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GROUNDWATER MONITORING AND PROGRESS REPORT

1700 Park Street
Alameda, California

MANAGEMENT AND CONSULTING

California Registered Environmental Assessors
California Certified Engineering Geologist
Oregon Registered Engineering Geologist
Oregon Registered UST Soil Cleanup Supervisors

"An Environmental Management Company"

GROUNDWATER MONITORING REPORT

Cavanaugh Motors Facility
1700 Park Street
Alameda, California

June 30, 1993

Prepared for

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

prepared by

TMC Environmental Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, California 94806
Project Number 101090

CERTIFICATION OF PROFESSIONAL SUPERVISION

Quarterly Monitoring and Progress Report
Cavanaugh Motors
1700 Park Street
Alameda, California

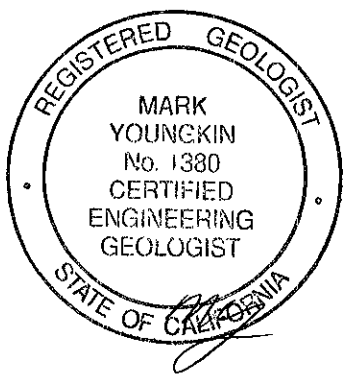
TMC ENVIRONMENTAL, Inc. supervised the preparation of this Groundwater Monitoring and Progress Report, dated June 30, 1993, for the Cavanaugh Motors facility in the City of Alameda, Alameda County, California. Techniques and standards of care common to the consulting geologic profession in California, 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 Professionals Code, State of California and the requirements of the California Regional Water Quality Control Board, San Francisco Bay Region.

TMC Environmental, Inc. certifying professional:

Mark T. Youngkin

Mark T. Youngkin, vice president
Certified Engineering Geologist No. EG-1380



License expires June 30, 1994.

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1700 PARK STREET, ALAMEDA, CALIFORNIA

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GROUNDWATER MONITORING AND PROGRESS REPORT
1700 Park Street, Alameda California

1. 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, accessible contaminated soils were excavated from the tank locations. Approximately 120 cubic yards were removed, and are now being treated on site.

Subsequently, six groundwater monitoring wells were installed 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 near the southern limits of the site. Monitoring well MW-4 is located in the western portion of the site, in the vicinity of the former gasoline tank. Groundwater monitoring well MW-6 is located within the limits of the former waste oil tank excavation. Monitoring Wells MW-3 and MW-5 are located in the down gradient direction from the former waste oil tank.

On May 19, 1993, TMC ENVIRONMENTAL, Inc. (**TMC**) recovered groundwater samples from the above-indicated wells. All samples were chemically analyzed for the target chemicals: 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, oil & grease and purgeable halocarbons. Samples from MW-1 continue to show the presence of gasoline and BTEX's. Samples from all other wells continue to have gasoline and BTEX levels below detection limits.

Samples from MW-6 continue to have detectable levels of diesel. Also, samples from MW-5 and MW-6 continue to have detectable levels cholorbenzene, but remain relatively low.

Variations in gasoline and BTEX levels of MW-1 and diesel levels of MW-6 are likely due to fluctuating groundwater levels contacting residual soil contamination in the former tank pits.

Chlorobenzene was reported in wells MW-5 and MW-6. Detectable levels of chlorobenzene were found in soil samples recovered during the waste oil tank removal. Concentrations of chlorobenzene in groundwater samples continued to decline over the past two sampling episodes.

Groundwater gradient and direction was estimated by measuring water levels at monitoring wells MW-2, MW-3 and MW-4. The down gradient direction and the horizontal gradient vary between quarterly monitoring measurements, apparently correlating with seasonal changes in groundwater elevation. Recent groundwater data indicates groundwater flows in a north/northwest direction (North, 7° west), at an average horizontal gradient of 0.014 ft/ft. The eight quarterly groundwater measurement episodes indicate a range of flow direction from N31W to N20E and a range of horizontal gradient from 0.005 ft/ft to 0.014 ft/ft.

Due to recent high groundwater levels at the site, the soil vapor recovery system (constructed at the site March, 1993) is temporarily shut off. When groundwater levels at the site drop sufficiently, soil vapor extraction will again commence.

2. 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 contact for TMC is Mr. Tom Edwards, president or Mr. Mark Youngkin, vice president. Mr. Edwards and Mr. Youngkin can be reached at (510) 232-8366.

2.4 SITE CONDITION

The site is presently being used for an automobile dealership. The property is in a commercial and residential neighborhood. Current activities include: a new car show-room, sales offices, parts storage and distribution, outside car storage, and vehicle repair shop. 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 and MW-6. These wells are constructed to monitor the shallow water bearing zone beneath the site.

2.5 GEOLOGY

The site is approximately than 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 rises to five feet bsg during winter rainfall.

2.6 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
80 Swan Way, Room 200, Oakland, California 94621

The officer overseeing this case is: Ms. Juliet Shin. Ms. Shin at can be called at (510) 271-4320.

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.

3. GROUNDWATER SAMPLING

On May 19, 1993 TMC recovered groundwater samples from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. The samples were chemically analyzed for the target chemicals: total volatile hydrocarbons (TVH) as gasoline and 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*
June 1990 Groundwater Sampling						
6-08-90	MW-1	28,000.	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
December 1990 Groundwater Sampling						
12-17-90	MW-1	7,200.	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

Date Sampled	*Monitoring Well*	*TPH gas ug/L*	*Benzene ug/L*	*Toluene ug/L*	*Ethyl benzene ug/L*	*Xylenes ug/L*
July 1991 Groundwater Sampling						
7-29-91	MW-1	21,000.	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
December 1991 Groundwater Sampling						
12-4-91	MW-1	4,300.	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
April 1992 Groundwater Sampling						
4-30-92	MW-1	16,000	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
July 1992 Groundwater Sampling						
7-28-92	MW-1	12,000	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
October 1992 Groundwater Sampling						
10-19-92	MW-1	5,000	400	710	170	750

Date Sampled	*Monitoring Well*	*TPH gas ug/L*	*Benzene ug/L*	*Toluene ug/L*	*Ethyl benzene ug/L*	*Xylenes ug/L*
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
February 1993 Groundwater Sampling						
2-24-93	MW-1	8,800	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
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
May 1993 Groundwater Sampling						
5-19-93	MW-1	24,000	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

ND- Not detected below reporting limits

The only well on-site to have detectable concentrations of gasoline and BTEX is well MW-1, located in the backfill of the former tank pit. Chart 1, MW1 Quarterly Sampling Results for Gasoline and Benzene, and Chart 2, Quarterly Sampling Results for BTEX show a fluctuating gasoline and BTEX concentrations over the past eight quarterly sampling episodes. BTEX concentrations dropped after the initial sampling interval then stabilized with a slight increase in concentration during the last sampling interval. Seasonal variations in gasoline concentration are apparent, with the highest concentrations occurring during periods of wet weather. The May 19, 1993, sample results show an increase in gasoline, BTEX and diesel levels. TMC believes the gaso-

line concentrations result from the contact of water in the tank pit with residual soil contamination along the building foundation.

