

July 30, 1990

Ms. Katherine Chesick Department of Environmental Health 80 Swan Way, Room 200 Oakland, California 94621

Dear Ms. Chesick,

Enclosed is our Preliminary Assessment Report for Cavanaugh Motors in Alameda, California. We are currently discussing various remedial options with the client.

We will keep you informed on the progress at this site. If you should have any questions, please do not hesitate to call.

Sincerely,

Chris Nielson-Cerquone

(M. Wielson - Conga

Vice President

cc:

Mr. Lester Feldman, RWQCB

PRELIMINARY ASSESSMENT REPORT

Cavanaugh Motors 1700 Park Street Alameda, California 94501

TMC Project No. 109001 July 11, 1990

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1.0 INTRODUCTION

Mr. Dave Cavanaugh, owner of Cavanaugh Motors, has authorized TMC Environmental, Inc. (TMC) to prepare a Preliminary Assessment Report concerning the investigation of soil and groundwater at Cavanaugh Motors in Alameda, California. A site location map is presented in Figure 1. The investigation was performed to evaluate soil and groundwater contamination in the vicinity of a former 550 gallon gasoline tank. The objectives of our investigation were;

- o To determine if groundwater directly beneath the site has been impacted,
- o To evaluate the lateral and vertical extent of soil and groundwater contamination,
- o To describe and classify the soils below the site,
- o To establish the hydraulic gradient and direction of groundwater flow beneath the site, and
- o To recommend investigation or remedial actions based on the results of work performed.

Our Preliminary Assessment was performed in accordance with the Regional Water Quality Control Board (RWQCB) recommendations for the Initial Evaluation and Investigation of Underground Tanks, June 1988, revised in November 1989. Conclusions and/or recommendations made in this report are based on results of our investigation performed in May and June 1990 and on records kept by Scott Corporation, Cavanaugh Motors and the RWQCB. TMC Environmental was not involved in the removal of the underground tank.

2.0 BACKGROUND/SITE HISTORY

A detailed description of site history can be found in the Preliminary Site Investigation Workplan, dated March 10, 1990. A brief description is presented below.

The property has always been an Auto Dealership. Mr. William S. Bean, the first proprietor, owned the property from 1948 until 1981. In 1981, Mr. Bean sold the property to Dave and Lee Cavanaugh, the present owners.

The 550 gallon underground gasoline tank was installed in 1948. The tank was used from 1948 until it failed a precision test in August, 1989. Inventory records were kept daily. No product loss was ever discovered prior to August, 1989.

3.0 TANK REMOVAL

The tank, dispenser, and associated piping were removed on December 15, 1989, by Scott Corporation. TMC was not involved in the removal of the tank and conclusions made in this report are based on records kept by Scott Company and Cavanaugh Motors. According to witnesses, the tank was free of any holes, cracks, and was in good condition. However, gasoline contamination was discovered in soil below and around the tank. Soil samples were collected directly beneath the tank at the locations shown in Figure 2. The samples were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX). The analytical results indicated that soil beneath the tank was contaminated with gasoline constituents. TPH concentrations ranged from 3,700 milligrams per kilograms (mg/kg) to 7,900 mg/kg. concentrations ranged from 17 to 65 mg/kg, 130 to 350 mg/kg, 75 to 160 mg/kg, and 430 to 870 mg/kg, respectively. Analytical results and the chain-of-custody are presented in Appendix A.

4.0 METHODS OF INVESTIGATION

4.1 Soil Investigation

To investigate potential soil contamination adjacent to the former underground gasoline tank, a controlled excavation of the contaminated soil was attempted on April 26, 1990 by TMC. the controlled dig it became clear that excavation of all the contaminated soil was an impossibility. The sandy native soils provided minimal stability and the contamination appeared to worsen moving toward the building. In addition, a slight sheen of what appeared to be gasoline was observed on the groundwater. A decision was made to stop the excavation and further the investigation by drilling exploratory borings around the tank excavation. At that time, two soil samples were collected and analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylene (BTEX) in an attempt to determine the lateral extent of soil contamination west and south of the former tank (see Figure 3).

An amendment to the workplan was submitted to Alameda County Health Department at the request of Katherine Chesick on May 9, 1990. On the approval of the County, four borings were augured around the former tank, at the locations shown in Figure 3. Each boring was augured to the groundwater, about seven feet below grade. Soil samples were collected at five feet below grade and analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylene (BTEX).

The exploratory borings EB-1 through EB-4 were drilled by Ensco Environmental Services. A Dietrich D-24 rig equipped with hollow-stem, continuous-flight auger was used in accordance with ASTM Method D 1452-80, Standard Practice for Soil Investigations and Sampling by Auger Borings. Soil samples were collected at five feet below ground surface using a 2-inch California modified split-tube sampler. The bottom brass tube was used for TPH vapor readings and soil classification. The middle brass tube was sent for laboratory analyses. Each sample sent to Anametrix, Inc. was capped, sealed, and taped to minimize the loss of volatile hydrocarbon constituents. The samples were placed on ice to maintain a temperature of 4 degrees centigrade or less during transport to the lab and were sent under chain-of-custody to ensure accurate sample representation.

The lithology, soil classification and other pertinent data were recorded by a geologist on a field boring log in accordance with ASTM Method D-2488-84 for visual description and identification of soils. The auger and associated drilling equipment were steam cleaned prior to the drilling of each boring. Cuttings and spoils from the borings were stockpiled and covered on site pending analytical results.

The four borings were converted to vapor recovery wells in anticipation of using a vapor extraction system to remediate the soil left in place. A design schematic of a typical vapor well can be seen in Figure 4.

4.2 Groundwater Investigation

Monitoring wells MW-1 through MW-4 were installed, at the locations shown in Figure 3. The monitoring wells were drilled by Ensco Environmental Services following the same protocol used during the auguring of the exploratory borings. The lithology, soil classification and other pertinent data were recorded by a geologist on a field boring log in accordance with ASTM Method D-2488-84 for visual description and identification of soils. Detailed boring logs for wells MW-1 through MW-4 and exploratory borings EB-1 through EB-4 can be seen in Appendix B.

