



Subsurface Consultants, Inc.

ENVIRONMENTAL  
PROTECTION  
96 OCT -8 AM 8:47

R. William Rudolph, P.E.  
President

October 4, 1996  
SCI 609.004

Ms. Jennifer Eberle  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway  
Alameda, California 94502

**Supplemental Groundwater Investigation**  
2250 Telegraph Avenue  
Oakland, California

Dear Ms. Eberle:

This letter presents the results of an investigation conducted by Subsurface Consultants, Inc. (SCI) to define the extent of groundwater contamination downgradient of 2250 Telegraph Avenue (Site). The scope of services described herein was presented in the SCI workplan dated February 8, 1996 which was approved by the Alameda County Health Care Services Agency (County). In general, the work performed for this phase of investigation included the installation of five temporary well points, and analytical testing of grab groundwater samples collected from the well points.

### **Background**

As described in the SCI tank removal report dated July 1, 1991, two 10,000-gallon underground gasoline storage tanks and one 280-gallon underground waste oil tank were removed from the site in August 1990. Approximately 500 cubic yards (c.y.) of gasoline impacted soils were aerated on-site and disposed of at a Class III sanitary landfill. In February 1994, SCI observed the excavation of additional contaminated soil from the former waste oil tank area and installed four groundwater monitoring wells. The limits of prior soil excavation and existing monitoring wells are shown on Plate 1.

SCI has conducted a quarterly groundwater monitoring program at the site since March 1994. Data generated to date indicates that groundwater has been impacted by Total Petroleum Hydrocarbons within the gasoline and diesel range; benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,2-

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Alameda County Health Care Services Agency  
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dichloroethane (1,2-DCA); and tetrachloroethene (PCE). However, the extent of impact to groundwater has not yet been defined.

In its letter dated November 8, 1995 to Buttner Properties, the County requested that the extent of groundwater contamination be defined downgradient of the site. In response to the County's November 8, 1995 letter, SCI submitted to the County a workplan (February 8, 1996) detailing the installation and sampling of temporary well points. As proposed in the workplan, data from the well points were to be used to select a location for a new downgradient well. On March 6, 1996, ACHCS accepted the workplan for implementation.

#### Temporary Well Point Installation

Prior to beginning field activities for the current investigation, excavation and drilling permits were obtained from the City of Oakland and the Alameda County Flood Control and Water Conservation District Zone 7. Copies of the permits are attached. In addition, Underground Service Alert was contacted to notify local utility companies of the proposed work.

On May 30, 1996, Precision Sampling continuously cored 5 shallow soil borings using a portable, hydraulically-driven soil coring system (Enviro-Core). Boring 1 was advanced to a depth of approximately 16 feet below the ground surface (bgs). Borings 2 through 5 were completed to a depth of 19 feet bgs to facilitate groundwater sampling; the anticipated depth to groundwater was approximately 8 to 10 feet bgs. Upon completion of the corings, a temporary well point consisting of a 10-foot section of well screen connected to blank casing was lowered into each borehole to collect groundwater samples. The grab groundwater samples were collected from temporary well points 2, 3, and 5 at the end of the first day of investigation. Because of slow recharge, grab groundwater samples from well points 1 and 4 were collected the following day. After completion of the grab groundwater samples, the temporary well points were removed and the borings were backfilled with cement grout using tremie techniques. The surface of the soil borings were then patched with asphalt.

SCI observed coring activities and retained soil samples in brass liners for visual classification of soil conditions. **Recovered soil cuttings were screened for the presence of organic vapors using an organic vapor meter (OVM).** Detailed logs of test borings 1 through 5 are presented on Plates 2 through 6. Soils were classified using the Unified Soil Classification System, presented on Plate 7.

NO  
soil  
analysed

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Alameda County Health Care Services Agency  
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Drilling and sampling equipment were steam cleaned prior to each use in order to prevent cross-contamination. Steam cleaning water was contained in 55-gallon steel drums. At the completion of drilling, the drums were removed from the site by the drilling subcontractor for disposal at a regulated disposal facility.

### **Soil and Groundwater Conditions**

Soils encountered during installation of the temporary wells were consistent with soil conditions found during the February 1994 groundwater investigation conducted by SCI. At the temporary well points, surficial soils in the upper 5 feet generally consisted of gravelly sand and sandy clay fill followed by layers of silty sand, clayey sand, and sandy silts. **From 5 feet bgs to the depth of the soil borings, 19 feet, soil generally consisted on silty clays and clayey silts with lenses of silty sand.**

Groundwater was measured in temporary well points 2, 3, and 5 at approximately 9 to 10 feet bgs. Groundwater was gauged in existing monitoring wells MW-1 through MW-4 prior to the installation of the temporary well points. The depth to water in these wells ranged between 9.69 feet (MW-3) and 11.56 feet (MW-2) below the top of casing. The direction of the groundwater gradient was calculated to be towards the southeast, which is consistent with previous data.

### **Analytical Testing**

The groundwater samples collected from the temporary wells were transported under Chain-of-Custody to Curtis & Tompkins, Ltd., an analytical laboratory certified by the State of California Department of Toxic Substances Control (DTSC). Grab groundwater samples collected from the current investigation were analyzed for the following:

1. Total Extractable Hydrocarbons (TEH) using EPA Methods 3550/8015 modified,
2. Total Volatile Hydrocarbons (TVH) and Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX) using EPA Methods 5030/8015 modified, and 8020, and
3. Halogenated Volatile Organic compounds (HVOC) using EPA Methods 5030/8010.

A summary of laboratory analytical results is presented in Table 1. Analytical test reports are attached.

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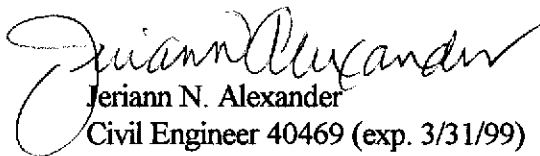
If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.



Samuel C. Won  
Project Engineer



Jeriann N. Alexander  
Civil Engineer 40469 (exp. 3/31/99)  
Registered Environmental Assessor 03130 (exp. 6/30/97)

SCW:JNA:sld

Attachments: Table 1- Summary of Groundwater Analytical Results, Temporary Well Points  
Table 2- Summary of Groundwater Elevation Data  
Plate 1- Site Plan  
Plate 2 through 6- Log of Test Borings 1 to 5  
Plate 7- Unified Soil Classification System  
Laboratory Analytical Reports and Chain-of-Custody Records  
Excavation and Drilling Permits

cc: Ms. Marianne Robison, Buttner Properties  
Mr. Wyman Hong, Zone 7 Alameda County Flood Control and Water Conservation District

**Table 1 Summary of Groundwater Analytical Results  
Temporary Well Points and Recent Quarterly Monitoring Data  
2250 Telegraph Avenue, Oakland, California, May 30 and 31, 1996**

Temporary Well Point	Date Sampled	Diesel (ug/L)	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	Other EPA 8010 (ug/L)
1	5/31/96	37,000 <sup>(2,3)</sup>	13,000 <sup>(1)</sup>	<50	<50	<50	380	ND
2	5/30/96	<50	250	<0.5	<0.5	13	3.4	ND
3	5/30/96	83 <sup>(1,2)</sup>	<50	<0.5	<0.5	<0.5	<0.5	20 (Freon)
4	5/31/96	1,900 <sup>(1,2)</sup>	11,000	130 <sup>(4)</sup>	66	340	260	ND
5	5/30/96	180 <sup>(1,2)</sup>	70 1	<0.5	<0.5	<0.5	<0.5	ND
MW-1	9/18/95	110	370	4.4	0.6	2	1.4	2.4 (1,2-DCE)
MW-2	9/18/95	<50	<50	<0.5	<0.5	<0.5	<0.5	ND
MW-3	9/18/95	770 <sup>(1)</sup>	1,500	400	11	2.2	33	ND
MW-4	9/18/95	1,231 <sup>(1)</sup>	3,000	12	<0.7	6.9	8.3	1.9 (1,1-DCE) 4 (chlorobenzene)

ND Not detected

ug/L Micrograms per liter

<50 Not detected at concentrations greater than laboratory reporting limit, i.e. 50 ug/L

1,1-DCE 1,1-dichloroethene

1,2-DCE 1,2-dichloroethene

1 Sample exhibits fuel pattern which does not resemble standard

2 Lighter hydrocarbons than indicated standard

3 Heavier hydrocarbons than indicated standard

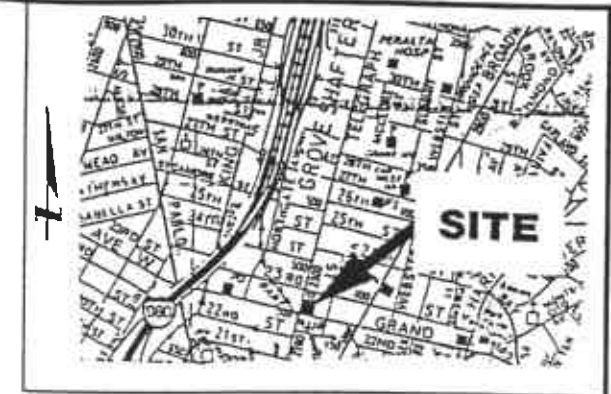
4 Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two

