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ENVIRONMENTAL ENGINEERING, INC  
2680 Bishop Drive • Suite 203 • San Ramon, CA 94583  
TEL (925) 244-6600 • FAX (925) 244-6601

December 27, 2001

Review 1/7/02  
B.L. Sepher  
AL

DEC 31 2001

Mr. Amir K. Gholami, REHS  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Subject: Former Minami Nursery  
Site Located on Penny Lane, Hayward, California  
**STID 3817**

Dear Amir:

Enclosed for your review is SOMA's report entitled "Soil and Groundwater Investigation at the Former Minami Nursery" for the subject site.

Thank you for your time in reviewing this report. If you have any questions or comments, please call me at (925) 244-6600.

Sincerely,

Mansour Sepehr, Ph.D., P.E.  
Principal Hydrogeologist

Enclosure

cc: Ms. Janet Minami w/enclosure  
Mr. Jay Woidtke w/enclosure





**ENVIRONMENTAL ENGINEERING, INC**  
2680 Bishop Drive • Suite 203 • San Ramon, CA 94583  
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**SOIL AND GROUNDWATER INVESTIGATION AT THE  
FORMER MINAMI NURSERY LOCATED  
AT PENNY LANE, HAYWARD, CA**

**December 18, 2001**

Project 2562

Prepared for

**Ms. Janet Minami  
998 A Street  
Hayward, California 94541**

Prepared By

**SOMA Environmental Engineering, Inc.  
2680 Bishop Drive, Suite 203  
San Ramon, California 94583**

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**SOMA Environmental Engineering, Inc.**

## CERTIFICATION

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Ms. Janet Minami, the property owner at Penny Lane, Hayward, California to comply with the Alameda County Environmental Health Care Agency's request dated September 7, 2001.

DEC 31 2001



Mansour Sepehr, Ph.D., P.E.  
Principal Hydrogeologist



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## **1.0 INTRODUCTION**

This report has been prepared by SOMA Environmental Engineering, Inc., (SOMA) on behalf of Ms. Janet Minami, the property owner of the former Minami Nursery (the "Site"). The Site is located at Penny Lane in Hayward, California. Currently, the Site is a vacant lot that was originally a portion of the Minami Nursery property, which was largely developed as a residential subdivision, as shown on the Site map (see Figure-1). The Site is relatively flat and is surrounded by residential properties that are located to the north, south, and east of the Site. This workplan has been prepared based on the Alameda County Health Care Services Agency's (ACHCS)'s request dated September 7, 2001.

In 1989, one 1000-gallon single-walled gasoline underground storage tank (UST), one 2,000-gallon fuel oil UST and another 1,000-gallon UST for storing fuel oil were excavated and removed from the Site. During the USTs' excavation and removal, elevated levels of fuel-impacted soils and groundwater were encountered.

The most recent groundwater monitoring report is dated May 1998. Therefore, the current environmental conditions of the Site are not known. This report proposes certain field investigations to evaluate the current status of the soil and groundwater conditions beneath the Site, as requested by the ACHCS.

### **1.1 Previous Activities**

Following the USTs' removal in 1989, soil and groundwater samples were collected to evaluate the extent of soil and groundwater contamination. During the removal activities over 1,250 cubic yards of fuel-impacted soils were excavated and stockpiled at the Site. Between January and March 1990 approximately 1,820 cubic yards of clean fill material was imported to the Site and used to fill the tank excavation pit.

In October 1993, Engineering Science, Inc. (ESI) prepared a workplan to install three groundwater monitoring wells and further characterize the existing stockpiled soils at the Site. The ESI workplan was approved by the ACHCS in October 1993, but it was not implemented.

In February 1996, Fuller Excavation and Demolition, Inc. (FE&DI) visited the Site to examine and estimate the amount of stockpiled soil at the Site. Field measurements suggested that as much as 2,500 cubic yards of soil was actually stockpiled at the Site. The source of additional soils was unknown, but FE&DI theorized that the excess soil may have been generated during the residential development of the main portion of the Minami Nursery property and discarded at the Site. The results of laboratory analyses on the soil samples collected from the stockpiled soils showed that, predominantly, oil and grease were present in the stockpiled soils at concentrations up to 100 mg/kg. The results of the laboratory analyses also indicated the presence of benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX) in the stockpiled soils.