Soil samples were collected at five feet below grade during the installation of each monitoring well. The samples were analyzed for TPH as gasoline and BTEX by Anametrix, Inc. in San Jose, California. Each sample was capped, sealed, and iced to minimize the loss of volatile gasoline constituents. They were also sent under chain-of-custody to ensure accurate sample representation. The wells were completed by placing a four-inch diameter PVC pipe through the hollow-stem auger. Each well was constructed with 0.20 micron screen from five to fifteen feet and solid pipe from ground surface to five feet below grade. Lonestar, 2/16 sand was used as filter pack and was tremied through the auger to one foot above the top of the screening. A one and a half foot bentonite seal was placed on top of the filter pack and each well was grouted to the surface. Locking monitoring well covers were also installed to provide security.

Testing and Technology of Novato, California developed and sampled the monitoring wells. The wells were developed by extracting a minimum of fifteen well volumes of water from each well, or until the water ran clear. The extracted groundwater was placed in drums pending analytical results.

The monitoring wells were sampled for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Groundwater extracted from monitoring well MW-1 was also analyzed for total lead. Prior to sampling, stagnant water was removed in order to obtain a representative groundwater sample. Purging was accomplished by extracting a minimum of three well volumes of groundwater. The field parameters pH, temperature, and conductivity were monitored during the purging process. Stabilization of the parameters pH, temperature and conductivity was indicated by at least three near-constant pH, temperature, and conductivity values. The acceptable range of values for stabilization were ±0.5 C for temperature, ±0.2 for pH, and ±10 percent of the total value for conductivity. Well development and sampling field logs are presented in Appendix C.

The groundwater samples were analyzed by Pace Laboratories in Novato, California. All the samples were collected in an order such that those parameters most sensitive to volatilization were sampled first. In this case, the volatile organic constituents BTEX were sampled first, total petroleum hydrocarbons second, and total lead third. The samples were sealed and labelled with a sample tag having a unique sample number, project number, date, time, and sample location. The samples were placed on ice to maintain a temperature of 4 degrees centigrade or less during transport to Pace, and all samples were sent under chain-of-custody to ensure accurate sample representation.

4.3 Groundwater Gradient and Direction of Flow

To determine the groundwater gradient and the direction of groundwater flow, the location and elevation of each monitoring well was surveyed by Mr. Andreas P. Deak, a California Licensed Land Surveyor, No. 4739. The northern edge of the well casing was used as a datum for surveying. Groundwater level measurements were taken on June 20, 1990. Actual groundwater elevations were extrapolated by subtracting the groundwater level measurement from the surveyed well elevation.

5.0 RESULTS

5.1 Soil Sampling

As Table 1 indicates, soil samples collected in exploratory borings EB-1 through EB-4 and during the initial attempted excavation of contaminated soil showed no presence of total petroleum hydrocarbons as gasoline. In addition, BTEX's were not detected in any of the samples, with the exception of 0.034 mg/kg of total xylenes in soil sample EB-4. Analytical results are presented in Appendix D.

Table 1
Summary of Gasoline Constituents Detected
in Exploratory Boring and Initial Excavation Soil Samples

Date Sampled	Well Number	TPHg (mg/kg)	Benzene	Toluene E. (mg/kg)	Benzene	Xylenes
4-26-90	South-1	ND	ND	ND	ND	ND
4-26-90	West-1	ND	ND	ND	ND	ND
5-19-90	EB-1	ND	ND	ND	ND	Ир
5-19-90	EB-2	ND	ND	ND ·	ND	ND
5-19-90	EB-3	ND	ND	ND	ND	ND
5-19-90	EB-4	ND	ND	ND	ND	0.034

ND -- Not Detected

See Appendix D for Laboratory Reports

Soil samples collected during the installation of monitoring wells MW-2, MW-3 and MW-4 showed no presence of total petroleum hydrocarbons as gasoline and benzene, toluene, ethylbenzene, and total xylenes (Table 2). However, the soil sample collected

during the installation of monitoring well MW-1 was found to contain 3,500 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline. Benzene, toluene, ethylbenzene and total xylenes concentrations were non-detectable, 190 mg/kg, 76 mg/kg, and 510 mg/kg, respectively. Analytical results are presented in Appendix D.

Table 2
Summary of Gasoline Constituents
Detected in Monitoring Well Soil Samples

Date Sampled	Well Number	TPHg (mg/kg)	Benzene		E. Benzene /kg)	Xylenes
5-17-90	MW-1,5' MW-2,5' MW-3,5' MW-4,5'	3,500 ND ND ND	ND ND ND	190 ND ND ND	76 ND ND ND	510 ND ND ND

ND -- Not Detected

See Appendix D for Laboratory Reports

5.2 Groundwater Sampling

Analytical results from the June 8, 1990 sampling event indicate that groundwater in the vicinity of the former tank has been impacted (Table 3). Groundwater collected from well MW-1 had 28,000 parts per billion (ppb) total petroleum hydrocarbons and 6,200, 630, 7000, and 6100 ppb benzene, ethylbenzene, toluene, and total xylene, respectively. Groundwater extracted from monitoring well MW-2, MW-3 and MW-4 was also slightly contaminated with volatile hydrocarbons. In monitoring well MW-2, 1.0 ppb of toluene and 1.7 ppb of total xylene were detected. Groundwater extracted from monitoring well MW-3 contained 0.9 ppb of total xylene. Likewise, groundwater sampled from monitoring well MW-4 contained 1.1 ppb of toluene and 2.2 ppb of total xylene. Analytical results are presented in Appendix E.

5.3 Description of Hydrogeology

Soils encountered showed characteristics of the Merit Sand Formation. Silty sands, clayey sands, and clean sands were found throughout the stratum beneath this site. The geologic make-up of the soils followed a general pattern, as illustrated in Figure 5. Silty sand and clean sand were found from ground surface to about six feet. Below this a distinct clayey sand layer, much

stiffer and more plastic than the silty sand, was present to about seven and a half feet below grade. From about eight feet to fifteen feet, a uniform well-sorted clean sand was present. Boring logs are presented in Appendix B.

Groundwater elevation measurements for monitoring wells MW-1 through MW-4 are shown in Table 4. Groundwater beneath this site appears to flow in a northerly direction toward the tidal canal between Alameda and Oakland. A groundwater gradient contour is shown in Figure 6. The hydraulic gradient from MW-2 to MW-3, based on groundwater elevation measurement taken June 8, 1990, is 0.007.

