

Subsurface Consultants, Inc.
Consulting Engineers

FAX TRANSMISSION COVER SHEET

To: Eva Chu

Receiver's Fax: 569-4757

Company: ACHCSA

From: Marianne Watada
SCI

RUSH!
Please Deliver Immediately

Date: 3/8/94 SCI Job No.: 838,001

Pages Transmitted: 19

Project: APA Fund

Subject: Dec. Quarterly Monitoring Report

For Your Review and Comment

As Requested

Original Will Be Mailed

Please Return an Executed Copy

For Your Information

Copies have also been sent to: _____

Remarks: _____

Subsurface Consultants, Inc.
171 - 12th Street, Suite 201
Oakland, California 94607
510-268-0461 FAX 510-268-0137

The A.P.A. Fund, Ltd.
1904 Franklin Street
Suite 501
Oakland, CA 94612

March 8, 1994

Mr. Thomas Peacock
Alameda County Health Care Services Agency
Department of Environmental Health
UST Local Oversight Group
80 Swan Way, Room 200
Oakland, CA 94621

RE: 2801 MacArthur Blvd., Oakland, CA
STID 23

Dear Mr. Peacock:

Enclosed is the second quarterly groundwater monitoring report for the above referenced site. The report presents the results from ground water sampling conducted in December 1993. The next round of sampling is scheduled for the week of March 9, 1994.

We have recently received partial reimbursement from the Underground Storage Tank Cleanup Fund for project costs incurred to date. We have also received an amended Letter of Commitment for remediation costs. Therefore, we are proceeding with the detailed design for remediation as requested in your letter dated October 19, 1993. Upon completion we will submit the design and a schedule for implementation.

Please contact me at (510) 452-4711 or Aniko Molnar at (714)476-6121 if you have any questions.

Sincerely,



Nicholas D. Molnar
General Partner
APA Fund, Ltd.

3/14/94 In midst of getting proposal for vapor extraction (air sparge design - will send to J. Munch of SWRCB for approval not to require 3 bids. Aniko will inform me of results in 2 weeks

Enclosure

cc: Rich Hiatt, RWQCB
Gil Jensen, Alameda County District Attorney's Office (w/o enclosure)
Raymond W. Yu (w/o enclosure)

January 11, 1994
SCI 838.001

A.P.A. Fund Ltd.
c/o Mr. Nicholas Molnar
1904 Franklin Street, Suite 501
Oakland, California 94612

**Quarterly Groundwater Monitoring
Sampling Event - December 1993
2801 MacArthur Boulevard
Oakland, California**

Dear Mr. Molnar:

This letter presents quarterly groundwater monitoring results for the referenced site. Monitoring services were provided by Subsurface Consultants, Inc. (SCI) on behalf of the A.P.A. Fund Limited. Groundwater monitoring has been performed in accordance with the workplan by Streamborn dated January 31, 1992. The monitoring was required by the Alameda County Health Care Services Agency (ACHCSA), due to an underground gasoline tank release. The location of the site is shown on Plate 1.

Groundwater Sampling

On December 13, 1993, Wells M2, M3 and M4 and Piezometer P2 were purged and sampled. In general, the groundwater monitoring event consisted of (1) measuring groundwater levels using an electric well sounder, (2) measuring free product thicknesses, (3) purging water from each well until pH, conductivity and temperature had stabilized (approximately 3 well volumes), and (4) after the wells had recovered to at least 50 percent of their initial level, sampling the wells with new disposable samplers. Those wells/piezometers that recharged very slowly (P2 and M4) were purged dry, allowed to recharge for four hours, purged dry again and sampled when the wells had recharged sufficiently to submerge the sampler. A summary of groundwater purging and sampling information is presented in Table 1. The samples were retained in containers pre-cleaned by the supplier in accordance with EPA protocol. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-custody documents accompanied the samples to the laboratory. Purge water is stored on-site in 55-gallon steel drums.

■ Subsurface Consultants, Inc.

A.P.A. Fund Ltd.
c/o Mr. Nicholas Molnar
SCI 838.001
January 11, 1994
Page 2

■ Subsurface Consultants, Inc.