In May 1996, FE&DI installed three 2-inch diameter groundwater monitoring wells (MW-1, MW-2, and MW-3) at the Site. The location of the groundwater monitoring wells had been selected by ESI in their 1993 approved workplan. Presumably, MW-1 was installed within the USTs' excavation pit while MW-2 and MW-3 were placed in a downgradient area to evaluate the extent of groundwater contamination beneath the Site. During the well installation activity, groundwater was encountered at 15 ½ feet below ground surface (bgs) and rose slightly to a depth of approximately 14 feet bgs. The first groundwater monitoring event was conducted on June 4, 1996. No evidence of floating product was observed in the wells; however, a noticeable hydrocarbon odor was noted in MW-1. The results of the groundwater monitoring event indicated that the groundwater beneath the

Site is flowing toward the west-northwest with an average gradient of 0.005 ft/ft (FE&DI, June 1996).

The results of the laboratory analyses on soil samples collected during the installation of the groundwater monitoring wells did not indicate the presence of petroleum hydrocarbons in surface or subsurface soils. However, the results of the laboratory analyses on groundwater samples collected from MW-1 indicated detectable concentrations of total oil and grease (TOG) up to 1,800 µg/l, total petroleum hydrocarbon as gasoline (TPH-g) up to 4,100 µg/l, BTEX up to 36 µg/l and a non-detectable concentration of total petroleum hydrocarbons as diesel (TPH-d) and tertiary butyl ether (MtBE). No petroleum hydrocarbons or its constituents were detected in MW-2 and MW-3 located downgradient from MW-1.

Following the well installations, monthly groundwater monitoring events were conducted from July, 1996 through October 1996 by FE&DI. In August 1997, an additional groundwater monitoring event was conducted by Geomatik Environmental and Geological Services. However, due to vandalism no groundwater sample were collected from MW-1 during this monitoring event. The results of the laboratory analyses indicated the presence of TOG in MW-2 at 1,300 µg/l.

The results of the laboratory analyses on composite soil samples collected from the stockpiled soils indicated the presence of low levels of TOG (up to 570 mg/kg) and TPH-d (up to 53 mg/kg). However, no BTEX or MtBE was detected in stockpiled soils.

The most recent groundwater monitoring event was conducted by Horizon Environmental on behalf of FE&DI on April 18, 1998. During this period no water samples were collected from MW-1 and MW-3 because both wells had been vandalized with obstructions present in each well casing. The results of the



laboratory analyses on groundwater samples collected from MW-2 did not detect the presence of TOG (at detection limit of 5,000 µg/l), BTEX (at detection limit of 0.5 µg/l), TPH-d and TPH-g (at detection limit of 50 µg/l) .

## **2.0 SCOPE OF WORK**

The ACHCS in their letter dated September 7, 2001, requested a workplan to conduct a subsurface investigation to include collection and testing of soil and groundwater samples beneath the Site. Based on the ACHCS 's request, the scope of work included the installation of hydropunches and collecting soil and grab groundwater samples to evaluate the current status of soil and groundwater contamination beneath the Site. Based on the approved workplan, SOMA performed the following tasks:

- Task 1: Permit Acquisition and Preparation of Site Health and Safety Plan**
- Task 2: Drilling Hydropunches and Collecting Grab Groundwater and Soil Samples**
- Task 3: Laboratory Analysis**
- Task 4: Report Preparation**

The following are brief descriptions of the above tasks.

### **2.1 Permit Acquisition and Preparation of Site Health and Safety Plan**

For the drilling and installation of hydropunches, necessary permits were obtained from the Alameda County Public Works Agency, Water Resources Section.

Prior to the commencement of field activity, a site-specific health and safety plan was prepared by SOMA. The health and safety plan (HASP), was designed to address safety provisions during field activities. It provided procedures to protect

the field crew from physical and chemical hazards resulting from drilling and sampling. The HASP established personnel responsibilities, general safe work practices and field procedures, personal protective equipment standards, decontamination procedures, and emergency action plans.

## **2.2 Installation of Hydropunches and Sampling**

SOMA drilled six hydropunches around existing/vandalized groundwater monitoring wells, especially around MW-1, in order to evaluate the existing soil and groundwater quality conditions beneath the Site. The borings were advanced to a total depth of 22 feet bgs. The locations of these hydropunches are shown in Figure-2. SOMA used a truck mounted direct penetration technology (DPT) drill, model Geoprobe 5400, to drill these hydropunches. This method is fast for collecting soil and grab groundwater samples and does not generate soil cuttings, which require disposal. All borings yielded groundwater within five to ten minutes after terminating the drilling. One soil sample was collected at capillary fringe at interface between the vadose zone and groundwater.