Table 3
Summary of Petroleum Hydrocarbons
Detected in Groundwater

Date	Well	TPHg (50 ppb)	Ben.		Results E.benzene ppb)	(ppb) Xylenes	Total Lead (3 ppb)
6-8-90	MW−1	28000	6200	7000	630	6100	ND
6-8-90	MW-2	ND	ND	1.0	ND	1.7	AИ
6-8-90	MW-3	ND	ND	ND	ND	0.9	NA
6-8-90	MW-4	ND	ND	1.1	ND	2.2	AN

ND - Below Detection Limit See Appendix I for Analytical Reports

6.0 CONCLUSIONS

The lateral extent of soil contamination has been established. Samples collected during the initial attempt to dig out of the contamination and those collected in borings EB-1 through EB-4, indicate that the area of contaminated soil is limited in extent. An illustration depicting the estimated area of contaminated soil remaining below ground can be seen in Figure 3. The bulk of soil contamination is located between four and seven feet below surface. As much as 400 cubic yards of soil may still remain below ground. It appears, as expected, that the gasoline migrated downward to the groundwater and then spread laterally. The limited lateral extent of gasoline contamination indicates that a large amount of gasoline may not have leaked from the tank.

However, enough gasoline did leak from the underground tank system to impact the groundwater. Groundwater sampled from MW-1 was heavily contaminated with volatile gasoline constituents. The benzene concentration of 6,200 ppb exceeds several water quality standards, including the California Maximum Concentration Level (MCL) of 1 ppb, the EPA's Suggested No-Adverse-Response Level (SNARL) of 235 ppb, and the California Proposition 65 level of 10 ppb.

Table 4
Monitoring Well Groundwater Elevations

Date Measured	Well	Groundwater Level	Top of Casing Elevation	Groundwater Elevation
6-20-90	MW-1	7.08	16.39	9.31
6-20-90	MW-2	7.16	16.73	9.57
6-20-90	MW-3	7.37	16.89	8.52
6-20-90	MW-4	7.60	16.39	8.79

Benzene was not the only volatile gasoline constituent that exceeded national or state water quality standards. The toluene concentration of 7,000 ppb detected in groundwater from MW-1 exceeds the California MCL of 2,000 ppb and the Department of Health Services action level of 100 ppb. The total xylene concentration of 6,100 ppb also exceeds the California MCL of 1,750 ppb. By contrast, gasoline concentrations detected in groundwater sampled from monitoring wells MW-2, MW-3, and MW-4 did not exceed any national or state water quality standards.

Silty sands, clayey sands and clean sands were encountered beneath the site. A distinct clayey sand layer was discovered between five and seven feet below grade. Groundwater was found approximately seven feet below surface. Using groundwater level measurements taken June 20, 1990, groundwater appears to flow north toward the tidal canal between Alameda and Oakland. The hydraulic gradient from monitoring well MW-2 to MW-3 was 0.007.

7.0 RECOMMENDATIONS

Although the preliminary site investigation provided a wealth of hydrogeologic information concerning the magnitude of the fuel release, additional groundwater investigation is recommended before remedial measures are started. Up gradient and down gradient groundwater concentrations were established by

installing monitoring wells MW-2 and MW-3. However, additional monitoring wells should be installed to better define the soluble groundwater gasoline plume discovered in the vicinity of the former tank. We recommend that two additional wells be installed inside the building to better define the soluble plume and to monitor hydrogeologic conditions during groundwater remediation. One should be located about fifteen to twenty feet inside the building northeast of the former tank (see Figure 3) to reduce the linear distance from contaminated groundwater in well MW-1 to clean groundwater in MW-3. Another well should also be placed east of the former gasoline tank about twenty feet inside the wall of the building.

Additional exploratory borings are not recommended at this time, nor is additional soil excavation. The lateral extent of soil contamination has been established. A soil remediation system can be designed to clean the contaminated soils left in place. The soil that could be removed without damaging the building was removed during our initial attempt to excavate all the contaminated soil. We believe due to the close proximity of the contaminated soils to the building, additional soil cannot be removed without subjecting the building to structural damage. The silty sands and clean sands which make up the majority of the soils beneath this site provide minimal stability around foundation piers of the building. Excavating the remaining soils around the building is an impossibility without demolishing the pre-1940 structure.

8.0 ONGOING AND UPCOMING REMEDIATION

About 70 cubic yards of contaminated soil was excavated during the investigation of the fuel release. The soil was stockpiled on the site and is being aerated. Initial soil samples were collected on May 5, 1990, indicating the concentration of gasoline contaminants at the beginning of the aeration process. The soil was spread out to a lift of approximately one foot and periodically tilled. On July 9, 1990 additional samples were collected in anticipation of finding clean soil that can be taken to the Durham Road landfill. Analytical results of the initial soil sampling can be found in Appendix F. Analytical results for the samples collected on the ninth of July are pending.

Groundwater extracted during the development and sampling of the monitoring wells was placed in drums pending analytical results. The drummed groundwater was treated using a mobile carbon absorption unit and placed in a 1,000 gallon above ground tank. A sample was collected to determine if any gasoline constituents remained in the water after treatment. Analytical results are

pending. If the water is clean, a request to the RWQCB will be submitted to attain a permit for a one time discharge into the sewer.

We recommend that air stripping and vapor extraction, two proven technologies, be used in conjunction to remediate soil and groundwater at this site. A soil vapor extraction system can be used to clean the contaminated soils left in place and an air stripping unit can be used to remediate groundwater gasoline contamination. The two systems can be piped together to increase the efficiency of the treatment system, while at the same time meet air quality standards established by the Bay Area Air Quality Management District. The geology of the site favors such a remedial process. Clean washed pea gravel was used as backfill to increase vacuum efficiency if an in-situ vapor extraction system was installed. In addition, as previously mentioned, the soil borings were finished as vapor wells in anticipation of the possibility for vapor extraction.

At this time an interim groundwater sampling protocol of quarterly sampling for total petroleum hydrocarbons as gasoline and benzene, toluene, ethylbenzene, and total xylenes should be adopted.

9.0 REMARKS AND SIGNATURES

This Preliminary Assessment Report was prepared in accordance with current industry standards and practice. All work performed at this site is performed under the direct supervision of a California Registered Geologist.