Analytical Testing

Analytical testing was performed by Curtis and Tompkins, Ltd., a laboratory certified by the State of California Department of Health Services for hazardous waste and water testing. A sample from each well was analyzed for the following:

1. Total petroleum hydrocarbons, as gasoline (TPH-gas), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector), and
2. Aromatic hydrocarbons, sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a photoionization detector).

A summary of the current and previous analytical test results are presented in Table 2. The groundwater level data generated to date are presented in Table 3. Well sampling forms, analytical test reports, and chain-of-custody documents are attached. All sampling events prior to May 17, 1993 were conducted by Streamborn, the previous environmental consultant.

Conclusions

The groundwater level data indicates that the regional groundwater flow direction is toward the south-southeast at a gradient of approximately 2 to 4 percent. This groundwater flow direction and gradient generally remain consistent with previous measurements.

In general, the analytical results indicate that elevated concentrations of gasoline and BTXE are present in groundwater. The highest concentrations of gasoline/BTXE have been detected in Wells P2 and M2. Gasoline was not detected at concentrations above laboratory reporting limits in Well M3. No free product was measured in any of the wells. However, a slight sheen was observed in Piezometer P2 and a petroleum hydrocarbon odor was observed in Piezometer P2 and Wells M2 and M4.

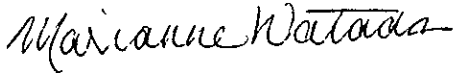
In accordance with our monitoring plan, the next monitoring event will occur during February 1994. If you have any questions, please call.

A.P.A. Fund Ltd.
c/o Mr. Nicholas Molnar
SCI 838.001
January 11, 1994
Page 3

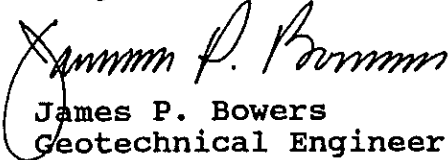
■ Subsurface Consultants, Inc.

Yours very truly,

Subsurface Consultants, Inc.



Marianne F. Watada
Project Engineer



James P. Bowers
Geotechnical Engineer 157 (expires 3/31/95)

MFW:JPB:sld

Attachments: Table 1 - Groundwater Purging and Sampling
Information
Table 2 - Hydrocarbon Concentrations in Groundwater
Table 3 - Groundwater Elevation Data
Plate 1 - Site Plan
Well Development/Sampling Forms
Analytical Test Reports
Chain-of-Custody Records

4 copies submitted

cc: Ms. Aniko Molnar
1920 Main Street, Suite 400
Irvine, California 92714

Table 1
Groundwater Purging and Sampling Information

| <u>Location</u> | <u>Date</u> | <u>Conductivity</u> <u>(umho/cm)</u> | <u>pH</u> | <u>Temperature</u> <u>°F</u> | <u>Purge/</u> <u>Sample</u> <u>Method</u> | <u>Volume</u> <u>Purged</u> <u>(gallons)</u> | <u>Static</u> <u>Casing</u> <u>Volumes</u> <u>Removed</u> | <u>Comments</u> |
|-----------------|-------------|---|-----------|---------------------------------|---|--|--|--|
| P2 | 12/13/93 | 1130 | 8.7 | 62.8 | Bailer | 8 | 4 ¹ | Semi-clear with sheen and hydrocarbon odor |
| M2 | 12/13/93 | ² | -- | -- | Bailer | 10 | 5 | Semi-clear with hydrocarbon odor |
| M3 | 12/13/93 | -- | -- | -- | Bailer | 10 | 4 | Semi-turbid |
| M4 | 12/13/93 | -- | -- | -- | Bailer | 6 | 4 ¹ | Clear with hydrocarbon odor |

¹ Slow recharge well - purged dry, allowed to recharge for 4 hours, purged dry again, sampled when the wells had recharged sufficiently to submerge the bailer.

² Equipment malfunction; conductivity, pH and temperature were not recorded.