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

Disposable bailers (1/4 inch in diameter) were used to collect grab groundwater samples. Grab groundwater samples for each hydropunch were transferred into four 40 ml VOA vials. Soil samples were collected using a 3/4 inch diameter polyethylene tubing inserted in the sampling tip of the drill. Both soil and grab groundwater samples were kept in an ice chest and were transported to Curtis and Tompkins immediately after completion of the Site's work. After the sampling was complete, all borings were sealed with neat cement grout.

### **2.3 Laboratory Analysis**

The soil and groundwater samples were analyzed for BTEX, MTBE and total petroleum hydrocarbons as gasoline (TPH-g) using EPA Methods 8020 and 8015 Modified. One soil sample was analyzed for total lead using EPA analysis Method 6010 and also analyzed for total organic carbon content and bulk density and the results are included in Appendix A.

### **3.0 Results and Recommendations**

Table-1 presents a brief description of field observations during the drilling of the hydropunches. All soil borings were terminated at a total depth of twenty-two feet and depths to watertable ranged between 13.8 and 16 feet.

The analytical results of the soil and grab groundwater are summarized in Tables 2 and 3, respectively. As these tables show the concentrations of all petroleum chemicals in the soil and grab groundwater samples were below the detection limits of the analytical procedures used by Curtis and Tompkins Laboratories. Therefore, we recommend that a "no further action" letter should be issued by the ACHES to the Site's owner.

