



December 22, 1992

92 DEC 23 PM 7:30

Jennifer Eberle  
Alameda County Department of  
Environmental Health  
Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA 94621

Re: STID #1107  
Shell Service Station  
29 Wildwood Avenue  
Piedmont, California  
WA Job #81-463-100

Dear Ms. Eberle:

As we discussed during our recent meeting and in your October 23, 1992 letter to Dan Kirk of Shell Oil Company, this letter presents the information that we agreed to provide for the site referenced above. Also presented is a recommendation for locating a well on the east side of Grand Avenue downgradient of the site.

Must review these

**ENSCO Analytic Reports:** Investigation report presented in Attachment A. ✓

**EMCON Analytic Reports:** Investigation report presented in Attachment B. ✓

**Tank Overspill Protection:** The tanks have overspill protection as indicated in the documents presented in Attachment C.

**Utility Locations and Depths:** Most utility locations and depths were described in Weiss Associates' November 18, 1992 letter to the ACDEH, which is included in as Attachment D. Figure 1 presents the locations of all identified utilities in the site vicinity. According to our research, the utility trenches appear to be less than five ft deep.

**Lease Expiration:** Shell is currently investigating the status of the lease including the lease expiration date as well as long-term plans for the site. ✓

**Dissolved Oxygen Measurements:** Weiss Associates has arranged for the water samples to be collected and analyzed for dissolved oxygen content to assess the viability of natural biodegradation of the hydrocarbons by the naturally occurring microbial population in the ground water. ✓

Jennifer Eberle  
December 22, 1992

2

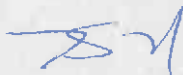
Weiss Associates 

**Bioremediation Papers:** Weiss Associates has numerous papers regarding naturally occurring biodegradation of hydrocarbons in ground water in our library. One reference that we recommend is David Noonan's 1990 book titled "Groundwater Remediation and Petroleum" published by Lewis Publishers (ISBN 0-87371-217-X). This book provides a good introduction to how naturally occurring biodegradation of hydrocarbons occurs in ground water. Since this book and our other papers on bioremediation are copyrighted, it would be improper for Weiss Associates to copy these papers for your review. However, if you cannot locate this book or an equivalent book or papers, Weiss Associates may be able to arrange to loan you our copies.

**Downgradient Well Location:** As indicated in Figure 1, Weiss Associates has located an area where we can safely drill a third downgradient well on the east side of Grand Avenue across Wildwood Avenue. According to the line locations marked by the utility companies, this location should be free of underground utilities. Weiss Associates proposes to install a ground water monitoring well in this location using the protocols described in our June 21, 1990 subsurface investigation report for the installation of existing wells MW-4 and MW-5. Weiss Associates will pursue drilling and other permits after the holidays. We anticipate installing the well in January 1993 if no delays are encountered during permitting.

We appreciate your consideration and oversight for this project. Please call us if you have any questions or comments.

Sincerely,  
Weiss Associates



N. Scott MacLeod  
Project Geologist

specify that the  
mw must be screened  
(at least 1') above  
top of static gw  
level

