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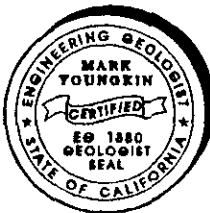
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**STATUS
REPORT**

1700 Park Street
Alameda, California

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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"

STATUS REPORT

Cavanaugh Motors Facility
1700 Park Street
Alameda, California

Project Number 109001
January 15, 1992

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

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STATUS REPORT

1700 Park Street, Alameda California

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STATUS REPORT

Cavanaugh Motors
1700 Park Street, Alameda California

1.0 GENERAL SITE INFORMATION

1.1 SITE LOCATION

The subject property, called the site in this report, is located at the following address and description:

Cavanaugh Motors
1700 Park Street
Alameda County
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.

1.2 TANK OWNER

The current property owner and owner contact is:

Mr. Dave Cavanaugh
1700 Park Street
Alameda, California 94501

Mr. Cavanaugh purchased the property in 1981 from Mr. William S. Bean. Mr. Cavanaugh can be reached at (510) 523-5246.

1.3 CONTACT PERSON

The contact person for this report is:

Mr. Tom Edwards, President
TMC Environmental Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, California 94806

TMC Environmental, Inc. is the environmental consultant that wrote this report. Mr. Edwards can be reached at (510) 232-8366.

1.4 SITE CONDITION

The site is presently being used for an automobile dealership. The site is in a commercial and retail neighborhood. Current activities on site include: new car showroom, sales offices, parts storage and distribution, outside car storage, vehicle repair shop with hydraulic hoists. 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. An automotive repair shop bounds the site on the east. A residential neighborhood bounds the site on the south.

1.5 GEOLOGY

The site is less 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 sandy clay occur in the sand. Groundwater in the Merritt Sand Formation is believed to be unconfined. Ground water is about eight feet below surface grade (bsg) at the site. The average direction of ground water flow as measured in three ground water monitoring wells on four sampling episodes was approximately North 75 degrees West with a gradient of 0.0081 ft/ft.

1.6 LEAD IMPLEMENTING AGENCY

As stated in a letter to Mr. Dave Cavanaugh dated January 31, 1990 from the Alameda County Health Care Services Agency; the lead implementing agency authorized by the Regional Water Quality Control Board to oversee this site is the:

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:

Mr. Brian Oliva
Hazardous Materials Specialist
(510) 271-4320

Inquiries regarding this case should be referred to Mr. Oliva.

2.0 SITE HISTORY

2.1 BACKGROUND

The property, developed in 1948 as a new automobile dealership, has remained an automobile dealership. Mr. William S. Bean, the first proprietor, owned the property from 1948 until 1981. In 1981, Mr. Bean sold the property to Dave Cavanaugh, the present owners. Mr. Cavanaugh reported to TMC that two underground tanks installed on the site by Mr. Bean in 1948 have the following capacities; a 550 gallon gasoline storage tank and a 300 gallon waste oil storage tank. Scott Corporation removed the 550 gallon gasoline tank, dispenser, and piping on December 15, 1989.

The six inch thick concrete floor overlaid the 300 gallon waste oil storage tank inside the vehicle repair shop. Next to the tank was a hydraulic lift and the north wall of the building. A fill pipe of approximately four feet in length connected the south end of the tank to a fill hole in the concrete floor. On August 14, 1990, TMC and Gene L. Failing Company removed the 300 gallon waste oil tank and related lines. TMC summarized the tank removal procedures and results in an April 8, 1991 report submitted to Cavanaugh Motors called, Tank Removal and Soil Excavation Report.

2.2 TANK INFORMATION

Mr. Cavanaugh reports that only two underground storage tanks have existed on the site as follows:

Tank 1:

550 gallon metal gasoline tank
Installation date 1948
Removed December 15, 1989
One dispenser on top of the tank

Tank 2:

300 gallon metal waste oil tank, no remote fill
Installation date 1948
Removed August 14, 1990

2.3 POTENTIAL SOURCES OF OFF SITE CONTAMINATION

There are five potential sites of contamination within a half mile of Cavanaugh Motors. Because two of the five sites are directly next to Cavanaugh Motors, there is a significant potential for adverse impact from off site contamination. Below is a brief description of the environmental problems associated with each site:

1. Alameda Collision, 1911 Park Street-

A gasoline tank was removed from this property in June, 1988. Gasoline contamination affects the soil and ground water. The maximum ground water total petroleum hydrocarbon (TPH) as gasoline concentration was 1.7 ppm. The site may be down gradient of Cavanaugh Motors.

2. Mobil Service Station, 1541 Park Street-

In October 1987, underground gasoline tanks were removed from the property. Gasoline affects the soil and ground water. The maximum TPH as gasoline concentration in tank removal soil samples was 3200 ppm. Subsequent ground water sampling shows a maximum TPH as gasoline concentration of 2000 ppb. This property may be up gradient of Cavanaugh Motors.

3. Good Chevrolet, 1630 Park Street-

Two tanks were removed from this site in October 1986. The maximum soil TPH as gasoline concentration collected beneath the tanks was 2500 ppm. Ground water contains as much as 7600 ppb TPH as gasoline. This site is less than one block west of Cavanaugh Motors and may be up gradient.

4. Regal Exxon Service Station, 1725 Park Street-

Removal and replacement of the tanks occurred in June 1988. Serious soil and ground water contamination was discovered during the installation of new tanks. Subsequent ground water sampling has shown TPH as gasoline concentrations as high as 110,000 ppb. No free product has been found on the ground water. This site is directly across Park street from Cavanaugh Motors.

5. Automotive Repair Shop, 1726 Park Street

An automotive repair facility and former Texaco gasoline service station is located adjacent and north of the site. Former gasoline tanks and a waste oil tank are present on the property. The waste oil tank was removed on January 2, 1992. No groundwater information is available for the property.

3.0 CHRONOLOGY OF PAST INVESTIGATIONS

3.1 PRELIMINARY ASSESSMENT REPORT

A Preliminary Assessment Report was prepared by TMC Environmental, Inc. dated July 11, 1990 and submitted to Cavanaugh Motors. The investigation concerned the former 550 gallon gasoline tank. The waste oil tank had not become an active case at this time. The report used the results from sampling of the former gasoline tank excavation, four soil borings, and four ground water monitoring wells.

3.2 SOIL EXCAVATION AND TANK REMOVAL REPORT

A Soil Excavation and Tank Removal Report was prepared by TMC Environmental, Inc. dated April 8, 1991, and submitted to Cavanaugh Motors. The report presents the procedures and results of the 300 gallon waste oil tank removal. Six exploratory borings were drilled around the perimeter of the waste oil tank excavation to visually inspect for evidence of soil contamination. Four soil samples from exploratory borings around the perimeter of the former tank location were analyzed for total petroleum hydrocarbons as diesel.

TMC excavated approximately 120 cubic yards of waste oil contaminated soil from surrounding the former tank location based upon the results of the exploratory borings, then back filled and compacted the hole with clean, imported fill. Gene Failing Company, engineering contractor, of Campbell, California excavated and back filled the excavation.

3.3 RECENT INVESTIGATION BY TMC ENVIRONMENTAL

Additional investigation tasks were performed since the submittal of the TMC soil excavation report dated April 8, 1991. The work was performed under the Site Contamination Workplan submitted to the enforcing agencies dated April 15, 1991. The additional work consisted of the installation of two additional 20 foot deep monitoring wells each of 2 inch-diameter at the locations shown in Plate 4, Sampling Map, Waste Oil Tank.

The new wells are labelled MW-5 and MW-6. The total number of monitoring wells on site is now six. Water sampling, groundwater measurements, and laboratory analysis were part of the investigation. Also performed was the drilling of one additional hand augured boring, B6 located north of the waste oil tank excavation. The results of the additional investigation are included in this report.

4.0 CONTAMINATION INFORMATION

4.1 550 GALLON GASOLINE TANK

The dealership recorded daily inventory records from 1948 until August 10, 1989 when the gasoline tank retired from service. A certified underground tank testing company tested the tank gasoline tank in August 1986, June 1988, and August 1989. The August 4, 1989 tank testing showed the filler tube was leaking. No estimate of product loss is available. The period of product loss is less than one year, between tank testing episodes. The tank, dispenser, and piping was reported in good condition with no holes when removed on December 15, 1989 by the Scott Corporation. Approximately 10-15 cubic yards of soil was excavated during the tank removal.

TMC removed most of the accessible gasoline contaminated soil surrounding the former location of the underground tank in a controlled excavation on April 26, 1990. TMC aerated the excavated soil on site, then disposed of the treated soil at Durham Landfill. The adjacent building prevented the complete excavation of the gasoline contaminated soil. Soil borings estimated the remaining extent of soil contamination. TMC installed and sampled four ground water monitoring wells. The excavated soil

was aerated on site until no detectable results were obtained. TMC reported the results of the 550 gallon gasoline tank investigation in a report dated July 11, 1990, titled "Preliminary Assessment Report" submitted to Cavanaugh Motors.

The following tables summarize the results of soil and water sampling and analyses in the report:

GASOLINE TANK TEST RESULTS FOR SOIL BORING SAMPLES
Summary of Laboratory Test Results for Soil Samples

<i>Date Sampled</i>	<i>Sample & depth</i>	<i>TPH gas mg/Kg</i>	<i>Benzene mg/kg</i>	<i>Toluene mg/kg</i>	<i>Ethyl benzene mg/Kg</i>	<i>Xylenes mg/Kg</i>
4-26-90	SOUTH-1	ND < 0.5	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
4-26-90	WEST-1	ND < 0.5	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
5-19-90	EB-1,5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
5-19-90	EB-2,5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
5-19-90	EB-3,5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
5-19-90	EB-4,5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	0.034
5-17-90	MW-1,5'	3,500	ND < 0.005	190	76	510
5-17-90	MW-2,5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
5-17-90	MW-3,5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005
5-17-90	MW-4,5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	0.034

ND- Not detected below reporting limits

4.2 300 GALLON WASTE OIL TANK

During removal of the 300 gallon waste oil tank on August 4, 1990 by TMC, many holes were in the metal tank. Stained soil surrounded the tank. There is no available estimate on the quantity of released waste oil. Soil borings and a controlled excavation removed 120 cubic yards of waste oil contaminated soil. TMC reported the

results of the 300 gallon waste oil tank removal in a report dated April 8, 1991 titled "Tank Removal and Soil Excavation Report" submitted to Cavanaugh Motors.

The laboratory analysis of the soil sample recovered from below the removed underground tank reported the following results:

Soil sample SS1 recovered 18 inches below the center of the tank contained 730 mg/Kg total petroleum hydrocarbons (TPH) as gasoline with 0.70 mg/Kg benzene, 16 mg/Kg toluene, 6.6 mg/Kg ethylbenzene, and 39 mg/Kg total xylenes; 6400 mg/Kg TPH as diesel; 20000 mg/Kg total oil and grease by standard method 503D; 17000 mg/Kg total oil and grease by standard method 503E; 0.25 mg/Kg cadmium, 31.6 mg/Kg total chrome, 24.0 mg/Kg nickel, 1040 mg/Kg lead, 111 mg/Kg zinc; 1.6 mg/Kg naphthalene, 1.5 mg/Kg 2-methylnaphthalene, 0.3 mg/Kg phenanthrene; and 22.0 mg/Kg methylene chloride, 59.0 mg/Kg chlorobenzene.

The results of the exploratory borings are as follows:

Sample B-1 recovered from sand at a depth of 7 to 7.5 feet below grade in boring number B-1. Laboratory analysis shows no detectable total petroleum hydrocarbons as diesel or total oil & grease. No staining or odor was noticeable in the sample.