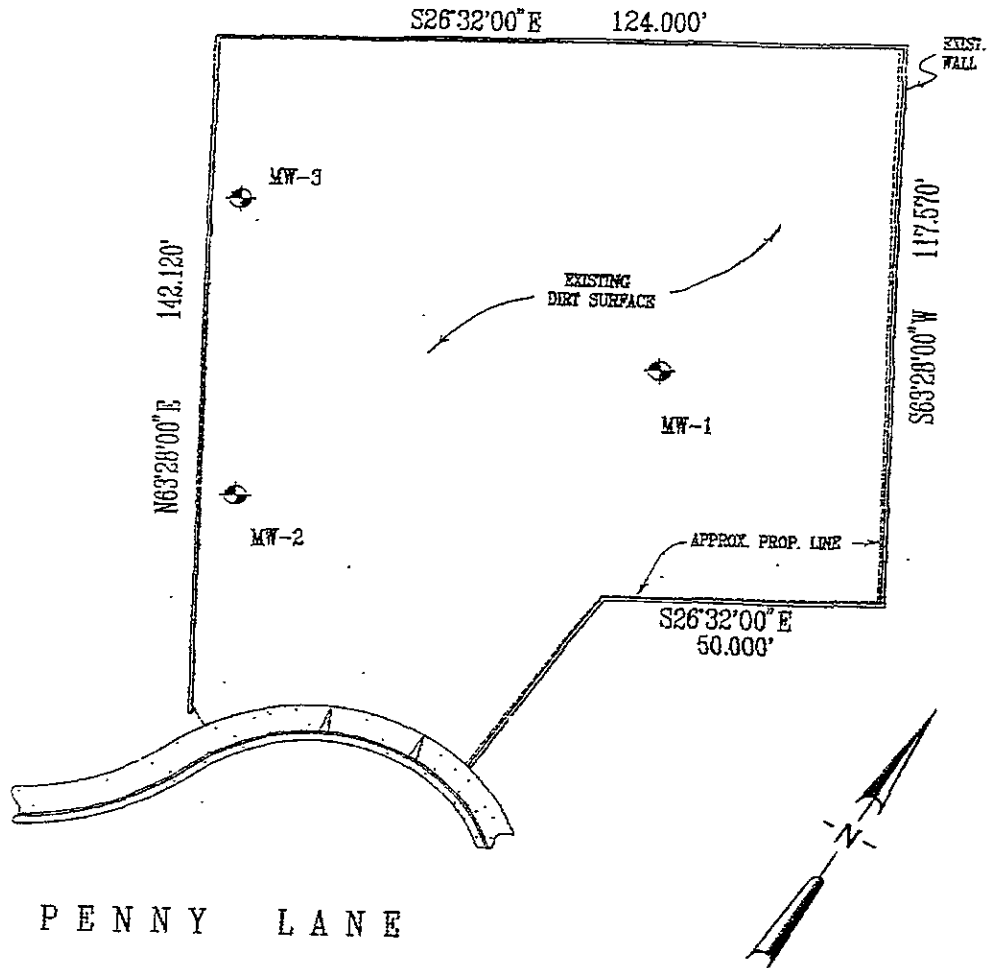
### 3.0 REFERENCES

Horizon Environmental Inc. May 12, 1998 "Soil and Groundwater Sampling Report, Second Quarter 1998".

Geomatik Environmental and Geological Services, August 31, 1997 "Letter Report Documenting Groundwater Sampling at Former Minami Nursery Site Located at the End of Penny Lane in Hayward, California"

Alameda County Health Care Services, September 7, 2001 a Letter in Connection with Request for Conducting Subsurface Investigation.

# FIGURES



Map Scale: 1 inch = 30 feet

Base Map: Site Survey Plat Map for the Former Minasi Nursery Property in San Lorenzo, California. (Ron Archer Civil Engineering, 1996)

Figure-1: Site Map and Location of Groundwater Monitoring Wells

# TABLES

**Table-1**  
**Field Observation During Drilling, November 28, 2001**  
**Penny Lane San Lorenzo, CA**

<b>Borehole</b>	<b>Total Depth (ft)</b>	<b>Depth To Water (ft)</b>	<b>Petroleum Odor</b>
HP-1	22	15.1	NO
HP-2	22	14.9	NO
HP-3	22	13.8	NO
HP-4	22	15.4	NO
HP-5	22	15.8	NO
HP-6	22	16	NO



**Table-2**  
**Soil Analytical Data, November 28, 2001**  
**Penny Lane San Lorenzo, CA**

Monitoring Well	Matrix	TPH-g (µg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl-Benzene (µg/kg)	Total Xylenes (µg/kg)	MtBE* (µg/kg)
HP-1-15'	Soil	ND	ND	ND	ND	ND	ND
HP-2-15'	Soil	ND	ND	ND	ND	ND	ND
HP-3-15'	Soil	ND	ND	ND	ND	ND	ND
HP-4-15'	Soil	ND	ND	ND	ND	ND	ND
HP-5-15'	Soil	ND	ND	ND	ND	ND	ND
HP-6-15'	Soil	ND	ND	ND	ND	ND	ND
DL		50	5	5	5	5	20.0

ND = Below detectable limit.

DL = Detection Limit of the laboratory

**Table-3**  
**Groundwater Analytical Data, November 28, 2001**  
**Penny Lane San Lorenzo, CA**

Monitoring Well	Matrix	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE* (µg/L)
HP-1	Water	ND	ND	ND	ND	ND	ND
HP-2	Water	ND	ND	ND	ND	ND	ND
HP-3	Water	ND	ND	ND	ND	ND	ND
HP-4	Water	ND	ND	ND	ND	ND	ND
HP-5	Water	ND	ND	ND	ND	ND	ND
HP-6	Water	ND	ND	ND	ND	ND	ND
DL		50	0.5	0.5	0.5	0.5	2.0

ND = Below detectable limit.

DL = Detection Limit of the laboratory

# Appendix A

Permit, Chain of Custody Form and Laboratory Reports



# ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION  
399 ELMHURST ST. HAYWARD CA. 94544-1395  
PHONE (510) 670-5554  
FAX (510)782-1939

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 600 Shirley Ave, Hayward CA

FOR OFFICE USE

PERMIT NUMBER WA1-1012  
WELL NUMBER \_\_\_\_\_  
APN \_\_\_\_\_

CLIENT Name Ms Janet Minami  
Address 930 7th Street Phone \_\_\_\_\_  
City Hayward, CA Zip 94541

APPLICANT Name Samp Environmental Engineering  
Address 2680 Bishop Dr 203 Phone 925 214 6601  
City San Ramon CA Zip 94583

TYPE OF PROJECT  
Well Construction  Geotechnical Investigation   
Cathodic Protection  General   
Water Supply  Contamination   
Monitoring  Well Destruction

