File No. 8-90-418-SI

PRELIMINARY SUBSURFACE ENVIRONMENTAL ASSESSMENT
AT KAMUR INDUSTRIES, INC., CAR WASH
2351 SHORE LINE DRIVE
ALAMEDA, CALIFORNIA
JULY 2, 1991

PREPARED FOR:
MR. MURRAY STEVENS
KAMUR INDUSTRIES
2351 SHORE LINE DRIVE
ALAMEDA, CALIFORNIA 94501

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

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SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

July 2, 1991

File No. 8-90-418-SI

Kamur Industries
2351 Shore Line Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

REFERENCE: PRELIMINARY SUBSURFACE ENVIRONMENTAL ASSESSMENT
AT KAMUR INDUSTRIES, INC., CAR WASH
Located at 2351 Shore Line Drive, in
Alameda, California

Dear Mr. Stevens:

The attached report presents the results of our preliminary subsurface investigation at the above-referenced site. The investigation included the installation of four monitoring wells and the drilling of ten exploratory borings.

Results of the data collected indicate that the plume of hydrocarbon contamination exists beneath the site.

Soil Tech Engineering, Inc. (STE), recommends quarterly monitoring and sampling of on-site and off-site wells for one year in order to define the source of Volatile Organic Compound and to evaluate remedial alternatives for clean-up. In addition, we recommend initiating a joint effort between the owner and the Texaco Service Station to design a remediation plan.

File No. 8-90-418-SI

Please submit this report to Local and State Agencies. If you have any questions or need additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.

NOORODDIN AMELI
PROJECT ENGINEER

LAWRENCE KOO, P. E.
C. E. #34928

FRANK HAMEDI-FARD
GENERAL MANAGER

EXECUTIVE SUMMARY

Soil Tech Engineering, Inc. (STE), conducted a preliminary subsurface environmental investigation to further define the extent of petroleum hydrocarbons in soil and groundwater beneath the site.

During the current phase of investigation at this site, ten exploratory soil borings were drilled and four monitoring wells were installed. The shallow soil beneath the site was predominately medium to fine grain sandy material.

Groundwater was encountered approximately eight feet below ground surface. The groundwater flowed in the easterly direction on April 8, 1991.

The analytical results of soil showed elevated levels of Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene and Xylene (BTEX) in only three of twenty-one soil samples analyzed. Elevated levels of TPHg and BTEX detected appeared to be near the former underground tank excavation area.

Slight sheen was detected in two monitoring wells (STMW-1 and STMW-3). TPHg and BTEX were also detected in two wells at elevated concentrations. In addition, some Volatile Organic Compounds were detected in three of the four on-site wells.

File No. 8-90-418-SI

PRELIMINARY SUBSURFACE ENVIRONMENTAL INVESTIGATION REPORT FOR KAMUR INDUSTRIES, INC. SOUTHSHORE CAR WASH LOCATED AT 2351 SHORE LINE DRIVE ALAMEDA, CALIFORNIA APRIL 18, 1991

INTRODUCTION:

This report presents the results of the preliminary subsurface assessment conducted by Soil Tech Engineering, Inc. (STE), at Southshore Car Wash, located at 2351 Shore Line Drive, in Alameda, California (Figure 1). Kamur Industries retained STE to further evaluate the nature and extent of subsurface hydrocarbons encountered during tank removal by Environmental Bio-System, Inc. (EBS). The supplemental investigation was initiated in response to a request from Alameda County Health Services-Department of Environmental Health (ACHS-DEH) for additional information regarding soil and groundwater at the site. This report describes the work STE conducted during this phase of investigation, discusses interpretations of the data collected, and presents conclusions and recommendations.

PURPOSE:

The purpose of the subsurface investigation described in this report was to further delineate the extent of petroleum hydrocarbons in soil and shallow groundwater at this site.

BACKGROUND AND PREVIOUS INVESTIGATIONS:

The site is located at 2351 Shore Line Drive, in Alameda, California. The site was formerly used as a gasoline service station and car wash. In July 1990, Zacor Corporation removed three underground gasoline tanks (10,000 gallons each). Soil sampling was conducted by Environmental Bio-Systems, Inc. (EBS). The soil sample analytical results taken beneath the underground tanks showed high concentrations of Total Petroleum Hydrocarbons as gasoline (TPHg), which ranged from 360 parts per million (ppm) to a maximum of 9,500 ppm. The locations of the former tanks are shown in Figure 2.

During tank removal, approximately 250 cubic yards of soil were excavated and stockpiled on the site. Then the stockpile was hauled to an approved facility where the contaminated soil materials were thermally treated and used as a lightweight aggregate.

In addition to tank removal, EBS Consultants conducted additional shallow soil sampling from the undisturbed area surrounding the former tank excavation. A hand auger was used to conduct soil sampling. The depth of the soil sampling ranged from 5.1 to 7.1 feet below ground surface. The location of the soil samplings conducted by EBS are shown in Figure 3. The undisturbed soil analytical results showed moderate levels of TPHg and BTEX. No groundwater investigation was conducted by EBS.

Alameda County Health Care Services-Department of Environmental Health (ACHCS-DEH) requested a preliminary soil/groundwater investigation, including the removal of contaminated soil and the further delineation of the extent of petroleum hydrocarbons in the soil and groundwater.

SCOPE:

In August 1990, Kamur Industries, Inc., retained STE to conduct further investigation as requested by the ACHCS-DEH. STE prepared a work plan (dated August 20, 1990) to conduct further investigation for local agency approval. The scope of the work completed is intended to provide data to satisfy the objectives stated above. The tasks included in this assessment are summarized below:

Task 1: Remove contaminated soil to the depth feasible.

Task 2: Define the extent of contamination in the soil by conducting exploratory borings within the property line.

Task 3: Install monitoring wells.

Task 4: Analyze the groundwater and selected soil samples for petroleum hydrocarbons and evaluate field and laboratory data.

Task 5: Prepare technical report.

TASK 1: REMOVE CONTAMINATED SOIL AND PROPER DISPOSAL:

Removal of contaminated soil and its proper disposal are described in STE's reports entitled "Verification of Contaminated Soil Removal" dated February 11, 1991 and "Soil Disposal from the Excavation" dated June 28, 1991.

TASK 2: DEFINE THE EXTENT OF CONTAMINATION:

Exploratory Borehole Drilling and Sampling:

Prior to drilling, STE obtained a permit to install four groundwater monitoring wells and to conduct exploratory borings from the Alameda County Flood Control and Water Conservation District-Zone 7 (ACFCWCD). Copies of the well permits are included in Appendix "C" of this report.

Prior to initiating exploratory boring and installation of the monitoring wells, all on-site utilities were located.

On February 14 and 19, 1991, ten shallow exploratory borings were drilled on the property to assess the extent of hydrocarbons in the soil. The locations of these borings are shown in Figure 4. The boring depth ranged from 6 feet to a maximum of 10 feet below ground surface. The soil encountered consisted of mainly fine to medium-grained sand. The groundwater was encountered at approximately 8 feet below ground surface.

Before use and between boreholes, all drilling equipment was steam cleaned to minimize the potential for cross-contamination.

The STE staff project engineer prepared a detailed lithologic log of each boring on-site. These logs provide a record of subsurface materials encountered, hydrogeologic information and results of field screening of soil samples for volatile hydrocarbon compounds. Boring logs are included in Appendix "B" of this report.

Discrete soil samples were collected at three- and four-foot intervals using a California modified sampler with stainless steel or brass liners. The soil sample tube was logged, covered with aluminum foil, plastic caps, and tape, and then stored in a cold ice chest. A portion of the remaining soil from each sample was screened in the field for volatile hydrocarbon compounds, using a photoionization detector (PID). The drilling methodology and soil samples are described in the Standard Operation Procedures (SOP) included in Appendix "A". Strict chain-of-custody procedures were followed throughout sample acquisition, storage and transport. Copies of chain-of-custody records are included in Appendix "D" of this report.

Soil cuttings from drilling operations were placed on and covered with plastic sheeting and temporarily stored on-site pending the results of laboratory analyses. Arrangements were made for appropriate off-site disposal of this material. After reviewing the soil results, the soil was disposed of at an approved Class III landfill.

TASK 3: INSTALL MONITORING WELLS:

On February 15 and 19, 1991, four groundwater monitoring wells were installed in the soil borings augered by Alpha Geo Services (AGS) immediately following the completion of each boring. The locations of these wells are shown in Figure 4.

Monitoring wells STMW-1, STMW-2 and STMW-4 were constructed of two-inch diameter and well STMW-3 was constructed of four-inch diameter Schedule 40 PVC flush-threaded casing. The drilling and installation of the four wells were conducted in accordance with ACFCWD well construction requirements which are described in STE's SOP included in Appendix "A" of this report. Schematic Piezometer of the construction details for the four wells are shown in logs STMW-1 to STMW-4 respectively. These logs are included in Appendix "B". Discrete soil samples were taken at approximately three- to four-foot intervals to be analyzed for petroleum hydrocarbons.

The ground surface and top-of-casing elevations of all four new monitoring wells were surveyed relative to fixed data. This data was used to calculate the local groundwater gradient and to develop a direction of groundwater flow map (Figure 5).

Well Development and Sampling:

On April 3 and 4, 1991, the four on-site wells were developed. Prior to development, all wells were sounded to determine the depth-to-water and potential presence of free phase hydrocarbons. No indication of free phase hydrocarbons was observe in wells STMW-2 and STMW-4. However, wells STMW-1 and STMW-3 contained a minor sheen and strong petroleum odors.

Groundwater samples from wells STMW-1 to STMW-4 were collected on April 5, 1991. Using a bailer, approximately five well volumes of water were removed from each well before the samples were collected by a clean Teflon bailer. Temperature, pH and conductivity were allowed to stabilize before collection of each sample. Water sampling equipment was decontaminated before and after each well using non-phosphate soap and water wash, followed by double rinsing in potable and deionized water.

Groundwater samples were contained in laboratory-cleaned 40 milliliter glass vials with Teflon-lined septa. After labeling, they were immediately stored in a cold ice chest. Strict chain-of-custody procedures were maintained during sample acquisition, storage and transport. A copy of the chain-of-custody report is included in Appendix "D".

Site Geology:

STE explored the soil stratigraphy beneath the site by excavating and augering shallow borings. Four of these borings were completed as monitoring wells (STMW-1 to STMW-4). Descriptions of the subsurface materials encountered are provided in the boring logs, included in Appendix "B".

Boring logs indicate that the native soil beneath the site consists of mainly fine to medium grained-sandy soil.

Site Hydrogeology:

Groundwater was encountered during excavation and drilling at depths ranging from approximately 8 to 9 feet below ground surface (BGS). Measured static water levels in monitoring wells on-site were approximately eight feet BGS. Water level and well construction data are included in Table 2.

A groundwater contour map was constructed using groundwater elevation data from wells STMW-1 through STMW-4. The groundwater flowed in the easterly direction on April 8, 1991.

TASK 4: ANALYZE RESULTS:

Results of Laboratory Analysis of Soil Samples:

This section presents the results of laboratory analyses for soil and groundwater samples collected during this assessment. Copies of laboratory reports and chain-of-custody records are included in Appendix "D".

Twenty-one soil samples from borings B1 through B10 and ten soil samples from monitoring wells STMW-1 to STMW-4 were submitted to state certified analytical laboratory. Four of the soil samples (B-1-6, B-2-6, B-6-6 and B-9-6) were analyzed on-site by state-certified Mobile Chem Labs, Inc. of Martinez, California. These samples were analyzed using EPA Method 8015 for Total Petroleum Hydrocarbons (TPH) in the gasoline range, and EPA Method 8020 for differentiation of Benzene, Toluene, Ethylbenzene and Xylene (BTEX). Copies of laboratory reports and the chain-of-custody record for these samples are included in Appendix "D".