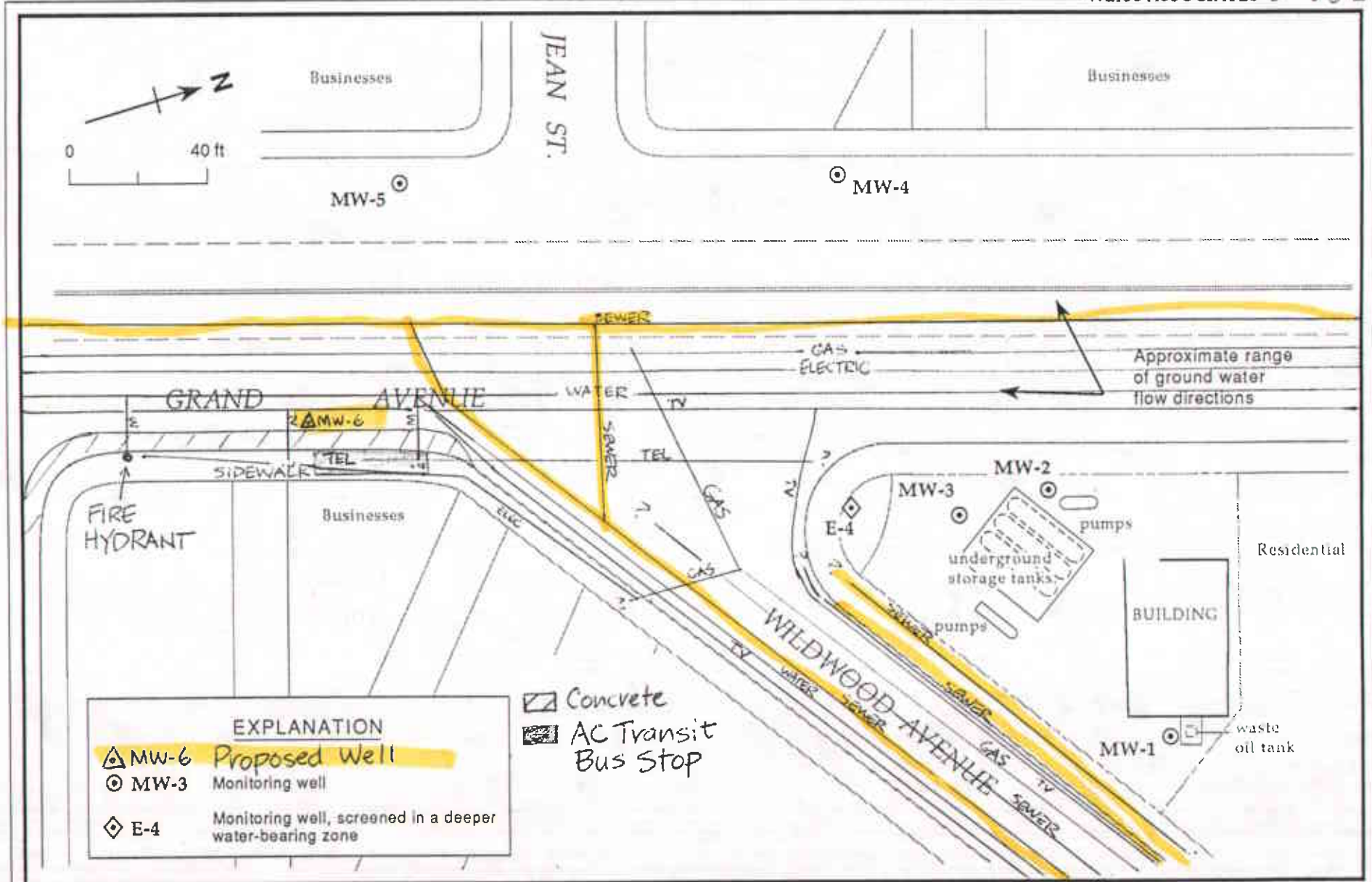
NSM:NM

ATTACHMENTS: A - ENSCO Soil Investigation Report  
B - EMCON Subsurface Hydrogeologic Investigation  
C - Tank Certification Documents  
D - Weiss Associates' November 18, 1992 Letter

C:\WP51\SHELL\PIEDMONT\463L1DE2.WP

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998  
Richard Hiatt, Regional Water Quality Control Board - San Francisco Bay, 2101 Webster Street, Suite 500, Oakland, California 94612

# DRAFT



Proposed Well Location and  
Figure 1. Underground Utilities- Shell Service Station, WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California

**ATTACHMENT A**  
**ENSCO SOIL INVESTIGATION REPORT**

**ENSCO ENVIRONMENTAL**  
**SERVICES, INC.**

SOIL INVESTIGATION

FOR

SHELL OIL COMPANY  
29 WILDWOOD AVENUE  
PIEDMONT, CALIFORNIA

Shell P.O. No. MOH 302584

EES Project No. 1856G

September, 1988



October 3, 1988

Shell Oil Company  
1390 Willow Pass Rd.  
Concord, CA 94520

Attn: Mr. Stan Roller

Re: Soil Investigation at Shell Service Station,  
29 Wildwood Avenue, Piedmont, California  
EES Project No. 1856G

Dear Mr. Roller:

Ensco Environmental Services, Inc. has completed a soil investigation at the above referenced property. The results of the investigation are presented in the attached report along with a description of methodology. The scope of work included the collection of soil samples from five shallow exploratory borings, chemical analyses of the samples, and the preparation of this report.

If you have any questions concerning this report, please call.

Sincerely,  
Ensco Environmental Services, Inc.

A handwritten signature in cursive script that reads "Leonard Niles".

Leonard Niles  
Staff Geologist

A handwritten signature in cursive script that reads "David Blunt".

David Blunt  
Senior Project Geologist

A handwritten signature in cursive script that reads "Lawrence D. Pavlak".

Lawrence D. Pavlak, C.E.G. 1187  
Senior Program Geologist

LN/DB/LDP/sr  
Attachment



ENSCO ENVIRONMENTAL SERVICES, INC.

SOIL INVESTIGATION

FOR

SHELL OIL COMPANY  
29 WILDWOOD AVENUE  
PIEDMONT, CALIFORNIA

EXECUTIVE SUMMARY

EnSCO Environmental Services, Inc. (EES) has recently completed a soil investigation for Shell Oil Company at the Shell Service Station located at 29 Wildwood Avenue, in the City of Piedmont, Alameda County, California. The investigation included a review of previous station modifications, soil sample collection from five shallow exploratory borings, and chemical analyses of the soil samples. A summary of findings follows:

- 1) Five shallow exploratory borings were drilled on the site to a maximum depth of 15.5 feet. Soils encountered during the drilling process were silty clay, sandy clays, clayey sands and sands to the depths explored.
- 2) Ground water was encountered in the exploratory borings at depths ranging from 6 to 9.5 feet below grade.
- 3) Gasoline odors were noted in the soil cuttings from all borings. In addition, a gasoline sheen was noted at a depth of 6 to 8 feet in the soil cuttings from boring B-4. Total petroleum hydrocarbons as gasoline were found at concentrations ranging from 6,500 parts-per-million at a depth of 10 feet in boring B-3 to non-detectable in the soil samples in borings B-1, B-2, and B-5.

## 1.0 INTRODUCTION

At the request of Mr. Stan Roller of Shell Oil Company (Shell), EES has completed a field investigation to assess potential site contamination prior to relinquishment of the Shell Service Station located at 29 Wildwood Avenue in Piedmont, California (see Figure 1 - Site Location Map). As shown on the Site Plan (Figure 2), three 10,000 gallon gasoline and one 550 gallon waste oil underground storage tanks are currently in use at the subject service station.

The field investigation was conducted in accordance with a scope of work which was approved by Shell and specified in Shell Purchase Order No. MOH 302584. This report will present the scope of work, a description of the field investigation and sample analyses, a summary of findings, and conclusions.

## 2.0 SCOPE OF WORK

The scope of work for the project included drilling five shallow exploratory borings, collecting soil samples from the borings, performing laboratory analyses of the samples, and preparing this report. The boring locations were selected to sample soils adjacent to the aforementioned underground storage tanks.

## 3.0 FIELD INVESTIGATION

The field investigation was conducted on August 9 and 10, 1988. Two borings (B-1 and B-2) were located on the estimated down-gradient side of the three 10,000 gallon underground fuel storage tanks with an additional two borings (B-3 and B-4) located on the estimated up-gradient side. In addition, one boring (B-5) was located adjacent to the 550 gallon underground waste oil tank. The approximate location of each boring is shown in Figure 2.



### 3.1 Exploratory Borings

A Mobile B-53 drilling rig, equipped with 8-inch outside diameter hollow stem auger, was used to drill the 5 exploratory borings. The borings were logged by an EES geologist with soil descriptions classified according to the Unified Soil Classification System and Munsell Soil Color Charts. Prior to work and during drilling at the site, all drilling and sampling equipment was cleaned to reduce the potential for cross-contamination between borings and between sampling intervals.