PROPOSED WATER SUPPLY WELL USE  
New Domestic  Replacement Domestic   
Municipal  Irrigation   
Industrial  Other \_\_\_\_\_

DRILLING METHOD:  
Mud Rotary  Air Rotary  Auger   
Cable  Other

DRILLER'S NAME Fisch Environmental

DRILLER'S LICENSE NO. C57683865

WELL PROJECTS  
Drill Hole Diameter \_\_\_\_\_ in. Maximum \_\_\_\_\_ ft.  
Casing Diameter \_\_\_\_\_ in. Depth \_\_\_\_\_ ft.  
Surface Seal Depth \_\_\_\_\_ ft. Owner's Well Number \_\_\_\_\_

GEOTECHNICAL PROJECTS  
Number of Borings SIX Maximum \_\_\_\_\_  
Hole Diameter 8 1/2 in. Depth 30 ft.

ESTIMATED STARTING DATE 11/8/01  
ESTIMATED COMPLETION DATE 11/9/01

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-65

APPLICANT'S SIGNATURE Naser Pakrou DATE 10/26/01

PLEASE PRINT NAME \_\_\_\_\_

APPROVED \_\_\_\_\_

DATE \_\_\_\_\_

### PERMIT CONDITIONS Circled Permit Requirements Apply

#### A. GENERAL

1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

#### B. WATER SUPPLY WELLS

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 30 feet for domestic and irrigation wells unless a lesser depth is specially approved.

#### C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

#### D. GEOTECHNICAL

Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

#### E. CATHODIC

Fill hole anode zone with concrete placed by tremie.

#### F. WELL DESTRUCTION

Send a map of work site. A separate permit is required for wells deeper than 45 feet.

#### G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

10-30-01  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
*(Handwritten signature and date)*





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

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

ANALYTICAL REPORT

Prepared for:

SOMA Environmental Engineering Inc.  
2680 Bishop Dr.  
Suite 203  
San Ramon, CA 94583

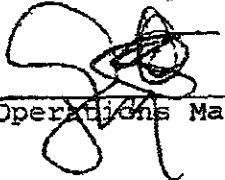
Date: 04-DEC-01  
Lab Job Number: 155693  
Project ID: 2560  
Location: Penny Lane

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:

  
Project Manager

Reviewed by:

  
Operations Manager

This package may be reproduced only in its entirety.

# CHAIN OF CUSTODY FORM

ins, Ltd.

Since 1878

set

94710

Phone

Fax

C&T

LOGIN #

155693

Analyses

Sampler: Naser Pakrou

Report To: Naser Pakrou

Lana

Company: SOMO Env. Eng

Telephone: 925 244 6600

Fax: 925 244 6601

Standard

Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes	TPH	BTEX, MTBE	Bulk Density	Lead, total organic carbon
	Soil	Water	Waste		HCL	NH2SO	HNO3	ICE					
28 8:55	✓	✓	✓	4	✓				Confirm MTBE Peaks with 8260	✓	✓		
9:55	✓	✓	✓	1	✓					✓	✓		
10:20	✓	✓	✓	1	✓					✓	✓		
11:00	✓	✓	✓	1	✓					✓	✓		
11:30	✓	✓	✓	1	✓					✓	✓		
12:00	✓	✓	✓	1	✓					✓	✓		
10:20	✓			1						✓	✓		
8:55	✓			1						✓	✓		
9:55	✓			1					✓	✓			
10:20	✓			1					✓	✓			
11:00	✓			2					✓	✓			
11:30	✓			1					✓	✓			
12:00	✓			1					✓	✓			

Received  Cold  Ambient  On Ice

Preservation Correct?  
 Yes  No  N/A

RELINQUISHED BY:

Joyce Bobek Joyce Bobek

11/29/01 1:22 p.m.  
DATE/TIME

RECEIVED BY:

[Signature]

11/29/01 1:22  
DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

Signature



Gasoline by GC/FID CA LUFT

Lab #: 155693 Location: Penny Lane  
Client: SOMA Environmental Engineering Inc. Prep: EPA 5030B  
Project#: 2560 Analysis: 8015B (M)  
Matrix: Water Sampled: 11/28/01  
Units: ug/L Received: 11/29/01  
Diln Fac: 1.000 Analyzed: 12/01/01  
Batch#: 68408

Field ID: HP-6 Lab ID: 155693-001  
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	REC	Limits
Trifluorotoluene (FID)	100	59-135
Bromofluorobenzene (FID)	98	60-140

