	Date: 8/25/94 Time: 4:00pm	Received by, Print name: M. Procevalle Signature: <i>Michael Procevalle</i>	Date: 8/25/94 Time: 4:00
Relinquished by, Print name: Michael Procevalle Signature: <i>Michael Procevalle</i>	Date: 8/26/94 Time: 12:35	Received by, Print name: SANTOS LOPEZ Signature: <i>Santos Lopez</i>	Date: 8/26 Time: 12:35
Relinquished by, Print name: <i>SANTOS LOPEZ</i>	Signature: <i>Santos Lopez</i>	Date: 8/24/94 Time: 2:00pm	

By signature the laboratory accepts the listed samples in good condition with appropriate containers, temperatures, and intact custody seals.

Received by Laboratory, Print Name of Laboratory: AMER
 Received by Laboratory personnel, Print Name: Kayvon Kimani
 Laboratory Certification Number:
 Signature: *Kayvon Kimani* Date: 8/26/94 Time: 2:00pm

ATTACHMENT 3
RECORD OF WATER SAMPLE COLLECTION

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW1	DATE COLLECTED: 9/15/94	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: TOM GHIGLIOTTO,	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND: CAPPED LOCKED DRY WATER DEBRIS REPLACE CAP REPLACE LOCK
 OTHER (describe)

TIME MEASURED	1030	1101			
DEPTH IN FEET (MEASURE TO 0.01')	8.04'	8.04'			

WELL PURGING METHOD

TOTAL DEPTH OF WELL: 14.27'	DEPTH TO WATER: 8.04'	DIAMETER OF WELL: 4'
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PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 12 GALLONS
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: SUBMERSABLE PUMP	OVA-FID VAPOR READING, ppm : 0
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WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1205	75.0	0.97	7.00	BLACK
4	1209	75.1	0.96	6.92	BLACK
* 8	1213	74.3	1.01	6.90	CLEAR W/ BLACK SPECKS
* 12	1217	74.1	0.96	6.91	CLEAR W/ BLACK SPECKS
* 16	1227	74.3	0.97	6.94	CLEAR
* 18 * 20	1231	73.9	0.97	6.92	CLEAR

SAMPLING METHOD: NEW DISPOSABLE BAILER	SAMPLE TURBIDITY (NTU):	TIME COLLECTED: 1245
PURGE WATER DESCRIPTION: <input checked="" type="checkbox"/> SHEEN <input checked="" type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> NO SHEEN <input type="checkbox"/> NO ODOR <input type="checkbox"/> OTHER (describe)		* - WELL DEWATERED 5 MINUTE RECHARGE

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW2	DATE COLLECTED: 9/15/94	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: DONALD CHUNG & JEFF GERKIN	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND: CAPPED LOCKED DRY WATER DEBRIS REPLACE CAP REPLACE LOCK
 OTHER (describe)

TIME MEASURED	1030	1110				
DEPTH IN FEET (MEASURE TO 0.01')	7.95	7.95				

WELL PURGING METHOD

TOTAL DEPTH OF WELL: 14.55'	DEPTH TO WATER: 7.95'	DIAMETER OF WELL: 4'
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 12.87 GALLONS
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm : 0
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WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1120	78.4	0.43	6.60	CLEAR
4	1128	75.0	0.39	7.03	CLEAR
8	1129	75.2	0.42	6.96	CLEAR
12	1132	75.1	0.35	6.97	CLEAR
13	1133	74.5	0.35	7.02	CLEAR

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU): 03.2	TIME COLLECTED: 1158
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> OTHER (describe)		
<input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR		

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW3	DATE COLLECTED: 9/15/94	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: DONALD CHUNG & JEFF GERKIN	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND: CAPPED LOCKED DRY WATER DEBRIS REPLACE CAP REPLACE LOCK
 OTHER (describe)

TIME MEASURED	1043				
DEPTH IN FEET (MEASURE TO 0.01')	8.28				

WELL PURGING METHOD

TOTAL DEPTH OF WELL: 14.52'	DEPTH TO WATER: 8.28'	DIAMETER OF WELL: 4"
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PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 12.17 GALLONS
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm : 0
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WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1304	79.0	0.47	6.65	CLEAR
4	1305	75.1	0.45	6.61	CLEAR
8	1307	73.0	0.42	6.62	CLEAR
12	1318	72.0	0.41	6.84	SL. CLOUDY, BROWN
13	1319	72.3	0.42	6.71	SL. CLOUDY, BROWN

SAMPLING METHOD: NEW DISPOSABLE BAILER	SAMPLE TURBIDITY (NTU): 12.6	TIME COLLECTED: 1323
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> OTHER (describe) <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR		

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW4	DATE COLLECTED: 9/15/94	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: DONALD CHUNG & JEFF GERKIN	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND: CAPPED LOCKED DRY WATER DEBRIS REPLACE CAP REPLACE LOCK
 OTHER (describe)

