James P. Bowers, PE
R. William Rudolph, Jr., PE

August 22, 1989
SCI 549.001

Mr. Murray T. Stevens
Kamur Industries
2351 Shoreline Drive
Alameda, California 94501

Consultation re:
Gasoline Contamination
Plaza Car Wash
400 San Pablo Avenue
San Pablo, California

Dear Mr. Stevens:

This letter presents preliminary results of our consultation regarding gasoline contamination at the subject site. Specifically, this letter records information regarding recent site history, temporary measures to mitigate the discharge of free product into the creek and proposed future investigation.

Recent Site History

We understand that in early July 1989, a dark-brown liquid substance (free product) was observed floating on water in El Cerrito Creek, north of the Orientation Center for the Blind (OCB). The free product was exiting a storm drain pipe which terminates at the creek northwest of Norge Cleaners, as shown on the attached Site Plan (Plate 1). We understand that the storm drain only serves the OCB site. The Albany Fire Department (AFD) placed absorbent materials and booms in the creek to remove the free product, and inspected the storm drain pipe with a remote video camera. The camera was inserted into the pipe starting at the manhole located west of Norge Cleaners. Product was reportedly observed in the storm drain pipe north, but not south, of the manhole. The product was apparently entering the storm drain through the joints. The AFD determined that possible sources of the product were underground storage tanks located at Troxell's Auto Body (500 San Pablo Avenue) and Plaza Car Wash (400 San Pablo Avenue).

The AFD was concerned that fumes within the storm drain pipe could be explosive. Accordingly, they removed the manhole cover to help ventilate the pipe. The manhole remains open and the area is cordoned off. Recent combustible gas measurements indicate a lower explosive limit (LEL) in the storm drain pipe of less than 25 percent.

Troxell's Auto Body shop has at least two underground storage tanks on-site. They are located about 220 feet east of the storm drain; they reportedly have not been used for many years. Aqua Terra Technologies (ATT) was retained by the auto body shop owners, on or about July 12, 1989, to investigate the possibility of the tanks being the product source. Upon opening, the two tanks were reportedly found to be completely filled with water. We understand that analytical tests have been performed of the water; we recommend that the results be reported to the proper agencies. We do not have any conclusive evidence regarding the relationship of the auto body shop tanks to any site contamination. This should be explored further.

Plaza Car Wash has three underground gasoline storage tanks located about 160 feet east of the storm drain. In mid-June 1989, the tanks and related piping reportedly passed precision tests performed using the "Petrotite" method. In mid-July, the car wash owner noted an inventory discrepancy at the unleaded fuel storage tank. The unleaded tank fuel lines were again precision tested. The results indicated a leak in the fuel lines. A leak was located in the unleaded fuel line beneath the dispenser island and was repaired on ~~August~~ July 26, 1989. During excavation for the repairs, gasoline contaminated soil was encountered adjacent to the pipe leak. About 1 cubic yard of soil was excavated and encapsulated on-site in polyethylene sheeting, for later disposal. Subsurface Consultants, Inc. (SCI) was retained by Kamur Industries on ~~August~~ July 26, 1989, to investigate the extent of gasoline contamination, and to develop remediation recommendations.

Services Performed to Date

To date, SCI has performed a site reconnaissance, drilled 5 test borings, obtained soil and groundwater samples, installed 4 monitoring wells, and performed analytical tests. Most of the analytical results are forthcoming and will be reported in future correspondence. Our preliminary data and conclusions are summarized in the following paragraphs.

Our engineer checked the creek for evidence of product seeping from the ground at locations other than the storm drain. The areas checked were adjacent to the cleaners and the OCB. No areas of seeping product were observed.

The test boring locations are shown on the Site Plan; the logs of the borings are presented on Plates 2 through 4. The soils are classified in accordance with the Unified Soil Classification System described on Plate 5. The test borings encountered clays, interbedded with relatively thin layers of gravel, to the depths drilled (12 to 20 feet). The clays, and gravels are likely to have relatively low and high permeabilities, respectively. An organic vapor meter (OVM) indicated the presence of organic vapors in soil samples from all of the test borings. Groundwater was encountered at depths of 4 to 7 feet. No free product was noted on the groundwater surface. Preliminary data suggests that the direction of groundwater flow, near the car wash, is to the west, toward the storm drain. However, additional water level readings are necessary to confirm that stabilized conditions have developed.