Soil samples were collected through the hollow stem auger to minimize cross contamination and sampling of slough. A modified California split-spoon sampler, equipped with three internal brass liner tubes, each six inches long and two inches in diameter, was used to collect and retain the soil sample at the desired sample depth. The sampler was advanced 18-inches into the undisturbed soils ahead of the auger by driving it with a 140-pound rig-operated hammer. After recovery from the borehole and the sampler, the soil was visually characterized and was also tested with a portable photo-ionization detector for the presence of volatile hydrocarbons.

Upon completion of field characterization, the bottom sampler liner was retained for chemical analysis. Both ends of the liner were covered with aluminum foil and a plastic cap, labeled with a unique sample number and pertinent sample information, placed in a plastic "zip-lock" bag, entered onto a Chain-of-Custody form, and packed in a suitable container chilled with ice. All borings were backfilled with grout upon completion.

### 4.0 SUBSURFACE CONDITIONS

Ground water was encountered in all borings at depths ranging from 6 to 9.5 feet below grade. An attempt was made in each borehole to collect a soil sample for analysis above the saturated zone. All borings were hand-augered

to a depth of 4 feet to check for underground utilities or other obstructions. Subsurface soils encountered below the pavement were silty clays, sandy clays, clayey sands, and sands with minor sub-angular gravel. Petroleum odor was detected in samples from all of the borings. A petroleum sheen was observed at a depth of 6 to 8 feet in the soil cuttings from boring B-4.

#### 5.0 LABORATORY ANALYSES

Soil samples collected at the site were analyzed at Anametrix, Inc. Laboratory Services in San Jose, California. All samples collected were analyzed for the presence of total petroleum hydrocarbons as gasoline (TPHG). Those samples which had TPHG concentrations greater than 100 parts-per-million (ppm) were also analyzed for the presence of benzene, toluene, total xylenes, and ethylbenzene (BTXE).

#### 6.0 SUMMARY OF ANALYTICAL RESULTS

Hydrocarbon contamination was detected in borings B-3 and B-4 on the northeast side (the apparent up-gradient side) of the three underground gasoline storage tanks, at depths ranging from 5 to 10 feet. Up to 6,500 ppm TPHG were detected in B-3 and up to 750 ppm TPHG in B-4, along with detectable quantities of BTXE in both borings. No evidence of hydrocarbon contamination was detected by the laboratory analysis of the soil samples collected in any of the other borings. The results of the laboratory analyses are summarized in Table 1.

#### 7.0 CONCLUSIONS

Five exploratory borings were drilled to a maximum depth of 15.5 feet in the vicinity of existing underground storage tanks at the subject Shell Station. The underlying soils explored consisted of silty clays, sandy clays, clayey sands, and sands. Ground water was encountered at depths ranging from approximately 6 to 9.5 feet below grade. A petroleum odor was detected in

some of the soil cuttings from each of the five borings drilled during the course of this investigation. Gasoline product contamination was detected by the laboratory analyses in the soils at shallow levels in two of the five borings. TPHG was detected in soil samples from boring B-3 at depths of 5 and 10 feet below grade at concentrations of 13 and 6,500 ppm, respectively. The soil sample from a depth of 10 feet in boring B-4 was also found to contain TPHG, at a concentration of 750 ppm. BTEX were detected in the sample collected from boring B-3 at a depth of 10 feet at concentrations of 4.5, 1.6, 28, and 2.5 ppm, respectively. In addition, BTEX were also revealed in the soil sample from a depth of 10 feet in boring B-4 at concentrations of 3.4, 1.2, 17, and 11 ppm, respectively.

#### 8.0 REPORTING REQUIREMENTS

A copy of this report should be forwarded by the client to the following agencies in a timely manner:

Zone 7-Alameda County Flood Control  
and Water Conservation District  
5997 Parkside Drive  
Pleasanton, California 94566  
Attn: Mr. Craig Mayfield

Regional Water Quality Control Board  
San Francisco Bay Region  
1111 Jackson Street  
Oakland, California 94607  
Attn: Mr. Peter Johnson

Alameda County Health Care  
Services Agency  
470 27th Street, Third Floor  
Oakland, California 94612  
Attn: Mr. Storm Goranson

#### LIMITATIONS

Ensco Environmental Services, Inc. (EES) formerly Exceltech, Inc., makes no warranty expressed or implied, except that our services have been performed in accordance with generally accepted, existing engineering, geological,

hydrogeological, health and safety principles and applicable regulations at the time and location of the study.

The chemical analytical data included in this report have been obtained from a state-certified laboratory. The analytical method employed by the laboratory were in accordance with procedures suggested by the U.S. EPA and State of California. EES is not responsible for laboratory errors in procedure or result reporting.