Prepared by:

C. 111. Milom - Caquene
Chris Nielson-Cerquone

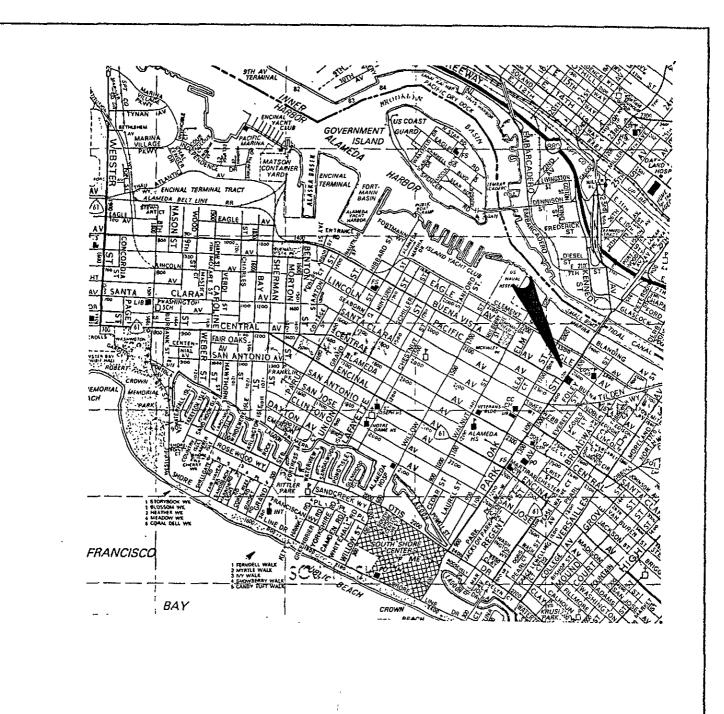
Associate

Approved by:

Mark Youngkin

California Registered Geologist No. 3888

Mark Youngkind



TON EDWARDS & ASSOCIATES

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REV. #

DATE

FIG. 2 4-2-90 CNC

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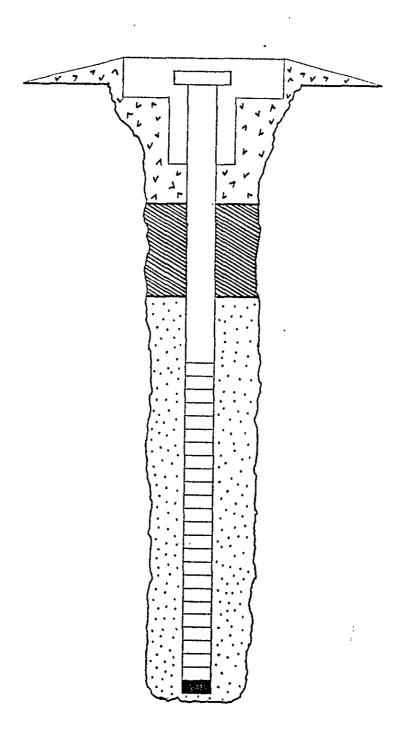
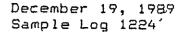


Figure 4: VAPOR WELL SCHEMATIC

APPENDIX A

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Michael Schweickert-Stary Scott Company 1919 Market Street Dakland, CA 94607

Subject: Analytical Results for 3 Soil Sample(s)

Identified as: Cavanaugh Motors Received: December 15, 1989

Dear Mr. Schweickert-Stary:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on December 19, 1989 and describes procedures used to analyze the samples.

Samples were received in brass sleeves that were sealed with aluminum foil and plastic endcaps. Each sample was transported and received under documented chain of custody, assigned a consecutive log number and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed for the following:

"BTEX" (EPA Method 8020/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Submitted by:

Joe∦ĸĭff

Pro/jact Chemist

Approved by:

Robert G. Smith, PK.D.

Laboratory Director



Table 1: 'BTEX' Results for 3 Soil Sample(s) Identified as Cavanaugh Motors
Received December 15, 1989

--all concentrations are units of mg/kg--

Sample	Benz.	Tol.	Eth.Benz.	Xyl.
# 1	65	350	140	650
# 2	56	350	160	870
# 3	17	130	75	430
Reporting Limit	.05	.05	.05	.05



Table 2: TPH Results for 3 Soil Sample(s) Identified as Cavanaugh Motors .

Received December 15, 1989

--all concentrations are units of mg/kg--

Sample	TPH as Gasoline
# 1	7900
# 2	7200
# 3	3700
Reporting Limit	.5

Wantern Environmental

1046 Olive Orive, Suite 3 Davis, CA 95616

916-753-9500 FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

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APPENDIX B

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LOCATION OF BORING							SITE/LOCATION CAVANAUGH MOTORS, 1700 PARK STREET, ALAMEDA BORING NO. NA									
							PROJE	CT NO.	SHEET 1 OF 2							
							WATER	LEVEL	DRILLER							
11							TIME			START FINISH						
11					- 1		DATE			TIME TIME						
				}		İ	CAS.	DEPTH	1520 1630							
							DRILL	ING CON	DATE DATE							
T							DRILL	ER TIN	5-17-90 5-17-90							
							DRILL	DRILLING METHOD HOLLOW STEM AUGER (12 INCH)								
1	1						SAMPL	SAMPLING METHOD CALIFORNIA SPLIT-SPOON SAMPLER (18 INCH)								
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		9801	14.) TOUGHNESS, NON-							
2 —		Ť	1000						PLASTIC, ANGULAR CLASTICS (1-8 MH).							
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3 -		BEAL														
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								4.	(SW) CLEAN SAND, FINE TO MEDIUM GRAINED, WELL	. SORTED, LIGHT BROWN,						
4								: :::	MOIST, NO DRY STRENGTH, WOULD NOT THREAD, NO	TOUGHNESS, NON-PLASTIC,						
		2							NO CLASTICS.	, page 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-						
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-				40	MW-4	100	12		(SC) CLAYEY SAND, MEDIUM GRAINED, BROWN, MODE	LED RED, SLIGHTLY HOIST						
6 -		Ä				100	12		MODERATE DILATENCY, DRY STRENGTH AND TOUGHNES	S, SLIGHTY PLASTIC.						
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TON EDWARDS & ASSOCIATES		BORING LOG
LOCATION OF BORING	SITE/LOCATION CAVANAUGH MOTORS, 1700 PARK STREET, ALAMEDA	BORING NO. MW-4
	PROJECT NO. 109001	SHEET 2 OF 2
	WATER LEVEL	ORILLER
	LINE.	START FINISH
	DATE	TIME TIME
<u> </u>	CAS. DEPTH	1520 1630
	DRILLING CONTRACTOR EXELTECH ENVIRONMENTAL SERVICES	DATE DATE
	DRILLER TIM COLLETT	5-17-90 5-17-90
	DRILLING METHOD HOLLOW STEM AUGER (12 INCH)	
	SAMPLING METHOD CALIFORNIA SPLIT-SPOON SAMPLER (18 INCH)	
	LOGGER CHRIS NIELSON-CERQUONE	and the second section of the second section of the second section of the second section of the second section second section
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	CLASTICS.	
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				·····	109001	·····	SHEET	1 OF 1
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-					RACTOR EXELTECH ENVIRONMENTAL SER	VICES	DATE	DATE
	<u></u>				JENKINS		5-19-90	5-19-90
			 		IOD HOLLOW STEM AUGER (8 INCH)	***************************************	······································	· · · · · · · · · · · · · · · · · · ·
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					ER 8 INCHES	CASING DIAMETE		8
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'	N	_					SAMPL.	SAMPLING METHOD CALIFORNIA SPLIT-SPOON SAMPLER (18 INCH)								
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		ſ]		PROJE	CT	NO.		109001 .		SHEET	1 OF 1	
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İ						!	<u> </u>	SAMPLING METHOD CALIFORNIA SPLIT-SPOON SAMPLER (18 INCH)							
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APPENDIX C