Concentrations of diesel are reported in samples recovered from well MW-6. It appears that the detectable diesel levels result from contact of groundwater in the tank pit with the residual soil contamination along the building foundation. Chlorobenzene was reported in groundwater samples from wells MW-5 and MW-6. Chlorobenzene was reported in the waste oil tank removal soil samples. Groundwater concentrations of diesel and chlorobenzene have decreased steadily over the past sampling episodes. Chart 3, MW-6 Quarterly Sampling Results for Diesel and Chart 4, MW-5 and MW-6 Quarterly Sampling Results for Chlorobenzene, graphically show the results of groundwater sampling over the past sampling episodes.

Table 2 presents the results of laboratory analyses for extractable petroleum hydrocarbons and purgeable halocarbons in water:

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

Date Sampled	*Monitoring Well*	*Diesel ug/L*	*Kerosene ug/L*	*Oil & Grease mg/L*	*Chlorobenzene ug/L*
July 1991 Groundwater Sampling					
7-18-91	MW-3	NA	NA	ND<5	NA
7-18-91	MW-5	NA	NA	ND<5	NA
7-18-91	MW-6	NA	NA	ND<5	NA
December 1991 Groundwater Sampling					
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
April 1992 Groundwater Sampling					
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

Date Sampled	*Monitoring Well*	*Diesel ug/L*	*Kerosene ug/L*	*Oil & Grease mg/L*	*Chlorobenzene ug/L*
July 1992 Groundwater Sampling					
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
October 1992 Groundwater Sampling					
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
February 1993 Groundwater Sampling					
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
May 1993 Groundwater Sampling					
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

ND- NOT DETECTED BELOW REPORTING LIMITS
NA- NOT ANALYZED BY LABORATORY
+ - DOES NOT MATCH DIESEL STANDARD (POSSIBLE MOTOR OIL HYDROCARBONS)

4. GROUNDWATER MEASUREMENTS

The shallow water-bearing unit beneath the site appears unconfined. Once uncovered the wells were 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 Appendix A. By measuring the water levels in three groundwater monitoring wells, MW-2, MW-3, and MW-4, we estimated the down gradient direction and horizontal gradient. The following table summarizes the groundwater measurements recorded for selected monitoring wells.

Table 3 summarizes groundwater level data collected over the part eight sampling episodes.

TABLE 3, GROUNDWATER MEASUREMENTS FROM MONITORING WELLS

Date	*Well Label*	*Water Level*	*Casing Elevation (msl)*	*Water Elevation (msl)*
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
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

Date	*Well Label*	*Water Level*	*Casing Elevation (msl)*	*Water Elevation (msl)*
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

Table 4 summarizes the estimated groundwater down gradient direction and horizontal gradient. TMC used a three point solution to estimate the direction and gradient. Groundwater level data from MW1 and MW-6 were not used in the estimate because these wells are in the back fill of tank excavations.

TABLE 4, GROUNDWATER GRADIENT AND DIRECTION

Measurement Date	*Down Gradient Direction*	*Horizontal Gradient*	*Average Water Level feet above msl*
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

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.

A significant increase in groundwater elevations occurred likely due to the heavy seasonal rainfall in January and February, 1993. The most recent data indicate a North 7 degrees West flow direction at an average horizontal gradient of 0.014 ft/ft. The horizontal gradient is similar to the topographic slope of the lot. Eight groundwater measurements indicate a range of flow direction from N31W to N20E and a range of horizontal gradient from 0.005 to 0.014 ft/ft. Plate 3, Groundwater Gradient Map illustrates the most recent (May, 1993) horizontal gradient measured across the site.

5. SOIL AND WATER SAMPLE DATA QUALITY

The quality assurance and quality control (QA/AC) review of the new sample data for this report indicates that the data is acceptable for the purpose and objectives of this project. We 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 Curtis & Tompkins, Ltd. of Berkeley, California. The certified laboratory reports and chain-of-custody forms are presented in Appendix A.

A. 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. Conductivity measurements for five of the six wells on site indicate a total dissolved solids content corresponding to about 300-600 mg/L. Well MW-6 shows anomalous conductivity results at about 3600 mg/L. A laboratory analysis using EPA method 160.1 for total dissolved solids was performed on a water sample collected from well MW-6 on July 18, 1991. The results of the analysis indicate 5,000 mg/L for the water from well MW-6. We believe that the base rock used to back fill the waste oil tank excavation was salty. Therefore, the anomalous total dissolved solids content of well MW-6 is due to back fill salt content. This condition should not effect the usefulness of the well for water quality measurements.

B. 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.

C. 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.

D. 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.

E. 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.

F. HYDROCARBON OIL & GREASE

Based on the QC data reviewed, the results of analyses for hydrocarbon oil & grease by gravimetric analysis, method SMWW 17:5520BF 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. OPERATION OF SOIL VENTING SYSTEM

The soil venting system was constructed under permit from the Bay Area Air Resources Management District during February 1993. The system began operation on March 17, 1993. Two of the four existing soil vents are presently connected to the blower system. Elevated groundwater elevations (due to the recent heavy seasonal rainfall) is hampering operation of the system. As such, the system is currently shut off.

7. SCHEDULE OF ACTIVITIES

The following activities are scheduled to be performed during the next quarter:

- Quarterly groundwater sampling and analysis with quarterly measurement of groundwater gradient and flow direction
- Continued operation of the soil venting system.
- Treatment and disposal of on-site soil stock pile.