The results of analytical tests on soil samples from Test Boring A/B and groundwater samples from the monitoring wells are as follows:

Location	Sample Type	Total Volatile Hydro-carbons (ppm) [1]	Benzene (ppm)	Toluene (ppm)	Total Xylenes (ppm)	Ethyl-Benzene (ppm)
A/B @ 2.5'	soil	27,000	380	1,400	1,500	280
A/B @ 4'	soil	15,000	260	1,000	1,100	210
A/B @ 8'	soil	2,500	23	110	150	28
MW1	water	16	1.8	1.8	0.21	1.2
MW2	water	80	9.1	12.0	0.46	7.1
MW3	water	71	22.0	21.0	0.58	7.9
MW4	water	14	2.0	1.5	ND	1.0

[1] Parts per million (mg/kg)
[2] None detected

The groundwater sample from Well MW3 was also analyzed for purgeable halocarbons. The test results are presented below:

Analytical Test	Material	Concentration (ppm)
EPA 601	1,2 - dichloroethene (total)	2.8
	Trichloroethylene	3.4
	Tetrachloroethylene	2.7
	Others	none detected

Analysis of a composite of 5 soil samples obtain from the materials removed from the pipe repair excavation as requested by the Alameda County Health Care Services Agency (ACHCSA) indicated a TVH concentration of 7,500 ppm. The results of additional analyses are not yet available.

Based upon the results of analytical testing to date, we conclude that gasoline appears to be a significant contaminant at the site. While the source of the gasoline may in large part, be the unleaded gasoline tank pipe leak, other sources of contamination cannot be ruled out at this time. Contaminants were found at the site, other than those which would customarily be associated with a gasoline dispensing retail establishment that does not do vehicle servicing. They include heavy metals and purgeable halocarbons. The source of these contaminants is currently uncertain and should be evaluated further during future investigations.

Temporary Measures to Mitigate the Discharge of Free Product into the Creek

Based upon our discussions with Mr. M. Hossain Kazemi of the RWQCB on August 7, 1989, it is necessary to eliminate the discharge of floating product into the creek from the storm drain. Accordingly, absorbent pads and booms have been placed in the storm drain pipe and outlet to collect the product. These pads and booms will be changed periodically, as required. The used pads and booms will be stored in steel drums for proper disposal. Samples of water from the storm drain outlet and the creek, both up-and down-stream from the outlet, are currently being analytically tested for TVH, TEH and BTXE. The results are forthcoming.

Proposed Future Services

We recommend that future investigation and mitigation of the problem be performed in a phased approach. The anticipated phases are as follow:

Phase 1

Monitor existing groundwater wells, and use of absorbent pads and booms to limit discharge of product to the creek. This phase should be performed concurrently with all subsequent phases of work.

Phase 2

Perform a historical use study of the site and vicinity by reviewing available city and county records, checking historical aerial photographs, discussing existing and past hazardous material uses/problems with regulatory agencies and interviewing area residents.

Phase 3

Evaluate the extent of soil and groundwater contamination by performing a soil gas study, drilling additional test borings, installing additional groundwater monitoring wells, and performing analytical tests. This phase should be performed concurrently with Phase 2.

Phase 4

Develop a plan to mitigate the discharge of product to the storm drain and creek.

Phase 5

Develop a plan to remediate the contaminated soil.

Phase 6

Develop a plan to remediate groundwater contamination.

This letter should be submitted to the following regulatory agencies, along with a cover letter from Kamur Industries.

Mr. Gil Wistar
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Mr. M. Hossain Kazemi
San Francisco Bay Regional Water Quality Control Board
1111 Jackson Street, Room 6040
Oakland, California 94607

Ms. Vicki Dvorak
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

If you have questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

R. William Rudolph
Geotechnical Engineer 741 (expires 12/31/92)

William K. Wikander
Geotechnical Engineer 892 (expires 12/31/92)
WKW:RWR:JPB:mbl:clh

Copies: Addressee (6)

ELEVATION REFERENCE:
NE corner of EBMUD utility box assumed to be 100.00 feet.

SAN PABLO AVENUE

APPROXIMATE TANK LOCATION

APPROXIMATE TANK LOCATION

AUTO BODY REPAIR (500 San Pablo Ave.)

PAINT CENTER

CAR WASH (400 San Pablo Ave.)

A/B

1

4

2

ASPHALT PAVED PARKING AREA

EL CERRITO CREEK

DRY CLEANERS

3

DROP INLET

DROP INLET

DROP INLET

ADAMS STREET

STORM DRAIN OUTLET

STORM DRAIN MANHOLE

ESTIMATED STORM DRAIN LOCATION

ORIENTATION CENTER FOR THE BLIND

VICINITY MAP

TEST BORING/ MONITORING WELL
PROPERTY LINE
FENCE
EXISTING STRUCTURE
DISPENSER ISLAND
HAND AUGERED TEST BORING

NOTE: This Site Plan was developed using approximate field measurements.