Table 2
Hydrocarbon Concentrations in Groundwater

| <u>Sample Location</u> | <u>Sample Date</u> | <u>TPH¹</u> | <u>Benzene</u> | <u>Toluene</u> | <u>Ethyl-benzene</u> | <u>Xylenes</u> |
|------------------------|--------------------|------------------------|----------------|----------------|----------------------|----------------|
| P1 | 01/16/92 | 6700 | 500 | 4.4 | 80 | 40 |
| | 03/09/93 | 5600 | 1100 | 29 | 63 | 120 |
| P2 | 11/06/90 | 33000 ² | 4700 | 2100 | 380 | 630 |
| | 01/16/92 | 99000 | 6500 | 12000 | 2000 | 16000 |
| | 03/09/93 | 70000 | 5900 | 11000 | 2100 | 12000 |
| | 05/17/93 | 87000 | 6600 | 13000 | 2200 | 13000 |
| | 08/17/93 | 80000 | 5800 | 12000 | 2000 | 12000 |
| | 12/13/93 | 100000 | 5600 | 12000 | 2200 | 14000 |
| P3 | 08/17/93 | 900 | 180 | 65 | 10 | 93 |
| M2 | 05/07/91 | 16000 | 1300 | 950 | 170 | 890 |
| | 01/16/92 | 22000 | 960 | 570 | 370 | 1800 |
| | 03/09/93 | 27000 | 1100 | 970 | 490 | 1400 |
| | 05/17/93 | 17000 | 1200 | 770 | 480 | 1300 |
| | 08/17/93 | 20000 | 1700 | 910 | 540 | 1400 |
| | 12/13/93 | 51000 | 2200 | 1400 | 700 | 2600 |
| M3 | 05/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 08/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 12/13/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| M4 | 05/17/93 | 7500 | 1200 | 230 | 11 | 350 |
| | 08/17/93 | 13000 | 3000 | 330 | 130 | 700 |
| | 12/13/93 | 11000 | 2700 | 190 | 90 | 360 |

¹ TPH = Total petroleum hydrocarbons, as gasoline

² All concentrations are reported in micrograms per liter (ug/l)

TABLE 3
Groundwater Elevation Data

| <u>Well</u> | <u>TOC¹ Elevation</u> | <u>Date</u> | <u>Groundwater Depth (feet)</u> | <u>Groundwater Elevation (feet)</u> |
|-------------|--------------------------------------|-----------------------|---|---|
| M1 | 1000.00 | 10/24/90 | 36.1 | 963.9 |
| | | 10/25/90 | 36.1 | 963.9 |
| | | 11/02/90 ² | 36.4 | 963.6 |
| | | 11/06/90 | 36.8 | 963.2 |
| | | 11/16/90 | 36.8 | 963.2 |
| | | 11/23/90 | 36.9 | 963.1 |
| | | 11/28/90 | 37.0 | 963.0 |
| | | 12/05/90 | 37.2 | 963.0 |
| | | 03/18/91 | 35.8 | 964.2 |
| | | 03/29/91 | 32.4 | 967.6 |
| | | 04/03/91 | 31.9 | 968.1 |
| | | 04/09/91 | 31.6 | 968.4 |
| | | 04/16/91 | 31.2 | 968.8 |
| | | 04/18/91 | 31.1 | 968.9 |
| | | 04/30/91 | 31.1 | 968.9 |
| | | 05/07/91 | 31.2 | 968.8 |
| | | 01/23/92 | 35.5 | 964.5 |
| 03/09/93 | 29.1 | 970.9 | | |
| 06/01/93 | 27.5 | 972.9 | | |
| 12/13/93 | 33.9 | 966.1 | | |
| M2 | 999.6 | 04/30/91 | 31.1 ³ | 968.5 |
| | | 05/07/91 | 31.3 ³ | 968.3 |
| | | 01/16/92 | 35.1 ³ | 964.5 |
| | | 03/09/93 | 33.6 ³ | 966.0 |
| | | 05/17/93 | 27.2 ³ | 972.4 |
| | | 06/01/93 | 27.6 ³ | 972.0 |
| | | 08/17/93 | 30.4 ³ | 969.2 |
| | | 12/13/93 | 34.0 ³ | 965.6 |
| M3 | 992.8 | 05/17/93 | 22.2 | 970.6 |
| | | 06/01/93 | 23.3 | 969.5 |
| | | 08/17/93 | 25.0 | 967.8 |
| | | 12/13/93 | 25.8 | 967.0 |
| M4 | 999.6 | 05/17/93 | 33.8 ³ | 965.8 |
| | | 06/01/93 | 32.5 ³ | 967.1 |
| | | 08/17/93 | 33.9 ³ | 965.7 |
| | | 12/13/93 | 36.8 ³ | 962.8 |