**Table 2**  
**Groundwater Elevation Data**  
**2250 Telegraph Avenue**  
**Oakland, California**

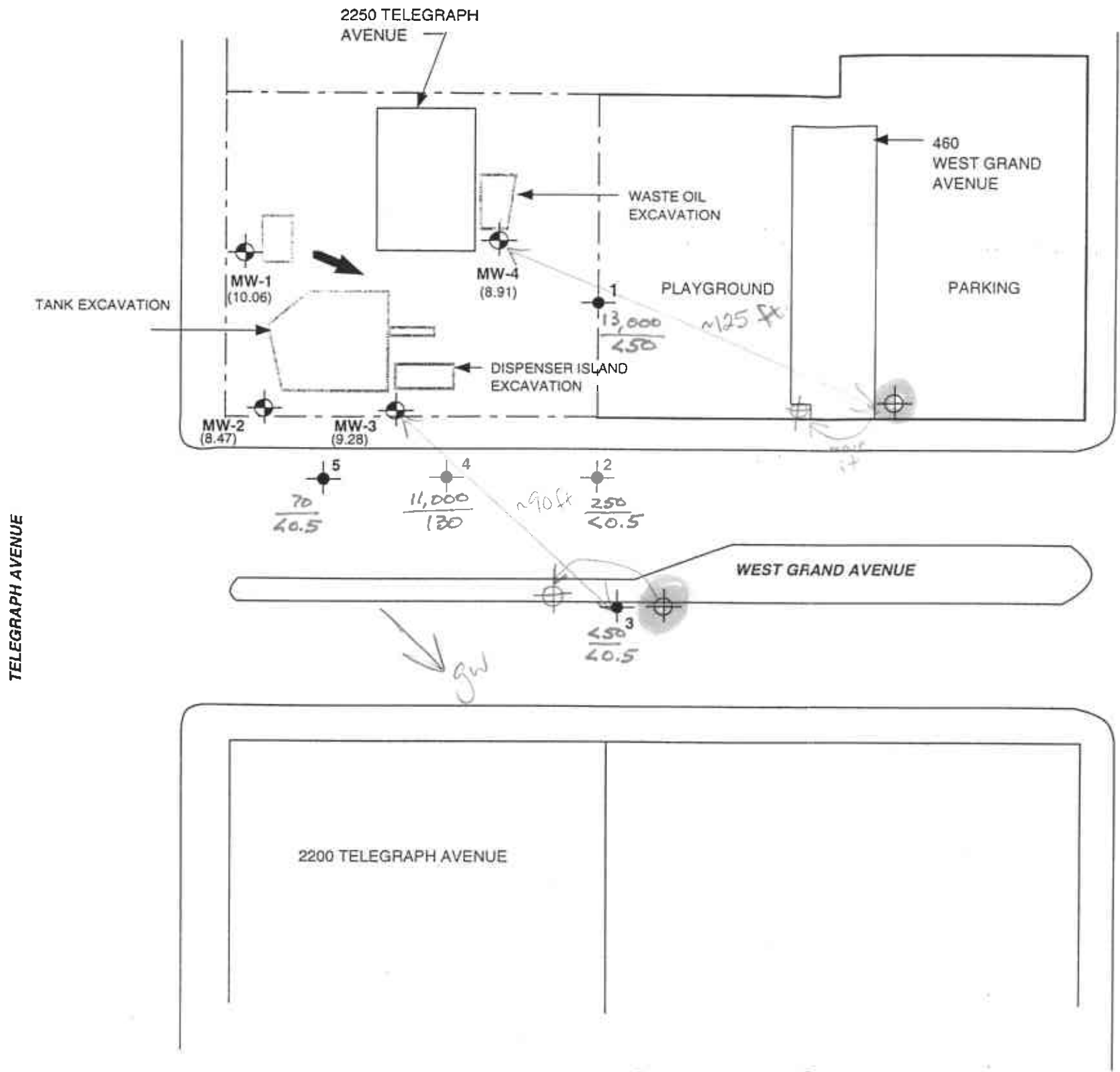
<b>Monitoring Well</b>	<b>Date</b>	<b>TOC Elevation (feet) MSL</b>	<b>Depth (feet)</b>	<b>Elevation (feet) MSL</b>
1	3/03/94	20.55	10.39	10.16
	3/10/94		10.54	10.01
	6/06/94		11.36	9.19
	9/07/94		11.92	8.63
	12/22/94		10.83	9.72
	3/17/95		9.73	10.82
	6/27/95		10.51	10.04
	9/18/95		11.12	9.43
	5/30/96		10.49	10.06
2	3/03/94	20.03	10.37	9.66
	3/10/94		10.53	9.50
	6/06/94		11.15	8.88
	9/07/94		11.72	8.31
	12/22/94		11.27	8.76
	3/17/95		9.85	10.18
	6/27/95		10.70	9.33
	9/18/95		11.67	8.36
	5/30/96		11.56	8.47
3	3/03/94	18.97	9.50	9.47
	3/10/94		9.51	9.26
	6/06/94		10.28	8.69
	9/07/94		10.75	8.22
	12/22/94		9.74	9.23
	3/17/95		8.85	10.12
	6/27/95		9.94	9.03
	9/18/95		10.54	8.43
	5/30/96		9.69	9.28
4	3/03/94	19.88	10.89	8.99
	3/10/94		11.19	8.69
	6/06/94		11.85	8.03
	9/07/94		12.86	7.02
	12/22/94		12.26	7.62
	3/17/95		10.10	9.78
	6/27/95		11.05	8.83
	9/18/95		11.84	8.04
	5/30/96		10.97	8.91

TOC = Top of Casing

Elevation Reference: USCGS benchmark W1197, 1969 with a reported elevation of +21.06 feet MSL datum.



VICINITY MAP



EXPLANATION

- STRUCTURE
- LIMITS OF EXCAVATION
- MONITORING WELL LOCATION
- (10.06) GROUNDWATER ELEVATION (FT. MSL) MEASURED 5/30/96
- TEMPORARY WELL INSTALLATION
- DIRECTION OF GROUNDWATER FLOW
- PROPOSED MONITORING WELL



APPROXIMATE SCALE (feet)



SITE PLAN

Subsurface Consultants

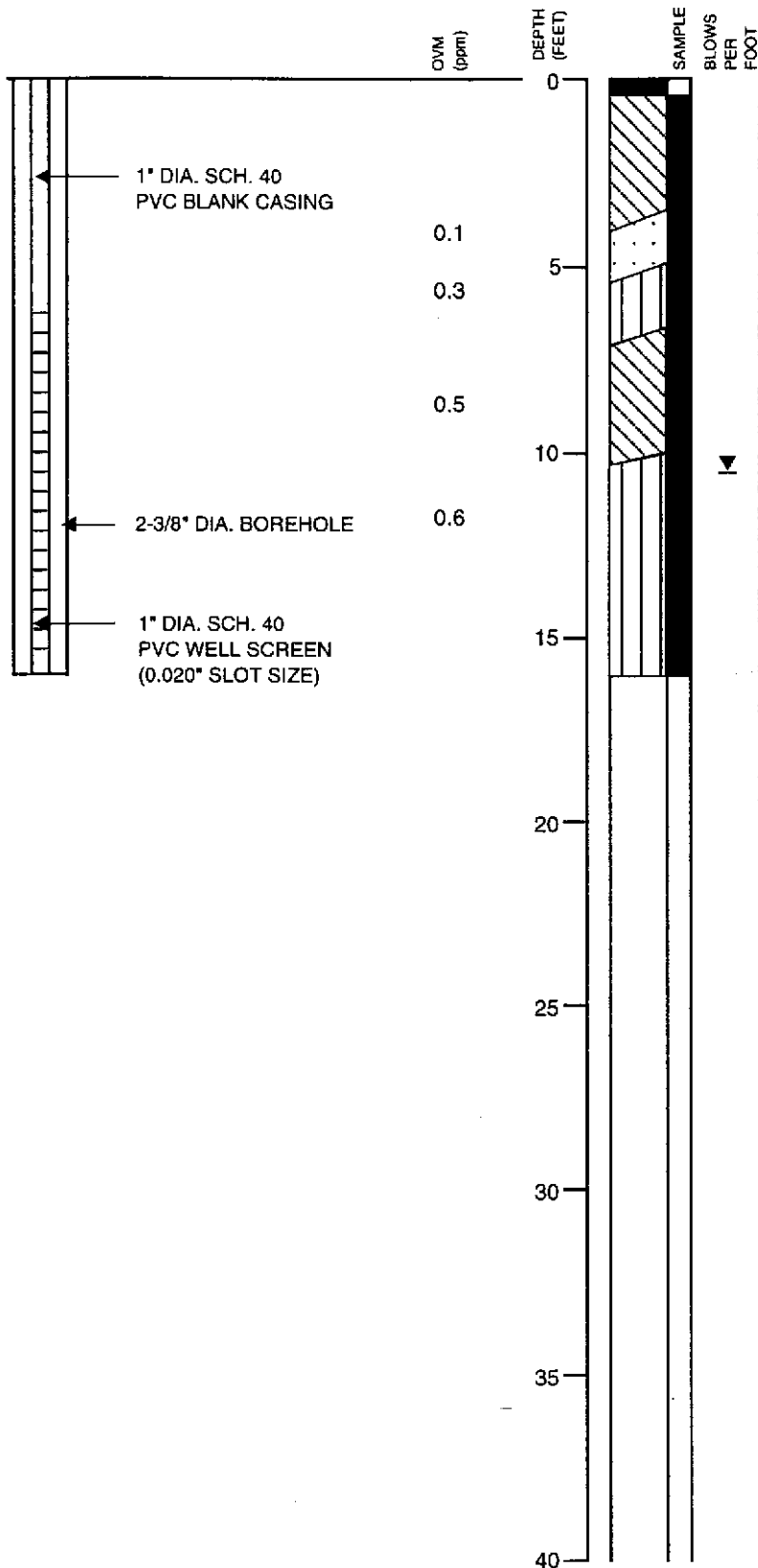
2250 TELEGRAPH AVENUE OAKLAND, CALIFORNIA		PLATE
JOB NUMBER	DATE	APPROVED
609.004	7/24/96	<b>1</b>