Sample B-2 recovered from sand at a depth of 7 to 7.5 feet had obvious staining and odor indicating contaminated soil. No sample was submitted for laboratory analysis. This soil was excavated during contaminated soil removal.

Sample B-3 recovered from sand at a depth of 8 to 8.5 feet below grade in boring number B-3. Laboratory analysis shows no detectable total petroleum hydrocarbons as diesel or total oil & grease. No staining or odor was noticeable in the sample.

Sample B-4 recovered from sand at a depth of 8 to 8.5 feet below grade in boring number B-4. Laboratory analysis shows 680 mg/Kg of total petroleum

hydrocarbons as diesel and 710 mg/Kg of total oil & grease. The certified analytical report indicates the concentration appears to represent a heavier petroleum product, possibly motor oil. No staining or odor was noticeable in the sample. This area was under a foundation wall and was not excavated.

Sample B-5 recovered from sand at a depth of 8 to 8.5 feet below grade in boring number B-5. Laboratory analysis shows no detectable total petroleum hydrocarbons as diesel. No staining or odor was noticeable in the sample.

Sample B-6 recovered from sand at a depth of 7 to 7.5 feet had obvious staining and odor indicating contaminated soil. A sample was submitted for laboratory analysis of total petroleum hydrocarbons as diesel. No detectable diesel was reported by the laboratory.

The laboratory reported a quality control problem with the total petroleum hydrocarbons as diesel analysis from samples B-1, B-2, B-3, B-4, and B-5. The extraction of the samples was performed after the 14 day holding limit. This may decrease the concentration of diesel reported. Since a significant concentration of diesel was reported, we believe the reported concentration is significant and adequate for the purposes of this investigation.

Soil sampling was performed during the installation of ground water monitoring wells MW-5 and MW-6 in the vicinity of the former waste oil tank. The laboratory analysis of the soil samples recovered from the ground water monitoring wells reported the following results:

Sample MW-5-5 recovered from sand at a depth of 5 feet below grade in monitoring well MW-5. Well MW-5 is the down gradient well from the waste oil tank pit. Laboratory analysis shows no detectable total petroleum hydrocarbons as diesel, kerosene, or motor oil; no detectable TVH as gasoline; no detectable benzene, toluene, or ethylbenzene. Total xylenes were detected at 21 ug/Kg. No hydrocarbon oil & grease was detected. No staining or odor was noticeable in the sample.

Sample MW-6-15 recovered from sand at a depth of 15 feet below grade in monitoring well MW-6. This well was in the back fill of the waste oil tank pit. Back fill material was present to a depth of 12-13 feet below grade. Laboratory analysis shows no detectable total petroleum hydrocarbons as diesel, kerosene, or motor oil; no detectable TVH as gasoline or benzene. Toluene was detected at 7.2 ug/Kg, Ethylbenzene was detected at 5.2 ug/Kg, and total xylenes were detected at 28 ug/Kg. No hydrocarbon oil & grease was detected. No staining or odor was noticeable in the sample.

Sample MW-6-20 recovered from sand at a depth of 20 feet below grade in monitoring well MW-6. Laboratory analysis shows no detectable total petroleum hydrocarbons as diesel, kerosene, or motor oil; no detectable TVH as gasoline, benzene, toluene, or ethylbenzene. Total xylenes were detected at 15 ug/Kg. No hydrocarbon oil & grease was detected. No staining or odor was noticeable in the sample.

The following tables summarize the results of soil sampling and analyses presented in this report:

GASOLINE RESULTS FOR RECENT SOIL SAMPLES
 Summary of Laboratory Gasoline Test Results for Soil Samples

<i>Date Sampled</i>	<i>Sample & depth</i>	<i>TPH gas mg/Kg</i>	<i>Benzene mg/kg</i>	<i>Toluene mg/kg</i>	<i>Ethyl benzene mg/Kg</i>	<i>Xylenes mg/Kg</i>
6-26-91	B-6, 8'	ND < 1.0	ND < 0.005	0.011	ND < 0.005	0.029
6-26-91	MW-5, 5'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	0.021
6-26-91	MW-6, 15'	ND < 1.0	ND < 0.005	0.0072	0.0052	0.028
6-26-91	MW-6, 20'	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	0.015

ND- Not detected below reporting limits

OIL AND DIESEL RESULTS FOR RECENT SOIL SAMPLES
 Summary of Laboratory Oil & Grease Test Results for Soil Samples

<i>Date Sampled</i>	<i>Sample & depth</i>	<i>Oil & Grease mg/Kg</i>	<i>Kerosene mg/kg</i>	<i>Diesel mg/kg</i>	<i>Motor Oil mg/kg</i>
8-31-90	SS-1 18" below tank	20,000	NA	6,400	NA
10-10-90	B-1, 7'	ND < 30	NA	ND < 10 *	NA
10-10-90	B-3, 8'	ND < 30	NA	ND < 10 *	NA
10-10-90	B-4, 8'	710	NA	680 *	NA
10-10-90	B-5, 8'	ND < 30	NA	ND < 10 *	NA
6-26-91	B-6, 8'	ND < 50.0	ND < 1.0	ND < 1.0	ND < 100
6-26-91	MW-5, 5'	ND < 50.0	ND < 1.0	ND < 1.0	ND < 100
6-26-91	MW-6, 15'	ND < 50.0	ND < 1.0	ND < 1.0	ND < 100
6-26-91	MW-6, 20'	ND < 50.0	ND < 1.0	ND < 1.0	ND < 100

ND- Not detected below reporting limits

NA- Not analyzed for this constituent

* - Quality control error reported by laboratory

5.0 GROUNDWATER SAMPLING

A total of six ground water monitoring wells have been installed on the 150 X 200 foot site. The first four wells, MW-1 through MW-4, were installed as a part of the investigation of the former gasoline tank. The wells MW-5 and MW-6 were recently installed to investigate the vicinity of the former waste oil tank.

5.1 MONITORING WELL DEVELOPMENT

Monitoring wells MW-5 and MW-6 were developed to remove fine-grained sediments from the well casings on June 29, 1991. The procedures followed for well development were included in the workplan for this project. All equipment inserted during development was decontaminated and dedicated to each well. Prior to development a clear, dedicated, disposable PVC bailer was used to check for the presence of product

on the water surface. No product was detected on the ground water from the four site wells. The wells were developed until the water was visually free of fine-grained sediments and field measurements of Ph, electrical conductivity, and temperature stabilized. At least 10 well volumes of water were removed from each well during development.

5.2 GROUND WATER SAMPLING

Monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 were sampled using a teflon bailer according to the procedures described in the workplan. Samples were collected and transported, according to the Sampling and Analysis Plan, to a California Department of Health Services- certified laboratory, Curtis & Tompkins, Ltd. of Berkeley, California. A dedicated poly tube and surface pump was used to remove a minimum of 4 well volumes of stale water from each well prior to sampling. Water parameters of temperature, conductivity, and Ph were monitored after every gallon of water removed to verify stabilization. A clear, dedicated, disposable PVC bailer was used to collect the ground water samples. Chain of custody forms and laboratory data sheets are found in Appendix A.

5.3 GROUND WATER CHEMISTRY DISCUSSION

The ground water from monitoring wells MW-1, MW-2, MW-3 and MW-4 was analyzed for the target pollutants TVH as gasoline and BTEX. The groundwater from wells MW-3, MW-5, and MW-6 was analyzed for the target pollutants TVH as gasoline with BTEX, diesel, oil & grease and purgeable halocarbons. Laboratory data sheets containing the laboratory results are contained in Appendix A. Quality Assurance and Quality Control (QA/QC) documents are found with the laboratory data sheets. The following Tables summarize the chemical compounds detected. The first table lists the gasoline results for groundwater samples:

GASOLINE RESULTS FOR GROUNDWATER SAMPLES
 Summary of Laboratory Test Results for Ground Water Samples

<i>Date Sampled</i>	<i>Monitoring Well</i>	<i>TPH gas ug/L</i>	<i>Benzene ug/L</i>	<i>Toluene ug/L</i>	<i>Ethyl benzene ug/L</i>	<i>Xylenes ug/L</i>
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
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
7-30-91	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
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

ND- Not detected below reporting limits

The following table presents the results of laboratory analyses for extractable petroleum hydrocarbons and purgeable halocarbons in water:

EXTRACTABLE AND PURGIBLE RESULTS FOR WATER SAMPLES
 Summary of Laboratory Test Results for Ground Water Samples

<i>Date Sampled</i>	<i>Monitoring Well</i>	<i>Diesel ug/L</i>	<i>Kerosene ug/L</i>	<i>Oil & Grease mg/L</i>	<i>Chlorobenzene ug/L</i>
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
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

ND- NOT DETECTED BELOW REPORTING LIMITS

NA- NOT ANALYZED BY LABORATORY

*- QA/AC REVIEW INDICATES CORRECTION

6.0 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. Data from previous reports that was only summarized in this report was not reviewed. 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 4 bore volumes of water, in accordance with EPA protocol. At the end of purging, the well water was clear in all wells except MW-5. However, upon recovery of the well MW-5, the

water collected for the sample was clear. The deionized water equipment blank for the December 4, 1991 sampling was reported to have a low concentration of chloroform and no other compounds. Since chloroform was not reported in any of the samples analyzed, the appearance of chloroform in the blank sample is judged to not effect the quality of the sample data.

Abrupt changes in chemical concentrations for wells MW-5 and MW-6 were noted in the December 4, 1991 sampling as compared to previous sampling intervals. The reported data indicated a reversal of the known direction of groundwater flow direction. A review of the field sampling forms indicates the field crew reversed the labels for wells MW-5 and MW-6. The corrected data is presented in the report and tables.

Conductivity measurements for five of the six wells on site indicate a total dissolved solids content corresponding to about 400-500 mg/L. We interpret the conductivity to indicate potable water according to RWQCB guidelines of less than 3000 mg/L. Well MW-6 shows anomalous conductivity results. 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. Cracking of the concrete floor around well MW-6 due to swelling of the back fill was also noted. We believe that the base rock used to back fill the waste oil tank excavation was of low quality and 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 was 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. The compound chlorobenzene was detected in wells MW-5 and MW-6 for the first time in the December 4, 1991 sampling. Chlorobenzene was detected in the tank removal soil sample from beneath the waste oil tank.

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

July 18, 1991: The chain-of-custody indicates that the water samples were to be analyzed for extractable hydrocarbons (diesel). The field sampling crew collected insufficient water for the analysis of both extractable hydrocarbons and petroleum oil & grease. The analysis of extractable hydrocarbons was canceled by the laboratory.

December 4, 1991: 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 blank.

7.0 ASSESSMENT OF PROBLEM

7.1 ESTIMATE OF SPILLED OR LEAKED PRODUCTS

No precise estimate of spilled or leaked product is available. Inventory records for the gasoline tank suggest leakage of less than one years duration from the fill tube. No inventory records for the waste oil tank are available. The extent of soil and groundwater contamination is limited to the immediate area surrounding each tank.

7.2 SITE HYDROGEOLOGY

The water bearing unit consists primarily of fine to medium grained clayey sand and sand. The predominantly clayey sand aquifer contained intermittent fine sand and clay lenses. As part of the recent investigation two groundwater monitoring wells (MW-5 and MW-6) were installed at the site. The locations of these wells are shown on Plate 4, Sampling Map, Waste Oil Tank. The geology and depths to which some of these wells are screened are shown on the boring logs found in Appendix B. Due to the lateral continuity of the lithology at the site both wells were constructed using identical

designs. The blank cased portion of the two inch monitoring wells exist to 5 feet BGS. Fifteen feet of 0.010 inch slotted PVC extends to 25 feet. Lonestar No. 3 sand was used as the filter pack surrounding the slotted portion of the well and extended two feet above the slot to three feet BGS. A hydrated bentonite seal above the sand pack and neat cement to the surface completed the well design.