TABLE 3 Groundwater Elevation Data (continued)

| <u>Well</u> | <u>TOC¹ Elevation</u> | <u>Date</u> | <u>Groundwater Depth (feet)</u> | <u>Groundwater Elevation (feet)</u> |
|-------------|--------------------------------------|-----------------------|---|---|
| P1 | 999.6 | 10/24/90 | 37.9 | 961.7 |
| | | 10/25/90 | 38.0 | 961.6 |
| | | 11/02/90 ² | 38.4 | 961.2 |
| | | 11/06/90 | 38.7 | 960.9 |
| | | 11/16/90 | 38.3 | 961.3 |
| | | 11/23/90 | 38.1 | 961.5 |
| | | 11/28/90 | 38.3 | 961.3 |
| | | 12/05/90 | 38.2 | 961.4 |
| | | 03/18/91 | 37.8 | 961.8 |
| | | 03/29/91 | 36.9 | 962.7 |
| | | 04/03/91 | 36.8 | 962.8 |
| | | 04/09/91 | 36.9 | 962.7 |
| | | 04/16/91 | 36.7 | 962.9 |
| | | 04/18/91 | 36.8 | 962.8 |
| | | 04/30/91 | 36.3 | 963.3 |
| | | 05/07/91 | 36.2 | 963.4 |
| | | 01/16/92 | 36.6 ³ | 963.0 |
| | | 03/09/93 | 32.8 | 966.8 |
| | | 06/01/93 | 30.0 ³ | 969.6 |
| | | 12/13/93 | 33.7 ³ | 965.9 |
| P2 | 997.8 | 10/24/90 | 41.1 | 956.7 |
| | | 10/25/90 | 40.6 | 957.2 |
| | | 11/02/90 ² | 38.4 | 959.4 |
| | | 11/06/90 | 37.0 | 960.8 |
| | | 11/16/90 | 37.4 | 960.4 |
| | | 11/23/90 | 35.9 | 961.9 |
| | | 11/28/90 | 35.4 ³ | 962.4 |
| | | 12/05/90 | 35.0 ³ | 962.8 |
| | | 03/18/91 | 31.4 ³ | 966.4 |
| | | 03/29/91 | 28.2 ³ | 969.6 |
| | | 04/03/91 | 26.8 ³ | 971.0 |
| | | 04/09/91 | 26.5 ³ | 971.3 |
| | | 04/16/91 | 26.5 ³ | 971.3 |
| | | 04/18/91 | 26.5 ³ | 971.3 |
| | | 04/30/91 | 26.7 ³ | 971.1 |
| | | 05/07/91 | 27.0 ³ | 970.8 |
| | | 01/16/92 | 33.7 ³ | 964.1 |
| | | 03/09/93 | 23.6 ³ | 974.2 |
| | | 05/17/93 | 23.7 ³ | 974.1 |
| | | 06/01/93 | 24.4 ³ | 973.4 |
| 08/17/93 | 28.3 ³ | 969.5 | | |
| 12/13/93 | 31.0 ³ | 966.8 | | |