# LOG OF TEST BORING 1

EQUIPMENT · Enviro-core Direct Push

DATE DRILLED 5/30/96

ELEVATION -----



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2250 TELEGRAPH AVENUE - OAKLAND, CA

JOB NUMBER

609.004

DATE

6/5/96

APPROVED

PLATE

2

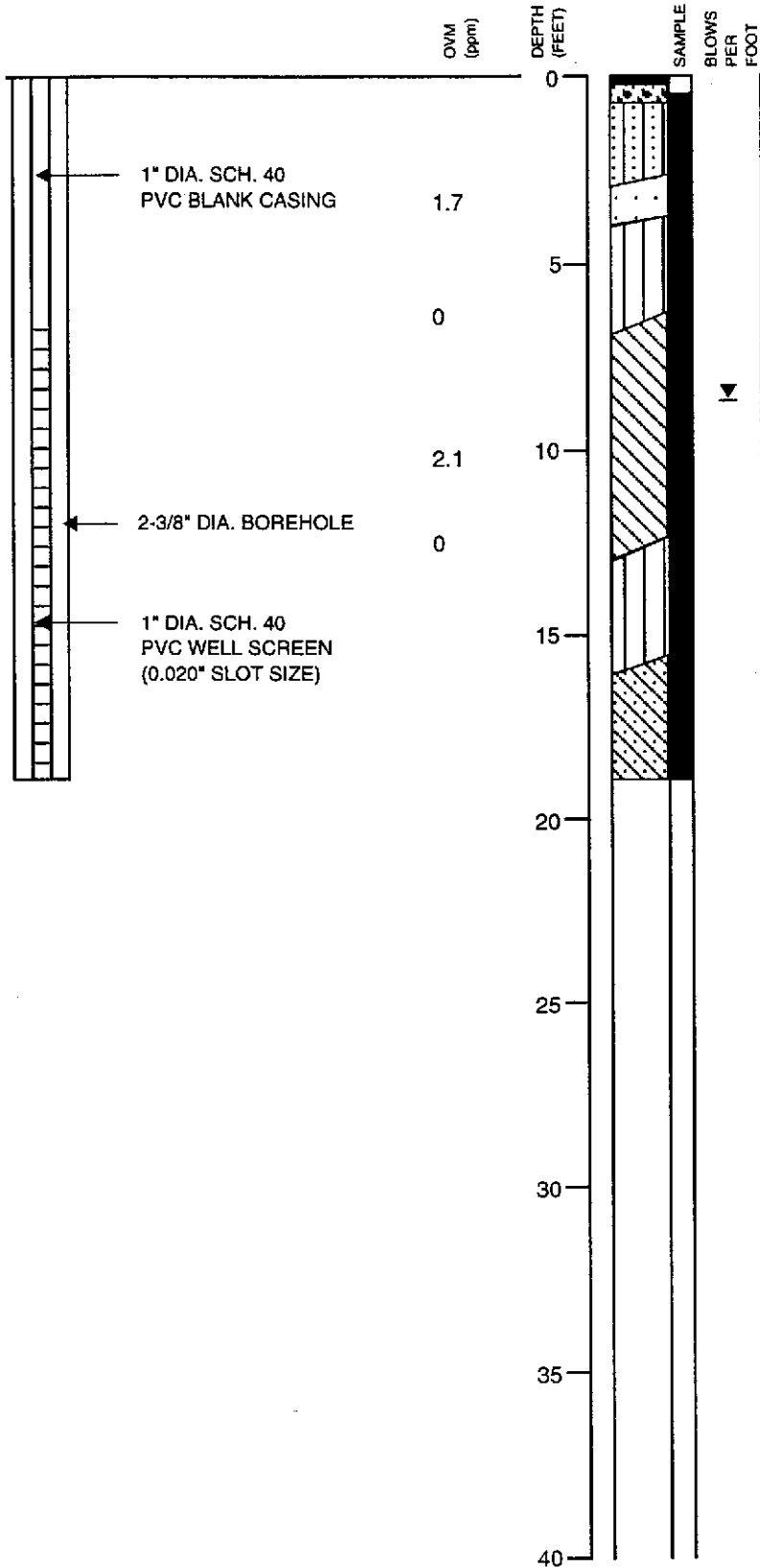


# LOG OF TEST BORING 2

EQUIPMENT . Enviro-core Direct Push

DATE DRILLED 5/30/96

ELEVATION -----



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2250 TELEGRAPH AVENUE - OAKLAND, CA

JOB NUMBER

609.004

DATE

6/5/96

APPROVED

PLATE

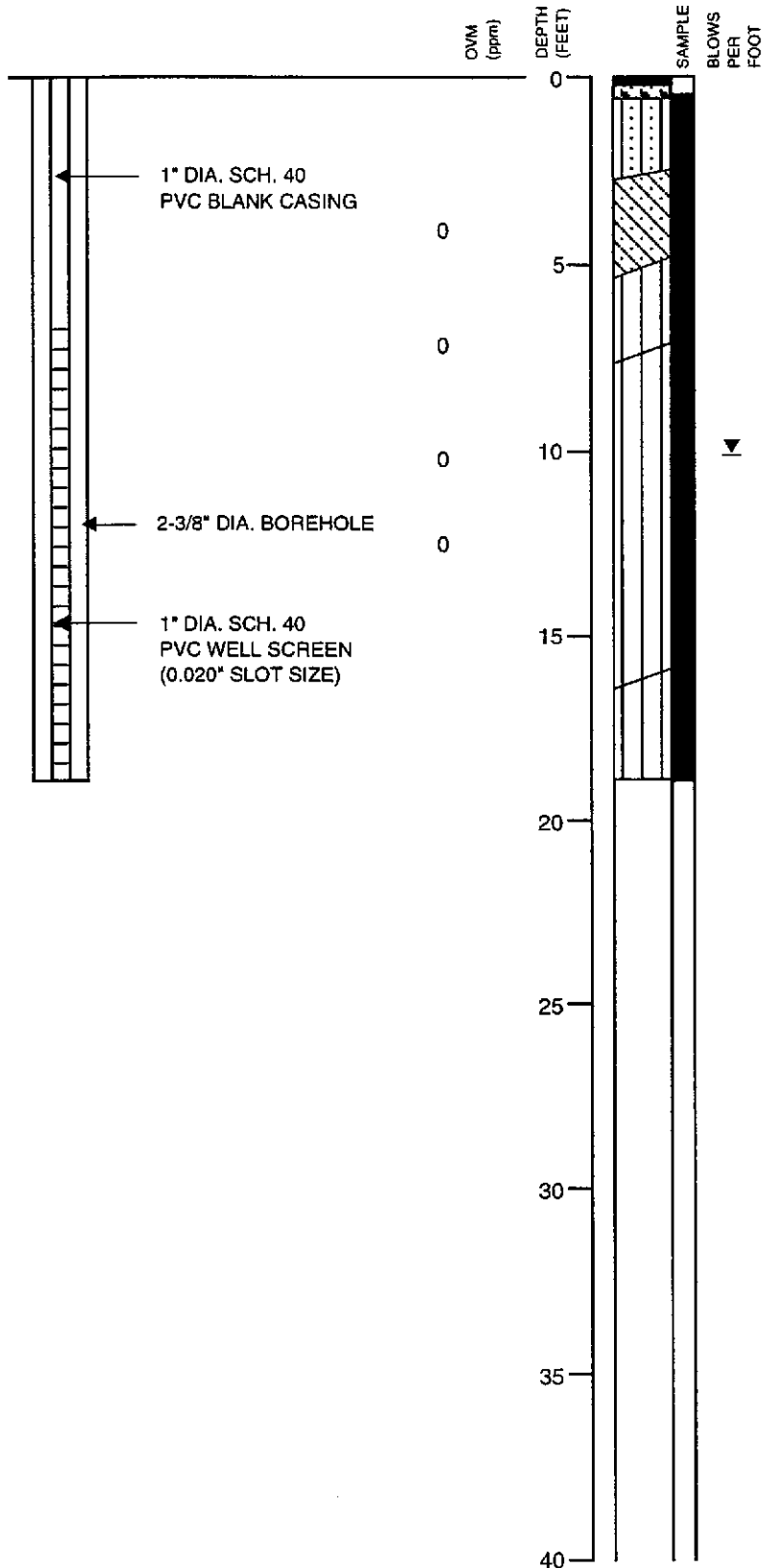
3

# LOG OF TEST BORING 3

EQUIPMENT Enviro-core Direct Push

DATE DRILLED 5/30/96

ELEVATION -----



ASPHALTIC CONCRETE - 2-inches thick  
 CEMENT CONCRETE - 4-inches thick  
 RED-BROWN SILTY SAND (SM)  
 medium stiff, moist (fill)  
 BROWN AND GRAY CLAYEY SAND (SC)  
 dense, moist (fill)  
 BLACK CLAYEY SILT (ML)  
 stiff, moist  
 GRAY-BROWN CLAYEY SILT (ML)  
 stiff, moist

▼ GROUNDWATER LEVEL MEASURED  
 ON MAY 30, 1996  
 Slight gas odor at 11 feet, becomes medium  
 stiff

BROWN SANDY SILT (ML)  
 stiff, moist

Well casing removed and borehole pressure  
 grouted with neat cement on May 30, 1996