The aquifer samples collected from each well were used to estimate grain size diameter against percent finer by weight. The filter pack selected, Lonestar No. 3, contains a 30% finer grain size that is 4 to 6 times greater than the 30% finer grain size of the aquifer material. This design allows 70% of the adjacent aquifer material to be trapped in the filter pack. The .010 inch slot installed will retain 100% of the sand pack and approximately 70% of the surrounding aquifer material taking into account the lenses of finer clay rich material. The .010 inch slot and Lonestar No. 3 sand combination meet accepted design parameters for ground water monitoring wells constructed in this type of aquifer environment.

The shallow groundwater-bearing zone beneath the site appears to be unconfined. The direction of the groundwater gradient beneath the site was determined by measurements of water levels at three groundwater monitoring wells. Water elevations were used to prepare groundwater work sheets. The following table summarizes the groundwater measurements recorded for selected groundwater monitoring wells. The groundwater work sheets generated during each sampling event, indicate that the groundwater flow direction and the horizontal gradient vary throughout the year. The fluctuating groundwater flow direction may indicate that the shallow hydrogeologic regime is sensitive to seasonal changes in precipitation. These changes can become more magnified in water table conditions which are characterized by very flat horizontal hydraulic gradients.

MONITORING WELL GROUNDWATER MEASUREMENTS

<i>Date</i>	<i>Well Number</i>	<i>Water Level</i>	<i>Casing Elevation</i>	<i>Water Elevation</i>
6-20-90	MW2	7.16	16.73	9.57
6-20-90	MW3	7.37	16.89	8.52
6-20-90	MW4	7.60	16.39	8.79
12-17-90	MW2	8.78	16.73	7.95
12-17-90	MW3	8.42	16.89	8.47
12-17-90	MW4	8.61	16.39	7.78
9-13-90	MW2	8.78	16.73	7.95
9-13-90	MW3	8.70	16.89	8.19
9-13-90	MW4	8.80	16.39	7.59
12-4-90	MW2	7.99	16.73	8.74
12-4-90	MW3	8.18	16.89	8.71
12-4-90	MW4	8.26	16.39	8.13

The following table summarizes the results of the calculation of groundwater flow direction and gradient for the groundwater measurements. A simple three point solution was utilized to calculate the flow direction and gradient. Well MW1 was not used for the calculation because it is located in the artificial back fill of the tank excavation.

GROUNDWATER FLOW DIRECTIONS AND GRADIENTS

<i>Date</i>	<i>Direction of Flow</i>	<i>Horizontal Gradient</i>
June 20, 1990	North 26 degrees West	0.0088 ft/ft
September 13, 1990	North 91 degrees West	0.0073 ft/ft
December 17, 1990	North 106 degrees West	0.0069 ft/ft
December 4, 1991	North 77 degrees West	0.0093 ft/ft

Although the groundwater flow direction and horizontal hydraulic gradient fluctuate throughout the year, the average of the collected field data suggests that groundwater is flowing in a North 75 degrees West direction at an approximate hydraulic gradient of 0.0081 ft/ft.

7.3 SOIL CONTAMINATION

The excavation of accessible contaminated soil was performed at both tank locations. The majority of the soil contamination was removed. A small area of gasoline contaminated soil remains under the foundation wall adjacent to the former gasoline tank location. Soil venting is proposed to remove this remaining soil contamination. The soil from the excavation was aerated on site until no detectable sampling results were obtained. The soil was disposed at a local Class III landfill.

A small area of diesel contaminated soil remains under the foundation wall adjacent to the former waste oil tank. Remediation of the clay soil under the foundation does not appear to be economically feasible. The soil from the excavation is stockpile on site for remediation and disposal. Sampling of the pile has been performed and a proposal for remediation has been submitted.

7.4 GROUNDWATER CONTAMINATION

Groundwater sampling has been performed on an intermittent schedule for the last two years. The first four groundwater monitoring wells installed as a part of the investigation of the gasoline tank, demonstrate consistent sampling results. Wells MW-2, MW-3, and MW-4 have consistently shown no detectable concentrations of gasoline and BTEX. Well MW-1 located in the tank pit of the former gasoline tank, consistently shows levels of gasoline and BTEX above action limits. The groundwater contamination in the gasoline pit does not appear to be migrating and may be confined to the pit. The proposed soil venting of remaining gasoline contamination under the foundation wall adjacent to the tank pit could alleviate the groundwater contamination in the pit.

Two additional wells were subsequently installed in the vicinity of the former waste oil tank excavation. Well MW-5 was located down gradient of the pit adjacent to a neighboring property with a waste oil tank. Well MW-6 is located at the former tank location in back fill material. The well MW-3, previously installed as part of the

gasoline tank investigation, is the closest down gradient well to the former waste oil tank.

Sampling for gasoline, BTEX, and oil & grease has shown no detectable results in two sampling intervals. Extractable hydrocarbons (diesel) and purgeable halocarbons were analyzed for the first time on December 4, 1991. Detectable concentrations of diesel (1600 ppb) were reported for well MW-6 in the waste oil excavation. Chlorobenzene (33 ppb) was reported in well MW-6 at the waste oil tank pit and in the well MW-5 at a concentration of 3 ppb. MW-5 is at the property boundary adjacent to the waste oil tank on the neighboring property. No diesel or chlorobenzene was reported in the down gradient well, MW-3 from the waste oil tank on this site. Additional sampling is necessary to substantiate the concentrations of the new reported compounds.

8.0 RECOMMENDATIONS

TMC Environmental, Inc. recommends the following additional tasks to be performed in the following quarter:

- Groundwater sampling and water level measurements should be performed on consistent quarterly basis.
- Remediation of the stockpile waste oil contaminated soil should begin as soon as feasible.
- Soil venting of the remaining gasoline contaminated soil should begin as soon as feasible.
- After one year of groundwater monitoring, a technical report should be prepared assessing the problem and recommending closure or remediation measures if required.

9.0 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 workplan 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 judgment 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.

10.0 CERTIFICATION

I supervised the preparation of the Status Report dated January 15, 1992 for the Cavanaugh Motors facility in the City of Alameda, Alameda County, California. The investigation used techniques and standards of care common to the consulting geologic profession in California. My certification as an engineering geologist by the State of California, Board of Registration for Geologists and Geophysicists, license number EG-1380, expires on June 30, 1992. This license is active and currently in good standing with the Board of Registration.

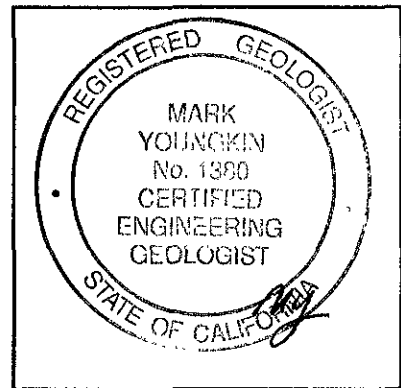
Certifying Professional:

TMC Environmental, Inc.
Vice President



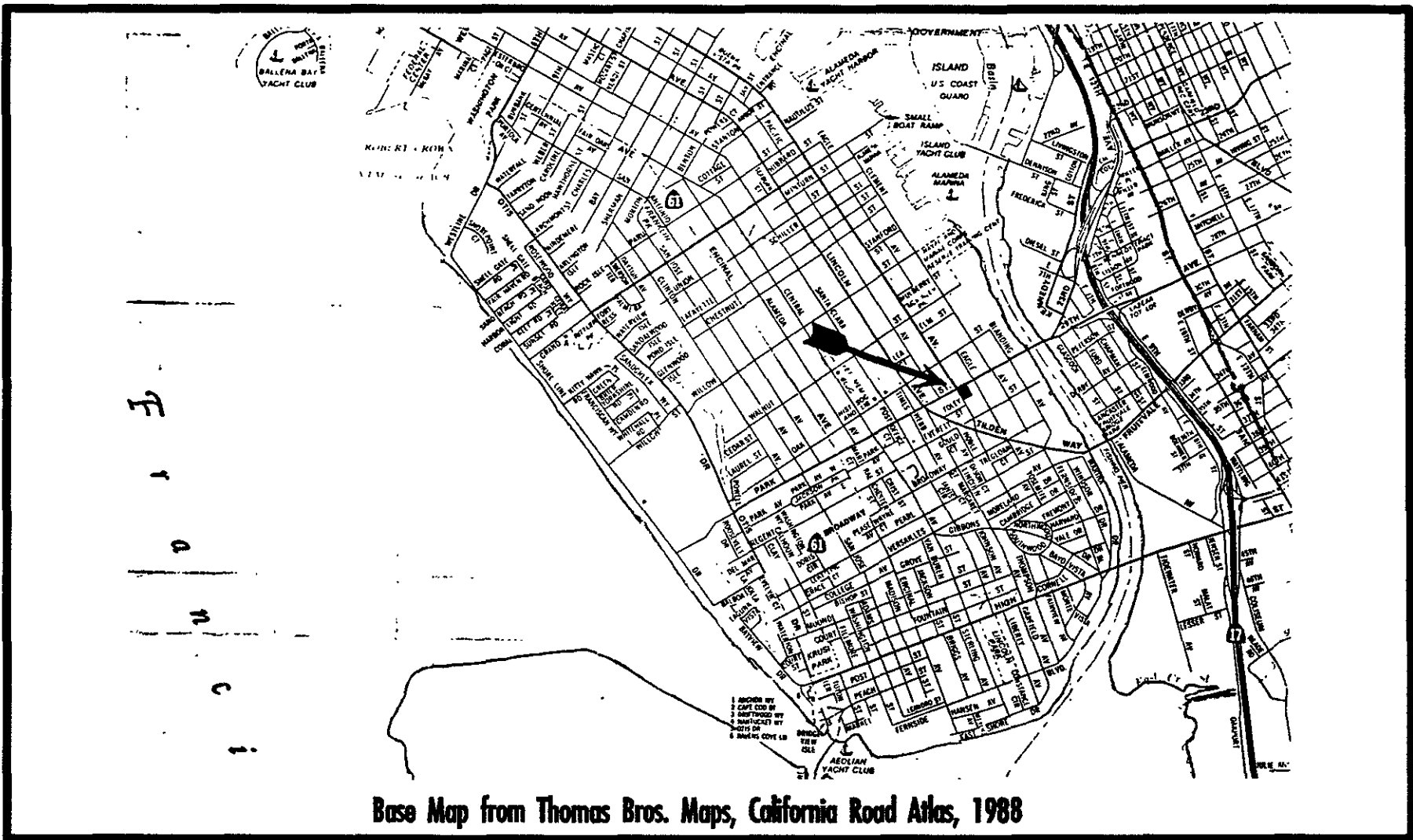
Mark T. Youngkin
Certified Engineering Geologist No. EG-1380