The results of laboratory analyses of soil samples are presented in Table 1. These results show the presence of petroleum hydrocarbon compounds at low concentrations in the shallow soil beneath the site. TPHg and BTEX compounds were detected in soil samples B-1-6 at 6 feet (2.5 mg/kg); B-2-3 at 3 feet (0.7 mg/kg); B-7-6 at 6 feet (0.7 mg/kg); B-9-3 at 3 feet (7 mg/kg); and B-10-6 at 6 feet (29 mg/kg) respectively for soil borings. However, elevated concentrations of TPHg and BTEX were detected at the depth of six feet in samples B-2-6, B-8-6 and B-9-6. The elevated TPHg as gasoline

concentrations were 4,700 mg/kg, 1800 mg/kg and 11,000 mg/kg respectively. Soil sample B-9-6 was analyzed for Volatile Organic Compounds, but no VOC's were detected.

Soil samples from monitoring well borings (SW-1-6 and SW-3-6) contained elevated levels of TPHg and BTEX at the depth of six feet. The TPHg concentrations were 650 milligrams per kilogram (mg/kg) and 2,800 mg/kg respectively. BTEX compounds were also detected at very low concentrations in soil samples SW-1-10, SW-3-3 and SW-4-3, and the concentrations were less than 0.5 mg/kg.

Results of Laboratory Analysis of Groundwater Samples:

Groundwater samples from wells STMW-1 through STMW-4 were analyzed by EPA Method 8015 for TPHg in the gasoline range, and EPA Method 8020 for BTEX differentiation. In addition to TPHg and BTEX, the water samples were also analyzed for Volatile Organic Compounds (VOC's) per EPA Method 8010. Copies of laboratory reports and the chain-of-custody record for these samples are included in Appendix "D" of this report.

Wells STMW-1 and STMW-3 contained moderate levels of TPHg and BTEX; whereas, wells STMW-2 and STMW-4 showed TPHg below detection limit. Three out of four wells contained Volatile Organic Compounds. The chemicals detected were 1,2-Dichloroethane, Trichloroethylene,

1,1,2-Trichloroethane, Tetrachloroethene and Cis-1,2-Dichloroethene. The compound 1,2-Dichloroethane was detected in three wells (STMW-1, STMW-2 and STMW-3), with concentrations ranging from 8 to a maximum of 450 parts per billion. The organic compounds that exceeded the State Health Department Drinking Water Standards were 1,2-Dichloroethane and Tetrachloroethene. No VOC's were detected in well STMW-4. The results of laboratory analysis of groundwater samples are presented in Table 2.

FINDINGS:

The following findings are based on the recent soil and groundwater analytical results and on STE's observations during field investigation.

- The site is underlaid by fine to medium grained sand to a depth of at least 15 feet below grade.
- Groundwater was encountered at approximately 8 feet below ground surface, and it flowed in the easterly direction on April 8, 1991.
- Laboratory chemical analysis of soil samples collected from shallow borings detected TPHg and BTEX in seven out of twenty-one samples, but elevated concentrations of TPHg and BTEX were

detected only in three of the samples (B-2, B-8 and B-9) at the depth of six feet. TPHg and BTEX were not detected in the rest of the samples, which indicates that contamination is localized in three areas.

- Shallow groundwater has been impacted. The southerly wells (STMW-2 and STMW-4) showed low to non-detectable levels of TPHg and BTEX, but elevated levels of TPHg and BTEX were detected in wells STMW-1 and STMW-3.

- Light petroleum sheen was detected in wells STMW-1 and STMW-3.

- Three of the four on-site wells contained few VOC's. No VOC's were detected in well STMW-4. The organic compounds that exceeded DHS Drinking Water Standards were 1,2-Dichloroethane (350 ppb in well STMW-1, 8 ppb in well STMW-2 and 450 ppb in well STMW-3, respectively) and Tetrachloroethene (27 ppb in well STMW-2).

- The source of the petroleum hydrocarbons in the soil and groundwater beneath the site appeared to be from past inadvertent spillage from the former on-site underground tanks.

- It is our understanding, since no solvents or waste oil was stored on-site, that the potential VOC's sources appear to be from off-site.

RECOMMENDATIONS:

Review of the technical reports written for the two adjacent properties (the former Texaco Gas Station and Dry Cleaning properties) showed that the groundwater has been impacted by TPHg, BTEX and some Volatile Organic Compounds. Since the groundwater in the area has been impacted both from the subject site (car wash) and the two above-mentioned properties, we recommend the following:

Phase I:

- Review all data from the off-site monitoring wells in order to evaluate the potential source for VOC's.
- Conduct quarterly groundwater monitoring and sampling of both on-site and off-site wells (located on the former dry cleaning property) for a minimum of one year. The proposed additional monitoring and sampling of on-site and off-site wells will assist in finding the possible source of VOC's. The frequency of proposed monitoring of the wells should be re-evaluated at the end of 12 months of sampling.
- Define the extent of TPHg and BTEX by installing two to three wells north of the site as required by the regulatory agency.
- Evaluate remedial alternatives for gasoline and VOC's in soil and groundwater, after the completion of one year of monitoring and sampling of the on-site and off-site wells.

Phase II:

Design and install a groundwater treatment system after evaluating the data from the Phase I investigation. This could be achieved as a joint venture between the owner or a consultant of the former Texaco Service Station and/or the owner of the property.

STE believes a joint effort to remediate the groundwater is the most cost-effective method to comply with the State and Local Agencies' requirements.

LIMITATIONS:

This report was prepared in accordance with the currently accepted standards for environmental investigations. The contents of this report reflect the conditions of the subject site at this particular time. No other warranties, expressed or implied, as to the professional advice provided are made.

TABLE 1
RESULTS OF LABORATORY ANALYSES OF
EXPLORATORY BORING SOIL SAMPLES
IN
MILLIGRAM PER KILOGRAM (mg/kg)

Sample No.	Depth feet	TPHg	B	T	E	X	TOG
B-1-3	3	ND	ND	ND	ND	ND	
B-1-6*	6	2.5	0.25	0.081	0.043	0.10	
B-2-3	3	0.7	ND	ND	ND	0.016	
B-2-6 *	6	4,700	16	66	54	200	
B-3-3	3	ND	ND	ND	ND	ND	
B-3-6	6	ND	ND	ND	ND	ND	
B-4-3	3	ND	ND	ND	ND	ND	
B-4-6	6	ND	ND	ND	ND	ND	
B-5-3	3	ND	ND	ND	ND	ND	
B-6-3	3	ND	ND	ND	ND	ND	
B-6-6*	6	ND	0.029	ND	ND	ND	
B-7-3	3	ND	ND	ND	ND	ND	
B-7-6	6	0.7	0.056	0.035	0.023	0.064	
B-8-3	3	ND	ND	0.008	ND	0.007	
B-8-6	6	1800	13	98	70	200	
B-8-10	10	ND	ND	ND	ND	ND	
B-9-3	3	7.0	ND	0.026	0.05	0.15	
B-9-6*	6	11,000	220	740	370	1,400	1,400
B-9-10	10	ND	ND	ND	ND	ND	
B-10-3	3	ND	ND	0.006	ND	0.012	
B-10-6	6	29	1.7	2.9	0.36	1.5	
Detection Limit		0.5	0.005	0.005	0.005	0.005	

TPHg = Total Petroleum Hydrocarbons as gasoline
BTEX = Benzene, Toluene, Ethylbenzene, Xylene
TOG = Total Oil and Grease
ND = Not Detected (Below Detection Limit)
* = Mobile Chem Labs, Inc.

SOIL TECH ENGINEERING, INC.

TABLE 2
RESULTS OF LABORATORY ANALYSES
SOIL AND GROUNDWATER SAMPLES
FROM
MONITORING WELLS

I. Soil Analytical Results in Milligram Per Kilogram (mg/kg)

Sample No.	Depth feet	TPHg	B	T	E	X
SW-1-3	3	ND	ND	ND	ND	ND
SW-1-6	6	650	4.5	30	34	79
SW-1-10	10	ND	0.006	0.005	0.014	0.018
SW-2-3	3	ND	ND	ND	ND	ND
SW-2-6	6	ND	ND	ND	ND	ND
SW-3-3	3	ND	0.054	0.048	0.009	0.041
SW-3-6	6	2800	14	120	75	270
SW-4-3	3	ND	ND	ND	0.005	0.014
SW-4-6	6	ND	ND	ND	ND	ND
SW-4-10	10	ND	ND	ND	ND	ND

II.
A. Water Analytical Results in Milligram Per Liter (mg/l)

Monitoring Well No.	Water Depth feet	TPHg	B	T	E	X
STMW-1	8.48	180	11.0	20	3.2	18
STMW-2	5.17	ND	ND	0.4	ND	0.5
STMW-3	7.08	260	20	34	3.6	19
STMW-4	7.08	ND	0.3	0.3	ND	0.7

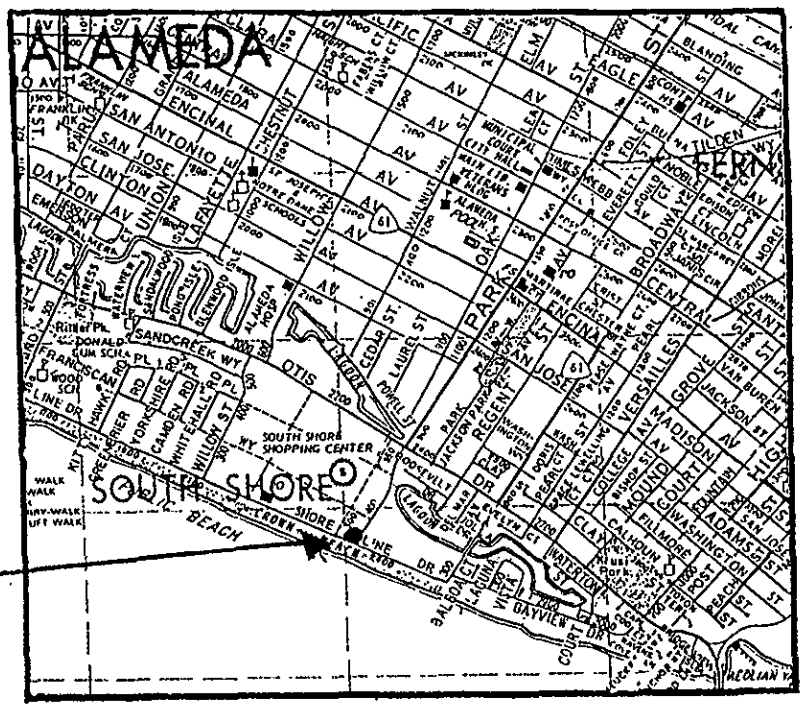
TPHg = Total Petroleum Hydrocarbons as gasoline
BTEX = Benzene, Toluene, Ethylbenzene, Xylene
ND = Not Detected (Below Detection Limit)

TABLE 2 CONT'D

B. Volatile Organic Compounds (VOC's) Results

Monitoring Well No.	VOC Compounds Detected Per EPA Method 8010 Results in Parts Per Billion (ppb)		DHS-DWS (ppb)
STMW-1	1,2-Dichloroethane	350	0.5
	Trichloroethylene	4	5
	1,1,2-Trichloroethane	0.5	32
	(PEC) Tetrachloroethene	0.9	5
	cis-1,2-Dichloroethene	1	6
STMW-2	1,2-Dichloroethane	8	0.5
	Trichloroethylene	4	5
	Tetrachloroethene	27	5
STMW-3	1,2-Dichloroethane	450	0.5
STMW-4	None Detected		