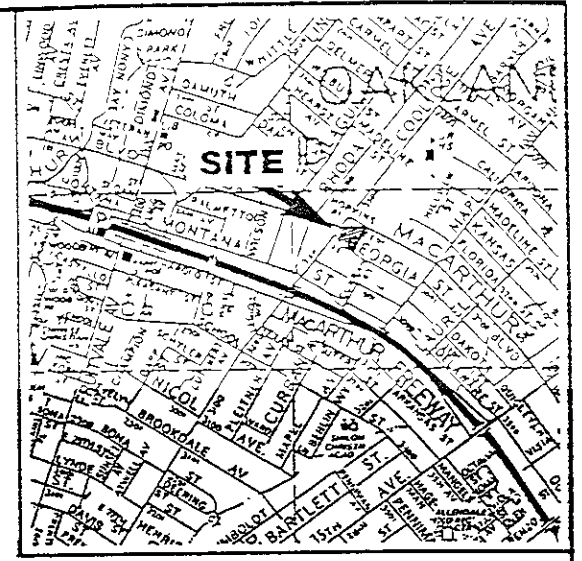
TABLE 3 Groundwater Elevation Data (continued)

| <u>Well</u> | <u>TOC¹ Elevation</u> | <u>Date</u> | <u>Groundwater Depth (feet)</u> | <u>Groundwater Elevation (feet)</u> |
|-------------|--------------------------------------|-------------|---|---|
| P3 | 999.1 | 03/29/91 | 24.7 | 974.4 |
| | | 04/03/91 | 25.1 | 974.0 |
| | | 04/09/91 | 25.9 | 973.2 |
| | | 04/16/91 | 26.2 | 972.9 |
| | | 04/18/91 | 26.2 | 972.9 |
| | | 04/30/91 | 26.8 | 972.3 |
| | | 05/07/91 | 27.4 | 971.7 |
| | | 01/23/92 | 32.5 | 966.6 |
| | | 03/09/93 | 24.8 | 974.3 |
| | | 06/01/93 | 23.9 | 975.2 |
| | | 08/17/93 | 28.5 ³ | 970.6 |
| | | 12/13/93 | 29.3 ³ | 969.8 |

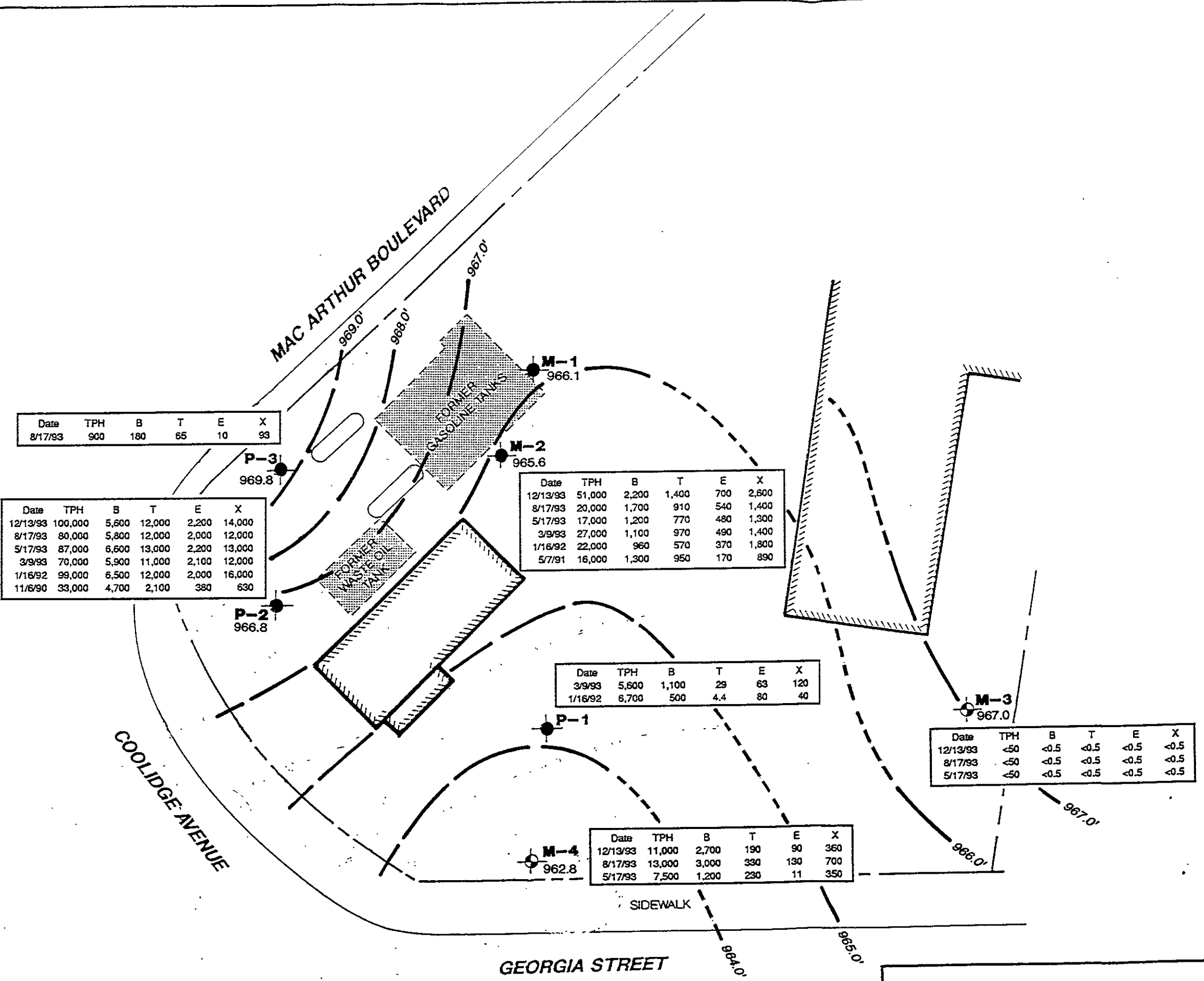
¹ Elevations relative to site-specific datum. Temporary Bench Mark No. 1, top of concrete at west corner of northernmost pump island. Assumed elevation = 1,000.00 feet.