Dated January 15, 1992

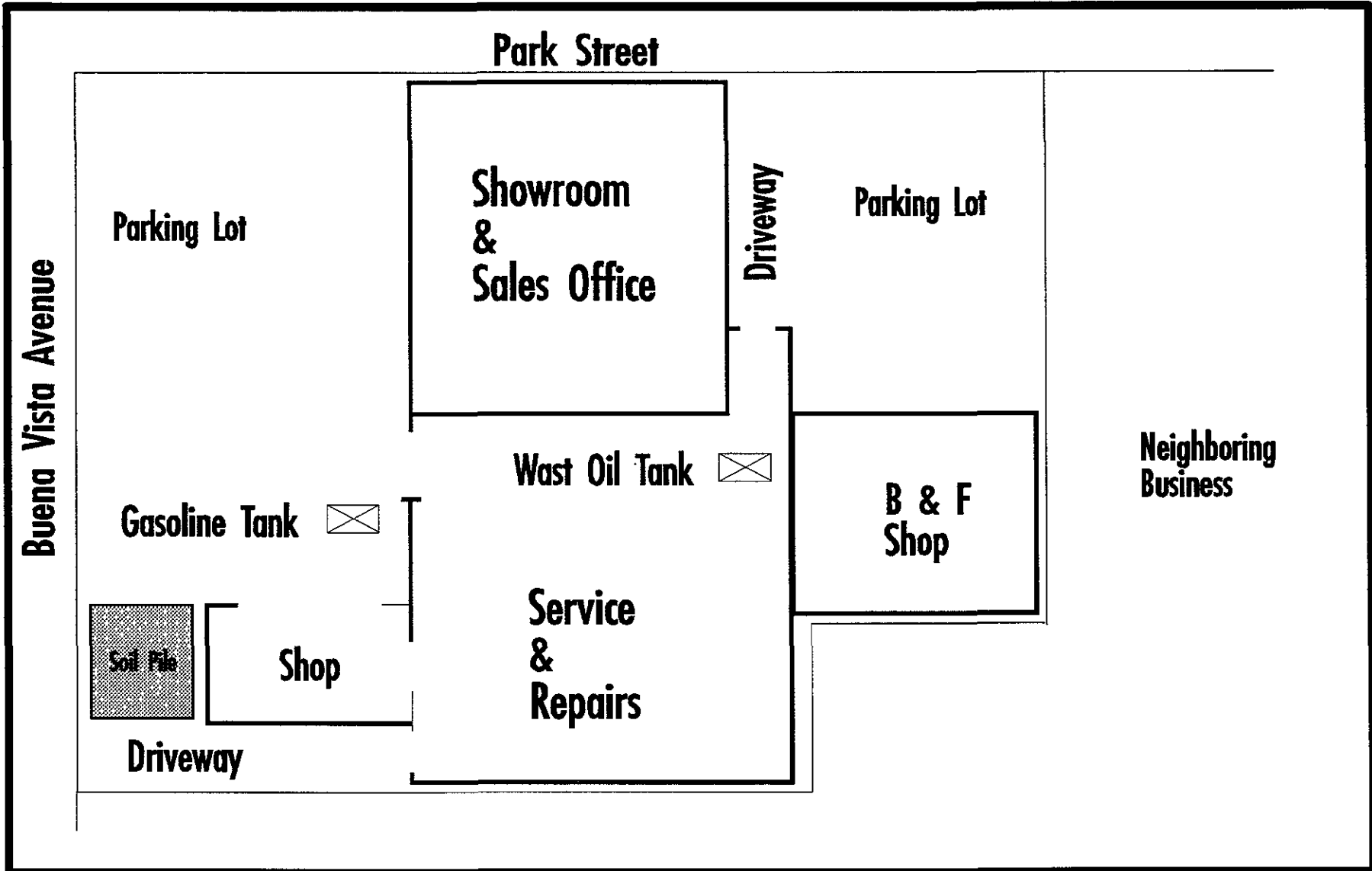


Geologist Seal

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.



<p>LEGEND</p> <p>Scale: 1 inch = 2200 feet</p> <p>N</p>	<p>SITE VICINITY MAP</p> <p>Cavanaugh Motors</p> <p>1700 Park Street, Alameda, California</p>
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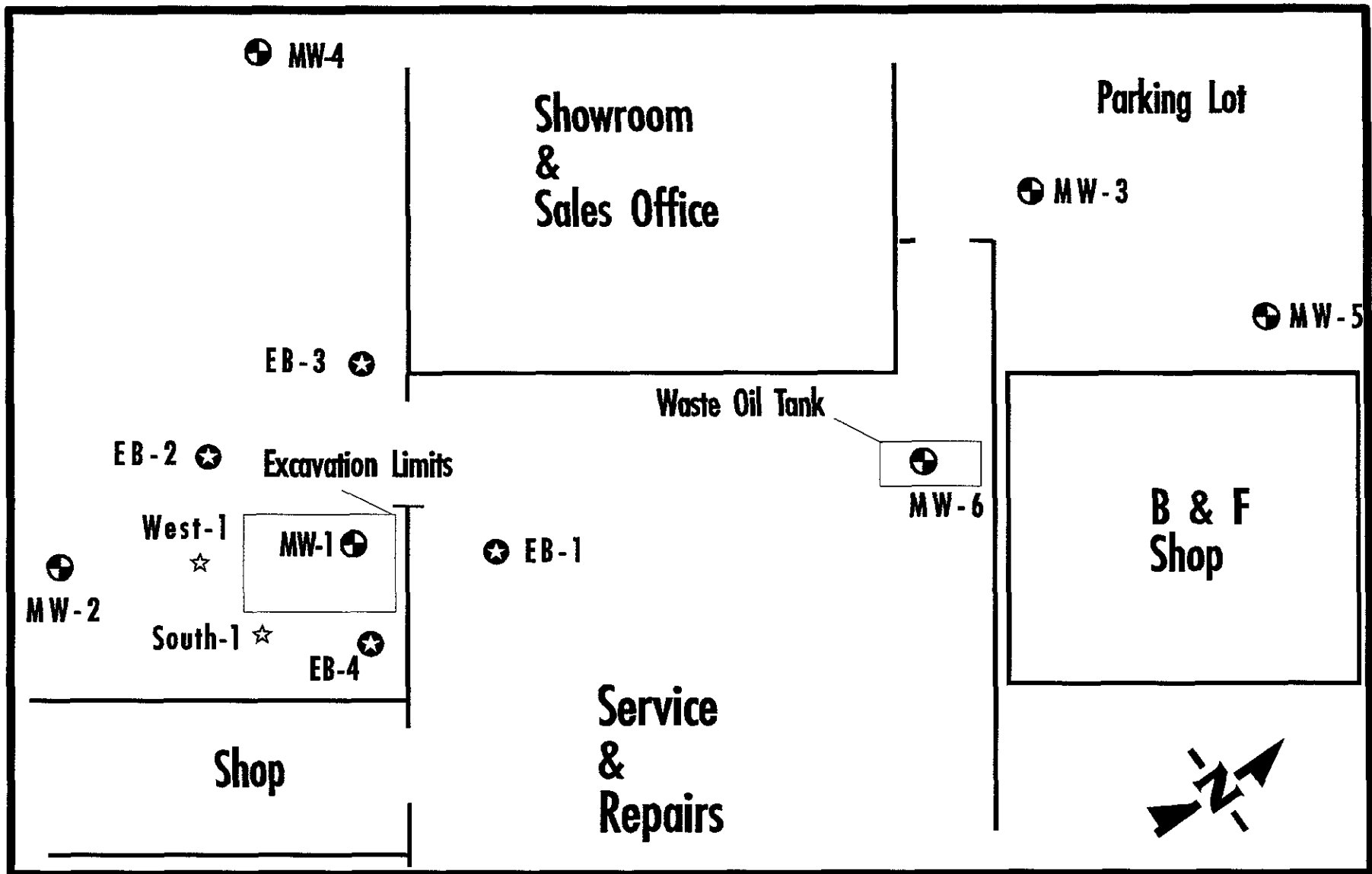
LEGEND



Scale: 1 inch = 30 feet
 Project No. 109001
 January 15, 1992

SITE MAP

Cavanaugh Motors
 1700 Park Street, Alameda California



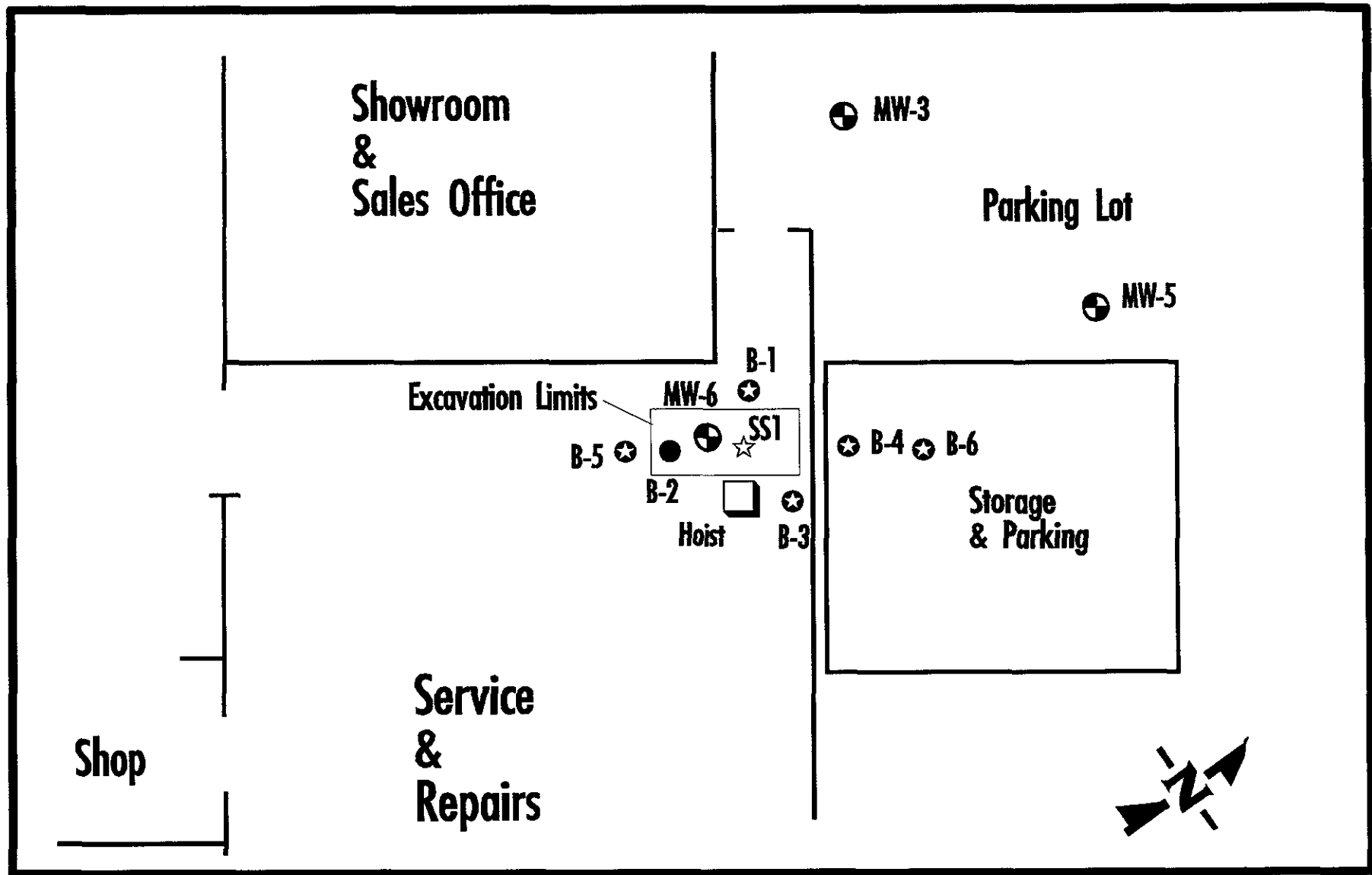
LEGEND

- ⊕ Monitoring Well
- Boring without soil sample
- ★ Boring with soil sample
- ☆ Soil sample

Project No. 109001
 January 15, 1992
 Scale 1 inch = 20 feet

**SAMPLING MAP
 GASOLINE TANK
 Cavanaugh Motors**

1700 Park Street, Alameda California



LEGEND

- Boring without soil sample
- ⊛ Boring with soil sample
- ☆ Tank removal soil sample

Project No. 109001
 January 15, 1992
 Scale 1 inch = 20 feet

**SAMPLING MAP
 WASTE OIL TANK**

Cavanaugh Motors
 1700 Park Street, Alameda California

APPENDIX A

**CERTIFIED ANALYTICAL REPORTS,
CHAIN-OF-CUSTODY AND ANALYSIS REQUEST FORMS**



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 06/26/91
DATE REQUESTED: 07/15/91
DATE REPORTED: 07/18/91


LAB NUMBER: 104491

CLIENT: TMC ENVIRONMENTAL, INC.