Subsurface Consultants

2250 TELEGRAPH AVENUE - OAKLAND, CA

PLATE

JOB NUMBER  
609.004

DATE  
6/5/96

APPROVED

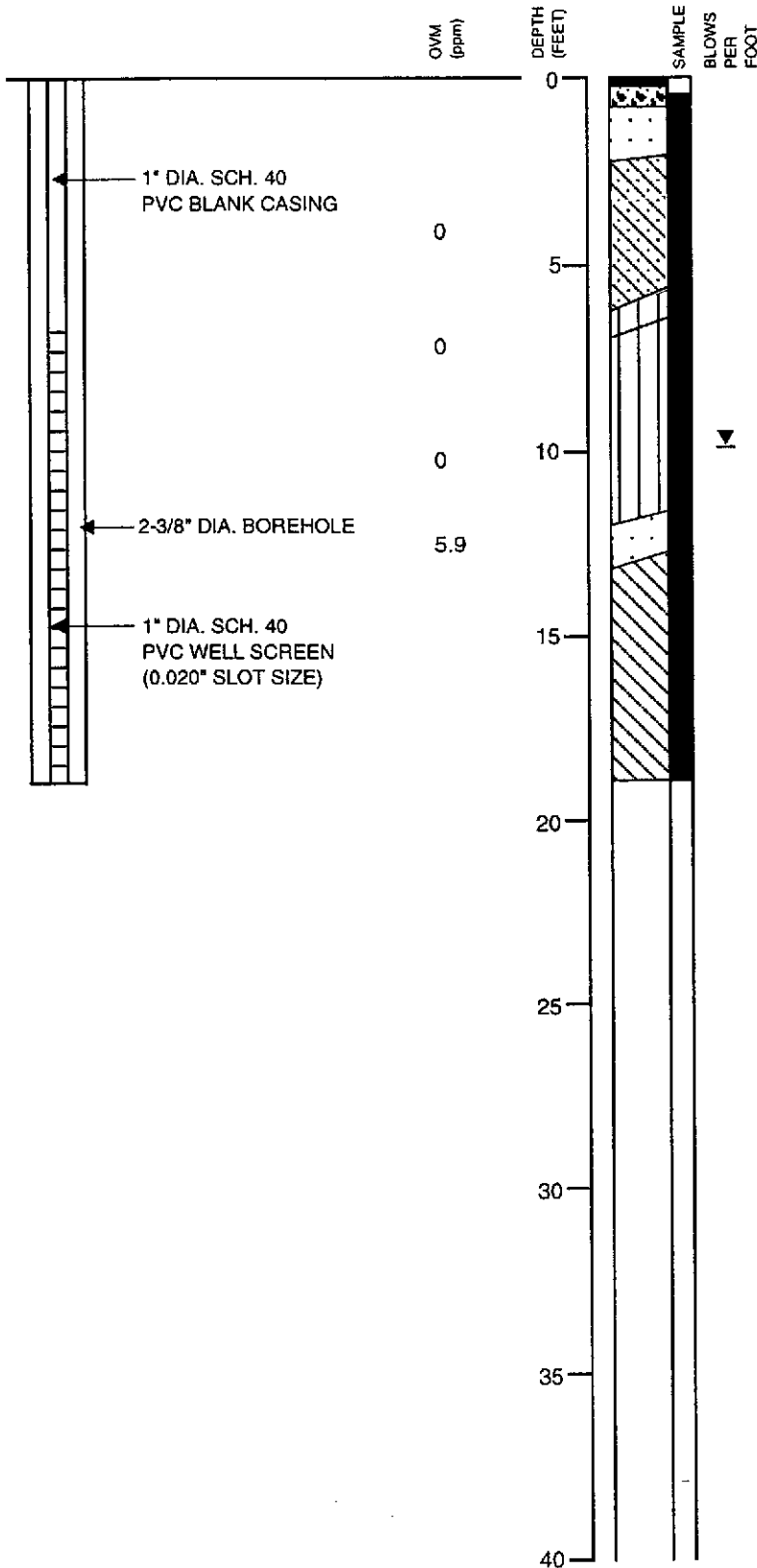
4

# LOG OF TEST BORING 4

EQUIPMENT Enviro-core Direct Push

DATE DRILLED 5/30/96

ELEVATION -----



ASPHALTIC CONCRETE - 2-inches thick  
 CEMENT CONCRETE - 8-inches thick  
 BROWN AND GRAY SILTY GRAVELLY SAND (SW)  
 medium dense, moist (fill)  
 ORANGE-BROWN CLAYEY SAND (SC)  
 medium dense, moist (fill)  
 DARK BROWN SANDY SILT (ML)  
 medium stiff, moist  
 GREEN-BROWN CLAYEY SILT (ML)  
 stiff, moist  
 DARK BROWN CLAYEY SILT (ML)  
 stiff, moist  
 GROUNDWATER LEVEL MEASURED  
 ON MAY 31, 1996  
 Color becomes gray and brown at 9 feet  
 Becomes sandy at 10 feet  
 Gas odor at 10-12 feet  
 GREEN-GRAY SILTY SAND (SP)  
 dense, wet  
 GREEN AND BROWN SILTY CLAY (CL)  
 stiff, moist  
 Becomes sandy at 15 feet  
 Sand gone at 16 1/2 feet  
 NO GROUNDWATER ENCOUNTERED  
 DURING DRILLING  
 Well casing removed and borehole pressure  
 grouted with neat cement on May 31, 1996

Subsurface Consultants

2250 TELEGRAPH AVENUE - OAKLAND, CA

PLATE

JOB NUMBER  
609.004

DATE  
6/5/96

APPROVED

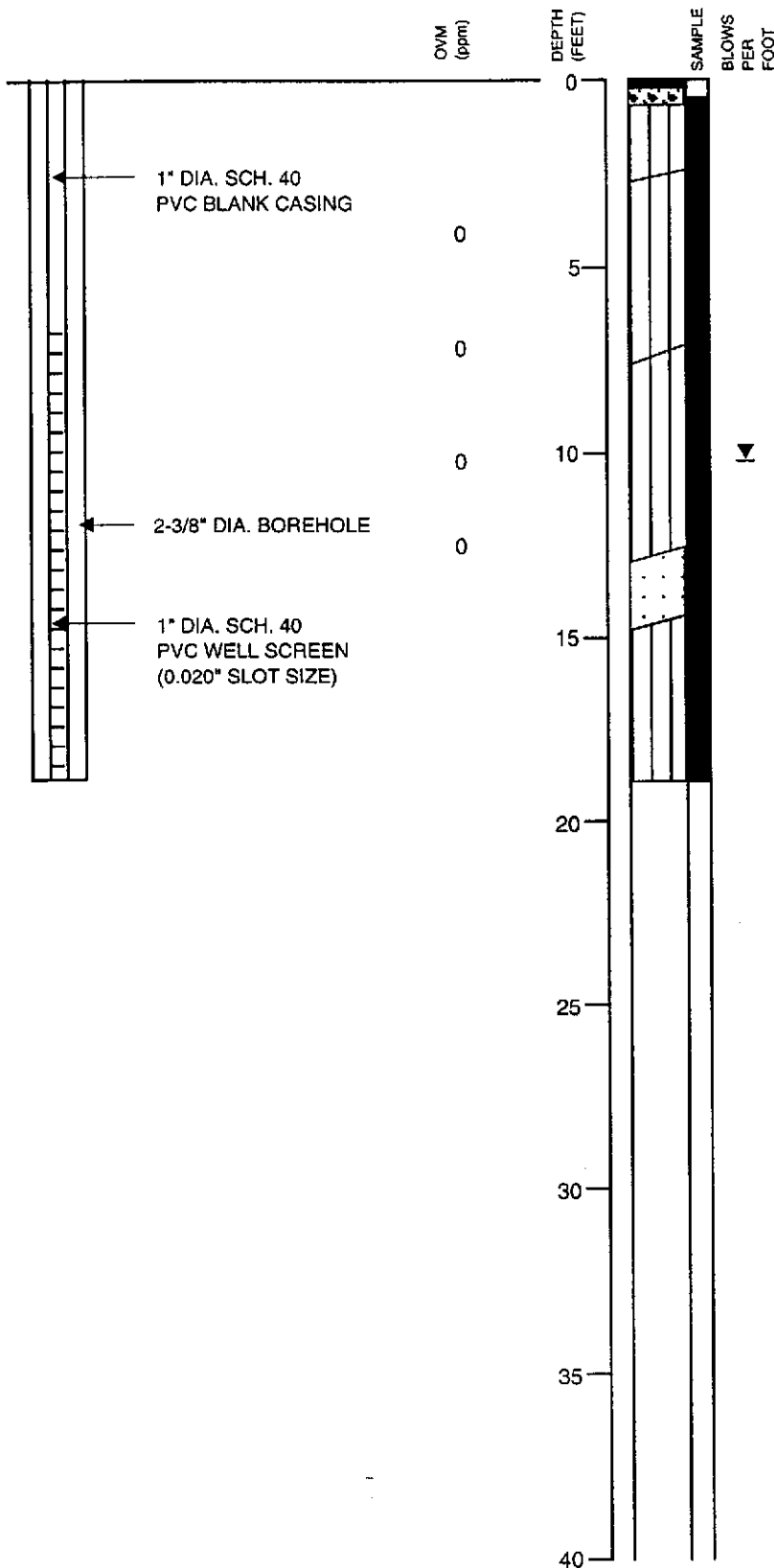
5

# LOG OF TEST BORING 5

EQUIPMENT Enviro-core Direct Push

DATE DRILLED 5/30/96

ELEVATION -----



ASPHALTIC CONCRETE - 2-inches thick  
 CEMENT CONCRETE - 8-inches thick  
 GRAY GRAVELLY SILT (ML)

medium stiff, dry  
 ORANGE AND DARK BROWN SANDY SILT (ML)  
 medium stiff, moist