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TESTING AND TECHNOLOGY 25-L COMMERCIAL BLVD NOVATO, CA 94949 (415)883~5070

MONITORING WELL SERVICES

DATE: 5/30 & 5/31 1990

POLY TUBING: 200'

INVOICE: W005301

DRUMS DLV: SEVEN

CLIENT: TOM EDWARDS &

FIELD TECH: JOHN GIDDINGS

ASSOCIATES

MILEAGE: 141 ROUND TRIP TWO DAYS

FACILITY: CAVANAUGH MOTORS

1700 PARK STREET

ALAMEDA CA

ALAMEDA C	H. L	L	•	•		
WELL NO.	MWl	MW2	MW3	MW4	∤	+
TIME:	11:17	11:29	11:32	11:36	†	+
WATER DEPTH: FT	7.18	7.25	7.11	7.52	**************************************	+
WELL DEPTH: FT	14.75	15.05	15.05	14.95		+
WELL DIAMETER: IN	4"	4"	4"	4"		+ + + +
WELL VOLUME: GAL	5.15	5.30	5.40	5.05	**************************************	+ !!
SHEEN PRESENCE:	YES	МО	ИО	NO	· · · · · · · · · · · · · · · · · · ·	+ !!!
PROD THICKNESS: FT	NONE	NONE	NONE	NONE		+
FIELD SAMPLE COLOR:	CLEAR	CLEAR	CLEAR	CLEAR	* ** · · · · · · · · · · · · · · · · ·	† 11.
PURGE:	NO	МО	NO	NO		+
DEVELOP:	YES	YES	YES	YES		+
SAMPLE:	NO	NO	NO	NO	the first state time man age may vive room time upper	+
METHOD:	SURG/SUCT	SURG/SUCT	SURG/SUCT	SURG/SUCT		† !!.
PURGE RATE: (gpm)	.44	.37	.46	.66		+
WATER VOLUME: GAL	105	75	95	82		†
TURBIDITY: NTU	77	160	108	121	or the season that the season to the season to	+
PURGED COLOR:	CLEAR }	CLEAR	CLEAR	CLEAR		*
PURGED PRODUCT: GAL	NONE	NONE	NONE	NONE		+
PURGE SEQUENCE:	1	2	4	3	· · · · · · · · · · · · · · · · · · ·	T .
INTERFACE PROBE: YN	N	N	N	N ;		T
NOTES:	· '					۲

- MW1- Slight amount of sheen was present in field sample. Started surging at bottom of the well for 15 minutes. Surged at the middle of the water column for 10 minutes, and at water depth for another 10 minutes. Water ran extremely silty at first, beginning to clear after 55 gallons purged. Recovery fair. Well dewatered throughout pumping.
- MW2- Field sample clear. Surged throughout well casing before purging. Water ran very silty at first, beginning to clear after 45 gailons purged. Recovery fair. Well dewatered constantly.
- MW3- Field sample clear. Surged throughout well casing before purging.
 Well dewatered after 15 gallons evacuated. Well dewatered throughout
 purging. Water began to clear after 50 gallons pumped. Fair recovery.
- MW4- Water in well box. Field sample clear. Started surging at bottom of the well, moving upwards in 24"/15 min. increments, until reading water depth before purging. Well dewatered after 10 gallons evacuated. Water began to clear after 55 gallons purged. Fair recovery.

TESTING AND TECHNOLOGY 27-B COMMERCIAL BLVD NOVATO, CA 94949 (415)883-5070

MONITORING WELL SERVICES

DATE: 6/09/90

POLY TUBING:

INVOICE: W006080

DRUMS DLVRD:

CLIENT:

FIELD TECH: DON SEMESKI / DARIA DOUGLAS

MILEAGE: 141

FACILITY: CAVANAUGH MOTORS

1700 PARK STREET

ALAMEDA CA

APWEDY A	` 				+
WELL NO.	MW1	MW2	MW3	MW4	
TIME:	11:03	11:05	11:14	11:10	 +
WATER DEPTH: FT	7.13	7.20	7.34	7.50	
WELL DEPTH: FT	14.85	15.15	15.11	14.97	, ; ; ;
WELL DIAMETER: IN	4"	4"	4"	4"	
WELL VOLUME: GAL	5.25	5.40	5.28	5.08	
SHEEN PRESENCE:	NO	NO	NO	NO	; ; ;
PROD THICKNESS: FT	NONE	NONE	NONE	NONE	
FIELD SAMPLE COLOR:	CLEAR	CLEAR	CLEAR	CLEAR	; ; ;
PURGE;	+ YES	+ YES	YES	YES	! #===================================
DEVELOP:	+	NO	No	NO	1
SAMPLE:	by TAT	by TAT	by TAT	by TAT	<u></u>
METHOD:	SUCTION	SUCTION	SUCTION	SUCTION	· !
PURGE RATE: (gpm)	† .5	1 .5	2	.5	1
WATER VOLUME: GAL	† 55	55	55	; 55 ; 55	; ; ;
TURBIDITY: NTU	N/A	N/A	N/A	N/A	†
PURGED COLOR:	CLEAR	CLEAR	CLEAR	CLEAR	· • • +
PURGED PRODUCT: GAL	NONE	NONE	NONE	NONE	•
PURGE SEQUENCE:	; 1	1 2	3	4	+
INTERFACE PROBE: YN	N	N	N	N	· ! !
	+	+		•	•