8. 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 AND BENZENE

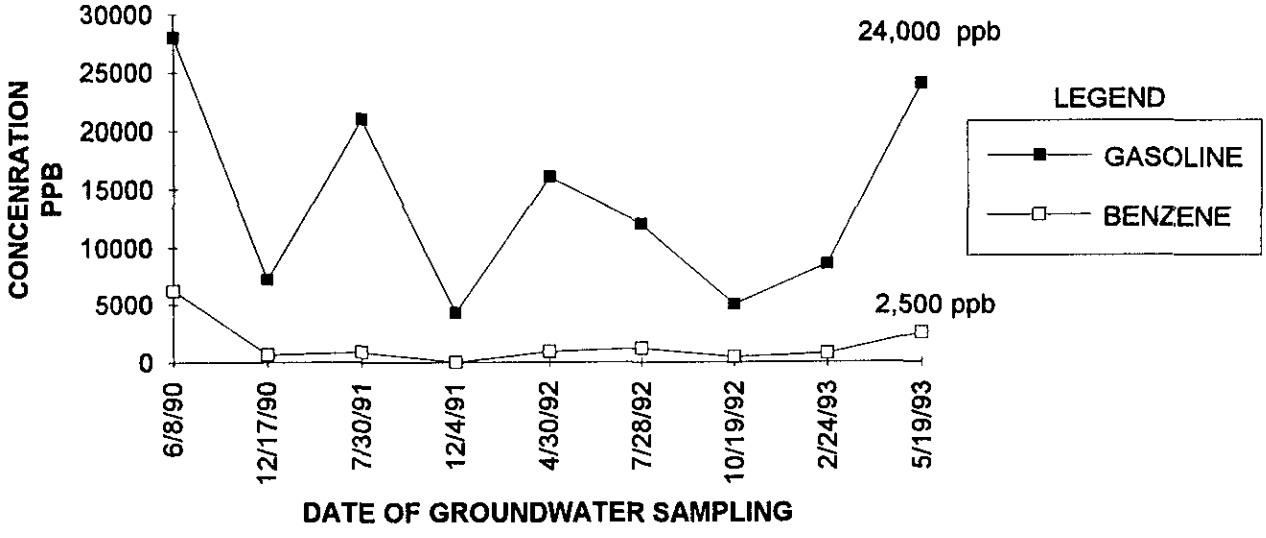


CHART 2
MW1 QUARTERLY SAMPLING RESULTS FOR BTEX

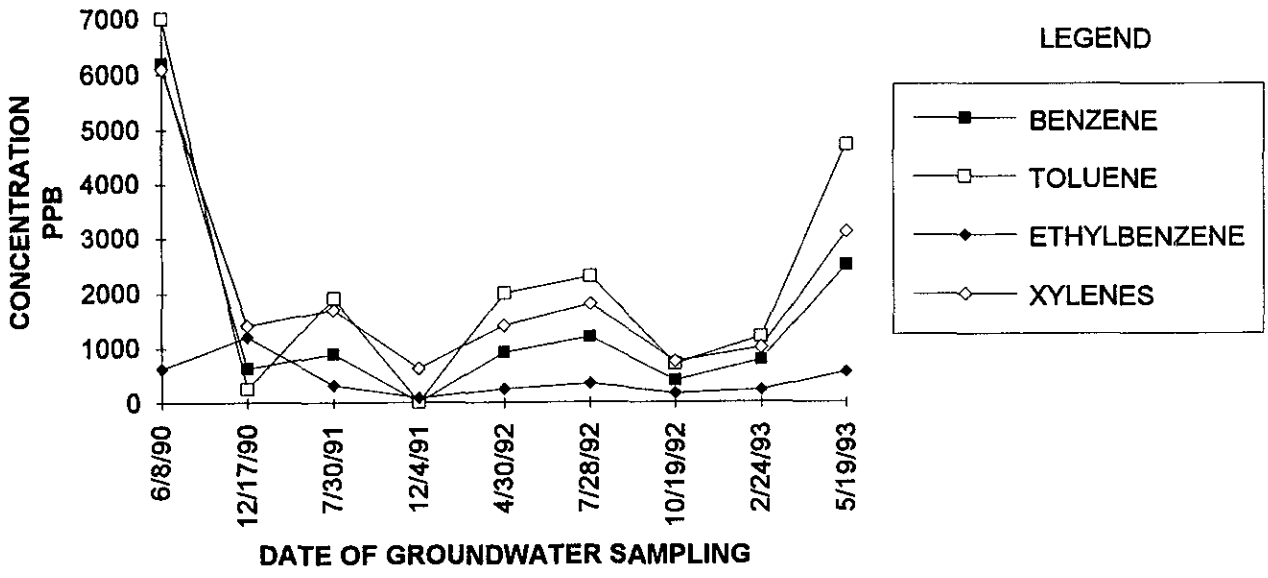