PROJECT ID: 109001

LOCATION: CAVANAUGH MOTORS

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

Berkeley

Wilmington

Los Angeles

Client: TMC Environmental, Inc.

Laboratory Login Number: 104491

Project Name: Cavanaugh Motors

Report Date: 18 July 91

Project Number: 109001

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
104491-001	MW5-5	Soil	26-JUN-91	26-JUN-91	17-JUL-91	ND	mg/Kg	50	TR	2062
104491-002	B-6	Soil	26-JUN-91	26-JUN-91	17-JUL-91	ND	mg/Kg	50	TR	2062
104491-003	MW6-15	Soil	26-JUN-91	26-JUN-91	17-JUL-91	ND	mg/Kg	50	TR	2062
104491-004	MW6-20	Soil	26-JUN-91	26-JUN-91	17-JUL-91	ND	mg/Kg	50	TR	2062

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

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

 Client: TMC Environmental, Inc.
 Project Name: Cavanaugh Motors
 Project Number: 109001

 Laboratory Login Number: 104491
 Report Date: 18 July 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 2062

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	17-JUL-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	83%	SMWW 17:5520EF	17-JUL-91
BSD	92%	SMWW 17:5520EF	17-JUL-91

		Control Limits
Average Spike Recovery	87%	80% - 120%
Relative Percent Difference	9.5%	< 20%

LABORATORY NUMBER: 104289
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 06/26/91
 DATE EXTRACTED: 07/01/91
 DATE ANALYZED: 07/02/91
 DATE REPORTED: 07/03/91
 DATE REVISED: 07/08/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	MOTOR OIL RANGE (mg/Kg)
104289-1	MW5-5	ND(1.0)	ND(1.0)	ND(100)
104289-2	B-6	ND(1.0)	ND(1.0)	ND(100)
104289-3	MW6-15	ND(1.0)	ND(1.0)	ND(100)
104289-4	MW6-20	ND(1.0)	ND(1.0)	ND(100)

ND = Not Detected; Reporting Limit indicated in parentheses.

QA/QC SUMMARY

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=====
RPD, %                                     3
RECOVERY, %                               85
=====
  
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Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 06/26/91

DATE REPORTED: 07/03/91

LAB NUMBER: 104289

CLIENT: TMC ENVIRONMENTAL, INC.

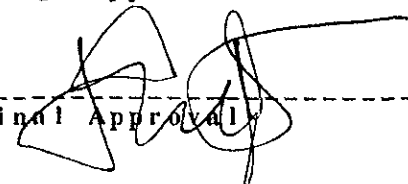
PROJECT ID: 109001

LOCATION: CAVANAUGH MOTORS

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

LABORATORY NUMBER: 104289
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 06/26/91
 DATE ANALYZED: 07/01/91
 DATE REPORTED: 07/03/91

Total Volatile Hydrocarbons with BTXE in Soils and Wastes
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
104289-1	MW5-5	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	21
104289-2	B-6	ND(1.0)	ND(5.0)	11	ND(5.0)	29
104289-3	MW6-15	ND(1.0)	ND(5.0)	7.2	5.2	28
104289-4	MW6-20	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	15

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

QA/QC SUMMARY

RPD, % <1
 RECOVERY, % 113

LABORATORY NUMBER: 104289
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 06/26/91
 DATE EXTRACTED: 07/01/91
 DATE ANALYZED: 07/02/91
 DATE REPORTED: 07/03/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
104289-1	MW5-5	ND	ND	1.0
104289-2	B-6	ND	ND	1.0
104289-3	MW6-15	ND	ND	1.0
104289-4	MW6-20	ND	ND	1.0

ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	85



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 109001	Project Name: CAVANAGH MOTORS	Project Contact: MARK YOUNGKIN	Page 1 of 1
Project Address: 1700 PARK STREET, ALAMEDA, CA			Turnaround Time: 5 days
Sampler: MARK YOUNGKIN		Laboratory Name: CURTIS & THOMPSON	Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTEX	TPH-DIESEL	ORGANIC LEAD	REMARKS ADDITIONAL ANALYSIS
104289-1	6/26/91	9:55	X		MW5-5	X	X		Sand, no odor
-2	6/26/91	11:30	X		B-6	X	X		Sand, no odor, 8-8 1/2' wet
-3	6/26/91	13:30	X		MW6-15	X	X		Sand, no odor
-4	6/26/91	13:55	X		MW6-20	X	X		Sand, no odor

Relinquished By: (Signature) <i>Mark Youngkin</i>	Date: 6-26-91 Time: 14:00	Received By: (Signature) <i>[Signature]</i>	Date: 6/26/91 Time: 1400
Relinquished By: (Signature) <i>[Signature]</i>	Date: Time:	Received By: (Signature)	Date: Time:
Relinquished By: (Signature) <i>[Signature]</i>	Date: 6/26/91 Time: 1400	Received By: (Signature) <i>[Signature]</i>	Date: 6/26/91 Time: 1400



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 109001	Project Name: CAVANAUGH MOTORS	Project Contact: MARK YOUNGKIN	Page 1 of 1
Project Address: 1700 PARK STREET, ALAMEDA, CA			Turnaround Time: 5 days
Sampler: MARK YOUNGKIN		Laboratory Name: CURTIS & THOMPSON	Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTX	TPH-DIESEL	ORGANIC LEAD	REMARKS	
										ADDITIONAL ANALYSIS
	6/26/91	9:55	X		MW5-5	X	X			Sand, no odor
	6/26/91	11:30	X		B-6	X	X			Sand, no odor, 8-8 1/2' wet
	6/26/91	13:30	X		MW6-15	X	X			Sand, no odor
	6/26/91	13:55	X		MW6-20	X	X			Sand, no odor

Relinquished By: (Signature) <i>Mark Youngkin</i>	Date: 6-26-91 Time: 14:00	Received By: (Signature) <i>[Signature]</i>	Date: 6/26/91 Time: 1400
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
Relinquished By: (Signature) <i>[Signature]</i>	Date: 6/26/91 Time: 1400	Received By: (Signature) <i>[Signature]</i>	Date: 6/26/91 Time: 1400



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 07/18/91

DATE REPORTED: 07/29/91

LAB NUMBER: 104557

CLIENT: TMC ENVIRONMENTAL

PROJECT ID: 109001

LOCATION: CAVANAUGH MOTORS

RESULTS: SEE ATTACHED

QA/QC APPROVAL

Final Approval

LABORATORY NUMBER: 104557
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 07/18/91
 DATE ANALYZED: 07/22/91
 DATE REPORTED: 07/29/91

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)
104557-1	WS-1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
104557-2	WS-2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
104557-3	WS-3	ND(50)	1.3	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, % 99
 =====

Client: TMC Environmental, Inc.

Laboratory Login Number: 104557

 Project Name: Cavanaugh Motors
 Project Number: 109001

Report Date: 29 July 91

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

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
104557-001	WS-1	Water	18-JUL-91	18-JUL-91	23-JUL-91	ND	mg/L	5	TR	2114
104557-002	WS-2	Water	18-JUL-91	18-JUL-91	23-JUL-91	ND	mg/L	5	TR	2114
104557-003	WS-3	Water	18-JUL-91	18-JUL-91	23-JUL-91	ND	mg/L	5	TR	2114

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

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

Client: TMC Environmental, Inc.
 Project Name: Cavanaugh Motors
 Project Number: 109001

Laboratory Login Number: 104557
 Report Date: 29 July 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 2114

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	23-JUL-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	84%	SMWW 17:5520BF	23-JUL-91
BSD	87%	SMWW 17:5520BF	23-JUL-91

		Control Limits
Average Spike Recovery	86%	80% - 120%
Relative Percent Difference	3.3%	< 20%

LABORATORY NUMBER: 104557
CLIENT: TMC ENVIRONMENTAL
PROJECT ID: 109001
LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 07/18/91
DATE ANALYZED: 07/29/91
DATE REPORTED: 07/29/91

=====
ANALYSIS: TOTAL DISSOLVED SOLIDS
ANALYSIS METHOD: EPA 160.1
=====

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
104557-1	WS-3	5,000	mg/L	20

QA/QC SUMMARY

=====
RPD, %

1
=====



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 109001 Project Name: Cavanaugh Project Contact: Mark Youngkin Page 1 of 1
 Project Address: 1700 Park Street, Alameda Ca. Turnaround Time: 5 days
 Sampler: Marc Edwards Laboratory Name: Curtis & Tompkins Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTX	TPH-DIESEL	ORGANIC LEAD	Petroleum oil & grease	TDS Dissolved Solids	REMARKS ADDITIONAL ANALYSIS
	7/18/91	11:20a		X	WS-1	X	X		X		clear H ₂ O, No odor
	7/18/91	11:40		X	WS-2	X	X		X		clear H ₂ O, No odor
	7/18/91	12:15		X	WS-3	X	X		X	X	clear H ₂ O, No odor

Relinquished By: (Signature)	Date: 7/18/91 Time: 13:45	Received By: (Signature)	Date: 7/18/91 Time: 13:45
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:

10455-1-



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CHAIN OF CUSTODY RECORD
ANALYSIS REQUEST FORM

Project No. 109001	Project Name: Cavanaugh	Project Contact: Mark Youngkin	Page 1 of 1
Project Address: 1700 Park Street, Alameda Co.			Turnaround Time: 5 days
Sampler: Marc Edwards		Laboratory Name: Curtis & Tompkins	Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTX	TPH-DIESEL	ORGANIC LEAD	Petroleum oil & grease	TDS Dissolved Solids	REMARKS ADDITIONAL ANALYSIS
10455-1	7/18/91	11:20a		X	WS-1	X	X		X		clear H ₂ O, No odor
-2	7/18/91	11:40		X	WS-2	X	X		X		clear H ₂ O, No odor
-3	7/18/91	12:15		X	WS-3	X	X		X	X	clear H ₂ O, No odor
											No H ₂ O in water
											found 1 liter water
											received first water
											sample B...
											...
											...

Relinquished By: (Signature)	Date: 7/18/91	Received By: (Signature)	Date: 7/18/91
	Time: 13:45		Time: 13:45
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
	Time:		Time:
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
	Time:		Time:



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 07/30/91

DATE REPORTED: 08/06/91


LAB NUMBER: 104648

CLIENT: TMC ENVIRONMENTAL, INC.


PROJECT ID: 109001

LOCATION: CAVANAUGH MOTORS

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

Berkeley

Wilmington

Los Angeles

Client: TMC Environmental, Inc.