TABLE 1

SOIL ANALYSES DATA

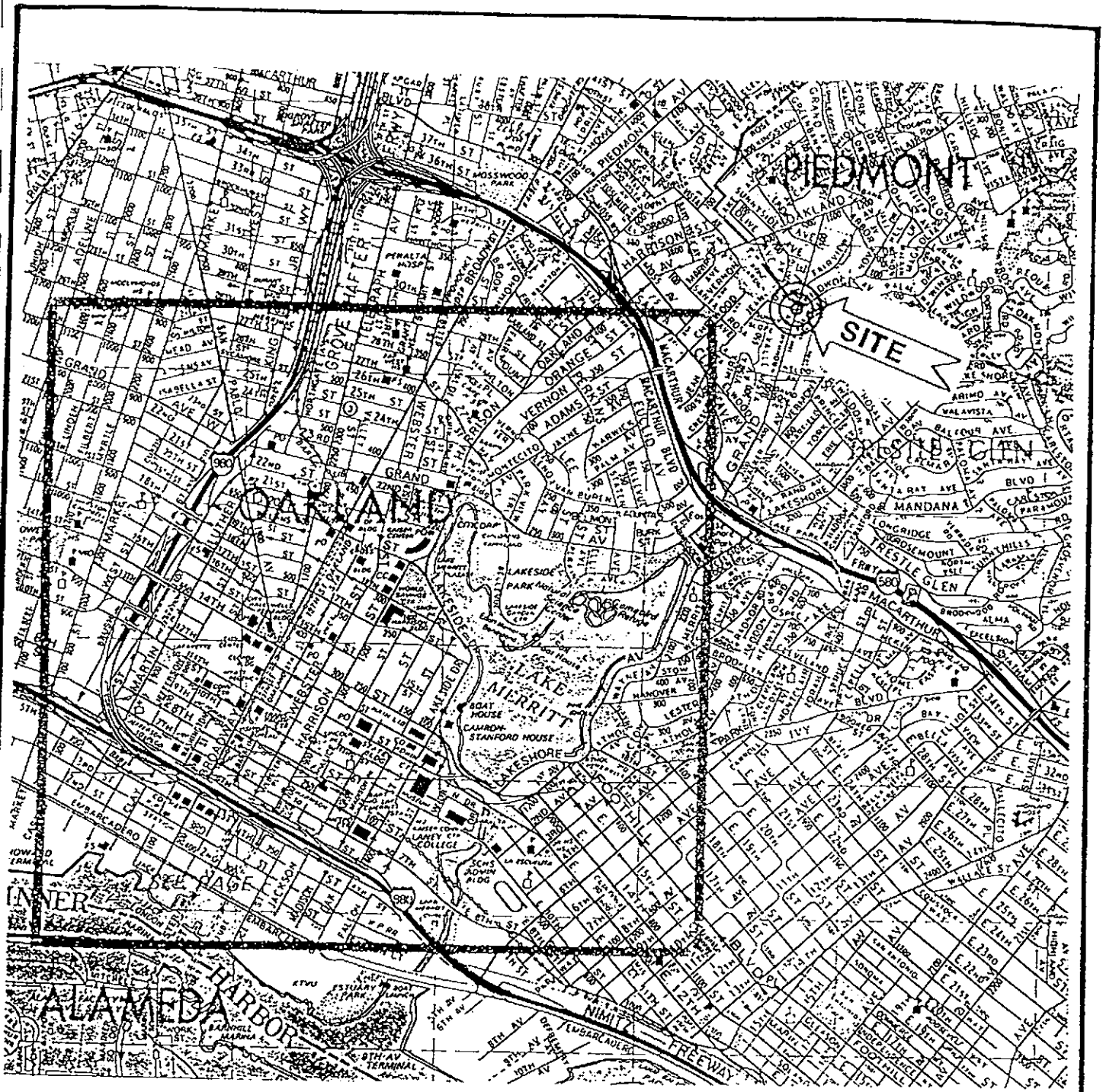
Shell Oil Company  
29 Wildwood Avenue, Piedmont, California

EES Project No. 1856G

SAMPLE NUMBER	<i>Depth</i>	TPHG (ppm)	BENZENE (ppm)	TOLUENE (ppm)	XYLENES (ppm)	ETHYLBENZENE (ppm)
B-1-1		BRL	NA	NA	NA	NA
B-2-1		BRL	NA	NA	NA	NA
B-3-1		13	NA	NA	NA	NA
B-3-2	10	6,500		1.6	2.8	2.5
B-3-3		BRL	NA	NA	NA	NA
B-4-1	10	750		1.2	1.7	1.1
B-4-2		BRL	NA	NA	NA	NA
B-5-(1-2)		BRL	NA	NA	NA	NA

ppm = Parts-per-million  
 BRL = Below Reporting Limit  
 TPHG = Total Petroleum Hydrocarbons as Gasoline  
 NA = Not Analyzed

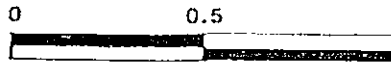
NOTE: For reporting limits, refer to laboratory reports



**LEGEND**



**SITE LOCATION**



**SCALE IN MILES**



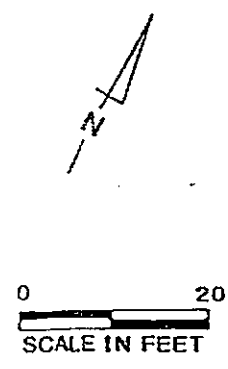
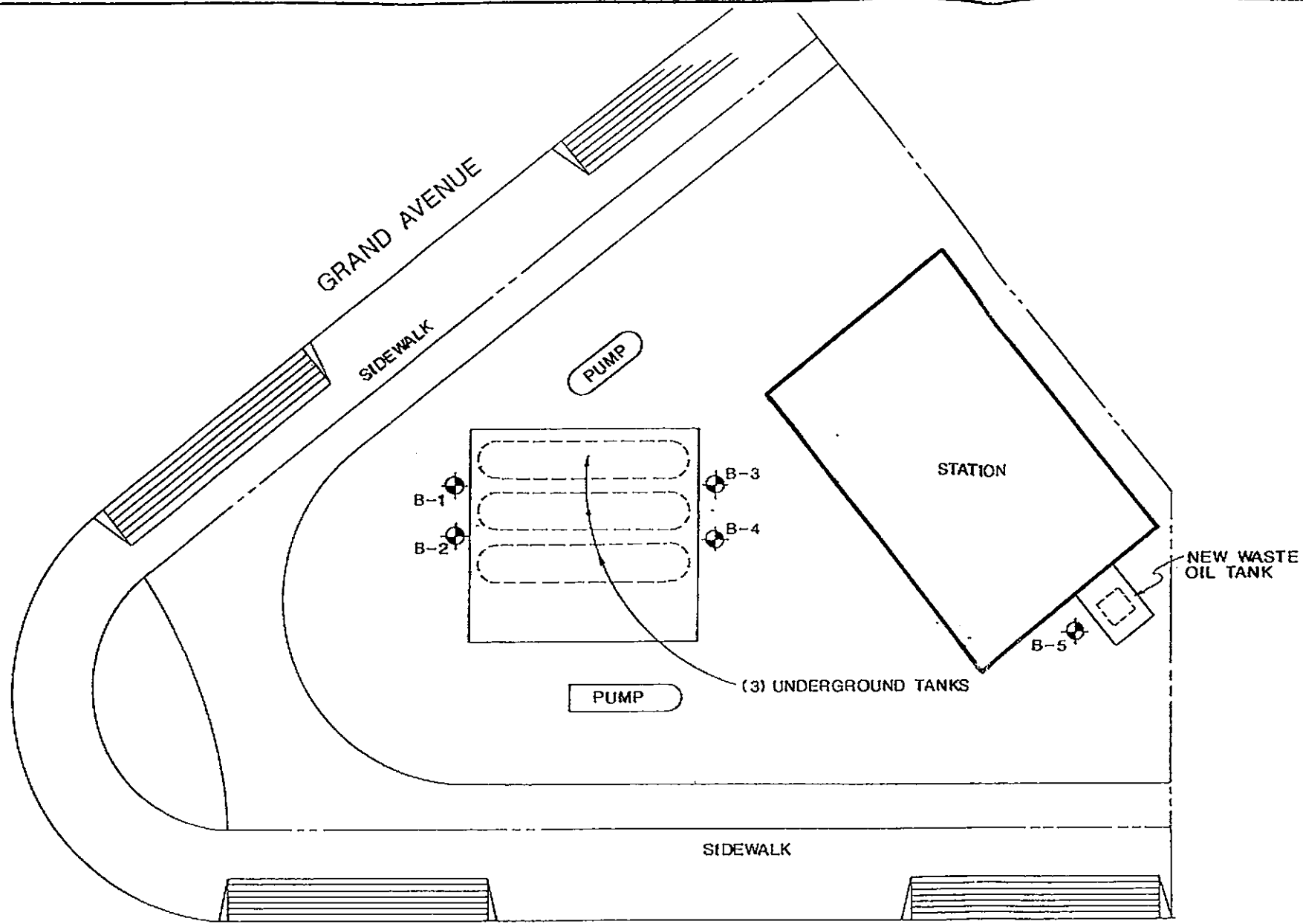
SOURCE: THOMAS BROTHERS MAPS