APPROXIMATE SCALE (feet)
0 40 80

SITE PLAN

Subsurface Consultants

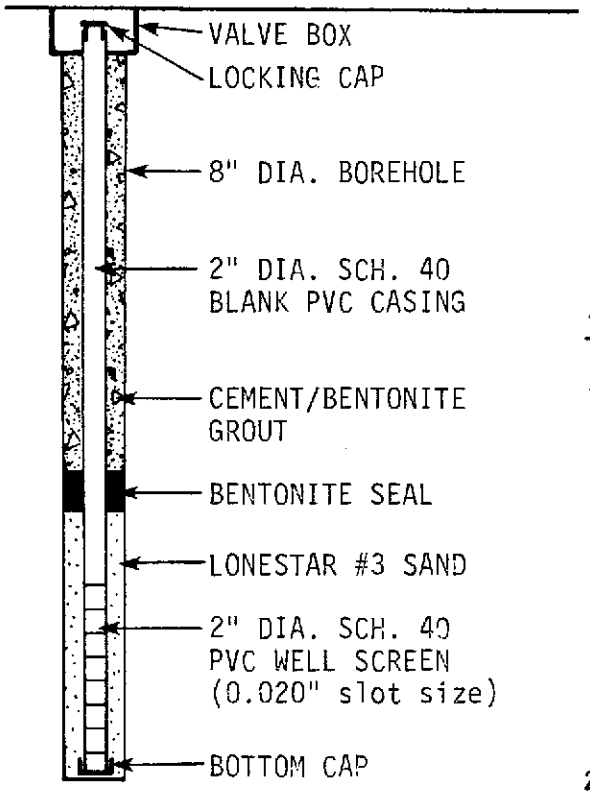
PLAZA CAR WASH - ALBANY, CA

JOB NUMBER	DATE	APPROVED
549.001	8/7/89	

PLATE 1

LOG OF TEST BORING 1

EQUIPMENT 8" HollowStem Auger
DATE DRILLED 8/1/89
ELEVATION TOC: 100.15 feet*



DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 2" thick BROWN SANDY CLAY (CL) stiff, moist, with gravel (fill)
5		8	DARK GRAY CLAYEY GRAVEL (GC) medium dense, moist, with brick fragments (fill)
		7	
		6	BLACK SILTY CLAY (CL) medium stiff, moist
		8	BROWN-GRAY SILTY CLAY (CL) medium stiff, moist, with gravel
10			GROUNDWATER LEVEL DURING DRILLING
		10	
		13	
15			MOTTLED RED AND BROWN SANDY CLAY (CL) medium stiff, wet, fine grained sand
		9	
			BROWN SILTY SAND (SM) medium dense, wet
20		50	BROWN CLAYEY GRAVEL (GC) very dense, wet, with sand
25			
30			
35			
40			

* Top of casing (TOC) using assumed elevation datum (location shown on Site Plan).

SAMPLER TYPE:
CALIFORNIA DRIVE
O.D.: 2.5 inches
I.D.: 2.0 inches

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

Subsurface Consultants	PLAZA CAR WASH - ALBANY, CA			PLATE
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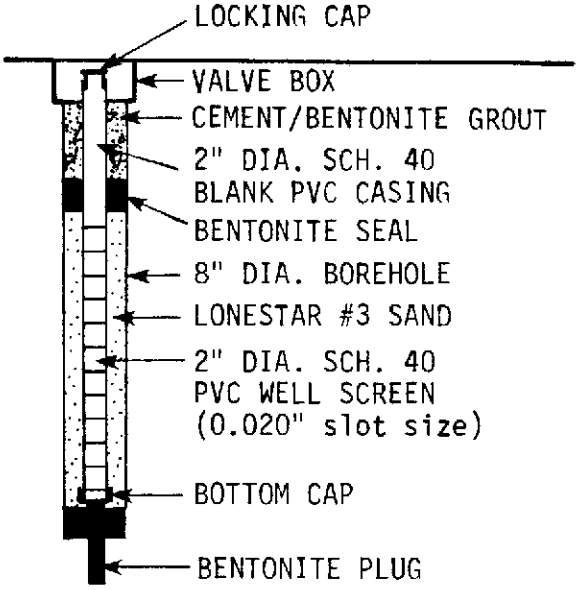
LOG OF TEST BORING 2