Field ID: HP-5 Lab ID: 155693-002  
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	102	60-140

Field ID: HP-4 Lab ID: 155693-003  
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	102	60-140

Field ID: HP-1 Lab ID: 155693-004  
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	104	60-140



## Gasoline by GC/FID CA LUFT

Lab #:	155693	Location:	Penny Lane
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2560	Analysis:	8015B (M)
Matrix:	Water	Sampled:	11/28/01
Units:	ug/L	Received:	11/29/01
Diln Fac:	1.000	Analyzed:	12/01/01
Batch#:	68408		

Field ID: HP-2                      Lab ID: 155693-005  
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Minutes
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	102	60-140

Field ID: HP-3                      Lab ID: 155693-006  
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Minutes
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	105	60-140

Type: BLANK                      Lab ID: QC163858

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Minutes
Trifluorotoluene (FID)	97	59-135
Bromofluorobenzene (FID)	93	60-140





## Gasoline by GC/FID CA LUFT

Lab #:	155693	Location:	Penny Lane
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2560	Analysis:	8015B (M)
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/28/01
Basis:	as received	Received:	11/29/01

Field ID:	HP-6-15	Batch#:	68416
Type:	SAMPLE	Analyzed:	12/03/01
Lab ID:	155693-008		

Analyte	Result	RL
Gasoline C7-C12	ND	0.93

Surrogate	%REC	Limite
Trifluorotoluene (FID)	92	62-138
Bromofluorobenzene (FID)	85	46-150

Field ID:	HP-5-15	Batch#:	68416
Type:	SAMPLE	Analyzed:	12/03/01
Lab ID:	155693-009		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limite
Trifluorotoluene (FID)	96	62-138
Bromofluorobenzene (FID)	91	46-150

Field ID:	HP-4-15	Batch#:	68416
Type:	SAMPLE	Analyzed:	12/03/01
Lab ID:	155693-010		

Analyte	Result	RL
Gasoline C7-C12	ND	0.91

Surrogate	%REC	Limite
Trifluorotoluene (FID)	93	62-138
Bromofluorobenzene (FID)	90	46-150

Field ID:	HP-1-15	Batch#:	68466
Type:	SAMPLE	Analyzed:	12/04/01
Lab ID:	155693-011		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limite



## Gasoline by GC/FID CA LUFT

Lab #:	155693	Location:	Penny Lane
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2560	Analysis:	8015B (M)
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/28/01
Basis:	as received	Received:	11/29/01

Field ID:	HP-2-15	Batch#:	68466
Type:	SAMPLE	Analyzed:	12/04/01
Lab ID:	155693-012		

Analyte	Result	RI
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	62-138
Bromofluorobenzene (FID)	93	46-150

Field ID:	HP-3-15	Batch#:	68416
Type:	SAMPLE	Analyzed:	12/03/01
Lab ID:	155693-013		

Analyte	Result	RI
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	62-138
Bromofluorobenzene (FID)	94	46-150

Type:	BLANK	Batch#:	68416
Lab ID:	QC163886	Analyzed:	12/03/01

Analyte	Result	RI
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	62-138
Bromofluorobenzene (FID)	91	46-150

Type:	BLANK	Batch#:	68466
Lab ID:	QC164105	Analyzed:	12/04/01

Analyte	Result	RI
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	62-138
Bromofluorobenzene (FID)	94	46-150







Benzene, Toluene, Ethylbenzene, Xylenes

Lab #: 155693 Location: Penny Lane  
 Client: SOMA Environmental Engineering Inc. Prep: EPA 5030B  
 Project#: 2560 Analysis: EPA 8021B  
 Matrix: Soil Diln Fac: 1.000  
 Units: ug/Kg Sampled: 11/28/01  
 Basis: as received Received: 11/29/01

Field ID: HP-6-15 Batch#: 68416  
 Type: SAMPLE Analyzed: 12/03/01  
 Lab ID: 155693-008

Analyte	Result	RL
MTBE	ND	19
Benzene	ND	4.6
Toluene	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6

Surrogate	%REC	Limits
Trifluorotoluene (PID)	87	65-134
Bromofluorobenzene (PID)	79	55-138

Field ID: HP-5-15 Batch#: 68416  
 Type: SAMPLE Analyzed: 12/03/01  
 Lab ID: 155693-009