CHART 3
MW-6 QUARTERLY SAMPLING RESULTS FOR DIESEL

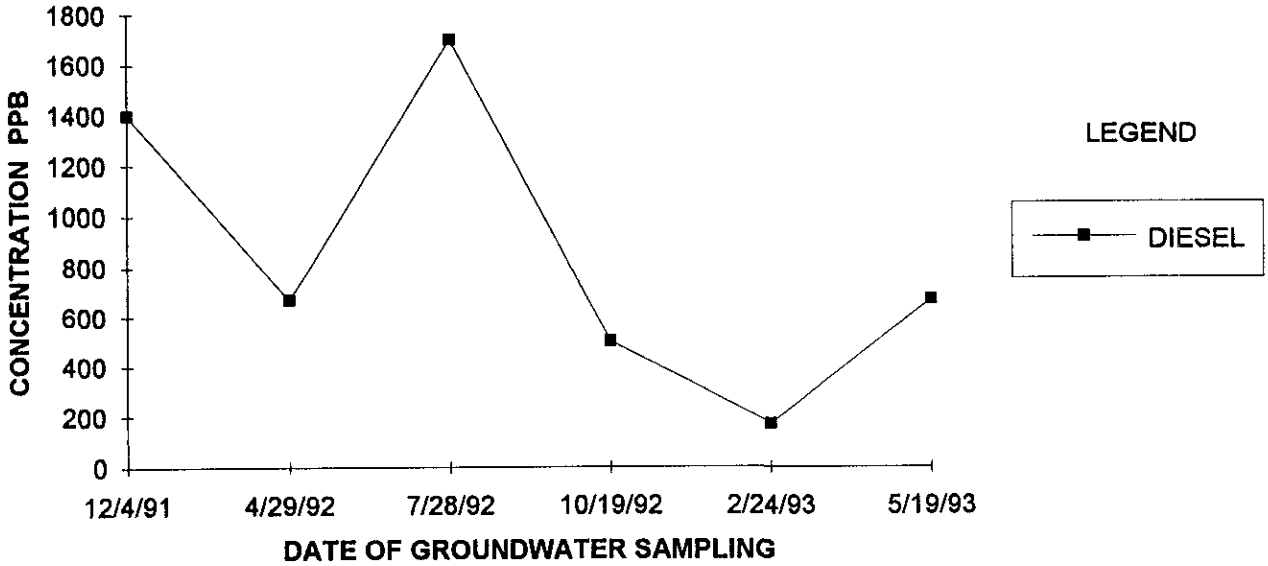
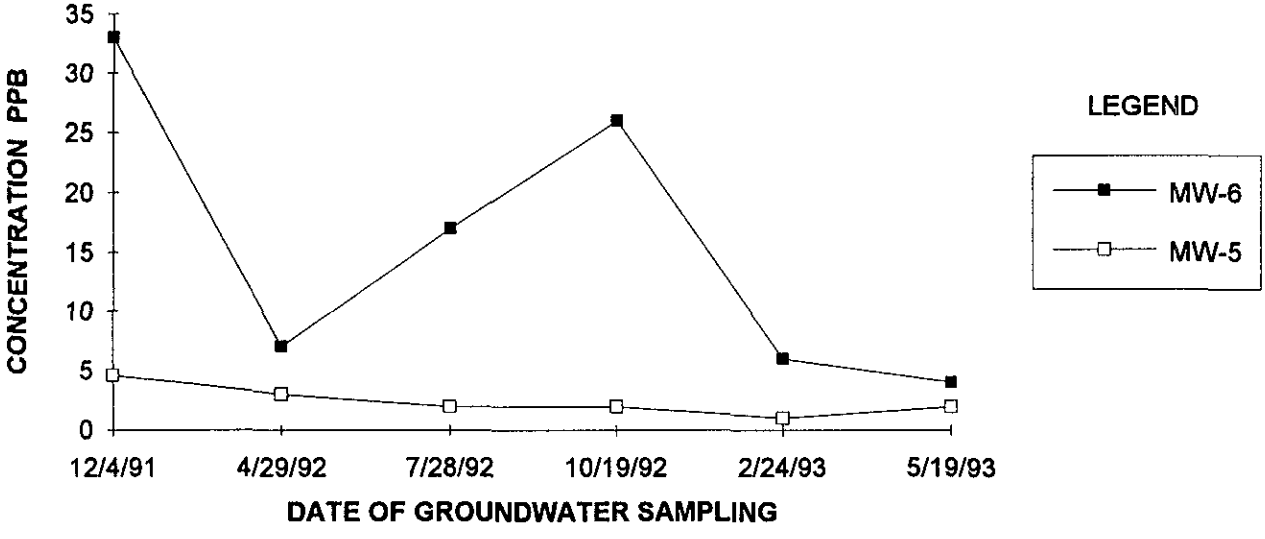
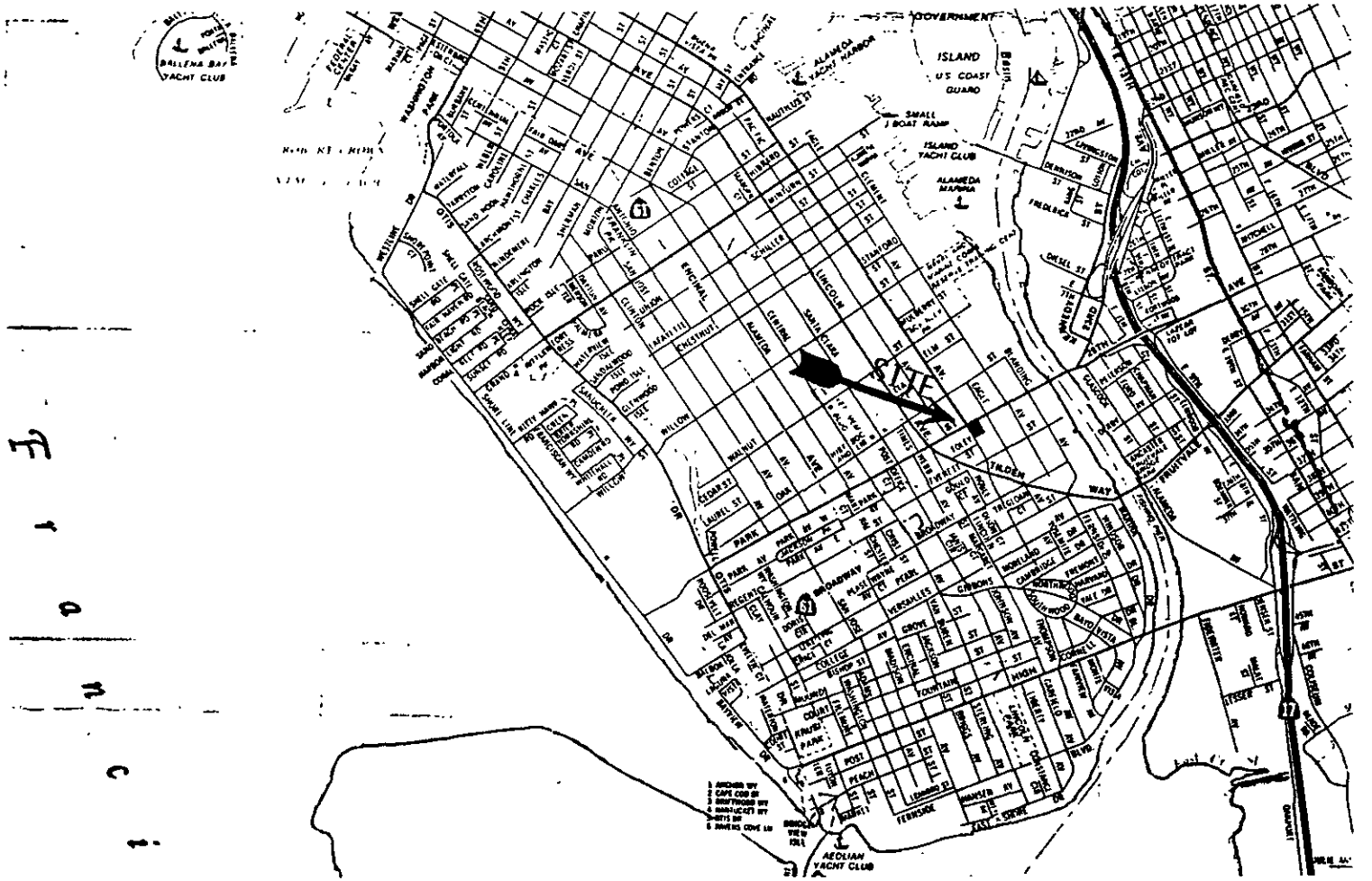