Laboratory Login Number: 104648

Project Name: Cavanaugh Motors

Report Date: 06 August 91

Project Number: 109001

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
104648-001	MW2	Water	29-JUL-91	30-JUL-91	05-AUG-91	ND	mg/L	5	TR	2238
104648-002	MW4	Water	29-JUL-91	30-JUL-91	05-AUG-91	ND	mg/L	5	TR	2238
104648-003	MW1	Water	29-JUL-91	30-JUL-91	05-AUG-91	ND	mg/L	5	TR	2238

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

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

Client: TMC Environmental, Inc.
 Project Name: Cavanaugh Motors
 Project Number: 109001

Laboratory Login Number: 104648
 Report Date: 06 August 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 2238

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	05-AUG-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	89%	SMWW 17:5520BF	05-AUG-91
BSD	86%	SMWW 17:5520BF	05-AUG-91

		Control Limits
Average Spike Recovery	88%	80% - 120%
Relative Percent Difference	4.0%	< 20%

LABORATORY NUMBER: 104648
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 07/30/91
 DATE ANALYZED: 08/02/91
 DATE REPORTED: 08/06/91

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)
104648-1	MW2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
104648-2	MW4	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
104648-3	MW1	21,000	890	1,900	320	1,700

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

QA/QC SUMMARY

=====
 RPD, % 1
 RECOVERY, % 100
 =====



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CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 09001 Project Name: CAVANAUGH Project Contact: TOM EDWARDS Page 1 of 1
 Project Address: 1700 PARK ST ALAMEDA CA. Turnaround Time: 5 days
 Sampler: MARC EDWARDS Laboratory Name: CURTIS & TOMPKINS Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTEX	TPH-DIESEL BTEX	ORGANIC LEAD	OIL & GREASE	REMARKS ADDITIONAL ANALYSIS
	7/29/91	2:15p		X	MW2	X			X	CLEAR, NO ODOR
	7/29/91	3:30p		X	MW4	X			X	CLEAR, NO ODOR
	7/29/91	4:45p		X	MW1	X			X	CLOUDY, STRONG ODOR

Relinquished By: (Signature) 	Date: <u>7/30/91</u> Time: <u>4:25p</u>	Received By: (Signature) 	Date: <u>7/30/91</u> Time: <u>16:25</u>
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:



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CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 109001 Project Name: CAVANAUOH Project Contact: TOM EDWARDS Page 1 of 1
 Project Address: 1700 PARK ST. ALAMEDA CA. Turnaround Time: 5 days
 Sampler: MARC EDWARDS Laboratory Name: CURTIS & TOMPKINS Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTEX	TPH-DIESEL BTEX	ORGANIC LEAD	OIL & GREASE	REMARKS ADDITIONAL ANALYSIS
	7/29/91	2:15p		X	MW2	X			X	CLEAR, NO ODOR
	7/29/91	3:30p		X	MW4	X			X	CLEAR, NO ODOR
	7/29/91	4:45p		X	MW1	X			X	CLOUDY, STRONG ODOR

Relinquished By: (Signature) 	Date: <u>7/30/91</u> Time: <u>4:25p</u>	Received By: (Signature) 	Date: <u>7/30/91</u> Time: <u>16:25</u>
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 12/05/91
DATE REPORTED: 12/18/91


LABORATORY NUMBER: 105953

CLIENT: TMC ENVIRONMENTAL, INC.

PROJECT ID: 109001

LOCATION: CAVANAUGH MOTORS

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

LABORATORY NUMBER: 105953
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/12/91
 DATE REPORTED: 12/18/91

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)
105953-2	MW-6	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105953-3	MW-3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105953-4	MW-5	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105953-5	MW-4	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105953-6	MW-2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105953-7	MW-1	4,300	3.2	1.3	88	630

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

QA/QC SUMMARY

RPD, %	6
RECOVERY, %	91

Client: TMC Environmental, Inc.

Laboratory Login Number: 105953

 Project Name: Cavanaugh Motors
 Project Number: 109001

Report Date: 18 December 91

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

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
105953-002	MW-6	Water	04-DEC-91	05-DEC-91	09-DEC-91	ND	mg/L	5	TR	3610
105953-003	MW-3	Water	04-DEC-91	05-DEC-91	09-DEC-91	ND	mg/L	5	TR	3610
105953-004	MW-5	Water	04-DEC-91	05-DEC-91	09-DEC-91	ND	mg/L	5	TR	3610

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

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

 Client: TMC Environmental, Inc.
 Project Name: Cavanaugh Motors
 Project Number: 109001

 Laboratory Login Number: 105953
 Report Date: 18 December 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 3610

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	09-DEC-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	86%	SMWW 17:5520BF	09-DEC-91
BSD	85%	SMWW 17:5520BF	09-DEC-91

		Control Limits
Average Spike Recovery	86%	80% - 120%
Relative Percent Difference	2.0%	< 20%



LABORATORY NUMBER: 105953-2
CLIENT: TMC ENVIRONMENTAL, INC.
PROJECT ID: 109001
LOCATION: CAVANAUGH MOTORS
SAMPLE ID: MW-6

DATE RECEIVED: 12/05/91
DATE ANALYZED: 12/10/91
DATE REPORTED: 12/18/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	1.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	4.6	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

113

LABORATORY NUMBER: 105953-3
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: MW-3

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/18/91

EPA 8010
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	1.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

114

LABORATORY NUMBER: 105953-4
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: MW-5

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/18/91

EPA 8010
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	1.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	33	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %	109
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=====

LABORATORY NUMBER: 105953
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: METHOD BLANK

DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/18/91

EPA 8010
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	1.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	1.1	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

112

=====

BS/BSD SUMMARY SHEET FOR EPA 8010/8020

Operator: AV Spike file: 344W/X015
 Analysis date: 12/10/91 Spike dup file: 344W/X016
 Sample type: WATER Instrument: GC12
 Sequence Name: dec 10

8010 BS/BSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	22.18	111 %	OK	61 - 145
Trichloroethene	22.27	111 %	OK	71 - 120
Chlorobenzene	23.46	117 %	OK	75 - 130
SPIKE DUP COMPOUNDS				
1,1-Dichloroethene	22.87	114 %	OK	61 - 145
Trichloroethene	21.66	108 %	OK	71 - 120
Chlorobenzene	22.13	111 %	OK	75 - 130
SURROGATES				
BROMOBENZENE (BS)	111.00	111 %	OK	75 - 120
BROMOBENZENE (BSD)	111.00	111 %	OK	75 - 120

8020 BS/BSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
Benzene	22.37	112 %	OK	76 - 127
Toluene	21.15	106 %	OK	76 - 125
Chlorobenzene	21.46	107 %	OK	75 - 130
SPIKE DUP COMPOUNDS				
Benzene	22.38	112 %	OK	76 - 127
Toluene	21.18	106 %	OK	76 - 125
Chlorobenzene	21.40	107 %	OK	75 - 130
SURROGATES				
BROMOBENZENE (BS)	97.00	97 %	OK	75 - 120
BROMOBENZENE (BSD)	97.00	97 %	OK	75 - 120

RPD DATA

8010 COMPOUNDS	SPIKE	SPIKE DUP	RPD	STATUS	LIMITS
1,1-Dichloroethene	22.18	22.87	3 %	OK	< 14
Trichloroethene	22.27	21.66	3 %	OK	< 14
Chlorobenzene	23.46	22.13	6 %	OK	< 13
8020 COMPOUNDS					
Benzene	22.37	22.38	0 %	OK	< 11
Toluene	21.15	21.18	0 %	OK	< 13
Chlorobenzene	21.46	21.40	0 %	OK	< 13

LABORATORY NUMBER: 105953
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 12/05/91
 DATE EXTRACTED: 12/13/91
 DATE ANALYZED: 12/17/91
 DATE REPORTED: 12/18/91

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)
105953-2	MW-6	ND	ND	50
105953-3	MW-3	ND	ND	50
105953-4	MW-5	ND	1,400	50

ND = Not detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	123



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 109001 Project Name: CAVANAUGH Project Contact: Tom Edwards Page 1 of 1
 Project Address: 1700 PARK ST. Alameda, CA. Turnaround Time: 5 days
 Sampler: Tom Chigliotto/Michael Prince Laboratory Name: CURTIS & THOMPSON Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTEX	TPH-DIESEL BTEX	ORGANIC LEAD	Pet. Oil & Grease	EPA 8010	REMARKS ADDITIONAL ANALYSIS
105953-1	12-4-91	10:35		X	Field Blank 1	X	X				Hold
-2	12-4-91	11:20		X	MW-6	X	X		X	X	
-3	12-4-91	12:10		X	MW-3	X	X		X	X	
-4	12-4-91	12:45		X	MW-5	X	X		X	X	
-5	12-4-91	2:55		X	MW-4	X	X		X	X	
-6	12-4-91	3:30		X	MW-2	X	X		X	X	
-7	12-4-91	4:15		X	MW-1	X	X		X	X	

Relinquished By: (Signature) <i>Thomas Chigliotto</i>	Date: 12-4-91 Time: 9:50	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) <i>Nancy J. Walsh - Curtis & Thompson</i>	Date: 12/5/91 Time: 9:50



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5135

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 109001 Project Name: CAVANAUGH Project Contact: Tom Edwards Page 1 of 1
 Project Address: 1700 PARK ST. Alameda, CA. Turnaround Time: 5 days
 Sampler: Tom Ghioglotto/Michael Park Laboratory Name: CURTIS & THOMPSON Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTEX	TPH-DIESEL BTEX	ORGANIC LEAD	Pet. Oil & Grease	EPA 8010	REMARKS ADDITIONAL ANALYSIS
	12-4-91	10:35		X	Field Blank 1	X	X				Hold
	12-4-91	11:20		X	MW-6	X	X		X	X	
	12-4-91	12:10		X	MW-3	X	X		X	X	
	12-4-91	12:45		X	MW-5	X	X		X	X	
	12-4-91	2:55		X	MW-4	X	X		X	X	
	12-4-91	3:30		X	MW-2	X	X		X	X	
	12-4-91	4:15		X	MW-1	X	X		X	X	

Relinquished By: (Signature) <i>Thomas Ghioglotto</i>	Date: 12-4-91 Time: 9:50	Received By: (Signature)	Date:
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
Relinquished By: (Signature)	Date:	Received By: (Signature) <i>Nancy J. Weber - Curtis & Thompson</i>	Date: 12/5/91 Time: 9:50



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 12/05/91

DATE REPORTED: 12/18/91


LABORATORY NUMBER: 105958

CLIENT: TMC ENVIRONMENTAL, INC.

PROJECT ID: 109001

LOCATION: CAVANAUGH MOTORS

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

Berkeley

Wilmington

Los Angeles

LABORATORY NUMBER: 105958
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS

DATE RECEIVED: 12/05/91
 DATE EXTRACTED: 12/11/91
 DATE ANALYZED: 12/12/91
 DATE REPORTED: 12/18/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg / Kg)	DIESEL RANGE (mg / Kg)	REPORTING LIMIT* (mg / Kg)
105958-1	COMPOSITE 1	ND	54	1.0
105958-2	COMPOSITE 2	ND	44	1.0

ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	118

Client: TMC Environmental, Inc.