**SITE LOCATION MAP**  
**SHELL GAS STATION**  
**29 WILDWOOD AVENUE**  
**PIEDMONT, CALIFORNIA**

REVIEWED BY 	APPROVED BY 
DATE 9/19/88	DRAWN BY LN
	DRAWING FIG. 1





- LEGEND**
- B-1 EXPLORATORY BORING
  - BUILDING
  - SITE BOUNDARY
  - UNDERGROUND STORAGE TANK



**SITE PLAN**

SHELL OIL COMPANY  
29 WILDWOOD AVENUE  
PIEMONT, CALIFORNIA

REVIEWED BY: 	APPROVED BY: 
JOB #: 1856G	DRAWN BY: J.C.
DATE: 9-20-88	DRAWING #: FIG. 2

**APPENDIX A**

**BORING LOGS AND  
WELL CONSTRUCTION DETAILS**



ensco  
environmental  
services, Inc.

# EXPLORATORY BORING LOG

PROJECT NAME: SHELL STATION  
29 WILDWOOD AVE.  
PIEDMONT, CA  
PROJECT NUMBER: 1856G

BORING NO. B-1  
DATE DRILLED: 8/9/88  
LOGGED BY: RAG

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft/lbs.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OVA READING ppm
1	B-1-1	11		Asphalt - 3", baserock - 9"		
2			CH	SILTY CLAY, dark gray (7.5YR 4/0), some fine grained sands, petroleum odor, high plasticity, medium stiff, moist		
3			CL	SANDY CLAY, yellowish brown (10YR 5/6), fine grained sand up to 20%, slight petroleum odor, medium stiff, moist		
4			CL	SANDY CLAY, light gray to olive yellow (2.5YR 7/0 to 2.5 YR 6/6), fine grained sand to 40%, possible petroleum odor, moist, stiff		
5	B-1-2	30	CL - SC	SANDY CLAY to CLAYEY SAND, mottled light gray to strong brown (7.5YR 7/0 to 7.5YR 5/8), fine grained sands at 40 to 60%, no petroleum odor, very stiff to medium dense, very moist to wet	▽	0
6						
7						
8						
9						
10				8/9/88, Groundwater encountered - 9.5 ft.		
11				Increasing gravels, up to 0.5" across		
12				Bottom of boring = 10.5 feet		
13						
14						
15						
16						
17						
18						
19						
20						
21						

SUPERVISED AND APPROVED BY R.G./C.E.G.

*RAG*



ensco  
environmental  
services, Inc.

# EXPLORATORY BORING LOG

PROJECT NAME: SHELL STATION  
29 WILDWOOD AVE.  
PIEDMONT, CA  
PROJECT NUMBER: 1856G

BORING NO. B-2  
DATE DRILLED: 8/9/88  
LOGGED BY: RAG

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft/lps.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OYA READING ppm
1	B-2-1	7		Asphalt - 3", baserock - 9"	▽	175
2			CH	SILTY CLAY, dark gray (7.5YR 4/0), some fine grained sands, no petroleum odor, high plasticity medium stiff, moist		
3			SC	CLAYEY SAND, dark brown (10YR 3/3), fine to medium grained sands, some gravels up to 0.5" across, faint petroleum odor, loose, moist		
4			SW	SAND, dark gray (10YR 4/1), fine to medium grained, strong petroleum odor, loose, very moist, something very hard and resistant at 7 feet, large fragments of red chert 6" across in cuttings		
5				8/9/88. Groundwater encountered - 6 ft.		
6				Refusal at 7 feet		
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						

SUPERVISED AND APPROVED BY R.G./C.E.G.

*ROP*



ensco  
environmental  
services, Inc.

# EXPLORATORY BORING LOG

PROJECT NAME: SHELL STATION  
29 WILDWOOD AVE.  
PIEDMONT, CA

BORING NO. B-3

DATE DRILLED: 8/10/88

PROJECT NUMBER: 1856G

LOGGED BY: RAG

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft./1ps.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OYA READING ppm
1				Concrete - 6"		
2				Pea gravel backfill		
3						
4			SC	CLAYEY SAND, brown (10YR 5/3), fine grained sands up to 60%, petroleum odor, loose, moist to very moist		
5	B-3-1	6	CH	SILTY CLAY, black (2.5YR 2/0), some isolated gravels, petroleum odor, high plasticity, medium stiff, moist to very moist		90
6						
7						
8				8/10/88, Groundwater encountered - 8 ft.	▽	
9			CL - SC	SANDY CLAY to CLAYEY SAND, dark gray to gray (2.5y 4/0 to 2.5Y 6/0), fine grained sands, localized clayey and sandy areas, some gravels up to 2" across, strong petroleum odor, medium dense to very stiff, wet		>200
10	B-3-2	20				
11						
12						
13			CL	SILTY CLAY, reddish brown (5YR 4/3), some medium grained sands, possible petroleum odor, hard, damp to moist		
14						
15	B-3-3	74				10
16				Bottom of boring = 15.5 feet		
17						
18						
19						
20						
21						

SUPERVISED AND APPROVED BY R.G./C.E.G.



ensco  
environmental  
services, Inc.