GRAY AND BROWN CLAYEY SILT (ML)  
 stiff, moist

Becomes sandy at 9 feet  
 ▼ GROUNDWATER LEVEL MEASURED ON MAY 30, 1996

Gray lense (SP) at 12 feet  
 GRAY SILTY SAND (SP)  
 medium dense, wet  
 GRAY AND BROWN CLAYEY SILT (ML)

Well casing removed and borehole pressure grouted with neat cement on May 30, 1996

Subsurface Consultants

2250 TELEGRAPH AVENUE - OAKLAND, CA

PLATE

JOB NUMBER

DATE

APPROVED

609.004

6/5/96

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GENERAL SOIL CATEGORIES			SYMBOLS	TYPICAL SOIL TYPES	
<b>COARSE GRAINED SOILS</b> More than half is larger than No. 200 sieve	<b>GRAVEL</b> 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	
	<b>SAND</b> 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	
			<b>SILT AND CLAY</b> 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				
<b>SILT AND CLAY</b> 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			
<b>HIGHLY ORGANIC SOILS</b>			PT	Peat and Other Highly Organic Soils	

## UNIFIED SOIL CLASSIFICATION SYSTEM

**Subsurface Consultants**

2250 TELEGRAPH AVENUE - OAKLAND, CA

JOB NUMBER  
609.004

DATE  
5/20/96

APPROVED

PLATE

7



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

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

A N A L Y T I C A L   R E P O R T

Prepared for:

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

Date: 12-JUN-96  
Lab Job Number: 125790  
Project ID: 609.004  
Location: 2250 Telegraph Av. Oakland

Reviewed by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

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## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
 Project#: 609.004  
 Location: 2250 Telegraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125790-001	2	27966	05/30/96	06/03/96	06/06/96	
125790-002	3	27966	05/30/96	06/03/96	06/06/96	
125790-003	5	27966	05/30/96	06/03/96	06/06/96	

Matrix: Water

Analyte	Units	125790-001	125790-002	125790-003
Diln Fac:		1	1	1
Diesel C12-C22	ug/L	<50	83 YL	180 YL
Surrogate				
Hexacosane	%REC	101	102	104

Y: Sample exhibits fuel pattern which does not resemble standard  
 L: Lighter hydrocarbons than indicated standard



Lab #: 125790

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telegraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water  
Batch#: 27966  
Units: ug/L  
Diln Fac: 1

Prep Date: 06/03/96  
Analysis Date: 06/04/96

MB Lab ID: QC23260

Analyte	Result	
Diesel C12-C22	<50	
Surrogate	%Rec	Recovery Limits
Hexacosane	102	60-140





Lab #: 125790

## BATCH QC REPORT

Page 1 of 1

## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telegraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 3520

## LABORATORY CONTROL SAMPLE

Matrix: Water  
Batch#: 27966  
Units: ug/L  
Diln Fac: 1

Prep Date: 06/03/96  
Analysis Date: 06/04/96

LCS Lab ID: QC23261

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	2149	2475	87	60-140
Surrogate	%Rec	Limits		
Hexacosane	101	60-140		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125790

## BATCH QC REPORT

Page 1 of 1

## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
 Project#: 609.004  
 Location: 2250 Telgraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
 Prep Method: EPA 3520

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
 Lab ID: 125762-001  
 Matrix: Water  
 Batch#: 27966  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 05/29/96  
 Received Date: 05/30/96  
 Prep Date: 06/03/96  
 Analysis Date: 06/05/96

MS Lab ID: QC23262

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	2475	528	2804	92	60-140
Surrogate	%Rec	Limits			
Hexacosane	110	60-140			

MSD Lab ID: QC23263

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	3054	102	60-140	12	<25
Surrogate	%Rec	Limits				
Hexacosane	119	60-140				

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 RPD: 0 out of 1 outside limits  
 Spike Recovery: 0 out of 2 outside limits



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telgraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125790-001	2	28009	05/30/96	06/05/96	06/05/96	
125790-002	3	28009	05/30/96	06/05/96	06/05/96	
125790-003	5	28009	05/30/96	06/05/96	06/05/96	

Matrix: Water

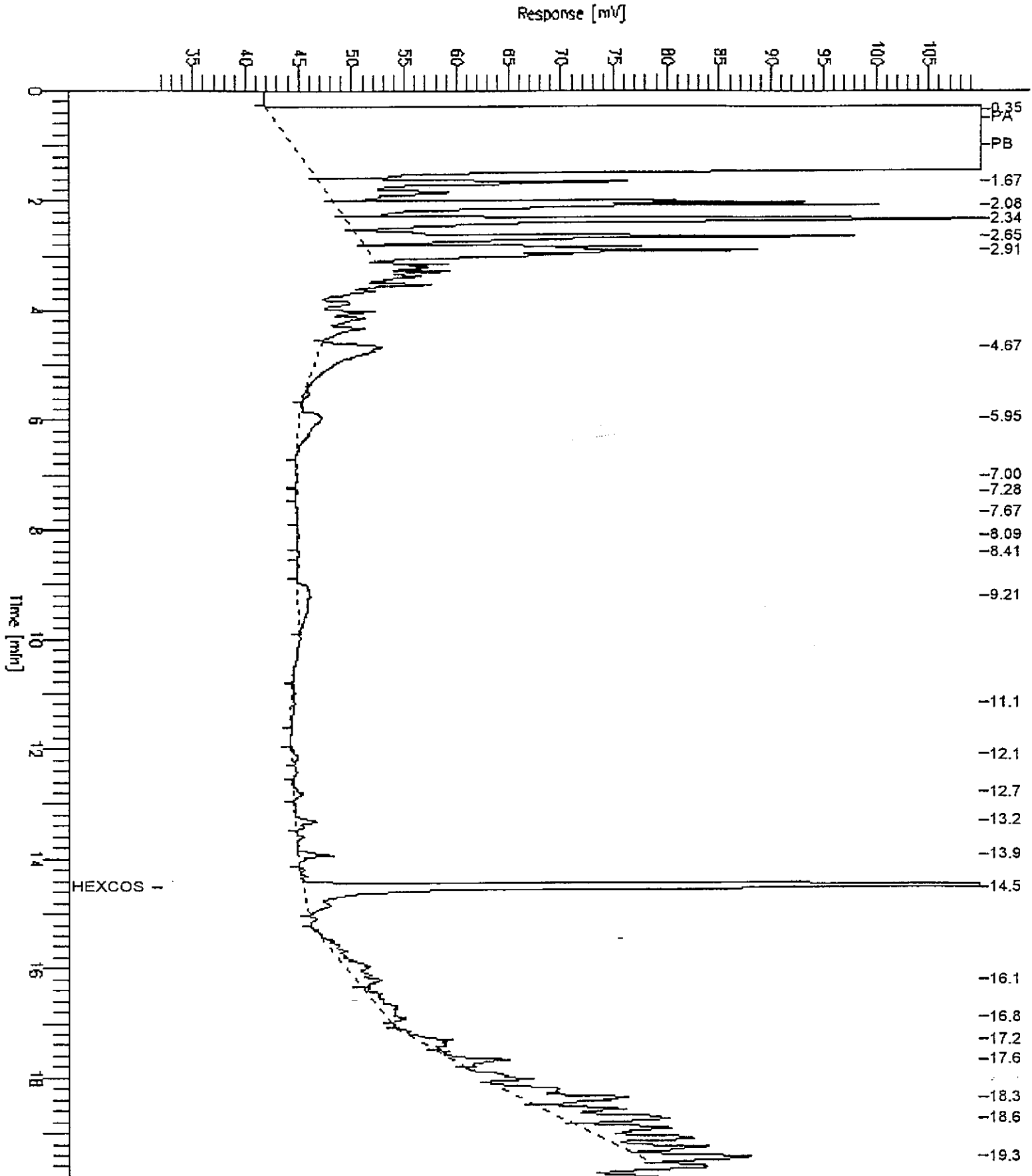
Analyte	Units	125790-001	125790-002	125790-003
Diln Fac:		1	1	1
Gasoline	ug/L	250	<50	70 Y
Surrogate				
Trifluorotoluene	%REC	90	91	86
Bromobenzene	%REC	84	85	80

Y: Sample exhibits fuel pattern which does not resemble standard

Sample Name : S\_125790-002,27966  
FileName : C:\GC15\CHB\157B027.raw  
Method : DUALA  
Start Time : 0.00 min  
Scale Factor: 0.0

End Time : 19.80 min  
Plot Offset: 32 mV

Sample #: 500:2.5  
Date : 6/6/96 07:43 AM  
Time of Injection: 6/6/96 07:21 AM  
Low Point : 32.00 mV  
Plot Scale: 78.0 mV  
High Point : 110.00 mV

