



## KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P. O. BOX 913

BENICIA, CA 94510

(415) 676-9100 (707) 746-6915

KEI-187-063

June 22, 1987

Shell Oil Company  
P.O. Box 7004  
Lafayette, CA 94549

Attention: Mr. R. Newsome

Re: Soil Sampling Investigation  
Shell Service Station  
15275 Washington Avenue  
San Leandro, California

Dear Mr. Newsome:

This report summarizes the subsurface investigation performed by Kaprealian Engineering, Inc. (KEI) at the referenced site. All work was performed in compliance with the regulations and guidelines established by the Regional Water Quality Control Board (RWQCB), and the Alameda County Department of Environmental Health.

The scope of the work performed in our investigation consisted of the following:

Supervision of the removal of the underground tanks

Coordination with the state and local agencies

Collection of samples of native soil beneath the storage tanks.

Delivery of soil samples with proper chain of custody to a certified analytical laboratory

Technical review and preparation of this report

### FIELD INVESTIGATION

KEI's field investigation was conducted on June 9 and 12, 1987. On June 9, 1987, four underground fuel storage tanks were removed. The tanks consisted of two (2) 5000 gallon, one (1) 8000 gallon, and one (1) 7500 gallon fuel tanks. Mr. Joe Ferreira of the San Leandro Fire Department was present for the tank removal. All four tanks appeared to be in good condition.

Groundwater was encountered in the pit at a depth of 10.5 feet, prohibiting collection of soil samples from beneath the tanks. Four (4) soil samples, labeled A, B, C, and D, were collected from each of the four sidewalls of the pit. The disturbed samples were collected from bulk material excavated by backhoe. The samples were placed in clean, two-inch diameter brass tubes, sealed with aluminum foil and plastic caps, and were stored in a cooled ice chest for delivery to the contracted laboratory. The sampling locations are shown on the attached location plan.

H and H waste haulers were called to the site to pump the standing groundwater from the fuel tank pit. One water sample, labeled W-1, was collected from the pit on June 12, 1987 after pumping was completed. The sample was placed in a VOA vial and was sealed with a Teflon-lined screw cap. The sample was stored in a cooled ice chest for delivery to the laboratory.

*Site pumped from 10.5 ft pit*

SUBSURFACE CONDITIONS

The subsurface soils exposed in the excavations consisted of clay and sand. Faint to strong odors of gasoline were present in all samples. The excavated soil from above the tanks was stockpiled on the site.

*backfill excavated only*

ANALYTICAL RESULTS

All samples were analyzed by Sequoia Analytical Laboratory of Redwood City, California, and were accompanied by proper chain of custody forms. The soil and water samples were analyzed for total hydrocarbon (THC) as gasoline, benzene, toluene and xylene (BTX) concentrations. The analytical results are summarized in Table 1. Copies of the laboratory analyses and the chain of custody forms are attached to this report.

### CONCLUSIONS AND RECOMMENDATIONS

Analytical results of the soil samples from the fuel tank pit indicate low levels of total hydrocarbon and BTX for all samples except sample D. Sample D had a THC level of 910 parts per million (ppm). During sampling, further excavation in the vicinity of sample D (the western sidewall) was prohibited by the presence of sewer and water lines running from the street to the service station building.

The water sample from the fuel tank pit had non-detectable levels of THC and BTX.

According to the guidelines established by the Regional Water Quality Control Board (RWQCB), further investigation is necessary at a site where the soil has a THC level greater than 100 ppm. Our understanding is that the existing four (4) wells are currently being monitored.

A copy of the laboratory analyses and the location plan should be sent to Mr. Joe Ferreira of the San Leandro Fire Department. A copy of the report should be sent to the Alameda County Department of Environmental Health, and to the Regional Water Quality Control Board.

### LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in groundwater levels and flow paths, thereby changing the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

KEI-J87-063  
June 24, 1987  
Page 4

The results of this study are based on the data obtained from the field and laboratory investigations. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

Should you have any questions regarding this report, please feel free to call me at (415) 676-9100.

Sincerely,

Kaprealian Engineering, Inc.