# EXPLORATORY BORING LOG

PROJECT NAME: SHELL STATION  
29 WILDWOOD AVE.  
PIEDMONT, CA  
PROJECT NUMBER: 1856G

BORING NO. B-4  
DATE DRILLED: 8/10/88  
LOGGED BY: RAG

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft/lbs.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OVA READING ppm
1				Concrete - 6"		
2				Pea gravel backfill		
3		3		No sample recovery		
4						
5						
6						
7			SP	SAND, dark gray to very dark gray (7.5YR 4/0 to 7.5YR 3/0), fine grained sand, up to 10% clay, strong petroleum odor, loose, very moist to wet, petroleum sheen on sand		
8				8/10/88, Groundwater encountered - 8 ft.	▽	
9						
10	B-4-1	13				250
11			SC	CLAYEY SAND, greenish gray (5G 5/1), fine grained sands up to 60%, some rounded gravels up to 2" across, slight petroleum odor, loose, moist		
12						
13			CL	SILTY CLAY, reddish brown (5YR 4/3), some medium grained sands, slight petroleum odor, hard, damp		
14						
15	B-4-2	68				20
16				Bottom of boring = 15 feet		
17						
18						
19						
20						
21						

SUPERVISED AND APPROVED BY R.G./C.E.G.

*RAG*





ensco  
environmental  
services, Inc.

# EXPLORATORY BORING LOG

PROJECT NAME: SHELL STATION  
29 WILDWOOD AVE.  
PIEDMONT, CA

BORING NO. B-5

DATE DRILLED: 8/10/88

PROJECT NUMBER: 1856G

LOGGED BY: RAG

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft/lps.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OVA READING ppm
1				Asphalt - 4", baserock - 8"		
2			CH	SILTY CLAY, grayish brown (10YR 5/2), no petroleum odor, high plasticity, stiff, moist		
3			CH	SILTY CLAY, very dark grayish brown (10YR 3/2), some fine sands and medium gravels, high plasticity, slight petroleum odor, stiff, moist		
4			CH	SILTY CLAY, very dark grayish brown (10YR 3/2), some fine sands and medium gravels, high plasticity, slight petroleum odor, stiff, moist		
5	B-5-1	16	CL	SILTY CLAY to SANDY CLAY, mottled dark gray to strong brown (10YR 4/0 to 10YR 4/6), fine grained sands up to 40%, some medium sized gravels, petroleum odor, stiff, moist		20
6			CL	SILTY CLAY to SANDY CLAY, mottled dark gray to strong brown (10YR 4/0 to 10YR 4/6), fine grained sands up to 40%, some medium sized gravels, petroleum odor, stiff, moist		
7			CL-SC	SANDY CLAY to CLAYEY SAND, mottled dark grayish brown to dark brown (10YR 4/2 to 10YR 4/3), 40 to 60% fine grained sands, no petroleum odor, stiff to medium dense, moist		
8			SC	SANDY CLAY to CLAYEY SAND, mottled dark grayish brown to dark brown (10YR 4/2 to 10YR 4/3), 40 to 60% fine grained sands, no petroleum odor, stiff to medium dense, moist		
9			SC	CLAYEY SAND, light yellowish brown, fine grained sands up to 70%, no petroleum odor, medium dense, moist	▽	
10	B-5-2	14	SC-SP	CLAYEY SAND to SAND, mottled light gray to yellowish brown (10YR 7/1 to 10YR 5/6), 70 to 90% fine grained sands, no petroleum odor, medium dense, wet		0
11			SC-SP	CLAYEY SAND to SAND, mottled light gray to yellowish brown (10YR 7/1 to 10YR 5/6), 70 to 90% fine grained sands, no petroleum odor, medium dense, wet		
12				Bottom of boring = 10.5 feet		
13						
14						
15						
16						
17						
18						
19						
20						
21						

SUPERVISED AND APPROVED BY R.G.C.E.G.

*RAG*

APPENDIX B

LABORATORY ANALYTICAL REPORT.

**ANAMETRIX, INC.**

LABORATORY SERVICES

ENVIRONMENTAL • ANALYTICAL CHEMISTRY

1961 CONCOURSE DR., SUITE E • SAN JOSE, CA 95131

TEL: (408) 432-8192 • FAX: (408) 432-8198

Dave Blunt  
Ensco/Exceltech  
41674 Christy Street  
Fremont, CA 94539-3114

August 18, 1988  
Work Order Number 8808085  
Date Received 08/11/88  
Project No. 1856

Dear Mr. Blunt:

Eight soil samples were received for analysis of BTEX plus total volatile hydrocarbons as gasoline by gas chromatography, using the following EPA method(s):

ANAMETRIX I.D.	SAMPLE I.D.	METHOD(S)
8808085-01	1856 B-3-1	8015
-02	" B-3-2	8015/8020
-03	" B-3-3	8015
-04	" B-4-1	8015/8020
-05	" B-4-2	8015
-06	" B-5-(1-2) COMP.	"
-07	" B-1-1	"
-08	" B-2-1	"

RESULTS

See enclosed data sheets, Pages 2 thru 9.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,



Sarah Schoen, Ph.D.  
GC Manager

SRS/dg

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-3-1	Anamatrix I.D. : 8808085-01
Matrix : SOIL	Analyst : <i>ml</i>
Date sampled : 08-10-88	Supervisor : <i>js</i>
Date anl. TVH: 08-12-88	Date released : 08-18-88
Date ext. TEH: NA	Date ext. TOG : NA
Date anl. TEH: NA	Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
	TVH as Gasoline	5000	13000

- BRL - Below reporting limit.
- TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.
- TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.
- TOG - Total Oil & Grease is determined by Standard Method 503E.
- BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-3-2  
Matrix : SOIL  
Date sampled : 08-10-88  
Date anl. TVH: 08-12-88  
Date ext. TEH: NA  
Date anl. TEH: NA

Anamatrix I.D. : 8808085-02  
Analyst : *mb*  
Supervisor : *Sm*  
Date released : 08-18-88  
Date ext. TOG : NA  
Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	200	4500
108-88-3	Toluene	200	1600
100-41-4	Ethylbenzene	200	2500
1330-20-7	Total Xylenes	200	28000
	TVH as Gasoline	5000	6500000

BRL - Below reporting limit.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.

TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.

TOG - Total Oil & Grease is determined by Standard Method 503E.

BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-3-3  
 Matrix : SOIL  
 Date sampled : 08-10-88  
 Date anl. TVH: 08-12-88  
 Date ext. TEH: NA  
 Date anl. TEH: NA

Anamatrix I.D. : 8808085-03  
 Analyst : *mlh*  
 Supervisor : *Jns*  
 Date released : 08-18-88  
 Date ext. TOG : NA  
 Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
	TVH as Gasoline	5000	BRL

- BRL - Below reporting limit.
- TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.
- TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.
- TOG - Total Oil & Grease is determined by Standard Method 503E.
- BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.



ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-4-1  
 Matrix : SOIL  
 Date sampled : 08-10-88  
 Date anl. TVH: 08-15-88  
 Date ext. TEH: NA  
 Date anl. TEH: NA

Anamatrix I.D. : 8808085-04  
 Analyst : *mh*  
 Supervisor : *SHS*  
 Date released : 08-18-88  
 Date ext. TOG : NA  
 Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
71-43-2	Benzene	200	3400
108-88-3	Toluene	200	1200
100-41-4	Ethylbenzene	200	11000
1330-20-7	Total Xylenes	200	17000
	TVH as Gasoline	5000	750000

BRL - Below reporting limit.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.

TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.

TOG - Total Oil & Grease is determined by Standard Method 503E.

BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-4-2  
 Matrix : SOIL  
 Date sampled : 08-10-88  
 Date anl. TVH: 08-12-88  
 Date ext. TEH: NA  
 Date anl. TEH: NA

Anametrix I.D. : 8808085-05  
 Analyst : *ml*  
 Supervisor : *JW*  
 Date released : 08-18-88  
 Date ext. TOG : NA  
 Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
	TVH as Gasoline	5000	BRL

BRL - Below reporting limit.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.

TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.

TOG - Total Oil & Grease is determined by Standard Method 503E.

BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-5-(1-2)COMP.	Anamatrix I.D. : 8808085-06
Matrix : SOIL	Analyst : <i>ml</i>
Date sampled : 08-10-88	Supervisor : <i>JS</i>
Date anl. TVH: 08-15-88	Date released : 08-18-88
Date ext. TEH: NA	Date ext. TOG : NA
Date anl. TEH: NA	Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
	TVH as Gasoline	5000	BRL

- BRL - Below reporting limit.
- TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.
- TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.
- TOG - Total Oil & Grease is determined by Standard Method 503E.
- BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-1-1  
 Matrix : SOIL  
 Date sampled : 08-09-88  
 Date anl. TVH: 08-12-88  
 Date ext. TEH: NA  
 Date anl. TEH: NA

Anamatrix I.D. : 8808085-07  
 Analyst : *mf*  
 Supervisor : *dm*  
 Date released : 08-18-88  
 Date ext. TOG : NA  
 Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
	TVH as Gasoline	5000	BRL

BRL - Below reporting limit.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.

TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.

TOG - Total Oil & Grease is determined by Standard Method 503E.

BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 1856 B-2-1  
 Matrix : SOIL  
 Date sampled : 08-09-88  
 Date anl. TVH: 08-12-88  
 Date ext. TEH: NA  
 Date anl. TEH: NA

Anametrix I.D. : 8808085-08  
 Analyst : *mh*  
 Supervisor : *SN*  
 Date released : 08-18-88  
 Date ext. TOG : NA  
 Date anl. TOG : NA

CAS #	Compound Name	Reporting Limit (ug/kg)	Amount Found (ug/kg)
	TVH as Gasoline	5000	BRL

BRL - Below reporting limit.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.

TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.


TOG - Total Oil & Grease is determined by Standard Method 503E.

BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

Question  
 Dave Blunt

CHAIN OF CUSTODY RECORD

PROJECT NO		PROJECT NAME				TEST REQUESTED										REMARKS					
1856		Shell - Piedmont				Modified TPH EPA 8015	EPA BTX 8020														
SAMPLERS (Signature) Robert A. Blunt																					
NO	DATE	TIME	DRIVE	GRAB	STATION AND LOCATION	TPH EPA 8015	BTX EPA 8020														
B-1-1	8/9/88					X															
B-2-1	"					X															
[Large diagonal line across the table]																					
RELINQUISHED BY		DATE	TIME	RECEIVED BY:			RELINQUISHED BY:		DATE	TIME	RECEIVED BY:										
[Signature]		10:00	8/11/88																		
RELINQUISHED BY		DATE	TIME	RECEIVED BY:			RELINQUISHED BY:		DATE	TIME	RECEIVED BY LABORATORY										
									8-11-88	10:00	Tephi Memo attached										
REMARKS							 <b>ensco environmental services, inc.</b> 41674 Christy Street Fremont, CA 94538-3114 (415) 659-0404 Fax: (415) 651-4677 Contr. Lic. No. 464324														
DISTRIBUTION							ATTN: Dave Blunt 5-DAY														



29.00  
 Dale Blunt

# CHAIN OF CUSTODY RECORD

PROJECT NO		PROJECT NAME				TEST REQUESTED																
1856		Shell Piedmont				TPH	BTX	EPA 8010	EPA 8020													
SAMPLERS (Signature)																						
Dale A. Blunt																						
NO	DATE	TIME	DRIVE	GRAB	STATION AND LOCATION																	
α B-3-1	8/10/88		-		5-5k																	
α B-3-2	8/10/88		-		10-10k																	
α B-3-3	8/10/88		-		15-15k																	
α B-4-1	8/10/88		-		10-10k																	
α B-4-2	8/10/88		-		15-15k																	
α B-5-1	8/10/88		-		5-5k																	
α B-5-2	8/10/88		-		10-10k																	

If TPH for composite sample is > 100ppm, then run each individual sample for TPH.  
 Any individual sample which TPH > 100ppm run that sample for BTX.