DHS-DWS = Department of Health Services-Drinking Water Standards



Thomas Brothers Map 1982 Edition
Alameda - Contra Costa Counties Map

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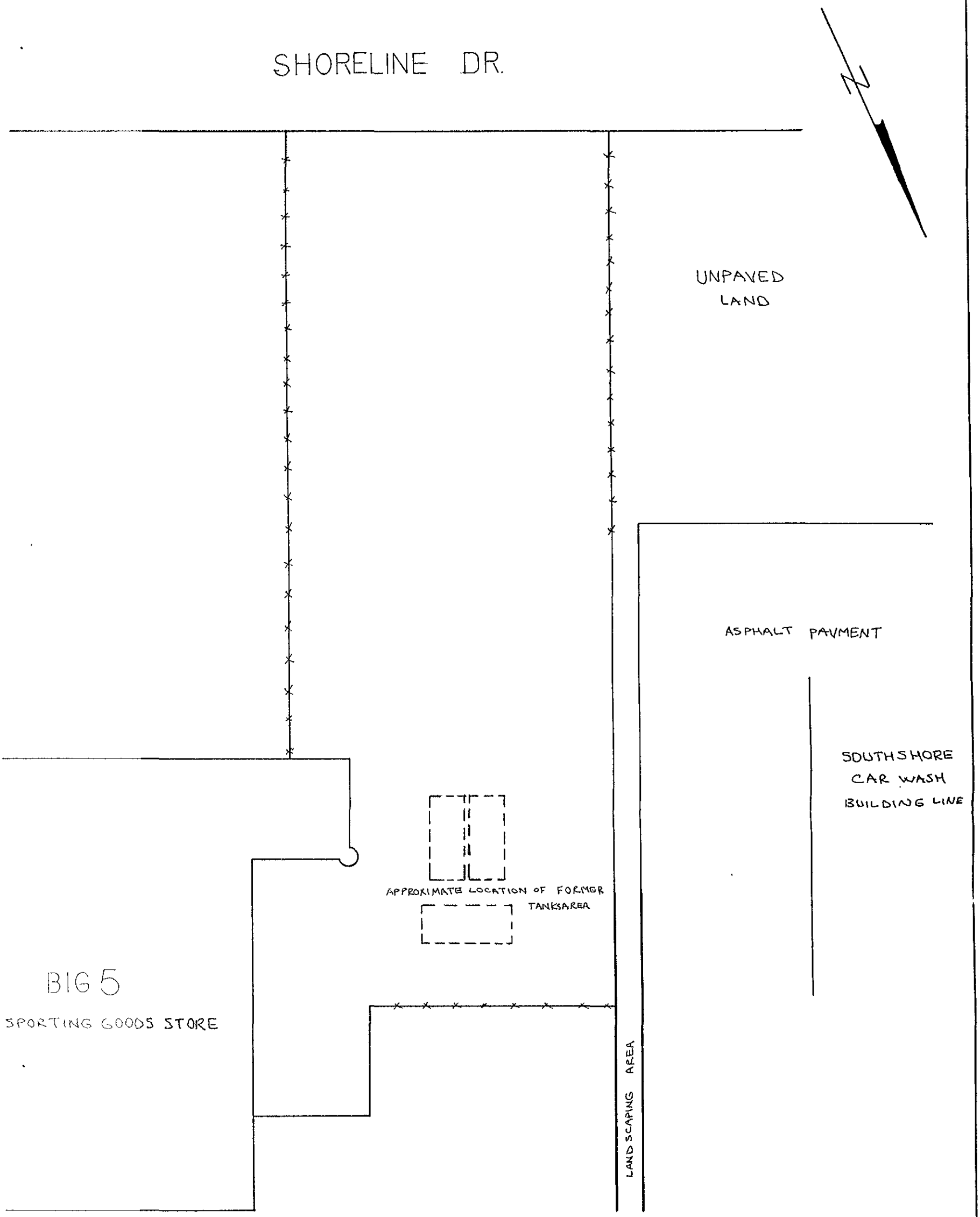
Figure 1



2351 SHORE LINE DR ALAMEDA CA		
1"=30'	PROJECT NO. 8-90-418-S1	FIG-2
DRAWN BY N.A.		
SOIL TECH ENGINEERING INC. 298 BROKAW Rd. SANTA CLARA CA 95050		

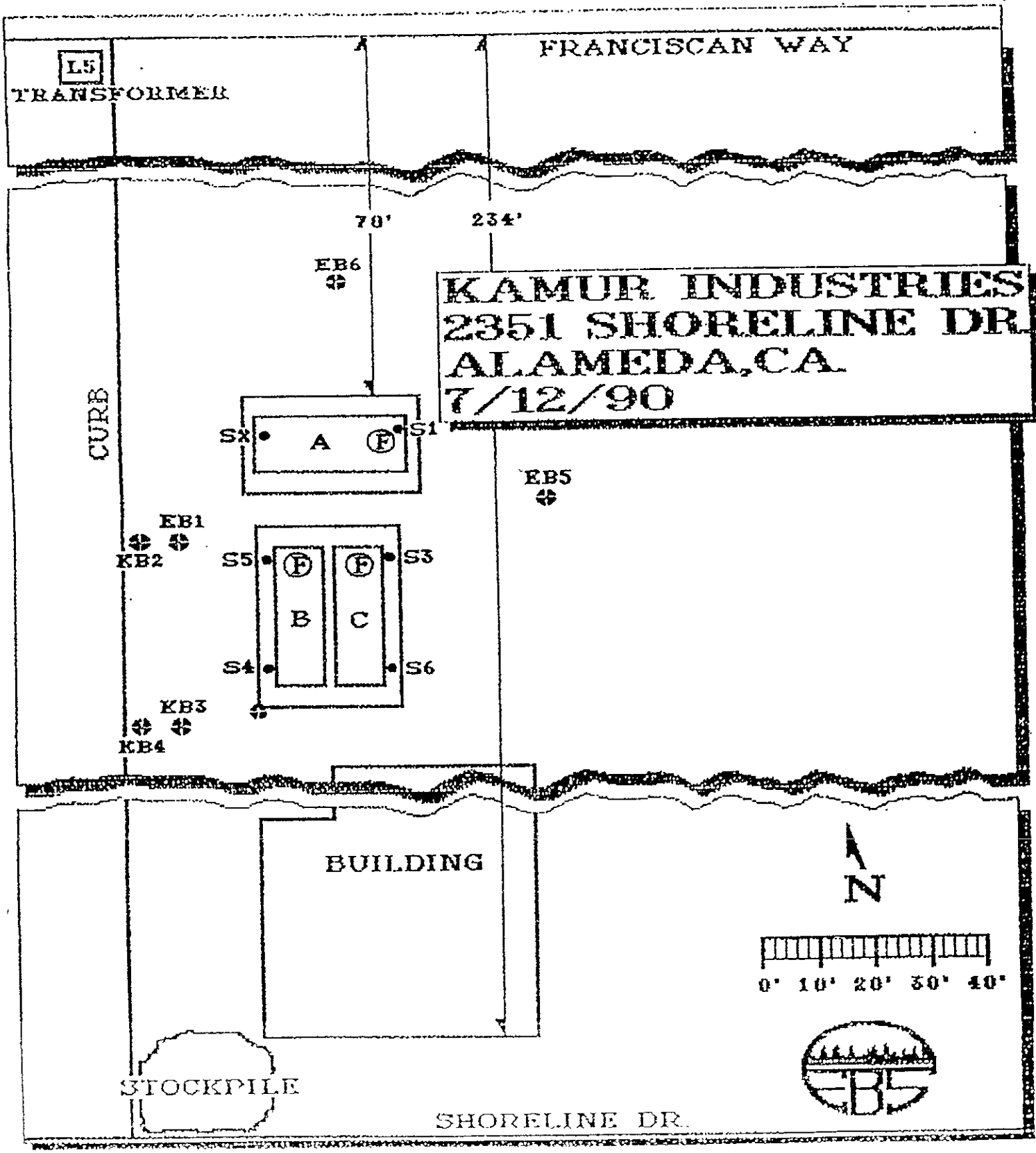

FRANCISCAN WAY
L5
TRANSFORMER
70'
234'
EB6
KAMUR INDUSTRIES
2351 SHORELINE DR.
ALAMEDA, CA.
7/12/90
CURB
SX
A
S1
EB5
EB1
KB2
S5
B
C
S3
S4
S6
KB3
KB4
BUILDING
N
0' 10' 20' 30' 40'
STOCKPILE
SHORELINE DR.
EB5

Figure 3

SHORE LINE DR.

N

UNPAVED LAND

B-3 B-6 B-4

STMW-4

B-2

B-1

B-5

STMW-2

300ppb benzene

305ppb benzene

ASPHALT PAVEMENT.

BUILDING LINE

SOUTH SHORE CAR WASH

BIG 5
SPORTING GOODS STORE

B-8 B-7

6"Ø. O.B.W.

STMW-3

STMW-1

B-9

4' PLYWOOD WALL

B-10

LANDSCAPING AREA

Elevated soil contamination.

Elevated g.w. contamination

CHAIN LINK FENCE

STMW SOIL TECH MONITORING WELL

B- BORING

O.B.W. OBSERVATION WELL

2351 SHORE LINE DR ALAMEDA CA

1"=30'	PROJECT NO. 8-90-418-S1	FIG-4
DRAWN BY N.A.		2-19-91

SOIL TECH ENGINEERING INC.
298 BROKAW RD. SANTA CLARA CA 95050

SHORE LINE DR

UNPAVED LAND

APPROXIMATE DIRECTION OF GROUND WATER FLOW AS 4-8-91

C.EL. 99.47
W.EL. 94.14

STMW-4

STMW-2

ASPHALT PAVEMENT

C.EL. 101.13
W.EL. 94.00

BUILDING LINE

SOUTH SHORE CAR WASH

BIG 5
SPORTING GOODS STORE

STMW-3

STMW-1

C.EL. 101.11
W.EL. 93.82

C.EL. 102.31
W.EL. 93.77

4' PLYWOOD WALL

LAND SCAPING AREA

STMW SOIL TECH MONITORING WELL
C EL CASING ELEVATION
W EL WATER ELEVATION

2351 SHORE LINE DR ALAMEDA CA

1"=30'	PROJECT NO 8-90-418-SI	FIG-5
DRAWN BY N.A.		4-'8-91

SOIL TECH ENGINEERING INC.
298 BROKAW RD. SANTA CLARA CA 95050

File No. 8-90-418-SI

A P P E N D I X "A"

DRILLING AND SOIL SAMPLING PROCEDURE

A truck mounted drill rig, using a continuous solid flight, hollow-stem auger was used in drilling the soil boring to the desired depth (see Boring Log for more details).

Prior to drilling, all drilling equipment (i.e. auger, pin, drilling head) was thoroughly steam-cleaned to minimize the possibility of cross-contamination and/or vertical migration of possible contaminants.

In addition, prior to obtaining each individual soil sample, all sampling tools, including the split-spoon sampler and brass liners were thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water.

During the drilling operation, relatively undisturbed soil samples were taken from the required depth by forcing a 2-inch I.D., split-spoon sampler insert with a brass liner into the ground by means of a 140-lb. hammer falling 30-inches or by hydraulic forces at various depths.

The samplers withdrew relatively undisturbed soil. In general, the first section of soil from the sampler (shoe) was used in the field for lithologic inspection and evidence of contamination. The selected brass liner was immediately trimmed, the ends of the brass liner was covered tightly with aluminum foil and plastic caps, sealed with tape, labeled, placed in a plastic bag and stored in

an ice chest in order to minimize the escape of any volatiles present in the samples. Soil samples for analysis were sent to a state-certified hazardous waste laboratory accompanied by a chain-of-custody record.