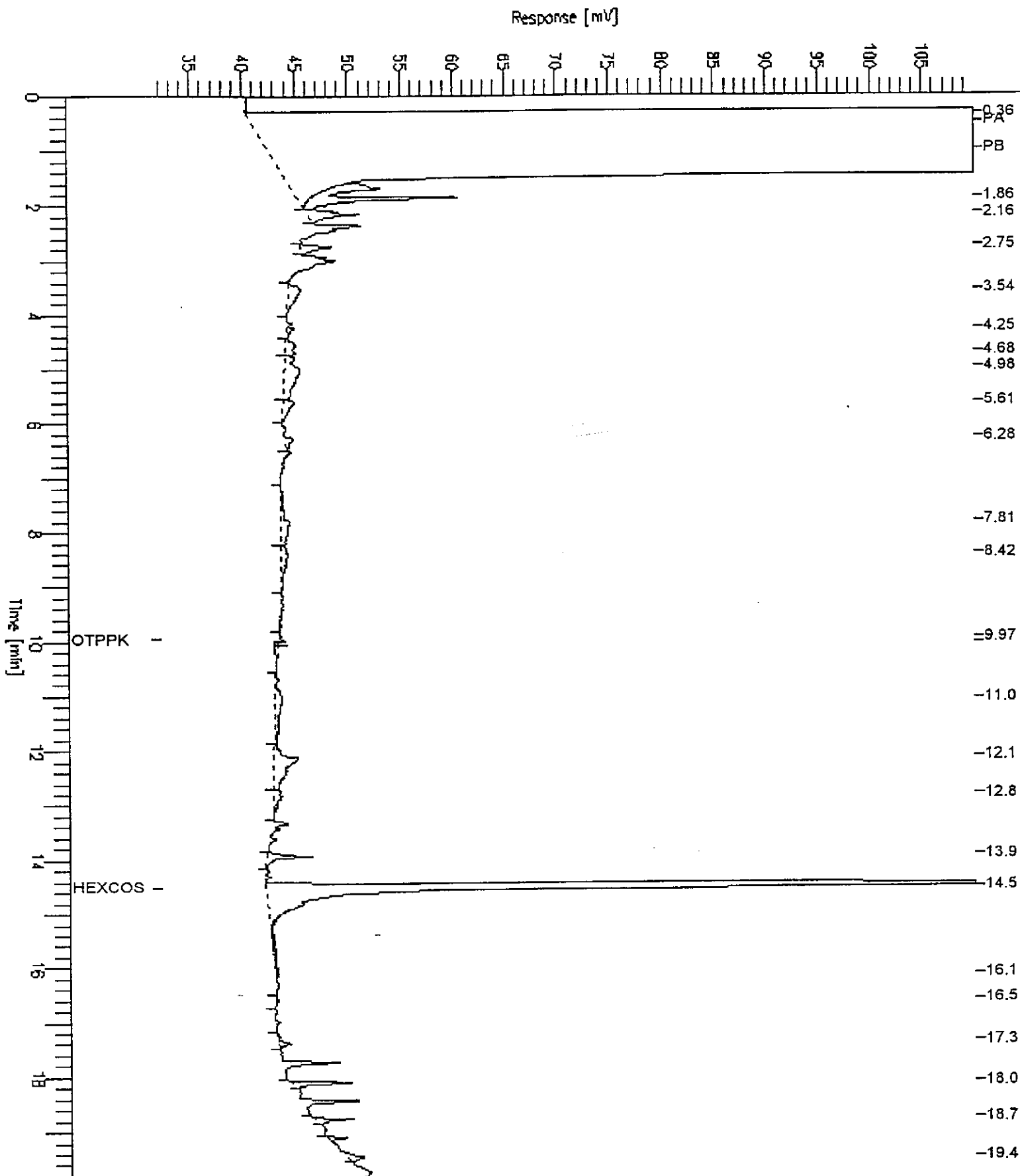


# GC15 Channel B Surrogate

Sample Name : S,125790-003,27966  
FileName : C:\GC15\CHB\157B032.raw  
Method : DUALA  
Start Time : 0.00 min  
Scale Factor: 0.0

End Time : 19.80 min  
Plot Offset: 32 mV

Sample #: 500:2.5  
Date : 6/6/96 10:03 AM  
Time of Injection: 6/6/96 09:41 AM  
Low Point : 32.00 mV  
Plot Scale: 78.0 mV  
High Point : 110.00 mV





## BTXE

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telgraph Av. Oakland

Analysis Method: EPA 8020  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125790-001	2	28009	05/30/96	06/05/96	06/05/96	
125790-002	3	28009	05/30/96	06/05/96	06/05/96	
125790-003	5	28009	05/30/96	06/05/96	06/05/96	

Matrix: Water

Analyte	Units	125790-001	125790-002	125790-003
Diln Fac:		1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	13	<0.5	<0.5
m,p-Xylenes	ug/L	3.4	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5
Surrogate				
Trifluorotoluene	%REC	94	96	92
Bromobenzene	%REC	90	91	86



Lab #: 125790

BATCH QC REPORT

Page 1 of 1

## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telegraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
Batch#: 28009  
Units: ug/L  
Diln Fac: 1

Prep Date: 06/05/96  
Analysis Date: 06/05/96

MB Lab ID: QC23428

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	89	69-120	
Bromobenzene	79	70-122	

Lab #: 125790

## BATCH QC REPORT

Page 1 of 1

BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	609.004	Prep Method:	EPA 5030
Location:	2250 Telgraph Av. Oakland		
METHOD BLANK			
Matrix:	Water	Prep Date:	06/05/96
Batch#:	28009	Analysis Date:	06/05/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC23428

Analyte	Result		Recovery Limits
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	95		58-130
Bromobenzene	86		62-131





Lab #: 125790

## BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons	
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 609.004	Prep Method: EPA 5030
Location: 2250 Telgraph Av. Oakland	
LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 06/05/96
Batch#: 28009	Analysis Date: 06/05/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC23429

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1964	2000	98	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	93	69-120		
Bromobenzene	97	70-122		

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits  
Spike Recovery: 0 out of 1 outside limits

Lab #: 125790

## BATCH QC REPORT

Page 1 of 1

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 609.004	Prep Method: EPA 5030
Location: 2250 Telgraph Av. Oakland	
LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 06/05/96
Batch#: 28009	Analysis Date: 06/05/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC23430

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	21.3	20	107	80-120
Toluene	21.6	20	108	80-120
Ethylbenzene	21.6	20	108	80-120
m,p-Xylenes	44.4	40	111	80-120
o-Xylene	22.4	20	112	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	96	58-130		
Bromobenzene	92	62-131		

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 Spike Recovery: 0 out of 5 outside limits



Lab #: 125790

## BATCH QC REPORT

Page 1 of 1

## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
 Project#: 609.004  
 Location: 2250 Telgraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
 Prep Method: EPA 5030

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: 2  
 Lab ID: 125790-001  
 Matrix: Water  
 Batch#: 28009  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 05/30/96  
 Received Date: 06/03/96  
 Prep Date: 06/05/96  
 Analysis Date: 06/05/96

MS Lab ID: QC23431

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	247.2	2163	96	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	92	69-120			
Bromobenzene	99	70-122			

MSD Lab ID: QC23432

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	2182	97	75-125	1	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	90	69-120				
Bromobenzene	98	70-122				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



LABORATORY NUMBER: 125790-001  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 609.004  
LOCATION: 2250 Telegraph Av. Oakland  
SAMPLE ID: 2

DATE SAMPLED: 05/30/96  
DATE RECEIVED: 06/03/96  
DATE ANALYZED: 06/06/96  
DATE REPORTED: 06/07/96  
BATCH NO: 27990

EPA 8010  
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

=====  
Bromobenzene

101 %  
=====

LABORATORY NUMBER: 125790-002  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 609.004  
 LOCATION: 2250 Telegraph Av. Oakland  
 SAMPLE ID: 3

DATE SAMPLED: 05/30/96  
 DATE RECEIVED: 06/03/96  
 DATE ANALYZED: 06/06/96  
 DATE REPORTED: 06/07/96  
 BATCH NO: 27990

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	20	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

=====  
 Bromobenzene

=====  
 103 %  
 =====

LABORATORY NUMBER: 125790-003  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 609.004  
 LOCATION: 2250 Telegraph Av. Oakland  
 SAMPLE ID: 5

DATE SAMPLED: 05/30/96  
 DATE RECEIVED: 06/03/96  
 DATE ANALYZED: 06/06/96  
 DATE REPORTED: 06/07/96  
 BATCH NO: 27990

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

Bromobenzene

99 %



LABORATORY NUMBER: 125790-METHOD BLANK  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 609.004  
LOCATION: 2250 Telegraph Av. Oakland  
SAMPLE ID: MB

DATE ANALYZED: 06/06/96  
DATE REPORTED: 06/07/96  
BATCH NO: 27990

EPA 8010  
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

=====  
Bromobenzene  
=====

95 %

LABORATORY NUMBER: 125790-METHOD BLANK  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 609.004  
 LOCATION: 2250 Telegraph Av. Oakland  
 SAMPLE ID: MB

DATE ANALYZED: 06/06/96  
 DATE REPORTED: 06/07/96  
 BATCH NO: 27990

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

=====

Bromobenzene

=====

100 %







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

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A N A L Y T I C A L   R E P O R T

Prepared for:

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

Date: 12-JUN-96  
Lab Job Number: 125774  
Project ID: 609.004  
Location: 2250 Telegraph Av. Oakland

Reviewed by: Damara Moore

Reviewed by: Troy Debe

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LABORATORY NUMBER: 125774-001  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT#: 609.004  
 LOCATION: 2250 TELEGRAPH AV. OAKLAND  
 SAMPLE ID: #1

DATE SAMPLED: 31-MAY-96  
 DATE RECEIVED: 31-MAY-96  
 DATE ANALYZED: 04-JUN-96  
 DATE REPORTED: 06-JUN-96  
 BATCH NO: 27983

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

Bromobenzene

99 %

LABORATORY NUMBER: 125774-002  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT#: 609.004  
 LOCATION: 2250 TELEGRAPH AV. OAKLAND  
 SAMPLE ID: #4

DATE SAMPLED: 31-MAY-96  
 DATE RECEIVED: 31-MAY-96  
 DATE ANALYZED: 04-JUN-96  
 DATE REPORTED: 06-JUN-96  
 BATCH NO: 27983