NOTES:

APPENDIX D

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ANAMETRIX INC

Environmental & Analytica: Chemistry 1961 Concourse Drive Suite E San Jose CA 9313' (408) 432-8192 - Fox (408) 432-8198



Tom Edwards Tom Edwards & Associates 13908 San Pablo Avenue San Pablo, CA 94806 May 10, 1990

Anametrix W.O.#: 9004241 Date Received : 04/27/90 Project Number : 109001

Dear Mr. Edwards:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Terry Cooke TPH Supervisor

TC/dmt

REPORT SUMMARY ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.#: 9004241 Date Received : 04/27/90 Purchase Order#: N/A Project No. : 109001 Date Released : 05/10/90 Client : Tom Edwards & Associates Address : 13908 San Pablo Avenue

City : San Pablo, CA 94806 Attn. : Tom Edwards

Accii Iom Hawaras	
Anametrix Sample I.D. I.D.	Date Date Date Date Inst Matrix Sampled Method Extract Analyzed I.D.
RESULTS	
9004241-01 SOUTH-1 9004241-02 WEST-1	SOIL 04/26/90 TPHg 05/03/90 N/A SOIL 04/26/90 TPHg 05/02/90 N/A

Sample I.D.: 109001 SOUTH-1 Anametrix I.D.: 9004241-01

Matrix : SOIL Analyst : 6V.
Date sampled: 04/26/90 Supervisor : 7C.

Date anl.TPHg: 05/03/90 Date released : 05/10/90

	Compound Name	Detection	Amount
		Limit	Found
CAS #		(ug/kg)	(ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5 5 5 5 1000	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Anametrix I.D.: 9004241-02
Analyst: GV
Supervisor: 7C
Date released: 05/10/90 Sample I.D. : 109001 WEST-1 Matrix : SOIL : SOIL
Date sampled: 04/26/90
Date anl.TPHg: 05/02/90

CAS #	Compound Name	Detection Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5 5 5 5 1000	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

TOM EDWARDS & ASSOCIATES P.O. BOX 418 PINOLE CALIFORNIA 9001/24/ CHAIN OF CUSTODY SAMPLERS (Signature) Chris Nielson - Cerquen SIS STED THE STED THE SOLD SELECTION OF STED SELECTION OF PROJECT NO. ANALYSIS REQUESTED 109001 PROJECT NAME AND ADDRESS: CAvanaugh Motors
1700 Park St. Alameda, California SOIL CROSS REMARKS STATION LOCATION REFERENCE TIME DATE NUMBER. 4/26/20 0935 SouTH-Turnesau DATE 4-27-90 BECEIVED BY: (Signature)
TIME 093DATE RECEIVED BY: (Signature) RELINOUISHED BY: (Signature) RELINQUISHED BY: (Signature) TIME TIME RECEIVED BY: (Signature) DATE RELINQUISHED BY: (Signature) TIME RECEIVED BY: (Signature) DATE RELINQUISHED BY: (Signature) TIME

94806

94564~ (415) 724-7751

TOM EDWARDS & ASSOCIATES P.O. BOX 418 PINOLE CALIFORNIA

94564~ (415) 724-7751

CHAIN OF CUSTODY

					•											
PROJECT NO. (0900)	SAMPLE	RS (Signatu	re) ieln	<u>,, -</u>	Cerquena lotors			ANA REÇ	LYSI QUEST	s ED ,	TES.		(20)	A GEN	/	, , , , , , , , , , , , , , , , , , ,
PROJECT NAME AN	ID ADDRESS:	CAvan	auah	N	lotors				-	13	12:	// \	8//	GP,		
		1700 F	ark	<u>S</u>	lotors L. Hameda	, California	۵		1/2		90307	W. Ell	5 ¹ / ₂ , 5	8080	Fig.	
CROSS REFERENCE	DATE	TIME	SOIL	WATER	STATION LOCA	ATION				\$7, 4J	A Car	OLDY S	(B)	ELITATIVE I	REMARKS dail	
NUMBER South-1	4/26/20	0935			Depth 7	7,5'		X	*					Stan	dail	
SouTH-1 WEST-1	4/26/20	1105	X		Depth 7.	5-1		X	7					Tur	resound	
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RELINGUISHED BY	: Legignatur	(e)		To.	grow-	DATE 4-27-90 TIME 0935	RECEIVED	37: (Si	ghalture	MA	1	<u> </u>	<u></u>		DATE 4	77-90 935
RELINQUISHED BY				<u> </u>	7	DATE TIME]								DATE TIME	
RELINQUISHED BY	: (Signatur	·e)				TIME TIME	RECEIVED								TIME	
RELINQUISHED BY	: (Signatua	·e}		•		TIME TIME	RECEIVED	BY: (Si	gnature	•)					TIME	

ANAMETRIX INC

Environmental & Analytical Chemistry 1961 Concourse Drive, Suite E. San Jose, CA 95131 (405) 432-8192 • Fax (405) 432-8198



Chris Nielson-Cerquone Tom Edwards & Associates 13908 San Pablo Avenue San Pablo, CA 94806 June 01, 1990

Anametrix W.O.#: 9005254 Date Received : 05/21/90 Project Number : 109001

Dear Mr. Nielson-Cerquone:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

Sarah Schoen, Ph.D. Laboratory Manager

SRS/dm

REPORT SUMMARY ANAMETRIX, INC. (408) 432-8192

Client : Tom Edwards & Associates
Address : 13908 San Pablo Avenue

City : San Pablo, CA 94806
Attn. : Chris Nielson-Cerquone

Anametrix W.O.#: 9005254
Date Received : 05/21/90
Purchase Order#: N/A
Project No. : 109001
Date Released : 06/01/90

Anametrix I.D.	Sample I.D.	 Matrix	Date Sampled	 Method	Date Extract	Date Ins Analyzed I.D
RESULTS						
9005254-01 MW 9005254-02 MW 9005254-03 MW 9005254-04 MW 9005254-05 EB 9005254-06 EB 9005254-07 EB 9005254-08 EB	-2,5' -3,5' -4,5' -1,5' -2,5'	SOIL SOIL SOIL SOIL SOIL SOIL SOIL	05/17/90 05/17/90 05/17/90 05/17/90 05/19/90 05/19/90 05/19/90 05/19/90	TPHG TPHG TPHG TPHG TPHG TPHG		05/30/90 N/A 05/29/90 N/A 05/29/90 N/A 05/30/90 N/A 05/30/90 N/A 05/30/90 N/A 05/31/90 N/A