² An interface probe was used to discern whether free product was present - free product was not detected with the probe.

³ A petroleum odor and/or coating was observed on the water level probe.



VICINITY MAP



| Date | TPH | B | T | E | X |
|---------|-----|-----|----|----|----|
| 8/17/93 | 900 | 180 | 65 | 10 | 93 |

| Date | TPH | B | T | E | X |
|----------|---------|-------|--------|-------|--------|
| 12/13/93 | 100,000 | 5,600 | 12,000 | 2,200 | 14,000 |
| 8/17/93 | 80,000 | 5,800 | 12,000 | 2,000 | 12,000 |
| 5/17/93 | 87,000 | 6,600 | 13,000 | 2,200 | 13,000 |
| 3/9/93 | 70,000 | 5,900 | 11,000 | 2,100 | 12,000 |
| 1/16/92 | 99,000 | 6,500 | 12,000 | 2,000 | 16,000 |
| 11/6/90 | 33,000 | 4,700 | 2,100 | 380 | 630 |

| Date | TPH | B | T | E | X |
|----------|--------|-------|-------|-----|-------|
| 12/13/93 | 51,000 | 2,200 | 1,400 | 700 | 2,600 |
| 8/17/93 | 20,000 | 1,700 | 910 | 540 | 1,400 |
| 5/17/93 | 17,000 | 1,200 | 770 | 480 | 1,300 |
| 3/9/93 | 27,000 | 1,100 | 970 | 490 | 1,400 |
| 1/16/92 | 22,000 | 960 | 570 | 370 | 1,800 |
| 5/7/91 | 16,000 | 1,300 | 950 | 170 | 890 |

| Date | TPH | B | T | E | X |
|---------|-------|-------|-----|----|-----|
| 3/9/93 | 5,600 | 1,100 | 29 | 63 | 120 |
| 1/16/92 | 6,700 | 500 | 4.4 | 80 | 40 |

| Date | TPH | B | T | E | X |
|----------|-----|------|------|------|------|
| 12/13/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| 8/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |
| 5/17/93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 |

| Date | TPH | B | T | E | X |
|----------|--------|-------|-----|-----|-----|
| 12/13/93 | 11,000 | 2,700 | 190 | 90 | 360 |
| 8/17/93 | 13,000 | 3,000 | 330 | 130 | 700 |
| 5/17/93 | 7,500 | 1,200 | 230 | 11 | 350 |