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

Bromobenzene

99 %

LABORATORY NUMBER: 125774-METHOD BLANK  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT#: 609.004  
 LOCATION: 2250 TELEGRAPH AV. OAKLAND  
 SAMPLE ID: MB

DATE ANALYZED: 06/04/96  
 DATE REPORTED: 06/06/96  
 BATCH NO: 27983

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

Surrogate Recovery

Bromobenzene

=====

99 %

=====



Laboratory Number: 125774  
Client: Subsurface  
Sample type: WATER

Date Analyzed: 06/04-05/96

BS/BSD SUMMARY SHEET FOR EPA 8010

BLANK SPIKE DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	LIMITS
1,1-Dichloroethene	23.70	119 %	68-134
Chlorobenzene	23.66	118 %	69-135
Trichloroethene	21.51	108 %	85-141

BLANK SPIKE DUP DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	LIMITS
1,1-Dichloroethene	23.81	119 %	68-134
Chlorobenzene	24.39	122 %	69-135
Trichloroethene	24.48	122 %	85-141

RPD DATA

SPIKE COMPOUNDS	RPD	LIMITS
1,1-Dichloroethene	0 %	< 14
Chlorobenzene	3 %	< 13
Trichloroethene	13 %	< 14



## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telgraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125774-001 #1		27931	05/31/96	05/31/96	06/05/96	
125774-002 #4		27931	05/31/96	05/31/96	06/03/96	

Matrix: Water

Analyte	Units	125774-001	125774-002
Diln Fac:		5	1
Diesel C12-C22	ug/L	37000 LH	1900 YL
Surrogate			
Hexacosane	%REC	117	130

Y: Sample exhibits fuel pattern which does not resemble standard  
H: Heavier hydrocarbons than indicated standard  
L: Lighter hydrocarbons than indicated standard



Lab #: 125774

BATCH QC REPORT

Page 1 of 1

## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telgraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 3520

## METHOD BLANK

Matrix: Water  
Batch#: 27931  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/31/96  
Analysis Date: 06/04/96

MB Lab ID: QC23112

Analyte	Result	
Diesel C12-C22	<50	
Surrogate	%Rec	Recovery Limits
Hexacosane	103	60-140





Lab #: 125774

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons	
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 609.004	Prep Method: EPA 3520
Location: 2250 Telgraph Av. Oakland	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 05/31/96
Batch#: 27931	Analysis Date: 06/04/96
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC23113

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2170	88	60-140
Surrogate	%Rec	Limits		
Hexacosane	106	60-140		

BSD Lab ID: QC23114

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2474	100	60-140	13	<35
Surrogate	%Rec	Limits				
Hexacosane	108	60-140				

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 RPD: 0 out of 1 outside limits  
 Spike Recovery: 0 out of 2 outside limits



## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telgraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125774-001 #1		27936	05/31/96	06/02/96	06/02/96	
125774-002 #4		27936	05/31/96	06/02/96	06/02/96	

Matrix: Water

Analyte	Units	125774-001	125774-002
Diln Fac:		100	10
Gasoline	ug/L	13000 Y	11000
Surrogate			
Trifluorotoluene	%REC	87	92
Bromobenzene	%REC	79	87

Y: Sample exhibits fuel pattern which does not resemble standard



## BTXE

Client: Subsurface Consultants  
 Project#: 609.004  
 Location: 2250 Telgraph Av. Oakland

Analysis Method: EPA 8020  
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125774-001 #1		27936	05/31/96	06/02/96	06/02/96	
125774-002 #4		27936	05/31/96	06/02/96	06/02/96	

Matrix: Water

Analyte	Units	125774-001	125774-002
Diln Fac:		100	10
Benzene	ug/L	<50	130 C
Toluene	ug/L	<50	66
Ethylbenzene	ug/L	<50	340
m,p-Xylenes	ug/L	380	260
o-Xylene	ug/L	<50	<5
Surrogate			
Trifluorotoluene	%REC	93	92
Bromobenzene	%REC	86	87

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



Lab #: 125774

## BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	609.004	Prep Method:	EPA 5030
Location:	2250 Telgraph Av. Oakland		
METHOD BLANK			
Matrix:	Water	Prep Date:	06/01/96
Batch#:	27936	Analysis Date:	06/01/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC23135

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	83	69-120	
Bromobenzene	73	70-122	

Lab #: 125774

## BATCH QC REPORT

Page 1 of 1

BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	609.004	Prep Method:	EPA 5030
Location:	2250 Telegraph Av. Oakland		
METHOD BLANK			
Matrix:	Water	Prep Date:	06/01/96
Batch#:	27936	Analysis Date:	06/01/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC23135

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	91		58-130
Bromobenzene	78		62-131



Lab #: 125774

## BATCH QC REPORT

Page 1 of 1

## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 609.004  
Location: 2250 Telegraph Av. Oakland

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
Batch#: 27936  
Units: ug/L  
Diln Fac: 1

Prep Date: 06/01/96  
Analysis Date: 06/01/96

LCS Lab ID: QC23136

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1903	2000	95	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	94	69-120		
Bromobenzene	97	70-122		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Sample Name : S\_125774-001,27931