Sample I.D.: 109001 MW-1,5' Anametrix I.D.: 9005254-01

Matrix : SOIL Analyst : $6\sqrt{}$ Date sampled : 05/17/90 Supervisor : 05/17/90

Date anl. TPHg: 05/30/90 Date released: 06/01/90

Date ext. TPHd: N/A
Date anl. TPHd: N/A
Date anl. TOG: N/A

	Compound Name	Reporting	Amount
		Limit	Found
CAS #		(mg/kg)	(mg/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	10 10 10 10 10 200	ND 190 76 510 3500

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Sample I.D. : 109001 MW-2,5' Anametrix I.D.: 9005254-02

Analyst Supervisor Matrix : SOIL

Date sampled: 05/17/90 Date anl.TPHg: 05/29/90 Date ext.TPHd: N/A Supervisor : DOG
Date released : 06/01/90
Date ext. TOG : N/A
Date anl. TOG : N/A

Date anl. TPHd: N/A

 CAS #	Compound Name	Reporting Limit (mg/kg)	Amount Found (mg/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.005 0.005 0.005 0.005	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Sample I.D. : 109001 MW-3,5' Anametrix I.D.: 9005254-03 Matrix

Analyst : 0%
Supervisor : 00G : SOIL

Date sampled: 05/17/90 Date anl.TPHg: 05/29/90

Date released : 06/01/90
Date ext. TOG : N/A
Date anl. TOG : N/A Date ext.TPHd: N/A Date anl. TPHd: N/A

	Compound Name	Reporting	Amount
		Limit	Found
CAS #		(mg/kg)	(mg/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.005 0.005 0.005 0.005 1	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHq - Total Petroleum Hydrocarbons as qasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Sample I.D. : 109001 MW-4,5'

Matrix : SOIL Date sampled: 05/17/90

Anametrix I.D.: 9005254-04
Analyst: C./
Supervisor: 000g
Date released: 06/01/90
Date ext. TOG: N/A
Date anl. TOG: N/A Date anl.TPHg: 05/30/90 Date ext.TPHd: N/A Date anl. TPHd: N/A

Reporting Amount
Limit Found
(mg/kg) (mg/kg) CAS # Compound Name |71-43-2 | Benzene |108-88-3 | Toluene |100-41-4 | Ethylbenzene |1330-20-7 | Total Xylenes | TPH as Gasoline 0.005 ND 0.005 ND 0.005 ND 0.005 ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Anametrix I.D.: 9005254-05 Sample I.D. : 109001 EB-1,5'

Matrix : SOIL Analyst Date sampled: 05/19/90

Supervisor : 004
Date released : 06/01/90
Date ext. TOG : N/A
Date anl. TOG : N/A Date anl.TPHg: 05/30/90 Date ext.TPHd: N/A Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (mg/kg)	Amount Found (mg/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.005 0.005 0.005 0.005	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Anametrix I.D. : 9005254-06 Analyst : 03 Sample I.D. : 109001 EB-2,5'

Analyst Supervisor : SOIL Matrix

Date sampled: 05/19/90
Date anl.TPHg: 05/30/90
Date ext.TPHd: N/A
Date anl.TPHd: N/A Supervisor : OG
Date released : 06/01/90
Date ext. TOG : N/A
Date anl. TOG : N/A

CAS #	Compound Name	Reporting Limit (mg/kg)	Amount Found (mg/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.005 0.005 0.005 0.005	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Anametrix I.D.: 9005254-07

Sample I.D.: 109001 EB-3,5'
Matrix: SOIL
Date sampled: 05/19/90
Date anl.TPHg: 05/30/90
Date ext.TPHd: N/A

Analyst : U/4
Supervisor : DOG
Date released : 06/01/90
Date ext. TOG : N/A
Date anl. TOG : N/A

Date anl.TPHd: N/A

CAS #	Compound Name	Reporting Limit (mg/kg)	Amount Found (mg/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.005 0.005 0.005 0.005	ND ND ND ND ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Sample I.D. : 109001 EB-4,5' Anametrix I.D.: 9005254-08 : SOIL Matrix

Date sampled : 05/19/90

Analyst : GV Supervisor : 00G Date released : 06/01/90 Date ext. TOG : N/A Date anl. TOG : N/A Date anl. TPHq: 05/31/90 Date ext.TPHd: N/A Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (mg/kg)	Amount Found (mg/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	0.005 0.005 0.005 0.005	ND ND ND 0.034 ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

TOW EDWARDS & ASSOCIATES P.D. BOX 418 PINOLE, CALIFORNIA 94564

				CI	HAIN OF CUSTODY						•		
PROJECT ND. SAMPLERS (SIGNATURE) 109001 Chris Hielson- Conquione PROJECT NAME AND ADDRESS: Cavanaugh Motors 1700 Park Street Mameda									ANRL'	YSES		1 1	
PRDJECT NAME I	AND ADDRE	155: Ca 17 A	vana 00 Pa lamed	ugh N vle Stra	lotors	4) V						
SAMPLE ID Number	DATE	TIME	SDIL	NATER	SAMPLE LOCATION	1 d	BTEX						
mw-1,5'	5-17-90	0915	X			×	X						
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Mw-3.51	5-17-90	1400	Χ			Х	X						
MW-4,5' EB-1,5'	5-17-90	1540	X			X	X						
EB-1, 5	5-19-20	1000				X	X						
EB-2,5'	· 4	1035	X			X	X						
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EB-2,5' EB-4,5') (1120	<u>/</u> X			X	X						
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APPENDIX E

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REPORT OF LABORATORY ANALYSIS

June 25, 1990

Mr. Don Semeski Testing and Technology 27 B Commercial Blvd. Novato, CA 94949

RE: PACE Project No. 400608.503 Cavanaugh Mtrs.

Dear Mr. Semeski:

Enclosed is the report of laboratory analyses for samples received June 08, 1990.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephen F. Nackord

Seeslan Hookool

Director, Sampling and Analytical Services

Enclosures



REPORT OF LABORATORY ANALYSIS

Testing and Technology 27 B Commercial Blvd. Novato, CA 94949 June 25, 1990 PACE Project

Number: 400608503

Attn: Mr. Don Semeski

Cavanaugh Mtrs.