CHART 4
MW-5 AND MW-6 QUARTERLY SAMPLING RESULTS FOR CHLOROBENZENE





Base Map from Thomas Bros. Maps, California Road Atlas, 1988

LEGEND

N

Scale: 1 inch = 2200 feet

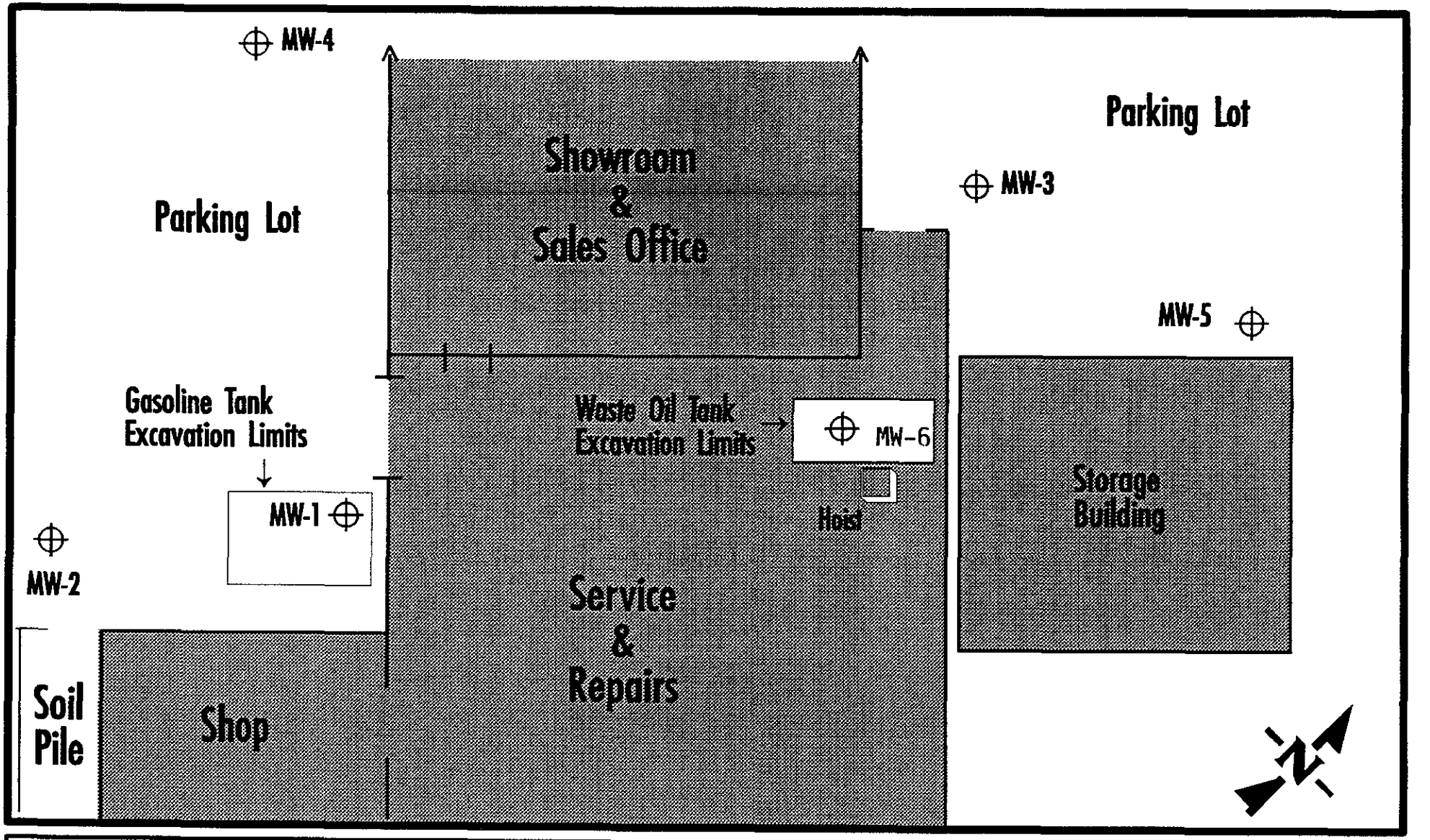
SITE VICINITY MAP

Cavanaugh Motors

1700 Park Street, Alameda, California

TMC ENVIRONMENTAL INC, SAN PABLO, CALIFORNIA

PLATE 1



LEGEND

MW-0 Monitoring Well

Building Interiors

Project No. 101090
June, 1993
Scale 1 inch = 20 feet

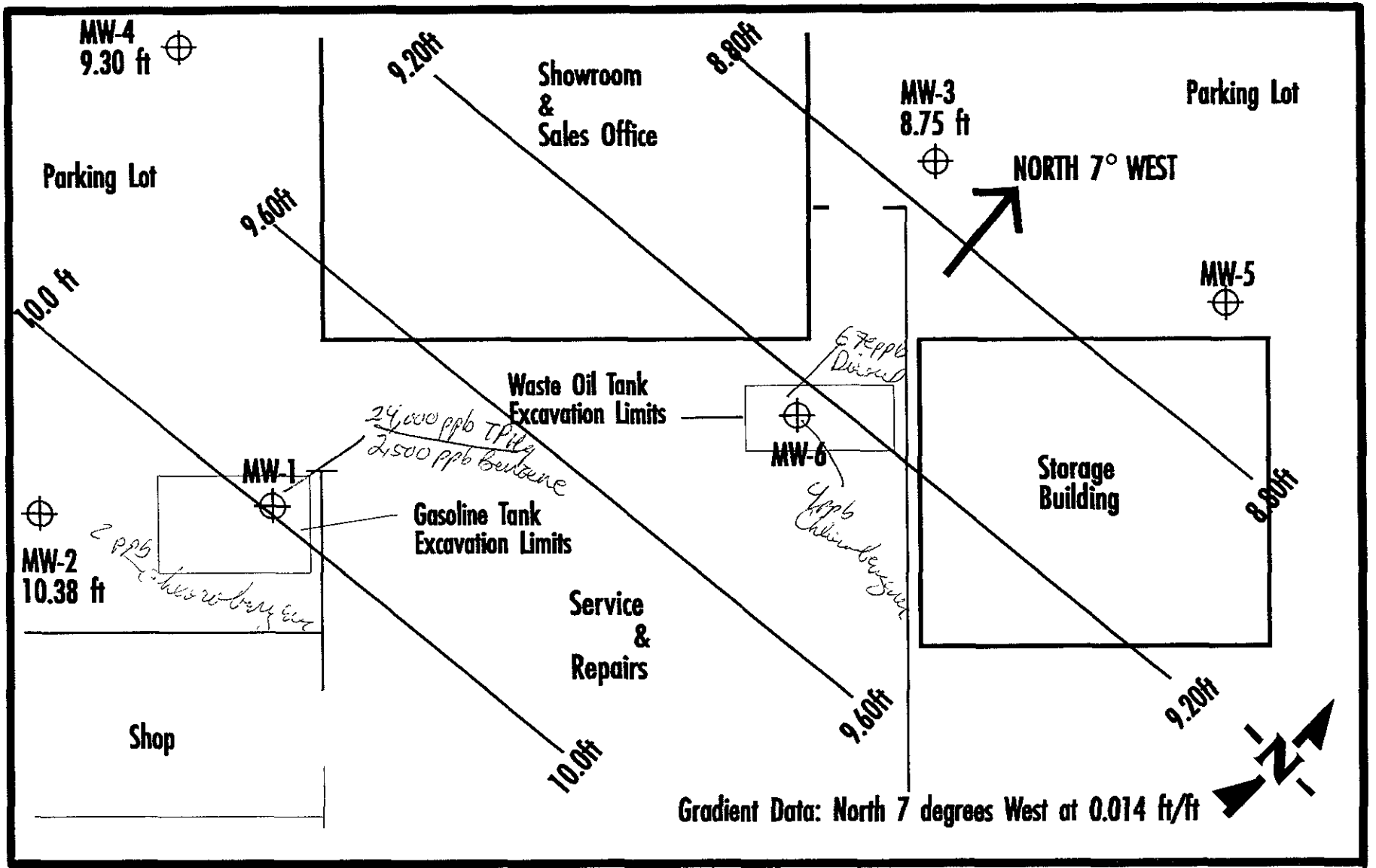
SITE PLAN

Cavanaugh Motors

1700 Park Street, Alameda California

TMC ENVIRONMENTAL INC. SAN PABLO, CALIFORNIA

PLATE 2



LEGEND

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

Project No. 109001
June, 1993
Scale 1 inch = 20 feet

GROUNDWATER GRADIENT MAP

Cavanaugh Motors

1700 Park Street, Alameda California

TMC ENVIRONMENTAL INC. SAN PABLO, CALIFORNIA

PLATE 3

APPENDIX A

CERTIFIED ANALYTICAL REPORTS,

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST FORMS,

WELL SAMPLING FORMS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

DATE RECEIVED: 05/19/93
DATE REPORTED: 05/28/93

LABORATORY NUMBER: 110957

CLIENT: TMC ENVIRONMENTAL, INC.

PROJECT ID: 101090

LOCATION: 1720 PARK STREET, ALAMEDA

RESULTS: SEE ATTACHED

Reviewed by

Reviewed by

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA

DATE SAMPLED: 05/19/93
DATE RECEIVED: 05/19/93
DATE ANALYZED: 05/25/93
DATE REPORTED: 05/28/93

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
110957-1	MW2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
110957-6	MW1	24,000	2,500	4,700	560	3,100
110957-7	MW6	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	96

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA

DATE SAMPLED: 05/19/93
DATE RECEIVED: 05/19/93
DATE ANALYZED: 05/27/93
DATE REPORTED: 05/28/93

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