Sample #: 500:25

Page 1 of 1

FileName : C:\GC15\CHB\155B083.RAW

Date : 6/5/96 06:51 PM

Method : BTEHJ.MTH

Time of Injection: 6/5/96 05:53 PM

Start Time : 0.01 min

End Time : 19.80 min

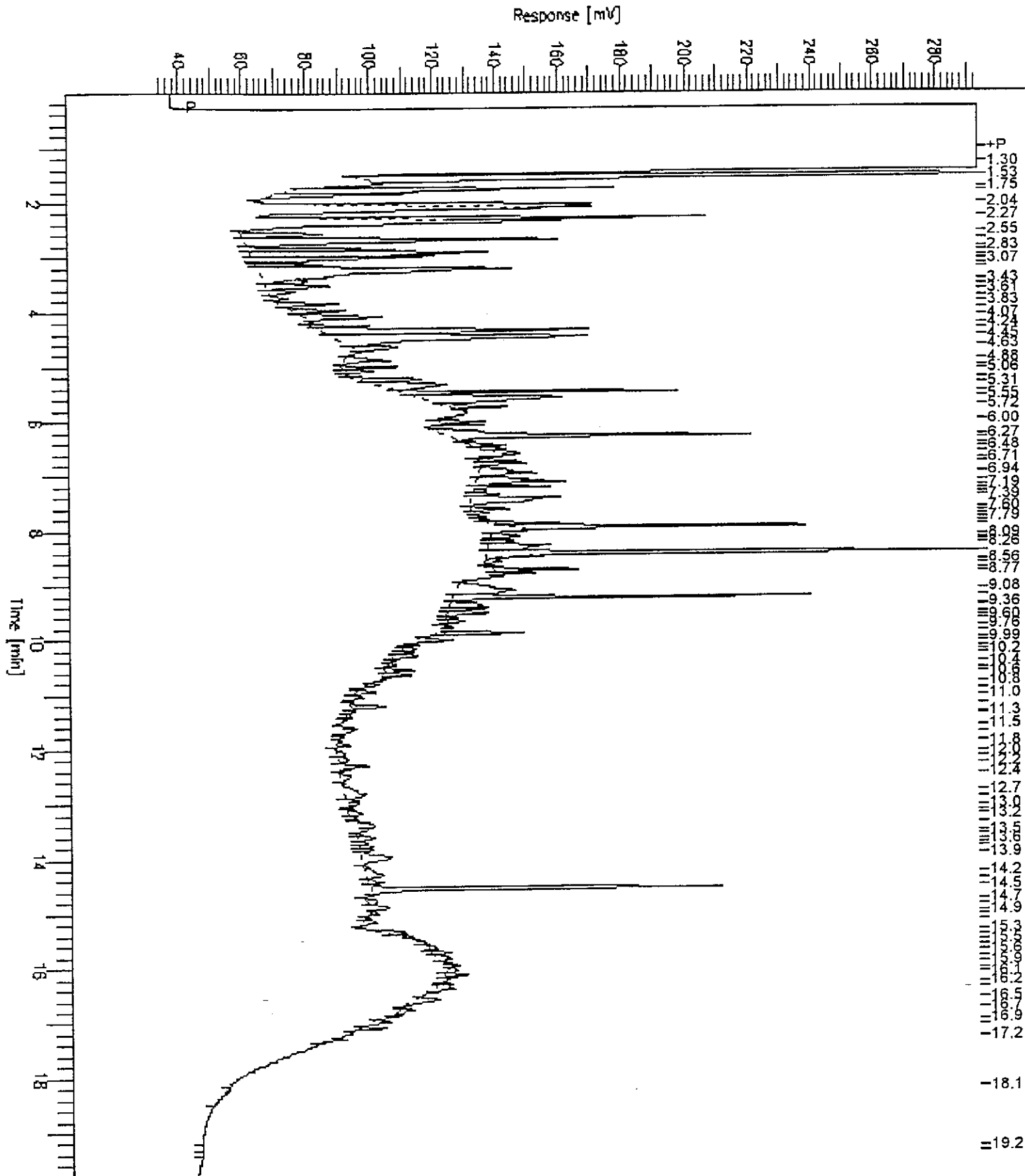
Low Point : 33.72 mV

High Point : 293.39 mV

Scale Factor: 0.0

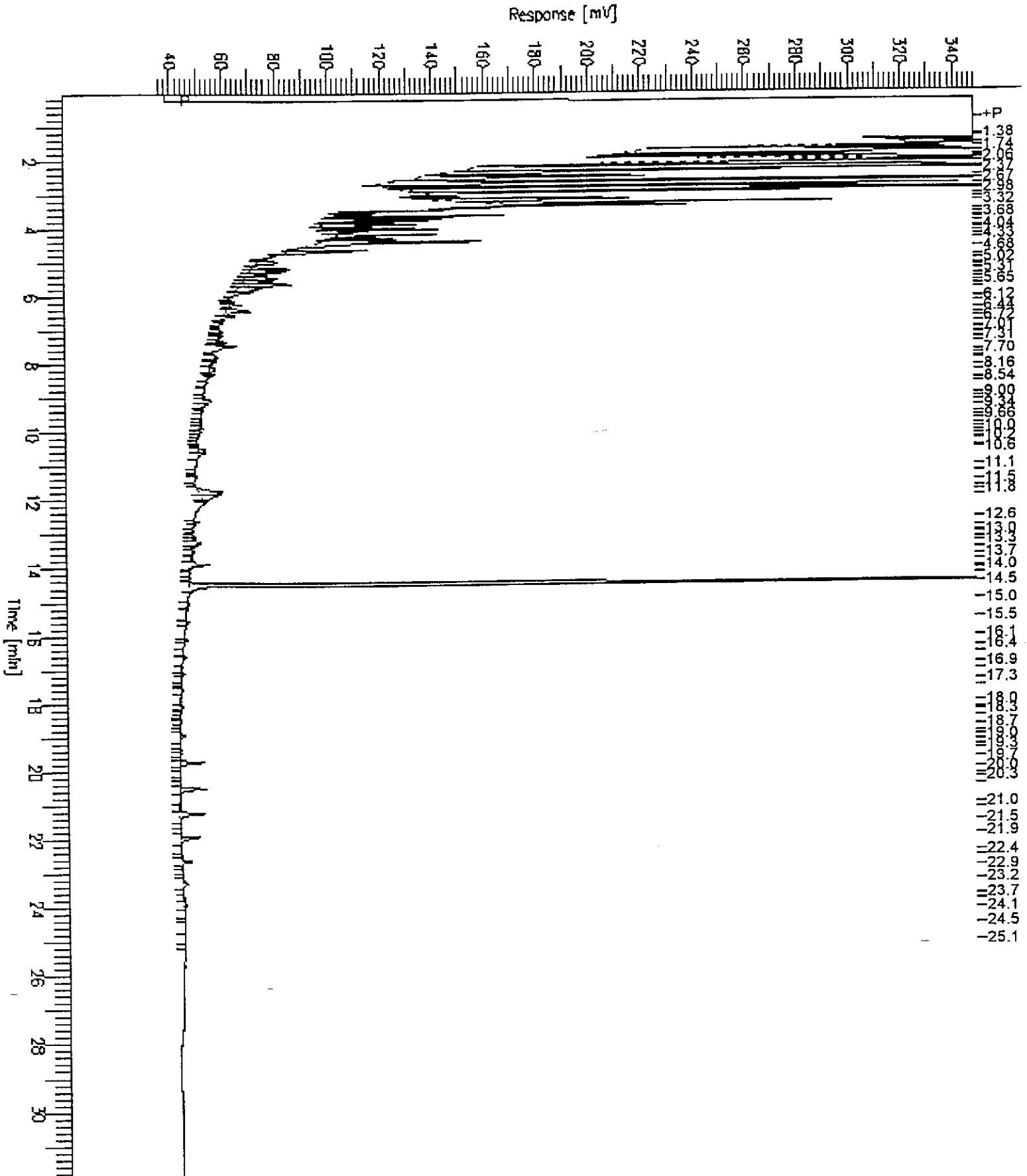
Plot Offset: 34 mV

Plot Scale: 259.7 mV



Sample Name : S,125774-002,27931  
FileName : C:\GC15\CHB\155B013.RAW  
Method : BTEHJ.MTH  
Start Time : 0.07 min  
Scale Factor: 0.0

Sample #: 500:2.5  
Date : 6/6/96 12:38 PM  
Time of Injection: 6/3/96 06:06 PM  
Low Point : 34.33 mV  
High Point : 348.20 mV  
Plot Scale: 313.9 mV





Lab #: 125774

## BATCH QC REPORT

Page 1 of 1

BTXE			
Client: Subsurface Consultants	Analysis Method: EPA 8020		
Project#: 609.004	Prep Method: EPA 5030		
Location: 2250 Telgraph Av. Oakland			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date: 06/01/96		
Batch#: 27936	Analysis Date: 06/01/96		
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC23137

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	16.1	20	81	80-120
Toluene	16.1	20	81	80-120
Ethylbenzene	16.2	20	81	80-120
m,p-Xylenes	32	40	80	80-120
o-Xylene	16.2	20	81	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	92	58-130		
Bromobenzene	85	62-131		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125774

## BATCH QC REPORT

Page 1 of 1

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 609.004	Prep Method: EPA 5030
Location: 2250 Telegraph Av. Oakland	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/29/96
Lab ID: 125762-001	Received Date: 05/30/96
Matrix: Water	Prep Date: 06/01/96
Batch#: 27936	Analysis Date: 06/01/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC23138

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	17.7	89	75-125
Toluene	20	<0.5000	17.5	88	75-125
Ethylbenzene	20	<0.5000	17.7	89	75-125
m,p-Xylenes	40	<0.5000	34.6	87	75-125
o-Xylene	20	<0.5000	17.8	89	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	91	58-130			
Bromobenzene	84	62-131			

MSD Lab ID: QC23139

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	19.2	96	75-125	8	<20
Toluene	20	18.9	95	75-125	8	<20
Ethylbenzene	20	18.7	94	75-125	6	<20
m,p-Xylenes	40	36.8	92	75-125	6	<20
o-Xylene	20	18.9	95	75-125	6	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	91	58-130				
Bromobenzene	84	62-131				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



# EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL  
ENGINEERING

PAGE 2 of 2

PERMIT NUMBER <b>X9600420</b>		SITE ADDRESS/LOCATION <b>2250 TELEGRAPH</b>	
APPROX. START DATE <b>5.30.96</b>	APPROX. END DATE <b>5.30.96</b>	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number) <b>415.456.9875</b>	
CONTRACTOR'S LICENSE # AND CLASS <b>#636387, C-57</b>		CITY BUSINESS TAX # <b>559628</b>	
ATTENTION:			
1) State law requires that the contractor/owner call <i>Underground Service Alert (USA)</i> two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: <u>132499</u>			
2) <b>48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.</b>			
OWNER/BUILDER			
I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than \$500):			
<input type="checkbox"/> I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).			
<input type="checkbox"/> I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).			
<input type="checkbox"/> I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).			
<input type="checkbox"/> I am exempt under Sec. _____, B&PC for this reason _____			
WORKER'S COMPENSATION			
<input checked="" type="checkbox"/> I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).			
Policy # <u>122198A</u> Company Name <u>PRECISION SAMPLING, INC. / STATE FUND</u>			
<input type="checkbox"/> I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars (\$100) or less).			
NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.			
I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.			
Signature of Permittee <i>[Signature]</i>		Agent for <input checked="" type="checkbox"/> Contractor <input type="checkbox"/> Owner <b>PRECISION SAMPLING, INC.</b>	Date <b>5.23.96</b>
DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
ISSUED BY <i>[Signature]</i>		DATE ISSUED <b>5-29-96</b>	



# ZONE WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600

FAX (510) 462-3914

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 2250 Telegraph Ave.  
Oakland, CA 94612

PERMIT NUMBER 96377

LOCATION NUMBER \_\_\_\_\_

### CLIENT

Name Marianne Robison  
Address 600 West Grand Ave. Voice 832-3456  
City Oakland, CA Zip 94612

### PERMIT CONDITIONS

Circled Permit Requirements Apply

### APPLICANT

Name Serome de Verrier / Subsurface Consultants, Inc.  
Address 171 12th Street, Suite 201 Voice 510-268-0461  
City Oakland, CA Zip 94607

### TYPE OF PROJECT

Well Construction \_\_\_\_\_ Geotechnical Investigation \_\_\_\_\_  
Cathodic Protection \_\_\_\_\_ General \_\_\_\_\_  
Water Supply \_\_\_\_\_ Contamination X  
Monitoring \_\_\_\_\_ Well Destruction \_\_\_\_\_

PROPOSED WATER SUPPLY WELL USE n/a  
Domestic \_\_\_\_\_ Industrial \_\_\_\_\_ Other \_\_\_\_\_  
Municipal \_\_\_\_\_ Irrigation \_\_\_\_\_

### DRILLING METHOD:

Mud Rotary \_\_\_\_\_ Air Rotary \_\_\_\_\_ Auger \_\_\_\_\_  
Cable \_\_\_\_\_ Other Enviro-core / Hydro-punch

DRILLER'S LICENSE NO. C57656387

### WELL PROJECTS n/a

Drill Hole Diameter \_\_\_\_\_ in. Maximum \_\_\_\_\_  
Casing Diameter \_\_\_\_\_ in. Depth \_\_\_\_\_ ft.  
Surface Seal Depth \_\_\_\_\_ ft. Number \_\_\_\_\_

### GEOTECHNICAL PROJECTS

Number of Borings 5 Maximum \_\_\_\_\_  
Hole Diameter 4 in. Depth 15-20 ft.

ESTIMATED STARTING DATE 5/23/96  
ESTIMATED COMPLETION DATE 3/23/96

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

APPLICANT'S SIGNATURE [Signature] Date 3/7/96

### 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 and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

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] Date 24 May 96  
Wyman Hong