Soil samples collected at each sampling interval were inspected for possible contamination (odor or peculiar colors). Soil vapor concentrations were measured in the field by using Photoionization Detector (PID), PhotoVac Tip Air Analyzer. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples will be analyzed at the laboratory. The soil sample is sealed in a ZipLoc plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the sample. The data is recorded on the drilling log at the depth corresponding to the sampling point.

Other soil samples may be collected to document the stratigraphy and estimate relative permeability of the subsurface materials.

Soil tailings obtained during drilling were stored at site, pending the analytical test results, for proper disposal.

MONITORING WELL INSTALLATION

Prior to well installation, all the necessary permits were obtained from the local regulatory agencies.

The boreholes for monitor wells were drilled with the diameter at least two inches larger than the casing outside diameter (O.D.).

Monitor wells are cased with threaded, factory-perforated and blank, schedule 40 P.V.C. The perforated interval consists of slotted casing, generally 0.010 to 0.040 inch wide by 1.5 inch long slot size, with 42 slots per foot (slots which match formation grain size as determined by field grain-size distribution analysis), a P.V.C. cap is fastened to the bottom of the casing (no solvents, adhesive, or cements are used). The well casing is thoroughly washed and steam-cleaned.

After setting the casing inside the borehole, kiln dried sand or gravel filter material was poured into the annular space to fill from the bottom of the boring to 2 feet above the perforated interval. A 1 to 2 feet thick bentonite plug was placed above this filter material to prevent grout from infiltrating down into the filter material. Approximately 1 to 2 gallon of distilled water was added to hydrate the bentonite pellets. the well was then sealed from the top of the bentonite seal to the surface with concrete or neat cement containing about 5% bentonite (see Well Construction Detail).

For protection of the well from vandalism and surface water contamination, Christy boxes with a special type of Allen screw were installed around the well head, (for wells in parking lots, driveways and building areas). Steel stove pipes with padlocks are usually set over well-heads in landscaped areas.

In general, groundwater monitoring wells shall extend to the base of the upper aquifer, as defined by the consistent (less than 5 feet thick) clay layer below the upper aquifer, or at least 10 to 15 feet below the top of the upper aquifer, whichever is shallower. The wells shall not extend through the laterally extensive clay layer below the upper aquifer. The wells shall be terminated 1 to 2 feet into such a clay layer.

WELL DEVELOPMENT

For all newly installed groundwater monitoring wells, the well casing, filter pack and adjacent formations shall be cleared of disturbed sediment and water.

Well development techniques include pumping, bailing, surging, swabbing, jetting, flushing or air lifting by using a stainless steel or Teflon bailer, a submersible stainless steel pump, or air lift pump. The well development continues until the discharged water appears to be relatively free of all turbidity.

All water and sediment generated by well development was collected in 55-gallon steel drums (Department of Transportation approved) closed-head (17-H) for temporarily storage, and are then disposed of properly, depending on analytical results.

To assure that cross-contamination does not occur between wells, all well development tools were thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water or steam-cleaned before each well development.

File No. 8-90-418-SI

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) were cleaned by pumping a TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" were filled out (depth to water and total depth of water column, measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.), glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample is decanted into each VOA vial in such a manner that there is a meniscus at the top. The cap is quickly placed over the top of the vial and securely tightened. The VOA vial is then inverted and tapped to see if air bubbles are present. If none are present, the sample is labeled and refrigerated for delivery under chain-of-custody to the laboratory. Label information includes a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

File No. 8-90-418-SI

A P P E N D I X "B"

SOIL TECH ENGINEERING, INC.

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-1
Date Drilled: 2/14/91	Approx. Elevation	Boring Diameter 8-inch

Drilling Method	Sampling Method
Mobile drill rig B-40L	

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Light Brown to green sand.
2					
3	1-3	5		SP	Dark green to grey sand, some moisture.
4					
5					
6	1-6	7		SP	Dark green to grey sand, mild petroleum odor. Boring terminated at 6 feet.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-2
Date Drilled. 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Medium brown sand.
2					
3	2-3	3		SP	Color change to olive, some moisture.
4					
5					
6	2-6	1200		SP	Dark grey sand, mild petroleum odor. Boring terminated at 6 feet.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Remarks

8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-3
Date Drilled. 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Light brown sand.
2					
3	3-3	4		SP	Light brown sand, some moisture.
4					
5					
6	3-6	15		SP	Dark grey to olive sand. Boring terminated at 6 feet.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-4
Date Drilled: 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Light brown sand.
2					
3	4-3	7		SP	Medium grey to olive sand, some moisture.
4					
5					
6	4-6	14		SP	Dark grey to green sand. Boring terminated at 6 feet.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-5
Date Drilled: 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L	Sampling Method	

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Light brown sand.
2					
3	S-3	11		SP	Light brown sand, some moisture.
4					
5					
6	S-6	17		SP	Medium brown sand. Boring terminated at 6 feet.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-6
Date Drilled: 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Medium brown sand.
2					
3	6-3	10		SP	Color changes to olive.
4					Medium grey to olive, some moisture.
5					
6	6-6	15		SP	Dark grey sand.
7					Boring terminated at 6 feet.
8					
9					
10					
11					
12					
13					
14					
15					
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-7
Date Drilled: 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
					Light brown sand.
2					
3	7-3	10		SP	Light brown sand, some moisture.
6	7-6	20		SP	Dark grey to green. Boring termianted at 6 feet.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-8
Date Drilled: 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No	Field Test for Total Ionization ppm	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1					Light brown sand.
2					
3	8-3	20		SP	Light brown sand, some moisture.
4					
5					
6	8-6	700		SP	Dark grey to green, mild petroleum odor.
7					Strong petroleum odor.
8					▽ Groundwater level encountered at 8 feet.
9					
10	8-10	30		SP	Medium brown sand, wet. Boring terminated at 10 feet.
11					
12					
13					
14					
15					
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-9
Date Drilled: 2/14/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L	Sampling Method	

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
					Light brown sand.
3	9-3	15		SP	Light brown sand.
6	9-6	1800		SP	Dark grey to green sand, strong petroleum odor.
8					▽ Groundwater level encountered at 8 feet.
10	9-10	30		SP	Boring terminated at 10 feet.

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STB-10
Date Drilled: 2/19/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L	Sampling Method	

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1					Dark green-olive sand.
2					
3	10-3	5		SP	Dark green-olive sand.
4					
5					Mild petroleum odor.
6	10-6	15		SP	Half light brown sand, half dark grey sand, mild petroleum odor.
7					
8					▽ Groundwater level encountered at 8 feet.
9					
10					Boring terminated at 10 feet.
11					
12					
13					
14					
15					
16					

Remarks

8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-1
Date Drilled: 2/15/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Light brown sand.
2					
3	SW-1-3	8		SP	Dark olive sand.
4					
5					Petroleum Odor.
6	SW-1-6	250		SP	Dark olive sand, odor.
7					
8					▽ Groundwater level at 8 feet.
9					
10	SW-1-10	15		SP	Dark olive sand, wet.
11					
12					
13					
14					
15					Boring terminated at 15 feet.
16					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-2
Date Drilled: 2/15/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/6"	Unified Soil Classification:	DESCRIPTION
					Light brown sand.
2					
3	SW-2-3	10		SP	Light brown sand.
6	SW-2-6	20		SP	Light brown sand.
7					▽ Groundwater level encountered at 8 feet.
10					Medium brown-olive sand, wet.
11					
2					
3					
14					
15					Boring terminated at 15 feet.
6					

Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-3
Date Drilled: 2/19/91	Approx. Elevation	Boring Diameter 8-inch

Drilling Method	Sampling Method
Mobile drill rig B-40L	

Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Light brown sand.
2					
3	SW-B-3	20		SP	Light brown sand.
4					
5					
6	SW-B-6	1000		SP	Dark olive sand, petroleum odor.
7					
8					▽ Groundwater level encountered at 8 feet.
9					
10					
11					
12					
13					
14					
15					Boring terminated at 15 feet.
16					

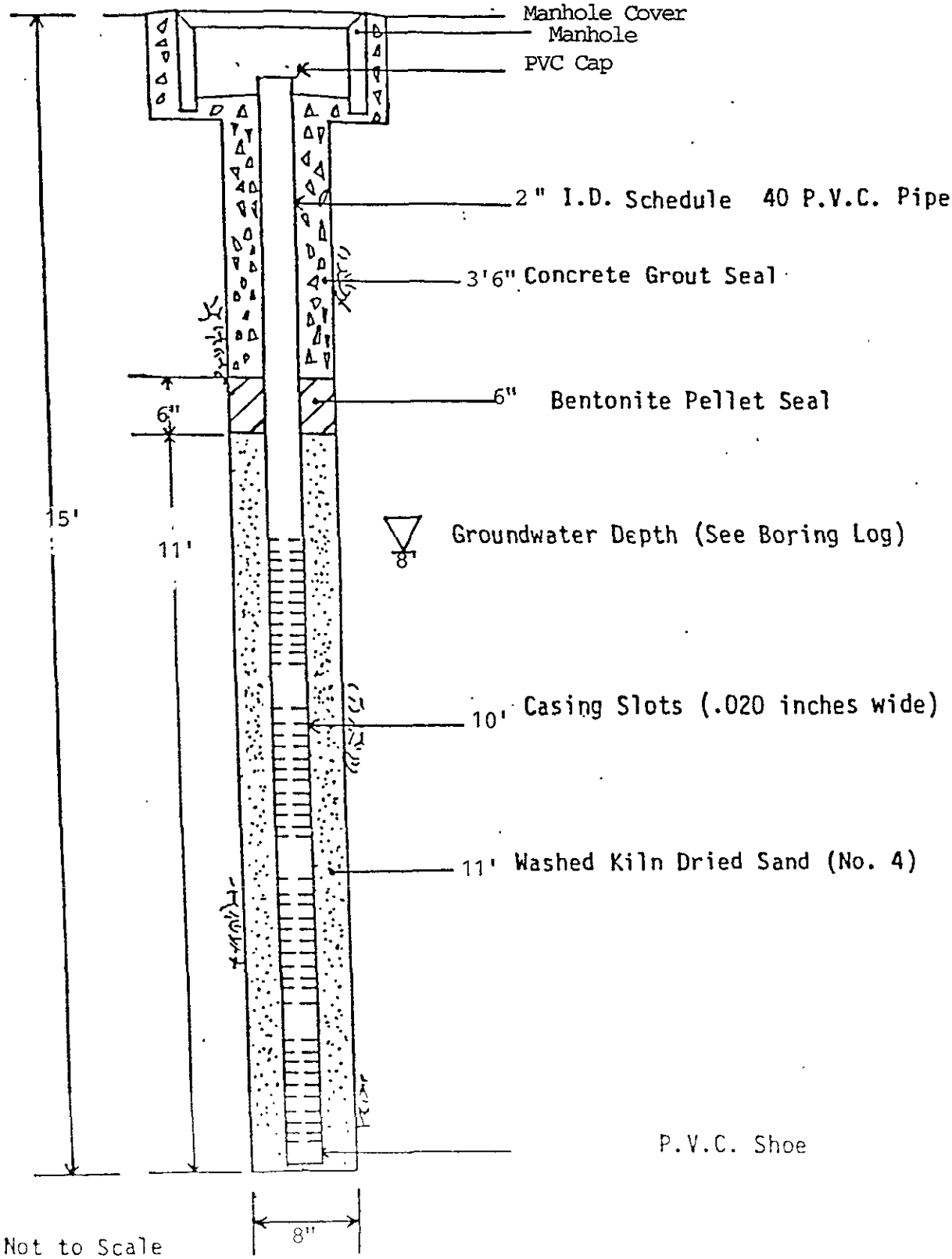
Remarks

File No. 8-90-418-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-4
Date Drilled: 2/19/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