Laboratory Login Number: 105958

Project Name: Cavanaugh Motors
Project Number: 109001

Report Date: 18 December 91

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

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
105958-001	COMPOSITE 1	Soil	05-DEC-91	05-DEC-91	10-DEC-91	5000	mg/Kg	50	TR	3623
105958-002	COMPOSITE 2	Soil	05-DEC-91	05-DEC-91	10-DEC-91	3600	mg/Kg	50	TR	3623

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

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

 Client: TMC Environmental, Inc.
 Project Name: Cavanaugh Motors
 Project Number: 109001

 Laboratory Login Number: 105958
 Report Date: 18 December 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 3623

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	30	mg/Kg	SMWW 17:5520EF	10-DEC-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	87%	SMWW 17:5520EF	10-DEC-91
BSD	93%	SMWW 17:5520EF	10-DEC-91

		Control Limits
Average Spike Recovery	90%	80% - 120%
Relative Percent Difference	6.2%	< 20%

LABORATORY NUMBER: 105958-1
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: COMPOSITE 1

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/18/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug / Kg	REPORTING LIMIT ug / Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon tetrachloride	ND	5.0
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethylene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
2-Chloroethylvinyl ether	ND	10
Bromoform	ND	5.0
Tetrachloroethylene	10	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Chlorobenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

112

LABORATORY NUMBER: 105958-2
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: COMPOSITE 2

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/18/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon tetrachloride	ND	5.0
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethylene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
2-Chloroethylvinyl ether	ND	10
Bromoform	ND	5.0
Tetrachloroethylene	58	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Chlorobenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

109

LABORATORY NUMBER: 105958
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: METHOD BLANK

DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/18/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon tetrachloride	ND	5.0
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethylene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
2-Chloroethylvinyl ether	ND	10
Bromoform	ND	5.0
Tetrachloroethylene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Chlorobenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

107

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MS/MSD SUMMARY SHEET FOR EPA 8010/8020

Operator:	AV	Spike file:	344W/X006
Analysis date:	12/10/91	Spike dup file:	344W/X006
Sample type:	SOIL	Instrument:	GC12
SAMPLE ID:	105959-2	Sequence Name:	DEC 10

8010 MS/MSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	19.98	100 %	OK	59 - 172
Trichloroethene	22.43	112 %	OK	62 - 137
Chlorobenzene	22.27	111 %	OK	60 - 133
SPIKE DUP COMPOUNDS				
1,1-Dichloroethene	19.22	96 %	OK	59 - 172
Trichloroethene	19.37	97 %	OK	62 - 137
Chlorobenzene	19.14	96 %	OK	60 - 133
SURROGATES				
BROMOBENZENE (MS)	109.00	109 %	OK	70 - 120
BROMOBENZENE (MSD)	107.00	107 %	OK	70 - 120

8020 MS/MSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
Benzene	20.73	104 %	OK	66 - 142
Toluene	20.78	104 %	OK	59 - 139
Chlorobenzene	20.50	103 %	OK	60 - 133
SPIKE DUP COMPOUNDS				
Benzene	20.00	100 %	OK	66 - 142
Toluene	19.57	98 %	OK	59 - 139
Chlorobenzene	19.53	98 %	OK	60 - 133
SURROGATES				
BROMOBENZENE (MS)	99.00	99 %	OK	70 - 120
BROMOBENZENE (MSD)	101.00	101 %	OK	70 - 120

RPD DATA

8010 COMPOUNDS	SPIKE	SPIKE DUP	RPD	STATUS	LIMITS
1,1-Dichloroethene	19.98	19.22	4 %	OK	< 22
Trichloroethene	22.43	19.37	15 %	OK	< 23
Chlorobenzene	22.27	19.14	15 %	OK	< 21
8020 COMPOUNDS					
Benzene	20.73	20.00	4 %	OK	< 21
Toluene	20.78	19.57	6 %	OK	< 21
Chlorobenzene	20.50	19.53	5 %	OK	< 21

LABORATORY NUMBER: 105958-1
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT NUMBER: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: COMPOSITE 1

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/06, 11, 17/91
 DATE REPORTED: 12/18/91

RCRA METALS IN SOILS

	RESULT (mg / kg)	REPORTING LIMIT (mg / kg)	METHOD
ARSENIC	ND	2.5	EPA 7060
BARIUM	61.1	0.50	EPA 6010
CADMIUM	ND	0.24	EPA 6010
CHROMIUM	36.2	0.50	EPA 6010
LEAD	84	3.0	EPA 7420
MERCURY	ND	0.10	EPA 7471
SELENIUM	ND	2.5	EPA 7740
SILVER	ND	0.50	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD, %	RECOVERY, %
ARSENIC	9	94
BARIUM	2	100
CADMIUM	2	81
CHROMIUM	3	98
LEAD	2	85
MERCURY	5	85
SELENIUM	9	100
SILVER	<1	95

LABORATORY NUMBER: 105958-2
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT NUMBER: 109001
 LOCATION: CAVANAUGH MOTORS
 SAMPLE ID: COMPOSITE 2

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/06, 11, 17/91
 DATE REPORTED: 12/14/91

RCRA METALS IN SOILS

	RESULT (mg / kg)	REPORTING LIMIT (mg / kg)	METHOD
ARSENIC	ND	2.5	EPA 7060
BARIUM	64.2	0.50	EPA 6010
CADMIUM	ND	0.25	EPA 6010
CHROMIUM	33.6	0.50	EPA 6010
LEAD	150	3.0	EPA 7420
MERCURY	ND	0.10	EPA 7471
SELENIUM	ND	2.5	EPA 7740
SILVER	ND	0.50	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD, %	RECOVERY, %
ARSENIC	9	94
BARIUM	2	100
CADMIUM	2	81
CHROMIUM	3	98
LEAD	2	85
MERCURY	5	85
SELENIUM	9	100
SILVER	<1	95



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

105958

CHAIN OF CUSTODY RECORD

ANALYSIS REQUEST FORM

Project No. 109001 Project Name: CAUNAUGH METERS Project Contact: Tom Edwards Page 1 of 1
 Project Address: 1700 PARK ST, Alameda, CA Turnaround Time: 5 days
 Sampler: Tom DiGiglio Laboratory Name: CURTIS & THOMPSON Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTX	TPH-DIESEL BTEX	ORGANIC LEAD	oil grease	EPA 8010	PCRB 8	METALS	REMARKS
													ADDITIONAL ANALYSIS
-1	12-5-91	2:15	X		COMPOSITE 1		X		X	X	X		
-2	12-5-91	2:45	X		COMPOSITE 2		X		X	X	X		

Relinquished By: (Signature) <i>Thomas DiGiglio</i>	Date: 12-5-91 Time: 1535	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) <i>Alison Keane</i>	Date: 12/5/91 Time: 3:35p



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 109001 Project Name: CAUVANAUGH Motors Project Contact: Tom Edwards Page 1 of 1
 Project Address: 1700 PARK ST, Alameda, CA. Turnaround Time: 5 days
 Sampler: Tom Chigliotto Laboratory Name: CURTIS & THOMPSON Lab No: 159

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTEX	TPH-DIESEL BTEX	ORGANIC LEAD	oil & grease	EPA BOD	PCRB B	METALS	REMARKS
													ADDITIONAL ANALYSIS
	12-5-91	2:15	X		Composite 1		X		X	X	X		
	12-5-91	2:45	X		Composite 2		X		X	X	X		

Relinquished By: (Signature) <i>Thomas Chigliotto</i>	Date: 12-5-91 Time: 1535	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) <i>Alison Keane</i>	Date: 12/5/91 Time: 3:50p

APPENDIX B

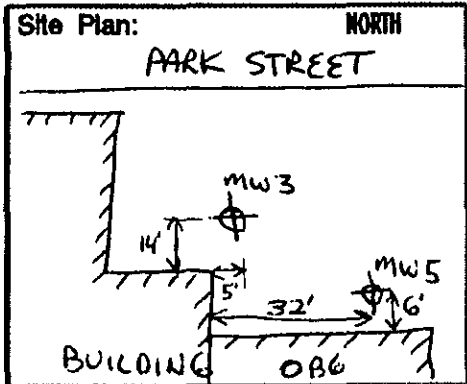
BORING LOGS

WELL COMPLETION FORMS

WELL PERMITS

FIELD RECORD OF BORING

Sheet 1 of 1

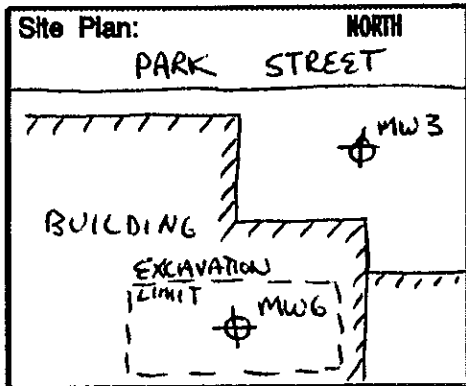


Project: CAVANAUGH MOTORS		Boring No. MW5
Location: 1700 PARK STREET		Date: 6-26-91
Contractor: KL DRILLING-CMF 45 C	License: 596309	
Drilling Method: 8" HOLLOW STEM AUGUR, 140# @ 30" Fall		
Sampling Method: CALIF. SAMPLER SPLIT SPOON 2X6" BRASS		
Logger: MARK YOUNGKIN	Driller: KEN LENK	
Agency: Alameda County & Zone 7		Permit: 91350
Boring Dia. 8"	Casing Dia. 2"	Total Depth: 20½

SAMPLE NUMBER	SAMPLE DEPTH	REC %	BLOWS / 12"	TLV PPM	WATER LOG	DEPTH	LEGEND USCS	DESCRIPTION	STAIN ODOR
						0	///	3" ASPHALT	
						2		BASE ROCK	
						4	SP	FILL-TOP SOIL, BLACK-BROWN	NONE
MW5-5	4½-5	75	15	<100	DRY-DAMP	6		SAND, LIGHT BROWN, MEDIUM GRAINED, NO PEBBLES, SOME CLAY	NONE
						8	SP		
	9½-10	30	30	<100	WET	10		SAND, BROWN, MEDIUM GRAINED, SORTED, ROUNDED, SOME CLAY	NONE
						12			
	14½-15	100	24	<100	WET	14	SP	SAND, BROWN, MEDIUM GRAINED, SORTED, ROUNDED, SOME CLAY	NONE
						16			
						18			
						20	SP-SC		
	20-20½	100	18	<100	WET	20		SAND, GRAY, CLAYEY, FINE-MEDIUM GRAINED, ROUNDED	NONE
						22		Bottom of hole at 20½'	

FIELD RECORD OF BORING

Sheet 1 of 1



Project: CAUNAUGH MOTORS		Boring No. MW6
Location: 1700 PARK STREET		Date: 6-26-91
Contractor: KL DRILLING-CMF45C	License: 596309	
Drilling Method: 8" HOLLOW STEM AUGUR, 140# @ 30"		
Sampling Method: SPLIT SPOON 2x6" BRASS		
Logger: MARK YOUNGKIN	Driller: KEN LENK	
Agency: Alameda County & Zone 7		Permit: 91350
Boring Dia. 8"	Casing Dia. 2"	Total Depth: 20 1/2'

SAMPLE NUMBER	SAMPLE DEPTH	REC %	BLOWS / 12"	TLV PPM	WATER LOG	DEPTH	LEGEND USCS	DESCRIPTION	STAIN ODOR
						0		6" Concrete	
						2		FILL MATERIAL IN TANK	
						4	FILL	PIT EXCAVATION	
					DRY	6		DARK BROWN, ANGULAR	NONE
						8		CRUSHED ROCK AND FINES, COMPACTED	
						10	FILL		
						12	R-2		
						14	SP		
MW6-15	14 1/2-15	100	37	<100	WET	16		SAND, BROWN, MEDIUM GRAINED, SORTED, SOME CLAY, MOTTLED W/ ORANGE	NONE
						18			
						20	SP-SC		
	20 1/2-21	100	27	<100	WET	22		SAND, CLAYEY, GRAY, FINE-MEDIUM GRAINED, MOTTLED BROWN	NONE
								Bottom of Hole at 20 1/2'	