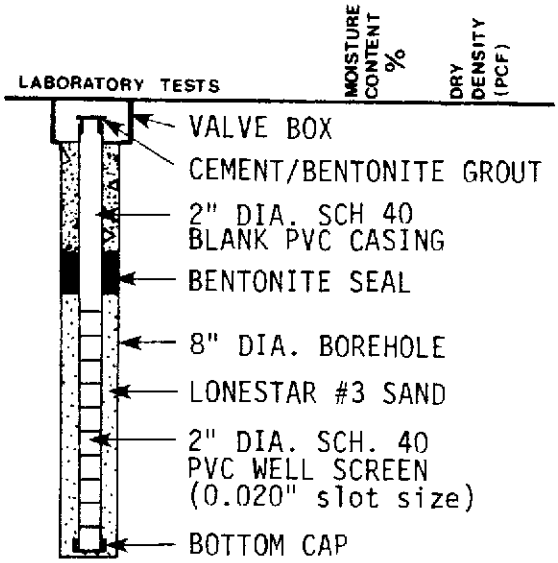
EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 8/1/89
ELEVATION TOC: 98.42 feet



DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 3" thick DARK BROWN-GRAY SILTY CLAY (CL) medium stiff, moist
		6	
5			
		8	GROUNDWATER LEVEL DURING DRILLING
		7	
		7	
10			
		13	BROWN SANDY GRAVEL (GC) dense, wet
15			

LOG OF TEST BORING 3

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 8/1/89
ELEVATION TOC: 98.81 feet