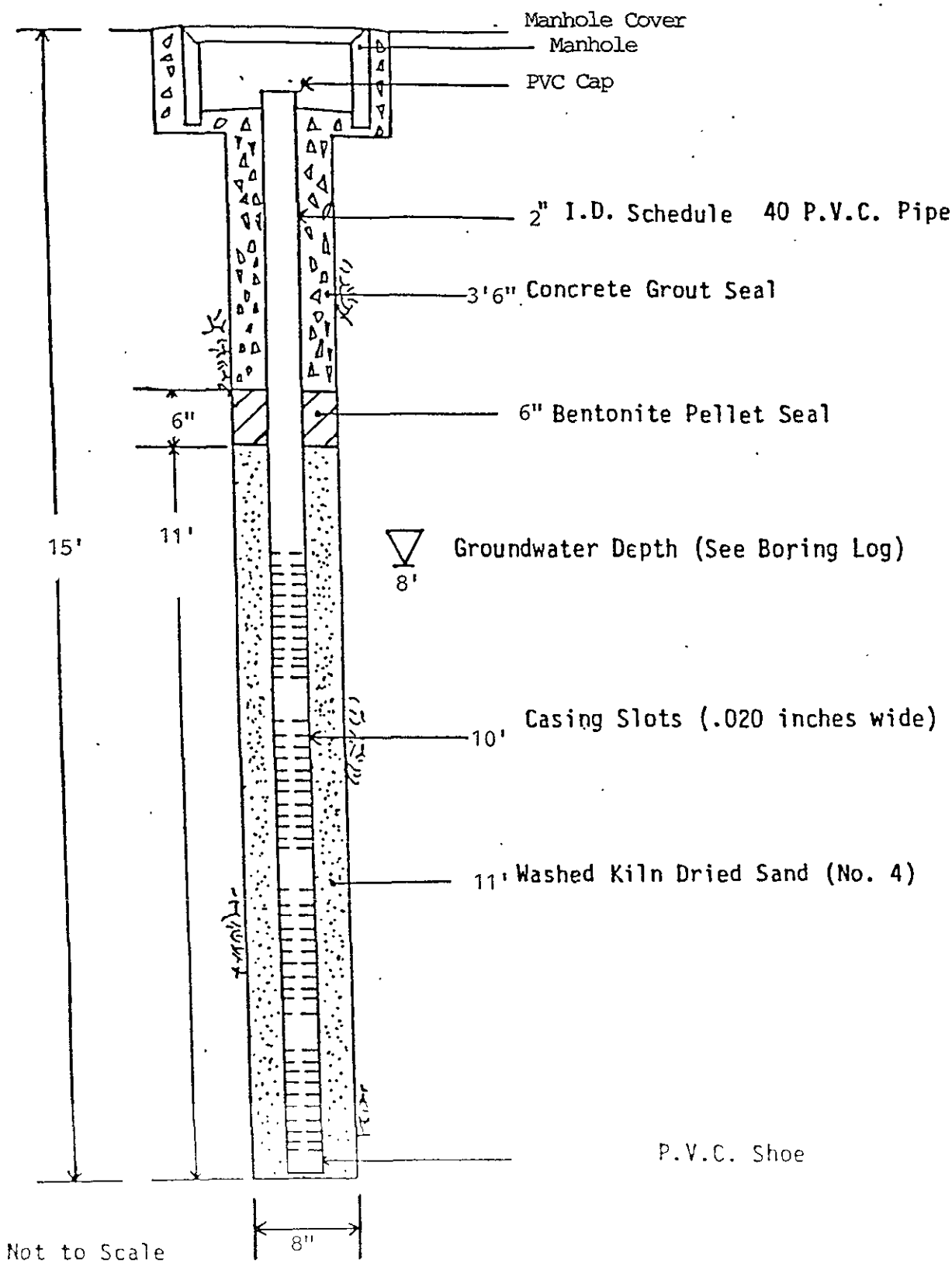
Depth, Ft.	Sample No.	Field Test for Total Ionization ppm	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Medium brown sand.
2					
3	SW-4-3	10		SP	Medium brown sand.
4					
5					
6	SW-4-6	15		SP	Olive-dark green sand.
7					
8					▽ Groundwater level encountered at 8 feet.
9					
10	SW-4-10	15		SP	Dark olive-dark green sand.
11					
12					
13					
14					
15					Boring terminated at 15 feet.
16					

Remarks



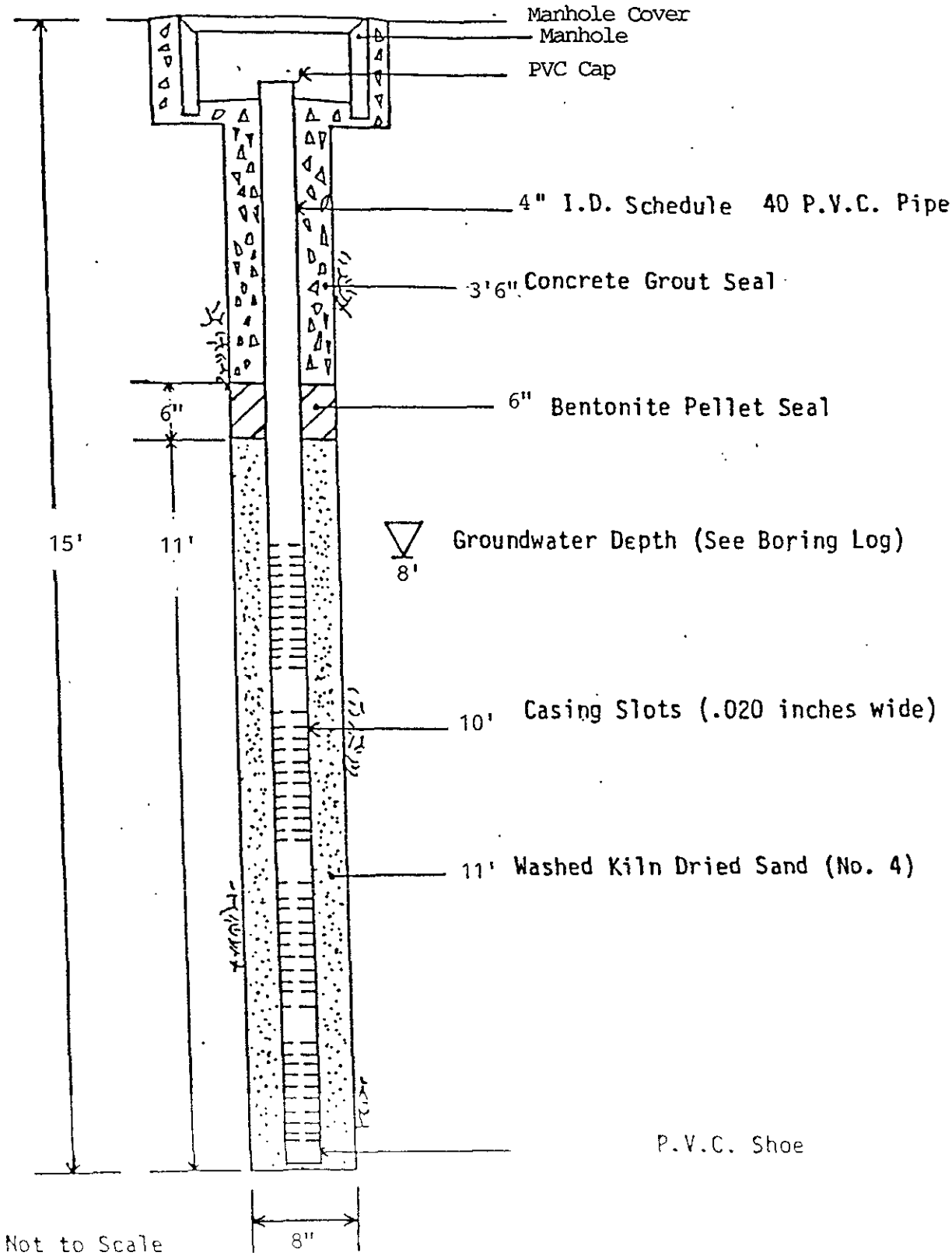
SIMW-1

Figure 6 - Piezometer Schematic



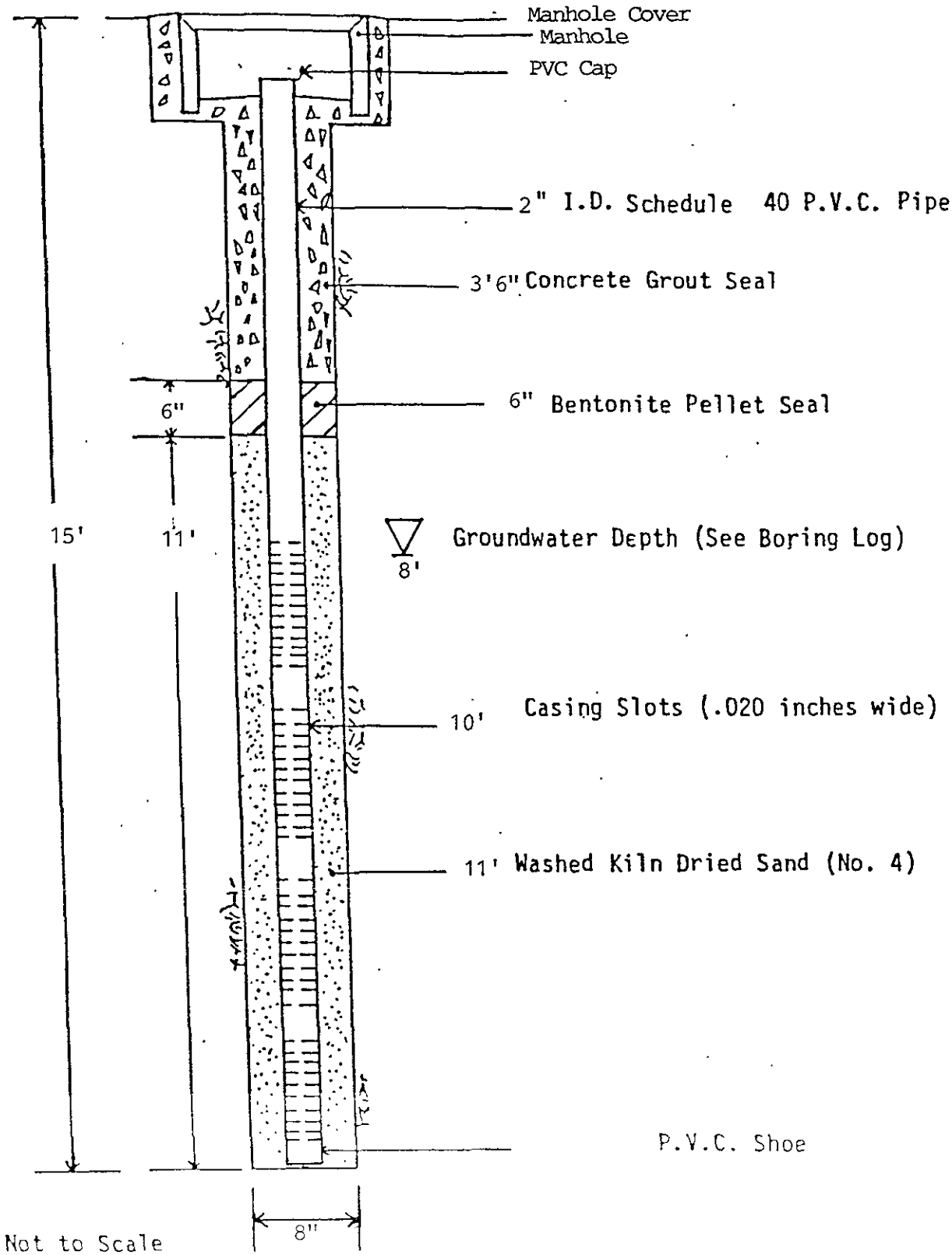
SIMW-2

Figure 7 - Piezometer Schematic



SIMW-3

Figure 8 - Piezometer Schematic



SIMW-4

Figure 9 - Piezometer Schematic

File No. 8-90-418-SI

A P P E N D I X "C"

SOIL TECH ENGINEERING, INC.