110957-2	MW4	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	99

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA

DATE SAMPLED: 05/19/93
DATE RECEIVED: 05/19/93
DATE ANALYZED: 05/25/93
DATE REPORTED: 05/28/93

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
110957-3	MW5	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
110957-4	MW3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	104

Curtis & Tompkins, Ltd

Client: TMC Environmental, Inc.

Laboratory Login Number: 110957

Project Name: Cavanaugh Motors
Project Number: 101090

Report Date: 28 May 93

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **METHOD: SMWW 17:5520BF**

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
110957-003	MW5	Water	19-MAY-93	19-MAY-93	25-MAY-93	ND	mg/L	5	TR	9343
110957-004	MW3	Water	19-MAY-93	19-MAY-93	25-MAY-93	ND	mg/L	5	TR	9343
110957-007	MW6	Water	19-MAY-93	19-MAY-93	25-MAY-93	ND	mg/L	5	TR	9343

ND = Not Detected at or above Reporting Limit (RL).

Curtis & Tompkins, Ltd

Q C B a t c h R e p o r t

Client: TMC Environmental, Inc.
Project Name: Cavanaugh Motors
Project Number: 101090

Laboratory Login Number: 110957
Report Date: 28 May 93

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **QC Batch Number: 9343**

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	25-MAY-93

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	88%	SMWW 17:5520BF	25-MAY-93
BSD	85%	SMWW 17:5520BF	25-MAY-93

		Control Limits
Average Spike Recovery	86%	80% - 120%
Relative Percent Difference	3.5%	< 20%

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA

DATE SAMPLED: 05/19/93
DATE RECEIVED: 05/19/93
DATE EXTRACTED: 05/21/93
DATE ANALYZED: 05/22/93
DATE REPORTED: 05/28/93

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
110957-3	MW5	ND	ND	50
110957-4	MW3	ND	ND	50
110957-7	MW6	**	670	50

ND = Not detected at or above reporting limit.