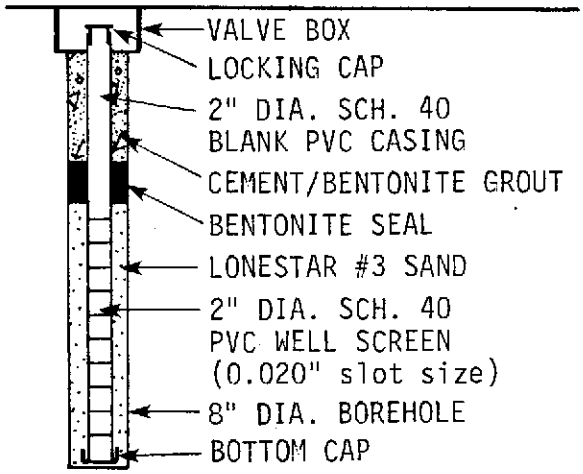


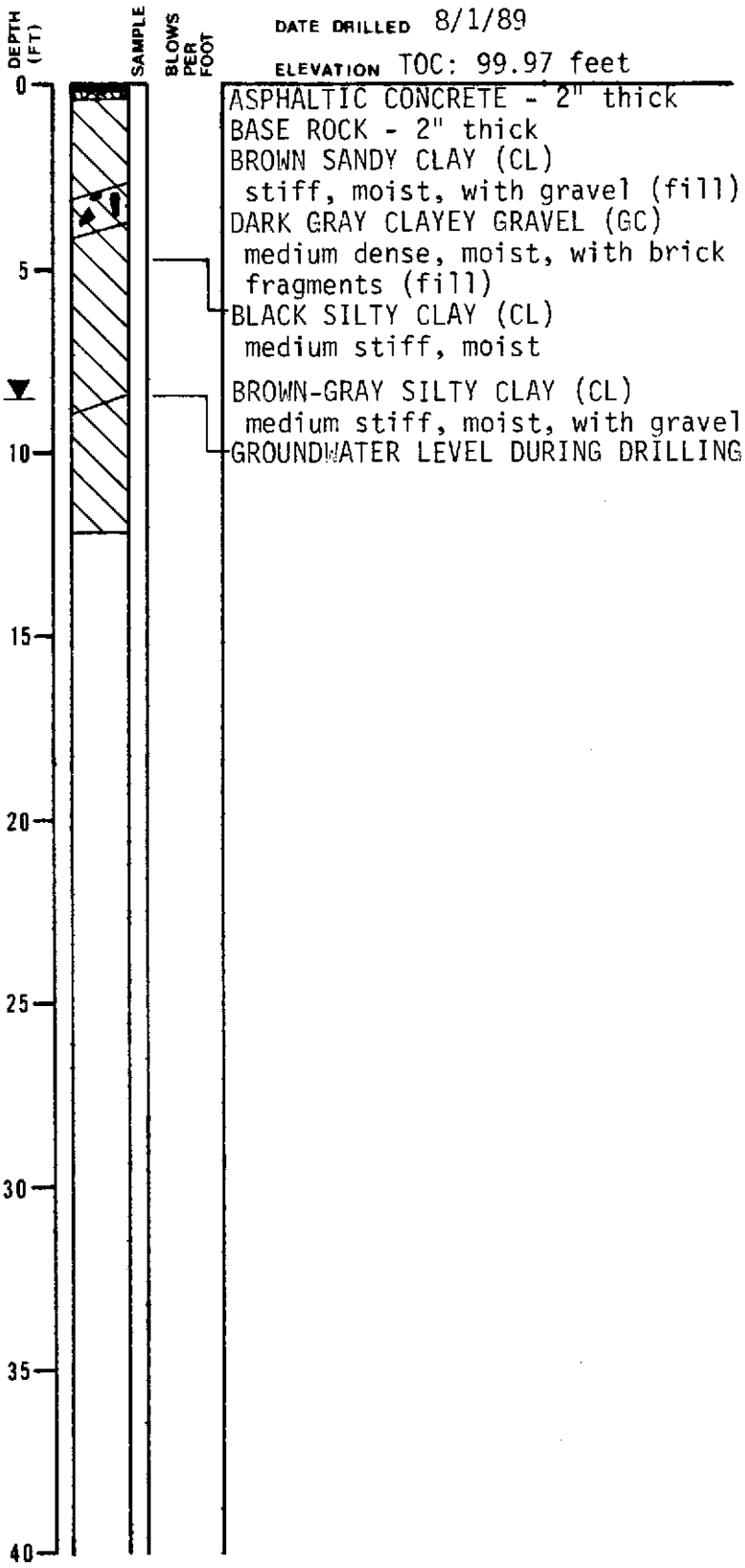
DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
0			ASPHALTIC CONCRETE - 4" thick BASE ROCK - 3" thick BROWN SANDY CLAY (CL) medium stiff, moist, with gravel (fill)
5		7	BROWN CLAYEY GRAVEL (GC) dense, wet
		5	DARK GRAY SILTY CLAY (CL) medium stiff, wet
		8	BROWN CLAYEY GRAVEL (GC) dense, wet
10		7	DARK GRAY SILTY CLAY (CL) medium stiff, wet mottled gray and brown below 10 feet
		9	
15			

Subsurface Consultants	PLAZA CAR WASH - ALBANY, CA	PLATE 3
	JOB NUMBER 549.001 / DATE 8/4/89 / APPROVED	

LOG OF TEST BORING 4

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 8/1/89
ELEVATION TOC: 99.97 feet





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GENERAL SOIL CATEGORIES			SYMBOLS	TYPICAL SOIL TYPES
COARSE GRAINED SOILS More than half is larger than No. 200 sieve	**GRAVEL** More than half coarse fraction is larger than No. 4 sieve size	Clean Gravel with little or no fines	GW	Well Graded Gravel, Gravel-Sand Mixtures
			GP	Poorly Graded Gravel, Gravel-Sand Mixtures
		Gravel with more than 12% fines	GM	Silty Gravel, Poorly Graded Gravel-Sand-Silt Mixtures
			GC	Clayey Gravel, Poorly Graded Gravel-Sand-Clay Mixtures
	SAND More than half coarse fraction is smaller than No. 4 sieve size	Clean sand with little or no fines	SW	Well Graded Sand, Gravelly Sand
			SP	Poorly Graded Sand, Gravelly Sand
		Sand with more than 12% fines	SM	Silty Sand, Poorly Graded Sand-Silt Mixtures
			SC	Clayey Sand, Poorly Graded Sand-Clay Mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 sieve	**SILT AND CLAY** Liquid Limit Less than 50%		ML	Inorganic Silt and Very Fine Sand, Rock Flour, Silty or Clayey Fine Sand, or Clayey Silt with Slight Plasticity
			CL	Inorganic Clay of Low to Medium Plasticity, Gravelly Clay, Sandy Clay, Silty Clay, Lean Clay
			OL	Organic Clay and Organic Silty Clay of Low Plasticity
	SILT AND CLAY Liquid Limit Greater than 50%		MH	Inorganic Silt, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silt
			CH	Inorganic Clay of High Plasticity, Fat Clay
			OH	Organic Clay of Medium to High Plasticity, Organic Silt
HIGHLY ORGANIC SOILS			PT	Peat and Other Highly Organic Soils

UNIFIED SOIL CLASSIFICATION SYSTEM

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PLAZA CAR WASH - ALBANY, CA

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