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

13 February 1991

Alpha Geo Services, Inc.
298 Brokaw Road
Santa Clara, Ca 95050

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 91074 for a monitoring well construction project at 2351 Shore Line Drive in Alameda for Murray Stevens.

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 Craig Mayfield at 484-2600.

Very truly yours,

J. Killingstad, Chief
Water Resources Engineering

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

(1) LOCATION OF PROJECT 2351 SHORELINE DR
ALAMEDA CA 94501

(2) CLIENT
Name MURRAY T STEVENS
Address 2351 SHORELINE DR Phone (415) 526-7434
City ALAMEDA CA Zip 94501

(3) APPLICANT
Name ALPHA GEO SERVICES
Address 798 BROKAW Rd. Phone (408) 988-1032
City SANTA CLARA CA Zip 95050

(4) DESCRIPTION OF PROJECT
Water Well Construction X Geotechnical Investigation
Cathodic Protection ___ General ___
Well Destruction ___ Contamination ___

(5) PROPOSED WATER WELL USE
Domestic ___ Industrial ___ Irrigation ___
Municipal ___ Monitoring X Other ___

(6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 507520

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 7 ft. Number 3

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

(7) ESTIMATED STARTING DATE 2/13/91
ESTIMATED COMPLETION DATE 2/14/91

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

APPLICANT'S SIGNATURE [signature] Date 2/8/91

FOR OFFICE USE

PERMIT NUMBER 91074
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(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, irrigation, and monitoring wells unless a lesser depth is specially approved.

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 [signature] Wyman Hong Date 8 Feb 91

21989

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC001052791209 | Manifest Document No.

2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
SOUTH SHORE CAR WASH
2351 SHORELINE DR. ALAMEDA, CA 94501

4. Generator's Phone (415) 523-7866

A. State Manifest Document Number 89806167

B. State Generator's ID

5. Transporter 1 Company Name: REFINERIES SERVICE | 6. US EPA ID Number: CAD018316728

C. State Transporter's ID 102073

D. Transporter's Phone 800-874-4444

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
REFINERIES SERVICE
1333 N. HWY 33
PATTERSON, CA. 95363 | 10. US EPA ID Number: CAD018316728

G. State Facility's ID

H. Facility's Phone 800-874-4444

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
a. NON RCRA HAZARDOUS WASTE LIQUID NOS N/A 9189	001	TT	01514.50	G	State 134 / EPA/Other EXEMPT
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
WATER - 9990
OIL - 190

K. Handling Codes for Wastes Listed Above
a. 01 | b. | c. | d.

15. Special Handling Instructions and Additional Information
GLOVES

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: NOORI AMELI (AGENT) | Signature: N. Ameli | Month Day Year: 02/14/91

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANIEL GERSON | Signature: Daniel Gerson | Month Day Year: 02/14/91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed Typed Name: Sandy Wade | Signature: Sandy Wade | Month Day Year: 02/15/91

Do Not Write Below This Line

DHS 8022 A (1-88)
EPA 8700—22
(Rev 9 88) Previous editions are obsolete

White TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To P.O. Box 3000, Sacramento, CA 95812

GENERATOR
TRANSPORTER
FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER (800-424-8802) WITHIN CALIFORNIA CALL (800-852-7550)

89806167

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *(Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: CA C 0 0 0 2 7 9 2 0 9 — Manifest Document No.: 3 3 9 6 5

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
So. Shore Car Wash
2351 Shoreline Blvd. Alameda, CA. 94501
4. Generator's Phone (415) 523-7866

A. State Manifest Document Number: 89807471
B. State Generator's ID:

5. Transporter 1 Company Name: Refineries Serivce
6. US EPA ID Number: CA D 0 8 3 1 6 6 7 2 8
C. State Transporter's ID: 102070
D. Transporter's Phone: 800-874-4444

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Refineries Serivce
13331 N. HWY. 33
Patterson, CA. 95363
10. US EPA ID Number: CA D 0 8 3 1 6 6 7 2 8
G. State Facility's ID:
H. Facility's Phone: 800-874-4444

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON RCRA HAZARDOUS WASTE LIQUID NOS N/A 9189	001	TT	0101/1010	G	State 223 / EPA/Other Exempt
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
OIL — 197
WATER — 999

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
24 HR. Emergency Contact: PRC # 800 874-4444
24 HR. Emergency Response: CHEM TEL INC. # 800-255-3924
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: NOORI AMELI — Signature: [signature] — Month Day Year: 01 21 91

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DARWIN FOKSON — Signature: [signature] — Month Day Year: 01 21 91

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Month Day Year:

FACILITY

19. Discrepancy Indication Space
Actual Gallons 551

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19
Printed Typed Name: — Signature: — Month Day Year:

DHS 8022 A (1 88)
EPA 8700—22
(Rev 9-88) Previous editions are obsolete

Do Not Write Below This Line

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To P.O. Box 3000, Sacramento, CA 95812

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000527736 — Manifest Document No. 74725
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
SOUTH SHORE CAR WASH
2351 SHORELINE DRIVE ALAMEDA CA. 94501
4. Generator's Phone (415) 523-7866

A. State Manifest Document Number 90649481
B. State Generator's ID

5. Transporter 1 Company Name: ERICKSON TRUCKING INC
6. US EPA ID Number: CAD009466392
C. State Transporter's ID 106229
D. Transporter's Phone (415) 235-1393

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
GIBSON PILOT
475 SEAPORT BLVD
REDWOOD CITY, CA. 94064
10. US EPA ID Number: CAD043260702
G. State Facility's ID
H. Facility's Phone (415) 368-5511

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NONE RCRA HAZARDOUS WASTE LIQUID N.O.S., ORM-E NA9189	001	TT	00500	G	State 212 / EPA/Other D018
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
WATER 98%-100%
GASOLINE 0%-2%
PROFILE RT2-010
24HR. CONTACT FRANK HAMEDI 408-988-1032

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
WEAR HARD HATS, Safety Glasses

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
FRANK HAMEDI, AGENT	Frank Hamedi	04 12 91

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
NORWOOD RICHMOND	Norwood Richmond	10 4 1 12 9 1

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name	Signature	Month Day Year

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER (800) 424-8802

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete

Do Not Write Below This Line

THE GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 806, Sacramento, CA 95812-0400

File No. 8-90-418-SI

A P P E N D I X "D"

SOIL TECH ENGINEERING, INC.

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

8-90-418-SI/011654

Soil Tech Engineering, Inc.
298 Brokaw Road
Santa Clara, CA 95050
Attn: Frank Hamedi
Project Geologist

Date Sampled: 02-14-91
Date Received: 02-14-91
Date Reported: 02-14-91

Sample Number	Sample Description
V021046	Project # 8-90-418-SI Murray Stevens - Alameda 2351 Shoreline Dr. 1-6 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	2.5
Benzene	0.005	0.25
Toluene	0.005	0.081
Xylenes	0.005	0.10
Ethylbenzene	0.005	0.043

QA/QC: Sample blank was none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

8-90-418-SI/011654

Soil Tech Engineering, Inc.
298 Brokaw Road
Santa Clara, CA 95050
Attn: Frank Hamedi
Project Geologist

Date Sampled: 02-14-91
Date Received: 02-14-91
Date Reported: 02-14-91

Sample Number	Sample Description
V021047	Project # 8-90-418-SI Murray Stevens - Alameda 2351 Shoreline Dr. 2-6 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	4,700
Benzene	0.005	16
Toluene	0.005	66
Xylenes	0.005	200
Ethylbenzene	0.005	54

QA/QC: Sample blank was none detected
Duplicate Deviation is 7.1%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

8-90-418-SI/011654

Soil Tech Engineering, Inc.
298 Brokaw Road
Santa Clara, CA 95050
Attn: Frank Hamedi
Project Geologist

Date Sampled: 02-14-91
Date Received: 02-14-91
Date Reported: 02-14-91

Sample Number	Sample Description
V021048	Project # 8-90-418-SI Murray Stevens - Alameda 2351 Shoreline Dr. 6-6 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.029
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank was none detected
Spike Recovery is 113%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

8-90-418-SI/011654

Soil Tech Engineering, Inc.
298 Brokaw Road
Santa Clara, CA 95050
Attn: Frank Hamedi
Project Geologist

Date Sampled: 02-14-91
Date Received: 02-14-91
Date Reported: 02-14-91

Sample Number	Sample Description
V021049	Project # 8-90-418-SI Murray Stevens - Alameda 2351 Shoreline Dr. 9-6 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	11,000
Benzene	0.005	220
Toluene	0.005	740
Xylenes	0.005	1,400
Ethylbenzene	0.005	370

QA/QC: Sample blank was none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

8-90-418-SI/011654

Soil Tech Engineering
298 Brokaw Road
Santa Clara, CA 95050
Attn: Frank Hamedi
Project Manager

Date Sampled: 02-14-91
Date Received: 02-14-91
Date Reported: 02-15-91

Sample Number	Description	Detection Limit	SOIL Total Gravimetric Waste Oil as Petroleum Oil
		ppm	ppm
	Metropolis West Project #: 7-89-338-TR		
V021049	9-6	50	1,400

QA/QC: Freon Blank is none detected.
Spike Recovery for is 75%.
Duplicate Deviation is 12%

Note: Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 503e
(ppm) = (mg/kg)

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Lab Director

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Phone (415) 372-3700 • Fax (415) 372-6955

8-90-418-SI/011654

Soil Tech Engineering, Inc.
298 Brokaw Road
Santa Clara, CA 95050
Attn: Frank Hamedi
Project Manager

Date Sampled: 02-14-91
Date Received: 02-14-91
Date Reported: 02-15-91

Sample Number	Sample Description
V021049	Murray Stevens - Alameda 2351 Shoreline Dr. 8-90-418-SI 9-6 SOIL

PRIORITY POLLUTANTS
VOLATILE ORGANIC COMPOUNDS
results in ppb

Benzene	----	trans-1,2-Dichloroethene	<5.0
Bromomethane	<10.0	1,2-Dichloropropane	<5.0
Bromodichloromethane	<5.0	cis-1,3-Dichloropropene	<5.0
Bromoform	<10.0	trans-1,3-Dichloropropene	<5.0
Carbon Tetrachloride	<5.0	Ethylbenzene	----
Chlorobenzene	<5.0	Methylene Chloride	<5.0
Chloroethane	<5.0	1,1,2,2-Tetrachloroethane	<5.0
2-Chloroethylvinyl Ether	<10.0	Tetrachloroethene	<5.0
Chloroform	<5.0	1,1,1-Trichloroethane	<5.0
Chloromethane	<10.0	1,1,2-Trichloroethane	<5.0
Dibromochloromethane	<5.0	Trichloroethene	<5.0
1,1-Dichloroethane	<5.0	Trichlorofluoromethane	<5.0
1,2-Dichloroethane	<5.0	Toluene	----
1,1-Dichloroethene	<5.0	Vinyl Chloride	<5.0
		Total Xylenes	----

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8010
(ppb) = (µg/L)

MOBILE CHEM LABS, INC.