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.1
Toluene	ND	5.1
Ethylbenzene	ND	5.1
m,p-Xylenes	ND	5.1
o-Xylene	ND	5.1

Surrogate	%REC	Limits
Trifluorotoluene (PID)	90	65-134
Bromofluorobenzene (PID)	83	55-138

Field ID: HP-4-15 Batch#: 68416  
 Type: SAMPLE Analyzed: 12/03/01  
 Lab ID: 155693-010

Analyte	Result	RL
MTBE	ND	18
Benzene	ND	4.5
Toluene	ND	4.5
Ethylbenzene	ND	4.5
m,p-Xylenes	ND	4.5
o-Xylene	ND	4.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	90	65-134
Bromofluorobenzene (PID)	83	55-138



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155693	Location:	Penny Lane
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2560	Analysis:	EPA 8021B
Matrix:	Soil	Diln Fac:	1.000
Units:	ug/Kg	Sampled:	11/28/01
Basis:	as received	Received:	11/29/01

Field ID:	HP-1-15	Batch#:	68466
Type:	SAMPLE	Analyzed:	12/04/01
Lab ID:	155693-011		

Analyte	Result	RL
MTBE	ND	20
Benzene	ND	5.1
Toluene	ND	5.1
Ethylbenzene	ND	5.1
m,p-Xylenes	ND	5.1
o-Xylene	ND	5.1

Surrogate	REC	Limit
Trifluorotoluene (PID)	73	65-134
Bromofluorobenzene (PID)	72	55-138

Field ID:	HP-2-15	Batch#:	68466
Type:	SAMPLE	Analyzed:	12/04/01
Lab ID:	155693-012		

Analyte	Result	RL
MTBE	ND	21
Benzene	ND	5.3
Toluene	ND	5.3
Ethylbenzene	ND	5.3
m,p-Xylenes	ND	5.3
o-Xylene	ND	5.3

Surrogate	REC	Limit
Trifluorotoluene (PID)	76	65-134
Bromofluorobenzene (PID)	74	55-138

Field ID:	HP-3-15	Batch#:	68416
Type:	SAMPLE	Analyzed:	12/03/01
Lab ID:	155693-013		

Analyte	Result	RL
MTBE	ND	22
Benzene	ND	5.4
Toluene	ND	5.4
Ethylbenzene	ND	5.4
m,p-Xylenes	ND	5.4
o-Xylene	ND	5.4

Surrogate	REC	Limit
Trifluorotoluene (PID)	76	65-134
Bromofluorobenzene (PID)	74	55-138



**Total Organic Carbon (TOC)**

Lab #:	155693	Location:	Penny Lane
Client:	SOMA Environmental Engineering Inc.	Analysis:	WALKLEY-BLACK
Project#:	2550		
Analyte:	Total Organic Carbon	Diln Fac:	1.000
Field ID:	HP-1-15	Batch#:	68438
Matrix:	Soil	Sampled:	11/28/01
Units:	%	Received:	11/29/01
Basis:	as received	Analyzed:	12/04/01

Type	Lab ID	Result	RL
SAMPLE	155693-011	0.04	0.01
BLANK	QC163990	ND	0.01

Curtis & Tompkins, Ltd.  
 2323 Fifth Street  
 Berkeley, CA 94710-2407

Date Received: 12/03/01  
 Work Order No: 01-12-0008  
 Preparation: Total Digestion  
 Method: EPA 6010B

Project: 155693

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Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
HP-1-15	01-12-0008-1	Solid	11/28/01	12/03/01	12/03/01	011203ics2

Parameter	Result	RL	DF	Qual	Units
Lead	4.87	0.50	1		mg/kg

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
Method Blank	057-01-002-2,853	Solid	N/A	12/03/01	12/03/01	011203ics2

Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.500	1		mg/kg





### PHYSICAL PROPERTIES DATA

(METHODOLOGY: ASTM D2937)

PROJECT NAME: N/A  
PROJECT NO: 155693

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENT. (1)	BULK DENSITY (dry) (g/cc)
HP-4-15	15.00	V	1.88

1.  $V_s$  = Sample Volume (cc)  $V_b$  = Bulk Volume (cc)  $V_a$  = Air Volume (cc)  $V_w$  = Water Volume (cc)  $V_g$  = Gas Volume (cc)