* Reporting limit applies to all analytes.

** Kerosene range not reported due to overlap of hydrocarbon ranges.

QA/QC SUMMARY

RPD, %	10
RECOVERY, %	118

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957-3
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA
SAMPLE ID: MW5

DATE SAMPLED: 05/19/93
DATE RECEIVED: 05/19/93
DATE ANALYZED: 05/21/93
DATE REPORTED: 05/28/93

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2
Bromomethane	ND	2
Vinyl chloride	ND	2
Chloroethane	ND	2
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
cis-1,2-Dichloroethene	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
Freon 113	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
1,1,2-Trichloroethane	ND	1
trans-1,3-Dichloropropene	ND	1
Dibromochloromethane	ND	1
Bromoform	ND	2
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	2	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	105

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957-4
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA
SAMPLE ID: MW3

DATE SAMPLED: 05/19/93
DATE RECEIVED: 05/19/93
DATE ANALYZED: 05/21/93
DATE REPORTED: 05/28/93

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2
Bromomethane	ND	2
Vinyl chloride	ND	2
Chloroethane	ND	2
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
cis-1,2-Dichloroethene	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
Freon 113	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
1,1,2-Trichloroethane	ND	1
trans-1,3-Dichloropropene	ND	1
Dibromochloromethane	ND	1
Bromoform	ND	2
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	115

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957-7
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA
SAMPLE ID: MW6

DATE SAMPLED: 05/19/93
DATE RECEIVED: 05/19/93
DATE ANALYZED: 05/24/93
DATE REPORTED: 05/28/93

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2
Bromomethane	ND	2
Vinyl chloride	ND	2
Chloroethane	ND	2
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
cis-1,2-Dichloroethene	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
Freon 113	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
1,1,2-Trichloroethane	ND	1
trans-1,3-Dichloropropene	ND	1
Dibromochloromethane	ND	1
Bromoform	ND	2
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	4	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	120

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 110957-METHOD BLANK
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA

DATE ANALYZED: 05/21/93
DATE REPORTED: 05/28/93

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2
Bromomethane	ND	2
Vinyl chloride	ND	2
Chloroethane	ND	2
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
cis-1,2-Dichloroethene	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
Freon 113	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
1,1,2-Trichloroethane	ND	1
trans-1,3-Dichloropropene	ND	1
Dibromochloromethane	ND	1
Bromoform	ND	2
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	109

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 110957-METHOD BLANK
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 101090
LOCATION: 1720 PARK STREET, ALAMEDA

DATE ANALYZED: 05/24/93
DATE REPORTED: 05/28/93

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2
Bromomethane	ND	2
Vinyl chloride	ND	2
Chloroethane	ND	2
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
cis-1,2-Dichloroethene	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
Freon 113	ND	1
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
1,1,2-Trichloroethane	ND	1
trans-1,3-Dichloropropene	ND	1
Dibromochloromethane	ND	1
Bromoform	ND	2
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	122

Curtis & Tompkins, Ltd.

LABORATORY CONTROL SAMPLE SUMMARY SHEET FOR EPA 8010

Laboratory Number: 110957
Analysis date: 05/20/93
Sample type: Water LCS file: 140w003

LCS SPIKE DATA (spiked at 20 ppb)

8010 COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	18.98	95 %	OK	61 - 145
Chlorobenzene	18.46	92 %	OK	75 - 130
Trichloroethene	23.65	118 %	OK	71 - 120
SURROGATES				
Bromobenzene	106.68	107 %	OK	75 - 125

Curtis & Tompkins, Ltd.

LABORATORY CONTROL SAMPLE SUMMARY SHEET FOR EPA 8010

Laboratory Number: 110957
Analysis date: 05/24/93
Sample type: Water LCS file: 144w003

LCS SPIKE DATA (spiked at 20 ppb)

8010 COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	20.14	101 %	OK	61 - 145
Trichloroethene	17.96	90 %	OK	71 - 120
Chlorobenzene	23.70	119 %	OK	75 - 130
SURROGATES				
Bromobenzene	117.81	118 %	OK	75 - 125

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 #	JOB ADDRESS:	SAMPLER:
101090	1720 PARK STREET, ALAMEDA	MARC EDWARDS & TOM CHIGLIOTTO

LABORATORY NAME: CURTIS & TOMPKINS, LTD. 2323 FIFTH STREET, BERKELEY, CA 94710

LAB ID NO.	SAMPLE LABEL	SOIL	WATER	DATE	TIME	TVH-GAS BTEX	TEH-DIESEL	EPA 9010	OIL & GREASE	
101057-1	MW2		X	5/19/93	1033	X				
-2	MW4		X	5/19/93	1101	X				
-3	MW5		X	5/19/93	1145	X	X	X	X	
-4	MW3		X	5/19/93	1223	X	X	X	X	
-5	EQB-1		X	5/19/93	1250		HOLD			
-6	MW1		X	5/19/93	1348	X				
-7	MW6		X	5/19/93	1439	X	X	X	X	

Relinquished By:		Recieved By:
(Print Name) MARC EDWARDS	Date: 5/19/93	(Print Name)
(Signature)	Time: 1715	(Signature)
(Print Name)	Date:	(Print Name)
(Signature)	Time:	(Signature)
(Print Name)	Date:	(Print Name)
(Signature)	Time:	(Signature)
(Print Name)	Date: 5/19/93	(Print Name) TERESA MORRISON
(Signature)	Time: 1715	(Signature) Teresa K Morrison

LABORATORY NOTES: 5 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

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW-1	DATE COLLECTED: 05/19/93	JOB NUMBER: 10-1090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: T. GHIGLIOTTO, M. EDWARDS	
LOCATION: 1700 PARK STREET, ALAMEDA, CALIFORNIA		

WELL HEAD COND.:

WATER LEVEL MEASUREMENTS:

TIME MEASURED	1021	1253				
DEPTH IN FEET (Measure to 0.01')	6.35	6.35				

WELL PURGING RECORD

TOTAL DEPTH OF WELL: 14.29	DEPTH TO WATER: 6.35	DIAMETER: 4

PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 15.483 **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 : >1000

WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY x 1000	VISUAL TURBIDITY	pH
0	1301	74.8	0.62	CL BLK STA SAND	6.85
5	1310	74.5	0.58	STA BLK SHEENING	6.79
10	1316	72.9	0.59	CLEAR W/STAIN	6.80
15	1321	71.8	0.54	CLEAR W/STAIN	6.88
15.5	1323	71.5	0.55	CLEAR W/STAIN	6.87

SAMPLING METHOD: DISPOSABLE BAILER	TIME COLLECTED: 1348
SAMPLE TURBIDITY: 3.3	

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW-2	DATE COLLECTED: 05/19/93	JOB NUMBER: 10-1090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: T. GHIGLIOTTO, M. EDWARDS	
LOCATION: 1700 PARK STREET, ALAMEDA, CALIFORNIA		

WELL HEAD COND.:

WATER LEVEL MEASUREMENTS:

TIME MEASURED	850	930				
DEPTH IN FEET (Measure to 0.01')	6.35	6.35				

WELL PURGING RECORD

TOTAL DEPTH OF WELL: 14.59	DEPTH TO WATER: 6.35	DIAMETER: 4

PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 16.0 **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

WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY x 1000	VISUAL TURBIDITY	pH
0	940	71.1	0.39	CLEAR	7.27
5	945	68.5	0.32	CLEAR	7.30
10	950	67.9	0.37	CLEAR	7.15
15	955	67.8	0.29	CLEAR	7.20
16	957	67.8	0.28	CLEAR	7.21

SAMPLING METHOD: DISPOSABLE BAILER	TIME COLLECTED: 1033
SAMPLE TURBIDITY: 4.9	

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW-3	DATE COLLECTED:05/19/93	JOB NUMBER: 10-1090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: T. GHIGLIOTTO, M. EDWARDS	
LOCATION: 1700 PARK STREET, ALAMEDA, CALIFORNIA		

WELL HEAD COND.:

WATER LEVEL MEASUREMENTS:

TIME MEASURED	940	1150				
DEPTH IN FEET (Measure to 0.01')	7.10	7.14				

WELL PURGING RECORD

TOTAL DEPTH OF WELL: 14.54	DEPTH TO WATER: 7.14	DIAMETER: 4

PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 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 :

WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY x 1000	VISUAL TURBIDITY	pH
0	1140	70.6	0.36	CLEAR	6.49
4	1149	68.5	0.42	CLEAR	6.49
8	1154	68.3	0.39	CLEAR	6.47
12	1159	67.7	0.39	CLEAR	6.47
14.5	1203	67.5	0.39	CLEAR	6.46

SAMPLING METHOD: DISPOSABLE BAILER	TIME COLLECTED: 1223
SAMPLE TURBIDITY: 13.8	

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW-4	DATE COLLECTED: 05/19/93	JOB NUMBER: 10-1090
JOB NAME: CAVANAUGH MOTORSS	SAMPLERS NAME: T. GHIGLIOTTO, M. EDWARDS	
LOCATION: 1700 PARK STREET, ALAMEDA, CALIFORNIA		

WELL HEAD COND.:

WATER LEVEL MEASUREMENTS:

TIME MEASURED	857	930				
DEPTH IN FEET *(Measure to 0.01')*	7.09	7.09				

WELL PURGING RECORD

TOTAL DEPTH OF WELL: 1442	DEPTH TO WATER: 7.09	DIAMETER: 4

PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 14.2935 **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

WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY x 1000	VISUAL TURBIDITY	pH
0	1030	7201	0.48	CLEAR	7.01
5	1035	69.4	0.45	CLEAR	6.95
10	1041	68.4	0.48	CLEAR	6.99
15	1046	68.6	0.42	CLEAR	6.97

SAMPLING METHOD: DISPOSABLE BAILER	TIME COLLECTED: 1101
SAMPLE TURBIDITY: 6.5	

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW-5	DATE COLLECTED: 05/19/93	JOB NUMBER: 10-1090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: T. GHIGLIOTTO, M. EDWARDS	
LOCATION: 1700 PARK STREET, ALAMEDA, CALIFORNIA		

WELL HEAD COND.:

WATER LEVEL MEASUREMENTS:

TIME MEASURED	1008	1100				
DEPTH IN FEET (Measure to 0.01')	6.38	6.38				

WELL PURGING RECORD

TOTAL DEPTH OF WELL: 18.40	DEPTH TO WATER: 6.38	DIAMETER: 2

PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 6.1302 **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

WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY x 1000	VISUAL TURBIDITY	pH
0	1110	69.0	0.28	CLOUDY	6.88
2	1112	67.0	0.27	CLOUDY	6.79
4	1115	65.9	0.27	SL. CLOUDY	6.76
6	1118	65.8	0.21	SL. CLOUDY	6.72
6.5	1120	65.7	0.26	SL. CLOUDY	6.70

SAMPLING METHOD: DISPOSABLE BAILER	TIME COLLECTED: 1145
SAMPLE TURBIDITY: 71.2	

RECORD OF WATER SAMPLE COLLECTION

WELL LABEL: MW-6	DATE COLLECTED:05/19/93	JOB NUMBER: 10-1090
JOB NAME: CAVANAUGH MOTORS	SAMPLERS NAME: T. GHIGLIOTTO, M. EDWARDS	
LOCATION: 1700 PARK STREET, ALAMEDA, CALIFORNIA		

WELL HEAD COND.:

WATER LEVEL MEASUREMENTS:

TIME MEASURED	1306	1354				
DEPTH IN FEET (Measure to 0.01')	6.57	6.57				

WELL PURGING RECORD

TOTAL DEPTH OF WELL: 18.85	DEPTH TO WATER: 6.57	DIAMETER: 2

PURGE VOLUME = TOTAL DEPTH - WATER DEPTH X VOLUME FACTOR X 3 VOLUMES = 6.2628 **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

WELL PURGING PARAMETERS

GALLONS	TIME	TEMPERATURE degrees F	CONDUCTIVITY x 1000	VISUAL TURBIDITY	pH
0	1358	71.8	1.67	CLEAR	6.75
2	1401	68.4	1.66	CLOUDY	6.74
4	1404	67.5	2.00	SL. CLOUDY	6.76
6	1406	67.1	2.04	SL. CLOUDY	6.74
7	1408	67.3	2.03	SL. CLOUDY	6.74

SAMPLING METHOD: DISPOSABLE BAILER	TIME COLLECTED: 1439
SAMPLE TURBIDITY: 9.9	