Ronald G. Evans
Lab Director

CHAIN OF CUSTODY RECORD

PROJ NO: 8-90-418-5 | NAME: SOUTH SHORE CARWASH ALAMEDA

SAMPLERS (Signature): N. A

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	TPHG/BTEX & TO 8010	REMARKS
1	2/14/91	11[05] A.M	✓		1-6	1	✓	
2	2/14/91	11[15] A.M	✓		2-6	1	✓	
3	2/14/91	12[20] PM	✓		6-6	1	✓	
4	2/14/91	2[30] PM	✓		9-6	1	✓	

Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
	2/14/91 15[05]		2/14/91 15[05]		

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

ANAMETRIX INC
Environmental & Analytical Chemistry
1261 Concourse Drive, Suite E, San Jose CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102194
Date Received : 02/19/91
Project ID : 8-90-418-SI
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9102194- 1	B-1-3
9102194- 2	B-2-3
9102194- 3	B-3-3
9102194- 4	B-3-6
9102194- 5	B-4-3
9102194- 6	B-4-6
9102194- 7	B-5-3
9102194- 8	B-5-6
9102194- 9	B-6-3
9102194-10	B-7-3
9102194-11	B-7-6
9102194-12	B-8-3
9102194-13	B-8-6
9102194-14	B-8-10
9102194-15	B-9-3
9102194-16	B-9-10
9102194-17	SW-1-3
9102194-18	SW-1-6
9102194-19	SW-1-10
9102194-20	SW-2-3
9102194-21	SW-2-6

This report consists of 8 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Burt Sutherland
Laboratory Director

2 28 91
Date

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

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102194
Date Received : 02/19/91
Project ID : 8-90-418-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9102194- 1	B-1-3	SOIL	02/14/91	TPHg/BTEX
9102194- 2	B-2-3	SOIL	02/14/91	TPHg/BTEX
9102194- 3	B-3-3	SOIL	02/14/91	TPHg/BTEX
9102194- 4	B-3-6	SOIL	02/14/91	TPHg/BTEX
9102194- 5	B-4-3	SOIL	02/14/91	TPHg/BTEX
9102194- 6	B-4-6	SOIL	02/14/91	TPHg/BTEX
9102194- 7	B-5-3	SOIL	02/14/91	TPHg/BTEX
9102194- 8	B-5-6	SOIL	02/14/91	TPHg/BTEX
9102194- 9	B-6-3	SOIL	02/14/91	TPHg/BTEX
9102194-10	B-7-3	SOIL	02/14/91	TPHg/BTEX
9102194-11	B-7-6	SOIL	02/14/91	TPHg/BTEX
9102194-12	B-8-3	SOIL	02/14/91	TPHg/BTEX
9102194-13	B-8-6	SOIL	02/14/91	TPHg/BTEX
9102194-14	B-8-10	SOIL	02/14/91	TPHg/BTEX
9102194-15	B-9-3	SOIL	02/14/91	TPHg/BTEX
9102194-16	B-9-10	SOIL	02/14/91	TPHg/BTEX
9102194-17	SW-1-3	SOIL	02/15/91	TPHg/BTEX
9102194-18	SW-1-6	SOIL	02/15/91	TPHg/BTEX
9102194-19	SW-1-10	SOIL	02/15/91	TPHg/BTEX
9102194-20	SW-2-3	SOIL	02/15/91	TPHg/BTEX
9102194-21	SW-2-6	SOIL	02/15/91	TPHg/BTEX

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

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102194
Date Received : 02/19/91
Project ID : 8-90-418-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor Date

Chemist 3/07/91 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102194
Matrix : SOIL
Date Sampled : 02/14/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# B-1-3 -01	Sample I.D.# B-2-3 -02	Sample I.D.# B-3-3 -03	Sample I.D.# B-3-6 -04	Sample I.D.# B-4-3 -05
Benzene	0.005	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND
Ethylbenzene	0.005	ND	ND	ND	ND	ND
Total Xylenes	0.005	ND	0.016	ND	ND	ND
TPH as Gasoline	0.5	ND	0.7	ND	ND	ND
% Surrogate Recovery		120%	128%	111%	95%	106%
Instrument I.D.		HP21	HP12	HP21	HP4	HP4
Date Analyzed		02/26/91	02/21/91	02/22/91	02/21/91	02/21/91
RLMF		1	1	1	1	1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 50-150%.

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

Analyst Date

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102194
Matrix : SOIL
Date Sampled : 02/14/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# B-4-6 -06	Sample I.D.# B-5-3 -07	Sample I.D.# B-5-6 -08	Sample I.D.# B-6-3 -09	Sample I.D.# B-7-3 -10
Benzene	0.005	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND
Ethylbenzene	0.005	ND	ND	ND	ND	ND
Total Xylenes	0.005	ND	ND	ND	ND	ND
TPH as Gasoline	0.5	ND	ND	ND	ND	ND
% Surrogate Recovery		115%	69%	109%	93%	102%
Instrument I.D.		HP21	HP4	HP21	HP4	HP4
Date Analyzed		02/22/91	02/22/91	02/22/91	02/22/91	02/26/91
RLMF		1	1	1	1	1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 50-150%.

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

Analyst Date

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102194
Matrix : SOIL
Date Sampled : 02/14/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# B-7-6 -11	Sample I.D.# B-8-3 -12	Sample I.D.# B-8-6 -13	Sample I.D.# B-8-10 -14	Sample I.D.# B-9-3 -15
Benzene	0.005	0.056	ND	13	ND	ND
Toluene	0.005	0.035	0.008	98	ND	0.026
Ethylbenzene	0.005	0.023	ND	70	ND	0.050
Total Xylenes	0.005	0.064	0.007	200	ND	0.15
TPH as Gasoline	0.5	0.7	ND	1800	ND	7.0
% Surrogate Recovery		92%	96%	102%	102%	75%
Instrument I.D.		HP21	HP21	HP8	HP21	HP8
Date Analyzed		02/25/91	02/25/91	02/21/91	02/22/91	02/21/91
RLMF		1	1	500	1	2

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 50-150%.

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

Analyst Date

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102194
Matrix : SOIL
Date Sampled : 02/14 & 02/15/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# B-9-10 -16	Sample I.D.# SW-1-3 -17	Sample I.D.# SW-1-6 -18	Sample I.D.# SW-1-10 -19	Sample I.D.# SW-2-3 -20
Benzene	0.005	ND	ND	4.5	0.006	ND
Toluene	0.005	ND	ND	30	0.005	ND
Ethylbenzene	0.005	ND	ND	34	0.014	ND
Total Xylenes	0.005	ND	ND	79	0.018	ND
TPH as Gasoline	0.5	ND	ND	650	ND	ND
% Surrogate Recovery		127%	139%	120%	103%	136%
Instrument I.D.		HP21	HP21	HP8	HP21	HP21
Date Analyzed		02/22/91	02/22/91	02/21/91	02/25/91	02/22/91
RLMF		1	1	250	1	1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 50-150%.

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

Analyst 2/23/91 Date

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102194
Matrix : SOIL
Date Sampled : 02/15/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# SW-2-6 -21	Sample I.D.# 12B0221A BLANK	Sample I.D.# 04B0221C BLANK	Sample I.D.# 21B0222A BLANK	Sample I.D.# 04B0222A BLANK
Benzene	0.005	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND
Ethylbenzene	0.005	ND	ND	ND	ND	ND
Total Xylenes	0.005	ND	ND	ND	ND	ND
TPH as Gasoline	0.5	ND	ND	ND	ND	ND
% Surrogate Recovery		134%	107%	70%	98%	93%
Instrument I.D.		HP21	HP12	HP4	HP21	HP4
Date Analyzed		02/22/91	02/21/91	02/21/91	02/22/91	02/22/91
RLMF		1	1	1	1	1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 50-150%.

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

Analyst Date 2/27/91

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102194
Matrix : SOIL
Date Sampled : N/A

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# 08B0221A BLANK	Sample I.D.# 21B0225A BLANK	Sample I.D.# 04B0226A BLANK	Sample I.D.# 21B0226A BLANK
Benzene	0.005	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND
Ethylbenzene	0.005	ND	ND	ND	ND
Total Xylenes	0.005	ND	ND	ND	ND
TPH as Gasoline	0.5	ND	ND	ND	ND
% Surrogate Recovery		100%	101%	114%	95%
Instrument I.D.		HP8	HP21	HP4	HP21
Date Analyzed		02/21/91	02/25/91	02/26/91	02/26/91
RLMF		1	1	1	1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 50-150%.

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

Analyst Date 2/22/91

Supervisor Date

9102194 Anametrix

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-418-ST	2351 SHORELINE Dr. ALAMEDA

SAMPLERS (Signature) N. A[illegible]

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED: TPH-G/BTE&X						REMARKS
1	2/14/91	10:45 AM	✓		B-1-3	1	✓						
2	2/14/91	11:15 AM	✓		B-2-3	1	✓						
3	2/14/91	10:30 AM	✓		B3-3	1	✓						
4	2/14/91	11:40 AM	✓		B3-6	1	✓						
5	2/14/91	11:45 AM	✓		B-4-3	1	✓						
6	2/14/91	11:50 AM	✓		B-4-6	1	✓						
7	2/14/91	12:00 PM	✓		B-5-3	1	✓						
8	2/14/91	12:10 PM	✓		B-5-6	1	✓						
9	2/14/91	12:15 PM	✓		B-6-3	1	✓						
10	2/14/91	1:05 PM	✓		B-7-3	1	✓						
11	2/14/91	1:10 PM	✓		B-7-6	1	✓						
12	2/14/91	1:30 PM	✓		B-8-3	1	✓						
13	2/14/91	1:35 PM	✓		B-8-6	1	✓						
14	2/14/91	1:50 PM	✓		B-8-10	1	✓						
15	2/14/91	2:10 PM	✓		B-9-3	1	✓						

Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
N. A[illegible]	2/19/91 9:03	[signature] 2-19-91 0905			

Relinquished by (Signature)	Date / Time	Received for Laboratory by (Signature)	Date / Time	Remarks
				N.T.A.

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

9102194

PROJ NO	NAME
5-90-418-ST	2351 SHORELINE Dr. ALAMEDA

SAMPLERS (Signature)

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG / BTEX	REMARKS
16	2/14/91	2:35 PM	✓		B-9-10	T	✓	
17	2/15/91	12:10 PM	✓		SW-1-3	1	✓	
18	2/15/91	12:22 PM	✓		SW-1-6	1	✓	
19	2/15/91	12:25 PM	✓		SW-1-10	1	✓	
20	2/15/91	2:30 PM	✓		SW-2-3	1	✓	
21	2/15/91	3:00 PM	✓		SW-2-6	1	✓	

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	2/17/91 9:05	2-17-91 0905			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				N.T.A.	