TIME MEASURED	1039				
DEPTH IN FEET (MEASURE TO 0.01')	8.15				

WELL PURGING METHOD

TOTAL DEPTH OF WELL: 14.55'	DEPTH TO WATER: 8.15'	DIAMETER OF WELL: 4'
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PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 12.48 GALLONS
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm: 0
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WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1216	77.9	0.54	7.15	CLEAR
4	1219	76.0	0.46	6.93	CLEAR
8	1221	74.6	0.42	6.40	CLEAR
12	1223	74.6	0.41	6.88	CLEAR
13	1224	74.2	0.40	6.92	CLEAR

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU): 4.6	TIME COLLECTED: 1230
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> OTHER (describe) <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR		

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW5	DATE COLLECTED: 9/15/94	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: DONALD CHUNG & JEFF GERKIN	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND: CAPPED LOCKED DRY WATER DEBRIS REPLACE CAP REPLACE LOCK
 OTHER (describe)

TIME MEASURED	1048				
DEPTH IN FEET (MEASURE TO 0.01')	7.68				

WELL PURGING METHOD

TOTAL DEPTH OF WELL: 19.18'	DEPTH TO WATER: 7.68'	DIAMETER OF WELL: 2'
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PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 5.87 GALLONS
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm : 0
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WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1341	84.3	0.52	6.60	SL. CLOUDY
2	1346	74.5	0.47	6.58	CLOUDY, BROWN
4	1347	72.8	0.48	6.58	CLOUDY, BROWN
5	1350	73.0	0.47	6.56	CLOUDY, LT. BROWN

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU): >200	TIME COLLECTED: 1400
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> OTHER (describe) <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR		

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW6	DATE COLLECTED: 9/15/94	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: DONALD CHUNG & JEFF GERKIN	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND: CAPPED LOCKED DRY WATER DEBRIS REPLACE CAP REPLACE LOCK
 OTHER (describe)

TIME MEASURED	1053				
DEPTH IN FEET (MEASURE TO 0.01')	8.10				

WELL PURGING METHOD

TOTAL DEPTH OF WELL: 19.05'	DEPTH TO WATER: 8.10'	DIAMETER OF WELL: 2'
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PURGE VOLUME= TOTAL DEPTH- WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 5.58 GALLONS
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm : 0
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WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1533	79.0	2.38	6.91	SL. CLOUDY
1.5	1534	73.2	2.18	6.99	CLOUDY, BROWN
3.0	1535	71.4	2.18	7.00	CLOUDY, BROWN
4.5	1536	70.5	1.92	6.98	VERY CLOUDY, BROWN
6.0	1542	70.2	1.88	6.98	VERY CLOUDY, BROWN

SAMPLING METHOD: NEW DISPOSABLE BAILER	SAMPLE TURBIDITY (NTU): 32.6	TIME COLLECTED: 1548
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> OTHER (describe) <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR		

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW7	DATE COLLECTED: 9/15/94	JOB NUMBER: 101090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: DONALD CHUNG & JEFF GERKIN	
LOCATION: 1700 PARK STREET ALAMEDA, CA		

WELL HEAD COND: CAPPED LOCKED DRY WATER DEBRIS REPLACE CAP REPLACE LOCK
 OTHER (describe)

TIME MEASURED	1058				
DEPTH IN FEET (MEASURE TO 0.01')	8.13				

WELL PURGING METHOD

TOTAL DEPTH OF WELL: 15.21'	DEPTH TO WATER: 8.13'	DIAMETER OF WELL: 2'
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PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 3.60 GALLONS
 VOLUME FACTOR = 0.17 FOR 2" CASING; 0.65 FOR 4" CASING; 1.47 FOR 6" CASING

PURGE METHOD: HONDA PUMP	OVA-FID VAPOR READING, ppm: 0
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WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY X 1000	pH	VISUAL TURBIDITY
0	1607	78.6	0.76	7.16	VERY CLOUDY, DARK BROWN
1	1610	78.5	0.84	7.06	VERY CLOUDY, DARK BROWN
2	1611	75.7	0.76	7.05	VERY CLOUDY, DARK BROWN
3	1612	74.4	0.74	7.04	VERY CLOUDY, DARK BROWN
4	1613	74.1	0.69	7.10	VERY CLOUDY, DARK BROWN

SAMPLING METHOD: NEW DISPOSALABLE BAILER	SAMPLE TURBIDITY (NTU): 20.1	TIME COLLECTED: 1630
PURGE WATER DESCRIPTION: <input type="checkbox"/> SHEEN <input type="checkbox"/> ODOR <input type="checkbox"/> SILTY <input type="checkbox"/> CLEAR <input type="checkbox"/> OTHER (describe) <input checked="" type="checkbox"/> NO SHEEN <input checked="" type="checkbox"/> NO ODOR		