FIELD WELL COMPLETION FORM

JOB NAME: **CAVANAUGH**

JOB NUMBER: **109001** PROJECT MANAGER: **M. YOUNGKIN**

LOGGED BY: **M. YOUNGKIN** EDITED BY:

WELL NAME: **MW-5** DATE: **6-26-91**

DRILLING COMPANY: **KL DRILLING**

EQUIPMENT: **8** INCH HOLLOW STEM AUGER DRILLER: **KEN**
 INCH ROTARY WASH HOURS DRILLED: **3**

GALLONS OF WATER USED DURING DRILLING: **NA** GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING: **STEAM CLEANING**

DEVELOPMENT

METHOD OF DEVELOPMENT: **Bailer**

DEVELOPMENT BEGAN DATE: **6-29-91** TIME:

YIELD:	GPM	TIME: FROM	TO	DATE:
YIELD:	GPM	TIME: FROM	TO	DATE:
YIELD:	GPM	TIME: FROM	TO	DATE:
YIELD:	GPM	TIME: FROM	TO	DATE:

TOTAL WATER REMOVED DURING DEVELOPMENT: **30** GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: CLEAR SLIGHTLY CLOUDY
 MOD. TURBID VERY MUDDY

ODOR OF WATER:

WATER DISCHARGED TO: GROUND SURFACE TANK TRUCK
 STORM SEWERS STORAGE TANK
 DRUMS OTHER

DEPTH TO WATER AFTER DEVELOPMENT: **~ 8** FEET

MATERIALS USED

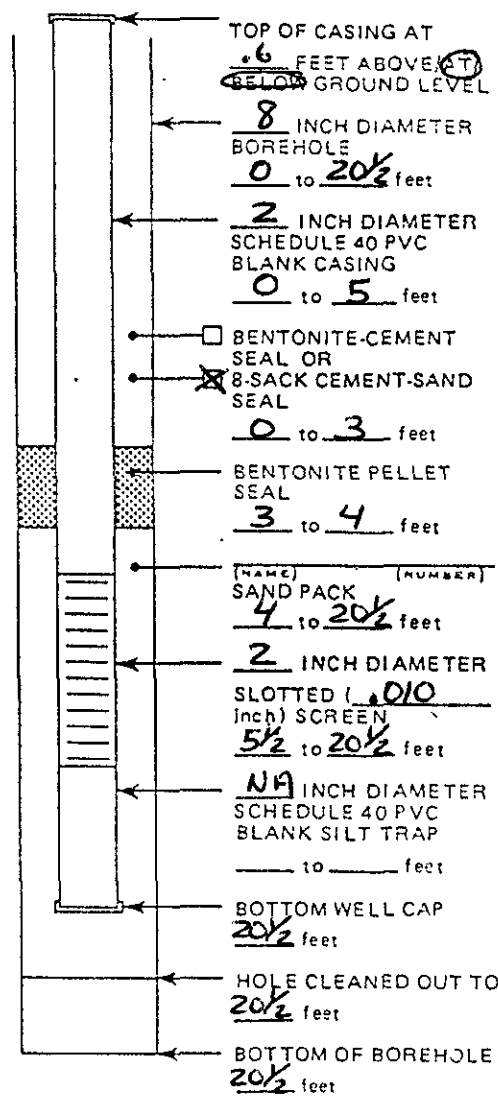
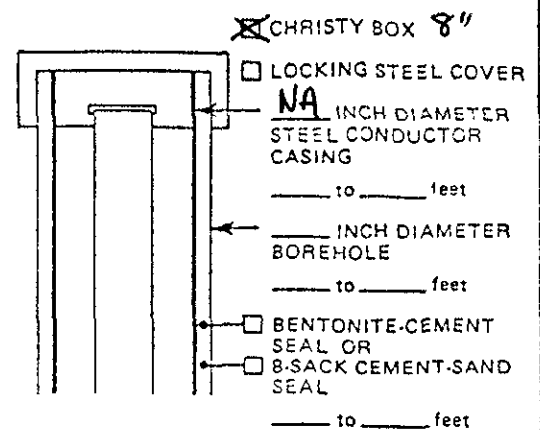
- 3 SACKS OF **RMC LONESTAR #3** SAND
- 2 SACKS OF **RMC LONESTAR PORTLAND** CEMENT
- _____ GALLONS OF GROUT USED
- _____ SACKS OF POWDERED BENTONITE
- 25 POUNDS OF BENTONITE PELLETS
- 10 FEET OF 2 INCH PVC BLANK CASING
- 20 FEET OF 2 INCH PVC SLOTTED SCREEN
- _____ FEET OF _____ INCH STEEL CONDUCTOR CASING
- _____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED
- _____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? NO YES

NAME _____

WELL COVER USED: LOCKING STEEL COVER
 CHRISTY BOX
 OTHER _____

SILT TRAP USED? NO YES



NOT TO SCALE

ADDITIONAL INFORMATION: _____

FIELD WELL COMPLETION FORM

JOB NAME: CAVANAUGH MOTORS

JOB NUMBER: 109001 PROJECT MANAGER: M. YOUNGKIN

LOGGED BY: M. YOUNGKIN EDITED BY:

WELL NAME: MW-6 DATE: 6-26-91

DRILLING COMPANY: KL DRILLING

EQUIPMENT: 8 INCH HOLLOW STEM AUGER DRILLER: KEN
 INCH ROTARY WASH HOURS DRILLED: 3

GALLONS OF WATER USED DURING DRILLING: NA GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING: STEAM CLEANER

DEVELOPMENT

METHOD OF DEVELOPMENT: BAILER

DEVELOPMENT BEGAN DATE: 6-29-91 TIME:

YIELD:	GPM	TIME:	FROM	TO	DATE:

TOTAL WATER REMOVED DURING DEVELOPMENT: 30 GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: CLEAR SLIGHTLY CLOUDY
 MOD. TURBID VERY MUDDY

ODOR OF WATER:

WATER DISCHARGED TO: GROUND SURFACE TANK TRUCK
 STORM SEWERS STORAGE TANK
 DRUMS OTHER

DEPTH TO WATER AFTER DEVELOPMENT: ~ 8 FEET

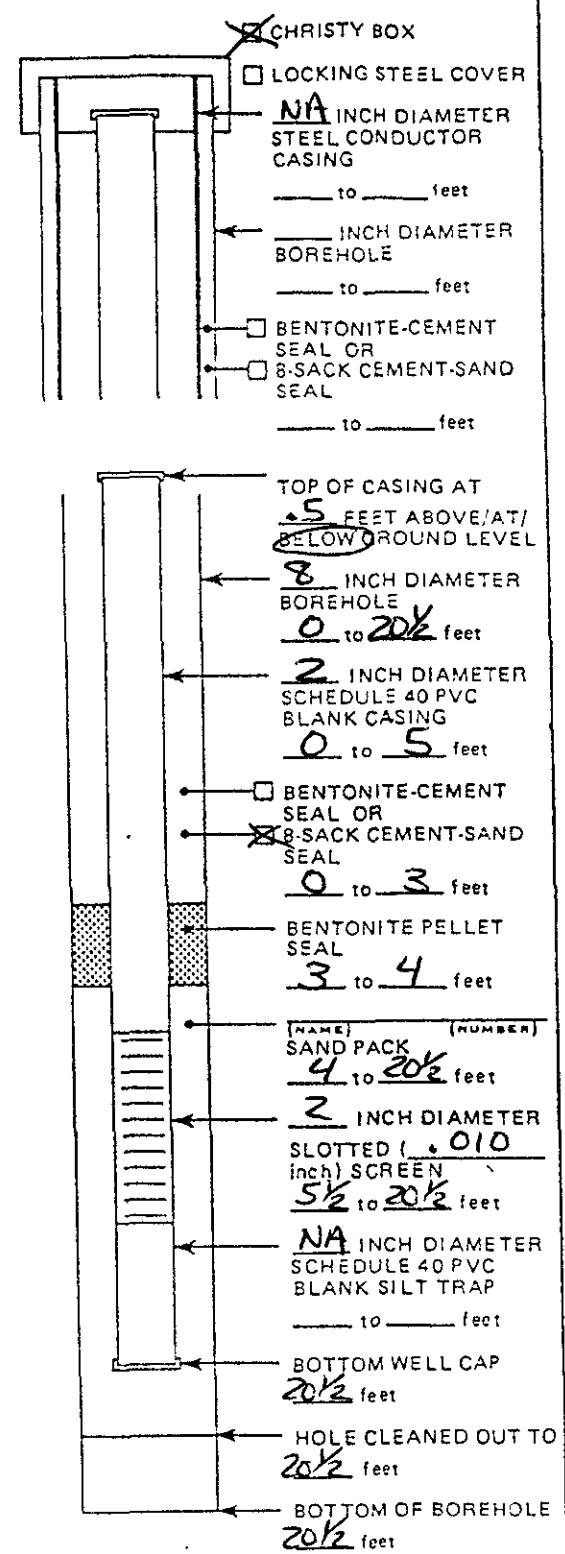
- MATERIALS USED
- 3 SACKS OF RMC LONESTAR #3 SAND
 - 2 SACKS OF RMC LONESTAR PORTLAND CEMENT
 - _____ GALLONS OF GROUT USED
 - _____ SACKS OF POWDERED BENTONITE
 - 25 POUNDS OF BENTONITE PELLETS
 - 10 FEET OF 2" INCH PVC BLANK CASING
 - 20 FEET OF 2" INCH PVC SLOTTED SCREEN
 - _____ FEET OF _____ INCH STEEL CONDUCTOR CASING
 - _____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED
 - _____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? NO YES

NAME _____

WELL COVER USED: LOCKING STEEL COVER
 CHRISTY BOX
 OTHER _____

SILT TRAP USED? NO YES



NOT TO SCALE

ADDITIONAL INFORMATION: _____



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (415) 484-2600

21 June 1991

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

Gentlemen:

Enclosed is Drilling permit 91350 for a monitoring well construction project at 1700 Park Street in Alameda for Cavanaugh Motors.

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

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

Very truly yours,

Craig A. Mayfield
Craig A. Mayfield
Water Resources Engineer

WH:mm
Enc.



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

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

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT CAVANAUGH MOTORS
1700 PARK STREET
ALAMEDA, CALIFORNIA

PERMIT NUMBER 91350
LOCATION NUMBER

CLIENT
Name CAVANAUGH MOTORS
Address 1700 PARK ST. Phone 523-5246
City ALAMEDA Zip 94501

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name TMC ENVIRONMENTAL, INC
Address 13908 SAN PABLO AVE, SUITE 101 Phone 232-8366
City SAN PABLO Zip 94806

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

PROPOSED WATER SUPPLY WELL USE
Domestic Industrial Other MONITORING
Municipal Irrigation

DRILLING METHOD:
Mud Rotary Air Rotary Auger
Cable Other

DRILLER'S LICENSE NO. CS7 596309

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum Depth 20 ft.
Casing Diameter 2 in. Number 2
Surface Seal Depth 5 ft.

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

ESTIMATED STARTING DATE JUNE 26
ESTIMATED COMPLETION DATE JUNE 27

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

APPLICANT'S SIGNATURE Mark Youngkin Date 6/17/91

- A. GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.
B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 19 Jun 91
Wyman Hong