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CU[redacted]TODY [redacted]COR[redacted] A[redacted] t[redacted] (1/2)

PROJ NO	NAME
8-90-418-ST	2351 SHORELINE Dr. ALAMEDA

SAMPLERS *(Signature)* N. [signature]

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTE&X						REMARKS
1	2/14/91	10^{45} PM	✓		B1-3	1	✓						
2	2/14/91	11^{15} AM	✓		B-2-3	1	✓						
3	2/14/91	10^{30} AM	✓		B3-3	1	✓						
4	2/14/91	11^{40} AM	✓		B-3-6	1	✓						
5	2/14/91	11^{45} AM	✓		B-4-3	1	✓						
6	2/14/91	11^{20} AM	✓		B-4-6	1	✓						
7	2/14/91	12^{20} PM	✓		B-5-3	1	✓						
8	2/14/91	12^{10} PM	✓		B-5-6	1	✓						
9	2/14/91	12^{15} PM	✓		B-6-3	1	✓						
10	2/14/91	1^{25} PM	✓		B-7-3	1	✓						
11	2/14/91	1^{50} PM	✓		B-7-6	1	✓						
12	2/14/91	1^{32} PM	✓		B-8-3	1	✓						
13	2/14/91	1^{35} PM	✓		B-8-6	1	✓						
14	2/14/91	1^{55} PM	✓		B-8-10	1	✓						
15	2/14/91	2^{10} PM	✓		B-9-3	1	✓						

Relinquished by *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
N. [signature]	2/19/91 9^{05}	[signature] 2-19-91 0905			
Relinquished by *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
				N.T.A.	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

[illegible] CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

PROJ NO	NAME
8-30-418-51	2351 SHORELINE Dr. ALAMEDA

SAMPLERS (Signature)

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG / BTEX	REMARKS
16	2/14/91	2:33 PM	✓		B-9-10	T	✓	
17	2/15/91	12:14 PM	✓		SW-1-3	1	✓	
18	2/15/91	12:24 PM	✓		SW-1-6	1	✓	
19	2/15/91	12:33 PM	✓		SW-1-10	1	✓	
20	2/15/91	2:50 PM	✓		SW-2-3	1	✓	
21	2/15/91	3:22 PM	✓		SW-2-6	1	✓	

Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
	2/19/91 9:05	2-19-91 0905			
Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				N.T.A.	

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
■ (408) 866-0919 ■ (415) 791-6406

ANAMETRIX INC
Environmental & Analytical Chemistry
1261 Concourse Drive Suite E San Jose CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102216
Date Received : 02/20/91
Project ID : 8-90-418-SI
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9102216- 1	B-10-3
9102216- 2	B-10-6
9102216- 3	SW-3-3
9102216- 4	SW-3-6
9102216- 5	SW-4-3
9102216- 6	SW-4-6
9102216- 7	SW-4-10

This report consists of 6 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Burt Sutherland
Laboratory Director

2-28-91
Date

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

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102216
Date Received : 02/20/91
Project ID : 8-90-418-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9102216- 1	B-10-3	SOIL	02/19/91	TPHg/BTEX
9102216- 2	B-10-6	SOIL	02/19/91	TPHg/BTEX
9102216- 3	SW-3-3	SOIL	02/19/91	TPHg/BTEX
9102216- 4	SW-3-6	SOIL	02/19/91	TPHg/BTEX
9102216- 5	SW-4-3	SOIL	02/19/91	TPHg/BTEX
9102216- 6	SW-4-6	SOIL	02/19/91	TPHg/BTEX
9102216- 7	SW-4-10	SOIL	02/19/91	TPHg/BTEX

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

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102216
Date Received : 02/20/91
Project ID : 8-90-418-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor Date

Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102216
Matrix : SOIL
Date Sampled : 02/19/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# B-10-3 -01	Sample I.D.# B-10-6 -02	Sample I.D.# SW-3-3 -03	Sample I.D.# SW-3-6 -04	Sample I.D.# SW-4-3 -05
Benzene	0.005	ND	1.7	0.054	14	ND
Toluene	0.005	0.006	2.9	0.048	120	ND
Ethylbenzene	0.005	ND	0.36	0.009	75	0.005
Total Xylenes	0.005	0.012	1.5	0.041	270	0.014
TPH as Gasoline	0.5	ND	29	ND	2800	ND
% Surrogate Recovery		100%	137%	90%	120%	90%
Instrument I.D.		HP21	HP21	HP21	HP8	HP21
Date Analyzed		02/25/91	02/27/91	02/25/91	02/25/91	02/25/91
RLMF		1	10	1	500	1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix Control limits for surrogate recovery are 53-147%.

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

Analyst 2/22/91 Date

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102216
Matrix : SOIL
Date Sampled : 02/19/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# SW-4-6 -06	Sample I.D.# SW-4-10 -07	Sample I.D.# 21B0225A BLANK	Sample I.D.# 21B0227A BLANK	Sample I.D.# 08B0225A BLANK
Benzene	0.005	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND
Ethylbenzene	0.005	ND	ND	ND	ND	ND
Total Xylenes	0.005	ND	ND	ND	ND	ND
TPH as Gasoline	0.5	ND	ND	ND	ND	ND
% Surrogate Recovery		109%	134%	101%	96%	93%
Instrument I.D.		HP21	HP21	HP21	HP21	HP8
Date Analyzed		02/26/91	02/26/91	02/25/91	02/27/91	02/25/91
RLMF		1	1	1	1	1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix Control limits for surrogate recovery are 53-147%.

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

Analyst Date

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102216
Matrix : SOIL
Date Sampled : 02/19/91

Project Number : 8-90-418-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# 21B0226A BLANK
Benzene	0.005	ND
Toluene	0.005	ND
Ethylbenzene	0.005	ND
Total Xylenes	0.005	ND
TPH as Gasoline	0.5	ND
% Surrogate Recovery		95%
Instrument I.D.		HP21
Date Analyzed		02/26/91
RLMF		1

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.
RLMF - Reporting Limit Multiplication Factor.
Anametrix Control limits for surrogate recovery are 53-147%.

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

Analyst Date

Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 8-90-418-SI SW-4-10
Matrix : SOIL
Date sampled : 02/19/91
Date analyzed : 02/26/91

Anametrix I.D. : 9102216-07
Analyst : GU
Supervisor : CB
Date Released : 02/28/91

COMPOUND	SPIKE AMT. (mg/Kg)	MS (mg/Kg)	%REC MS	MSD (mg/Kg)	%REC MSD	RPD	%REC LIMITS
Gasoline	1.0	0.8	77%	0.7	66%	-15%	48-145

* Limits established by Anametrix, Inc.

9106216

CHAIN OF CUSTODY RECORD

PROJ NO	NAME
8-90-418-ST	2351 SHORELINE Dr. ALAMEDA

SAMPLERS *(Signature)*: N. Amelia

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED: TPHG / BTE&X	REMARKS
1	2/19/91	11:55 AM	✓		B-10-3	1	✓	
2	2/13/91	12:12 PM	✓		B-10-6	1	✓	
3	2/19/91	12:25 PM	✓		SW-3-3	1	✓	
4	2/13/91	12:55 PM	✓		SW-3-6	1	✓	
5	2/13/91	2:35 PM	✓		SW-4-3	1	✓	
6	2/13/91	2:45 PM	✓		SW-4-6	1	✓	
7	2/19/91	3:22 PM	✓		SW-4-10	1	✓	

Relinquished by *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
N. Amelia	2/20/91 11:20	Benny S. Carrizo	Benny S. Carrizo	2/20/91 12/0	
Relinquished by *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*

Relinquished by *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
		[signature]	2/20/91 1210	N.T.A.

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

Amerita

PROJ NO	NAME
8-90-418-ST	2351 SHORELINE Dr. ALAMEDA

SAMPLERS (Signature) N. Amelio

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPHG / BTEX	REMARKS
1	2/19/91	11:05 AM	✓		B-10-3	1	✓	
2	2/19/91	12:10 PM	✓		B-10-6	1	✓	
3	2/19/91	12:45 PM	✓		SW-3-3	1	✓	
4	2/19/91	12:55 PM	✓		SW-3-6	1	✓	
5	2/19/91	2:30 PM	✓		SW-4-3	1	✓	
6	2/19/91	2:40 PM	✓		SW-4-6	1	✓	
7	2/19/91	3:00 PM	✓		SW-4-10	1	✓	

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N. Amelio	2/20/91 11:20	Tommy Blanyo			
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Relinquished by (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				N.T.A.	

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
■ (408) 866-0919 ■ (415) 791-6406

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53438
CLIENT: Soil Tech Engineering
CLIENT JOB NO.: 8-90-418-SI

DATE RECEIVED: 04/09/91
DATE REPORTED: 04/17/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L) Benzene	Toluene	Ethyl Benzene	Xylenes
1	STMW-1	11000	20000	3200	18000
2	STMW-2	ND<0.3	0.4	ND<0.3	0.5
3	STMW-3	20000	34000	3600	19000
4	STMW-4	0.3	0.3	ND<0.3	0.7

ug/L - parts per billion (ppb)

Minimum Detection Limit in Water:0.3ug/L

QAQC Summary:
Daily Standard run at 20ug/L: %DIFF 8020 = <15%
MS/MSD Average Recovery = 89% : Duplicate RPD = 3%

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53438
CLIENT: Soil Tech Engineering
CLIENT JOB NO.: 8-90-418-SI

DATE RECEIVED: 04/09/91
DATE REPORTED: 04/17/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (ug/L) Gasoline Range
1	STMW-1	180000
2	STMW-2	ND<50
3	STMW-3	260000
4	STMW-4	ND<50

ug/L - parts per billion (ppb)
Minimum Detection Limit for Gasoline in Water: 50ug/L

QAQC Summary:
Daily Standard run at 2mg/L: %DIFF Gasoline = <15%
MS/MSD Average Recovery = 94%: Duplicate RPD = 3%

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53438-1
CLIENT: Soil Tech Engineering
JOB NO.: 8-90-418-SI

DATE SAMPLED: 04/08/91
DATE RECEIVED: 04/09/91
DATE ANALYZED: 04/12/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: STMW-1

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	350
Trichloroethylene	0.5	4
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	0.5
Tetrachloroethene	0.5	0.9
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	1

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15
MS/MSD average recovery = 99 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53438-2
CLIENT: Soil Tech Engineering
JOB NO.: 8-90-418-SI

DATE SAMPLED: 04/08/91
DATE RECEIVED: 04/09/91
DATE ANALYZED: 04/12/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: STMW-2

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	8
Trichloroethylene	0.5	4
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	27
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15
MS/MSD average recovery = 99 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53438-3
CLIENT: Soil Tech Engineering
JOB NO.: 8-90-418-SI

DATE SAMPLED: 04/08/91
DATE RECEIVED: 04/09/91
DATE ANALYZED: 04/14/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: STMW-3

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	450
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15
MS/MSD average recovery = 99 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53438-4
CLIENT: Soil Tech Engineering
JOB NO.: 8-90-418-SI

DATE SAMPLED: 04/08/91
DATE RECEIVED: 04/09/91
DATE ANALYZED: 04/12/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: STMW-4

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15
MS/MSD average recovery = 99 % :MS/MSD RPD = 2 %

Richard Srna, Ph.D.

Laboratory Director

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-418-SI	2351 Shoreline Dr. Alameda

SAMPLERS. (Signature) N. Amos

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPHG/BTEX 8010						REMARKS
1	4/8/91	16^{45}		✓	STMW-1	6	✓	✓					
2	4/8/91	16^{15}		✓	STMW-2	6	✓	✓					
3	4/8/91	17^{00}		✓	STMW-3	6	✓	✓					
4	4/8/91	16^{20}		✓	STMW-4	6	✓	✓					

Please initial: (N)
Samples Stored in ice. No
Appropriate containers. Y
Samples preserved ?
VOA's without headspace. Y
Comments: Samples received in Cardboard box = No ice in box but VOA's are cold

Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
N. Amos	4/9/91 10^{50}	Tom Hood	Tom Hood	4/9 1100	
Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Karen Zahel	4/9/91 2:25P	N. T. A.	

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

SUPERIOR

PROJ. NO.	NAME
8-90-418-SI	2351 Shoreline Dr. Alameda

SAMPLERS (Signature) N. Arnes

NO	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested ② TPHG/BTEX & 8010							REMARKS
1	4/8/91	16^{45}		✓	STMW-1	6	✓	✓						
2	4/8/91	16^{15}		✓	STMW-2	6	✓	✓						
3	4/8/91	17^{00}		✓	STMW-3	6	✓	✓						
4	4/8/91	16^{30}		✓	STMW-4	6	✓	✓						

Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
N. Arnes	4/9/91 10^{50}	Tom Aoo			
Relinquished by (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				N. T. A.	

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