Mardo Kaprealian

License #C29326  
Exp. date 3/31/91

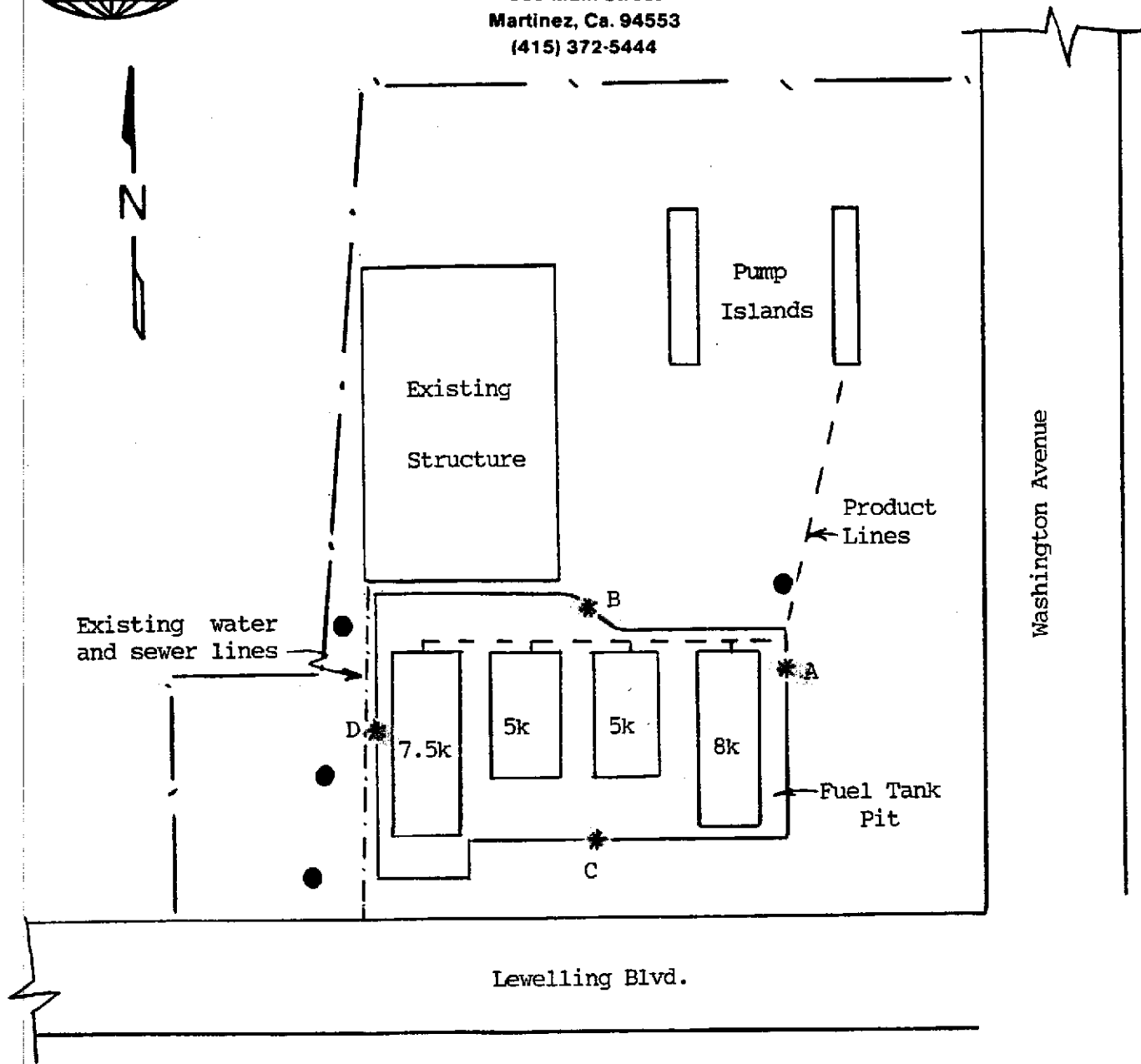
Attachments: Location plan  
Laboratory analyses  
Chain of custody forms  
Table 1



# KAPREALIAN ENGINEERING, INC.

Consulting Engineers

535 Main Street  
Martinez, Ca. 94553  
(415) 372-5444



LOCATION PLAN  
(not to scale)

- Existing monitoring well
- \* soil sample location

SHELL SERVICE STATION  
13275 Washington Avenue  
San Leandro, CA



# SEQUOIA Analytical Laboratory

2549 Middlefield Road  
Redwood City, CA 94063 • (415) 364-9222

Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 06-11-87  
Date Received: 06-11-87  
Date Reported: 06-22-87

Sample Number

7060803

Sample Description

Soil A  
Shell at Washington Avenue  
in San Leandro, CA

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons as Gasoline	1	1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

jao



# SEQUOIA Analytical Laboratory

2549 Middlefield Road  
Redwood City, CA 94063 • (415) 364-9222

Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 06-11-87  
Date Received: 06-11-87  
Date Reported: 06-22-87

## Sample Number

7060804

## Sample Description


Soil B  
Shell at Washington Avenue  
in San Leandro, CA

## ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons as Gasoline	1	74
Benzene	0.1	2.5
Toluene	0.1	1.1
Xylenes	0.1	3.7