PACE Sample Number: Date Collected: Date Received: Parameter	<u>Units</u>	MDL	764910 06/08/90 06/08/90 MW1	764920 06/08/90 06/08/90 MW2	764930 06/08/90 06/08/90 MW3
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS Lead (EPA Method 7421, Graphite Furnace)	mg/L	0.003	ND	-	-
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT): Purgeable Fuels, as Gasoline (EPA 8015)	/1	50	28000	MD	- ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):	ug/L	30	28000	ND	ND
Benzene	ug/L	0.5	6200	ND	ND
Ethylbenzene	ug/L	0.5	630	ND	ND
Toluene	ug/L	0.5	7000	1.0	ND
Xylenes, Total	ug/L	0.5	6100	1.7	0.9

MDL Method Detection Limit

ND Not detected at or above the MDL.



REPORT OF LABORATORY ANALYSIS

Mr. Don Semeski Page 2

Number: 400608503

2.2

0.5

June 25, 1990

PACE Project

Cavanaugh Mtrs.

PACE Sample Number: Date Collected: Date Received: Parameter	<u>Units</u>	MDL	764940 06/08/90 06/08/90 MW4
ORGANIC ANALYSIS			
PURGEABLE FUELS AND AROMATICS TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015) PURGEABLE AROMATICS (BTXE BY EPA 8020):	ug/L	50	ND -
Benzene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Toluene	ug/L	0.5	1.1

ug/L

MDL

Method Detection Limit

ND Not detected at or above the MDL.

The data contained in this report were obtained using EPA or other approved methodologies. All analyses were performed by me or under my supervision.

Robert P. Chrin

Xylenes, Total

Inorganic Chemistry Manager

Ruch Sugmend

Robert P. Cl

Ruth J. Siegmund

Organic Chemistry Manager

Pace laboratories, inc.

								CHAIN-OF-CUSTODY RECORT Analytical Request)
Client TESTING & TECH	14000	. 9		Report To: Do	w Ser	resk i	,	Pace Client No. 780661	
Address 27-13 Commence				Bill To: TO	7 7			Pace Project Manager SFN	
NOVATO CA.				P.O. # / Billing Ref	erence CAUA	ANAUG		Pace Project No. 400608, 5	0:
Phone \$83-5076				Project Name / No.				*Requested Due Date: STD,	
Sampled By (PRINT): DARLA DOUGLAS F Sampler Signature Date Sampled G - 8 - 9 ITEM NO. SAMPLE DESCRIPTION	TIME MATRIX	NO. OF CONTAINERS	UNPRESERVED H2SO4	SERVATIVES YOU HAVE	ANALYSES REQUEST			REMARKS	
1 MW1 2 MW2 3 MW3 4 MW4	WATER	924 924 934 944		24 4 *4 *4	* * * * *	m - sgrie			
6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		かずででは い、 _ v · d ・ · · · · · · · · · · · · · · · · · · ·	TENTON CONTRACTOR CONT	Ca.		स्या स्टब्स् ट्राट ख्रास्ट्रास्ट्र इ. १४ ख्राह्म श्रास्त्र			
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				, s ** * w	# Sec. 100	,	English Allows as	The section of a children with the bounder	-

APPENDIX F

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Environmental & Analytical Chemistry 1951 Concourse Drive Suite E San Jose CA 95131 (408) 432-8192 • Fax (408) 432-8198



Chris Nielson - Cerquone Tom Edwards & Associates 13908 San Pablo Avenue San Pablo, CA 94806

May 10, 1990 Anametrix W.O.#: 9005035 Date Received : 05/04/90 Project Number : 109001

Dear Mr. Nielson:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Terry Cooke TPH Supervisor

TC/dag

REPORT SUMMARY ANAMETRIX, INC. (408) 432-8192

Client Address City Attn.	: Tom Edwards & A : 13908 San Pablo : San Pablo, CA : Chris Nielson -	Avenue 94806	Anametrix W.O.; Date Received Purchase Order; Project No. Date Released	: 05/04/90 : N/A : 109001
Anametri	x Sample I.D.	Date Matrix Sampled	Date Method Extract	Date Inst Analyzed I.D.
RESULTS				
	01 SOIL PILE WEST 02 SOIL PILE EAST	SOIL 05/03/9 SOIL 05/03/9		05/08/90 N/A 05/08/90 N/A

Sample I.D.: 109001 SOIL PILE WEST Anametrix I.D.: 9005035-01

Matrix Analyst Supervisor : SOIL Date sampled : 05/03/90

Analyst : 6:V
Supervisor : 7
Date released : 05/10/90 Date an1.TPHg: 05/08/90

Date ext. TOG : N/A Date anl. TOG : N/A Date ext. TPHd: N/A Date anl. TPHd: N/A

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	2000 2000 2000 2000 2000 40000	ND ND ND 14000 350000

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

Sample I.D. : 109001 SOIL PILE EAST Anametrix I.D.: 9005035-02

Analyst :60 Supervisor :7 Matrix : SOIL Date sampled: 05/03/90

Date anl.TPHg: 05/08/90 Date ext.TPHd: N/A Date released : 05/10/90

Date ext. TOG : N/A
Date anl. TOG : N/A Date anl. TPHd: N/A

	Compound Name	Reporting	Amount		
		Limit	Found		
CAS #		(ug/kg)	(ug/kg)		
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Total Xylenes TPH as Gasoline	5000 5000 5000 5000 100000	ND 11000 7900 110000 780000		

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

PROJECT NO.	SAMPLE	RS (Signatu	re)	0	As well	K 5 em	CHAIN OF			ALYS:	IS	1	1	//	10050		1.
PROJECT NO. SAMPLERS (Signature) 109001 Chris Nielson- Cerquon Send to									ANALYSIS REQUESTED (10)								
PROJECT NAME AND ADDRESS: CAVANAUGH MOTORS								(5)	100	مرراها	,,,,,	100	1000	or por			
1700 PARK ST.								200	ر راهی			تممير	A PARTY	A Part of the second			
CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATIO	ON LOC	ATION		100	N. O.	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	je jednosti				REMARKS	
(O)	5-3-90	1630-	X		5016	Pile	- West	. 4	X	x					5-	Day	
(02)	5-3-90	1635	X		Soic	Pile	- West - East		×	X					Tur	Day	Q
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