970.6 GROUNDWATER ELEVATION 12/13/93

MONITORING WELL BY SCI

MONITORING WELL BY OTHERS

FORMER EXCAVATION

PROPERTY BOUNDARY

EXISTING BUILDING

GROUNDWATER LEVEL CONTOURS (feet) 12/13/93

TPH TOTAL PETROLEUM HYDROCARBONS

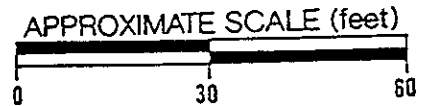
B BENZENE

T TOLUENE

E ETHYLBENZENE

X XYLENES

ALL CONCENTRATIONS IN ug/l



HYDROCARBON CONCENTRATIONS IN GROUNDWATER

2801 MacARTHUR BLVD. - OAKLAND, CA

JOB NUMBER 838.001 DATE 1/10/94 APPROVED [Signature]

PLATE 1

Subsurface Consultants

WELL SAMPLING FORM

Project Name: 2801 MACARTHUR BOULEVARD Well Number: M 2
Job No.: 838.001 Well Casing Diameter: 2 inch
Sampled By: [Signature] Date: 12/13/93
TOC Elevation: Weather: Cloudy

Depth to Casing Bottom (below TOC) 44.90 feet
Depth to Groundwater (below TOC) 33.96 feet
Feet of Water in Well 10.94 feet
Depth to Groundwater When 80% Recovered feet
Casing Volume (feet of water x Casing DIA^2 x 0.0408) 79 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Free Product
Purge Method disposable bailer

FIELD MEASUREMENTS

Table with 6 columns: Gallons Removed, pH, Temp (°c), Conductivity (micromhos/cm), Salinity S%, Comments. Includes handwritten entry 'Semi Clear' in the Comments column.

Total Gallons Purged 10 gallons
Depth to Groundwater Before Sampling (below TOC) feet
Sampling Method
Containers Used 3 40 ml liter pint

Subsurface Consultants 2801 MACARTHUR BLVD-OAKLAND, CA
JOB NUMBER 838.001 DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: 2801 MACARTHUR BOULEVARD

Well Number: M3

Job No.: 838.001

Well Casing Diameter: 2 inch

Sampled By: COA

Date: 12/13/93

TOC Elevation:

Weather: Cloudy

Depth to Casing Bottom (below TOC) 39.86 feet

Depth to Groundwater (below TOC) 25.80 feet

Feet of Water in Well 14.06 feet

Depth to Groundwater When 80% Recovered

Casing Volume (feet of water x Casing DIA² x 0.0408) 7.79 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product

Purge Method disposable bucket

FIELD MEASUREMENTS

| Gallons Removed | pH | Temp (°c) | Conductivity (micromhos/cm) | Salinity S% | Comments |
|-----------------|----|-----------|-----------------------------|-------------|-------------|
| | | | | | Semi-turbid |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Total Gallons Purged 10 gallons

Depth to Groundwater Before Sampling (below TOC)

Sampling Method

Containers Used 3 40 ml liter pint

Subsurface Consultants

2801 MACARTHUR BLVD-OAKLAND, CA

PLATE

JOB NUMBER 838.001

DATE

APPROVED

WELL SAMPLING FORM

Project Name: 2801 MACARTHUR BOULEVARD Well Number: m-4
Job No.: 838.001 Well Casing Diameter: 2 inch
Sampled By: CODea Date: 12/13/93
TOC Elevation: _____ Weather: Cloudy

Depth to Casing Bottom (below TOC) 45.20 feet
Depth to Groundwater (below TOC) 36.74 feet
Feet of Water in Well 8.44 feet
Depth to Groundwater When 80% Recovered _____ feet
Casing Volume (feet of water x Casing DIA² x 0.0408) 1.38 gallons
Depth Measurement Method Tape & Paste Electronic Sounder Other _____
Free Product _____
Purge Method disposable teflon bailer

FIELD MEASUREMENTS

| Gallons Removed | pH | Temp (°c) | Conductivity (micromhos/cm) | Salinity S% | Comments |
|-----------------|-------|-----------|-----------------------------|-------------|--------------|
| _____ | _____ | _____ | _____ | _____ | <u>Clear</u> |
| _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |

Total Gallons Purged 5 1/2 gallons
Depth to Groundwater Before Sampling (below TOC) _____ feet
Sampling Method _____
Containers Used 3 40 ml _____ liter _____ pint

| | | | |
|-------------------------------|---------------------------------|------|----------|
| Subsurface Consultants | 2801 MACARTHUR BLVD-OAKLAND, CA | | PLATE |
| | JOB NUMBER 838.001 | DATE | APPROVED |



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

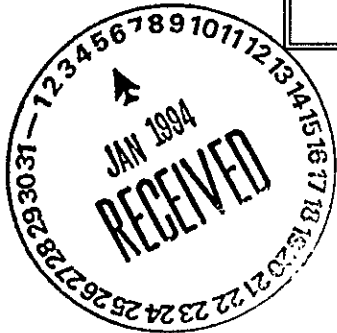
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 28-DEC-93
Lab Job Number: 113580
Project ID: 838.001
Location: A.P.A. Fund



Reviewed by: *[Signature]*

Reviewed by: *[Signature]*

This package may be reproduced only in its entirety.

LABORATORY NUMBER: 113580
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 838.001
 LOCATION: A.P.A FUND

DATE SAMPLED: 12/13/93
 DATE RECEIVED: 12/14/93
 DATE ANALYZED: 12/23/93
 DATE REPORTED: 12/28/93

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (ug/L) | BENZENE (ug/L) | TOLUENE (ug/L) | ETHYL BENZENE (ug/L) | TOTAL XYLENES (ug/L) |
|--------------|-----------|------------------------------|-------------------|-------------------|----------------------------|----------------------------|
| 113580-001 | P-2 | 100,000 | 5,600 | 12,000 | 2,200 | 14,000 |
| 113580-002 | M-2 | 51,000 | 2,200 | 1,400 | 700 | 2,600 |
| METHOD BLANK | | ND(50) | ND(0.5) | ND(0.5) | ND(0.5) | ND(0.5) |

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

QA/QC SUMMARY

| | |
|-------------|----|
| RPD, % | 17 |
| RECOVERY, % | 91 |



LABORATORY NUMBER: 113580
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 838.001
LOCATION: A.P.A FUND

DATE SAMPLED: 12/13/93
DATE RECEIVED: 12/14/93
DATE ANALYZED: 12/19/93
DATE REPORTED: 12/28/93

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (ug/L) | BENZENE (ug/L) | TOLUENE (ug/L) | ETHYL BENZENE (ug/L) | TOTAL XYLENES (ug/L) |
|--------------|-----------|------------------------------|-------------------|-------------------|----------------------------|----------------------------|
| 113580-003 | M-3 | ND(50) | ND(0.5) | ND(0.5) | ND(0.5) | ND(0.5) |
| METHOD BLANK | | ND(50) | ND(0.5) | ND(0.5) | ND(0.5) | ND(0.5) |

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

QA/QC SUMMARY

```

=====
RPD, %                               3
RECOVERY, %                           107
=====

```



LABORATORY NUMBER: 113580
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 838.001
LOCATION: A.P.A FUND

DATE SAMPLED: 12/13/93
DATE RECEIVED: 12/14/93
DATE ANALYZED: 12/23/93
DATE REPORTED: 12/28/93

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

| LAB ID | SAMPLE ID | TVH AS GASOLINE (ug/L) | BENZENE (ug/L) | TOLUENE (ug/L) | ETHYL BENZENE (ug/L) | TOTAL XYLENES (ug/L) |
|--------------|-----------|------------------------------|-------------------|-------------------|----------------------------|----------------------------|
| 113580-004 | M-4 | 11,000 | 2,700 | 190 | 90 | 360 * |
| METHOD BLANK | | ND(50) | ND(0.5) | ND(0.5) | ND(0.5) | ND(0.5) |

* Presence of this compound confirmed by second column; however, the confirmation concentration differed from the reported result by more than a factor of two.

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

QA/QC SUMMARY

| | |
|-------------|----|
| RPD, % | 2 |
| RECOVERY, % | 99 |