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

SEQUOIA ANALYTICAL LABORATORY

  
Arthur G. Burton  
Laboratory Director

jao



# SEQUOIA Analytical Laboratory

2549 Middlefield Road  
Redwood City, CA 94063 • (415) 364-9222

Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 06-11-87  
Date Received: 06-11-87  
Date Reported: 06-22-87

## Sample Number

7060805

## Sample Description


Soil C  
Shell at Washington Avenue  
in San Leandro, CA

## ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons as Gasoline	1	31
Benzene	0.1	< 0.1
Toluene	0.1	0.69
Xylenes	0.1	1.2

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

SEQUOIA ANALYTICAL LABORATORY

  
Arthur G. Burton  
Laboratory Director

jao





# SEQUOIA Analytical Laboratory

2549 Middlefield Road  
Redwood City, CA 94063 • (415) 364-9222

Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 06-11-87  
Date Received: 06-11-87  
Date Reported: 06-22-87

Sample Number

7060806

Sample Description

Soil D  
Shell at Washington Avenue  
in San Leandro, CA

ANALYSIS

	<u>Detection Limit</u> ppm	<u>Sample Results</u> ppm
Total Hydrocarbons as Gasoline	1	910
Benzene	0.1	7.4
Toluene	0.1	43
Xylenes	0.1	43

NOTE: Analysis was performed using EPA methods 5020 and 8015 with method 8020 used for BTX distinction.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

jao

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Jean Semansky (signature) KEI DATE/TIME OF COLLECTION: 6/9/87 1400-1530 TURNAROUND TIME: 1 week RUSH

SAMPLE DESCRIPTION AND PROJECT NUMBER: 5 hell San Leandro  
Washington Ave.

SAMPLE #	ANALYSIS	GRAB OR COMP.	NUMBER OF CONTAINERS	SOIL/WATER
<u>A</u>	<u>THC, BTX</u>	<u>grab</u>	<u>1</u>	<u>S</u>
<u>B</u>	<u>THC, BTX</u>	<u>grab</u>	<u>1</u>	<u>S</u>
<u>C</u>	<u>THC, BTX</u>	<u>grab</u>	<u>1</u>	<u>S</u>
<u>D</u>	<u>THC, BTX</u>	<u>grab</u>	<u>1</u>	<u>S</u>

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
<u>Jean Semansky</u> <u>KEI</u>	<u>1330</u> <u>6/10/87</u>	<u>[Signature]</u> <u>(N)</u>	<u>1330</u> <u>6.10.87</u>
<u>[Signature]</u> <u>(N)</u>	<u>1245</u> <u>6.11.87</u>	<u>[Signature]</u> <u>KEI</u>	<u>12:45</u> <u>6.11.87</u>
<u>[Signature]</u> <u>KEI</u>	<u>6.11.87</u> <u>6:45 PM</u>	<u>[Signature]</u> <u>G.M. Brooks</u>	<u>6:11/87</u> <u>6:45</u>
4.			

\* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: \_\_\_\_\_



# SEQUOIA Analytical Laboratory

2549 Middlefield Road  
Redwood City, CA 94063 • (415) 364-9222

Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 06-12-87  
Date Received: 06-15-87  
Date Reported: 06-17-87

Sample Number

7061116

Sample Description

Water W-1  
Shell at Washington Avenue  
in San Leandro, CA

ANALYSIS

	<u>Detection Limit</u> ppb	<u>Sample Results</u> ppb
Total Hydrocarbons as Gasoline	50	< 50
Benzene	0.5	< 0.5
Toluene	0.5	< 0.5
Xylenes	0.5	< 0.5

NOTE: Analysis was performed using EPA method 602.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

jao

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Jean Semansky DATE/TIME OF COLLECTION: 6/12/87 1400 TURNAROUND TIME: Rush 48 HRS  
 (signature) KEI

SAMPLE DESCRIPTION AND PROJECT NUMBER: Shell San Leandro  
Washington Ave

SAMPLE #	ANALYSIS	GRAB OR COMP.	NUMBER OF CONTAINERS	SOIL/WATER
<u>W-1</u>	<u>THC, BTX</u>	<u>grab</u>	<u>1</u>	<u>water</u>

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
1. <u>Jean Semansky</u> <u>KEI</u>	<u>1700</u> <u>6/12/87</u>	<u>(N) [Signature]</u>	<u>1700</u> <u>6.12.87</u>
2. <u>(N) [Signature]</u>	<u>6.13.87</u> <u>11.35 AM</u>	<u>[Signature] (KEI)</u>	<u>6.13.87</u> <u>11.35 AM</u>
3. <u>[Signature] KEI</u>	<u>6.15.87</u> <u>9:15 AM</u>	<u>[Signature] McConnel</u>	<u>6.15.87</u> <u>9:15 AM</u>
4.			

\* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: RUSH 48 HRS