Individual Sample  
 Individual Sample  
 Individual Sample  
 Individual Sample  
 Individual Sample  
 Composite 1  
 Composite 1

RELINQUISHED BY: Dale Blunt	DATE: 8/11/88	TIME: 10:00	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE: 8-11-88	TIME: 10:00	RECEIVED BY: Toph: Memorod 11

REMARKS: Actv: Dale Blunt  
 5-DAY

DISTRIBUTION



**ensco environmental services, inc.**  
 41674 Christy Street  
 Fremont, CA 94538-3114  
 (415) 659-0404  
 Fax: (415) 651-4677  
 Contr. Lic. No. 484324

**ATTACHMENT B**

**EMCON SUBSURFACE HYDROGEOLOGIC INVESTIGATION**



**EMCON**

ASSOCIATES  
Consultants in Wastes  
Management and  
Environmental Control

September 20, 1984  
Project 438-37.01

Gettler-Ryan, Inc.  
1992 National Avenue  
Hayward, California 94545

Attention: Mr. Jeffrey M. Ryan

Re: Subsurface Hydrogeo-  
logic Investigations,  
Shell Station,  
29 Wildwood Avenue,  
Piedmont, California

Gentlemen:

This letter presents our report on soil and ground-water investigations at the Shell Oil Station located at 29 Wildwood Avenue in Piedmont, California. The purpose of this investigation was to examine soil and ground-water conditions (1) in the tank excavation, and (2) downgradient of the subsurface petroleum product storage tanks.

#### FIELD INVESTIGATION PROCEDURES

Four exploratory borings were drilled using continuous-flight, hollow-stem auger drilling equipment, and were logged by an EMCON geologist. The location of all four exploratory borings is presented on the attached Figure 1. Soil samples for logging were obtained from auger-return materials and using a California split-spoon sampler advanced into undisturbed soil beyond the tip of the auger. Logs of the exploratory borings are attached. Soil samples for chemical testing were collected in brass rings, wrapped in aluminum foil, placed in glass containers, and transported to the laboratory on ice with the appropriate chain-of-custody documentation. The samples were delivered directly to an independent laboratory as authorized by Gettler-Ryan. Analytical results will be sent directly to Shell Oil Company by the laboratory.

Borings E-1, E-2, and E-3 were placed directly in the tank excavation to provide definition of subsurface conditions. These borings were back-filled with cuttings and concrete upon completion as noted on the logs.

Boring E-4 was converted to a monitoring well with the installation of 3-inch PVC casing. A summary of the well construction details is presented on the bottom of the enclosed Exploratory Boring Log.

#### SOIL AND GROUND-WATER CONDITIONS

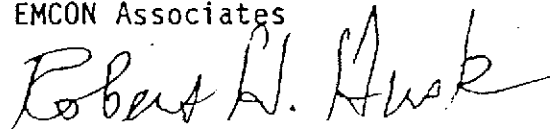
Subsurface conditions explored by Borings E-1, E-2, and E-3 ranged from 5 to 6-1/2 feet. These borings encountered fill material which consisted of fine sand and silty clay. Boring E-4 was advanced to a depth of 35 feet and primarily encountered clay with thin clayey sand interbeds. Ground water was encountered in Boring E-4 at a depth of 28 feet.

Petroleum product was encountered in Borings E-1, E-2, and E-3 at an approximate depth of 5 feet within the tank backfill. No visible signs of petroleum product contamination was noted in Boring E-4 at the time of our investigation.


If you have any questions regarding the contents of this letter or the findings of our investigation, please do not hesitate to call.

Very truly yours,

EMCON Associates



Robert H. Husk  
Staff Geologist



Susan M. Willhite  
Project Coordinator

RHH/SMW:y1

Enclosures

NOTES:

Logs of Exploratory Borings

2.5 YR 6/2

Denotes color as field checked to Munsell Soil Color Charts (1975 Edition)



Denotes undisturbed sample taken in 2-inch split-spoon sampler.



Denotes disturbed sample (bag sample)..



Denotes first observation of ground water.



Denotes static ground-water level.

Penetration

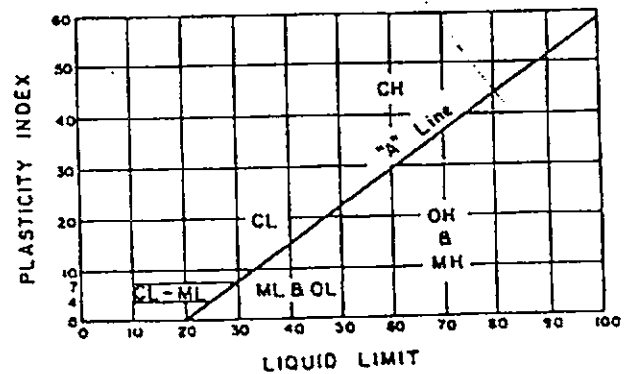
Sample drive hammer weight - 140 pounds, drop - 30 inches. Blows required to drive sampler 1 foot are indicated on the logs.

MAJOR DIVISIONS		SYMBOLS	TYPICAL SOIL DESCRIPTIONS
COARSE GRAINED SOILS (More than 1/2 of soil > no. 200 sieve size)	<u>GRAVELS</u> (More than 1/2 of coarse fraction < no. 4 sieve size)	GW	Well graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	<u>SANDS</u> (More than 1/2 of coarse fraction < no. 4 sieve size)	SW	Well graded sands or gravelly sands, little or no fines
		SP	Poorly graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS (More than 1/2 of soil < no. 200 sieve size)	<u>SILTS &amp; CLAYS</u> <u>LL &lt; 50</u>	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	<u>SILTS &amp; CLAYS</u> <u>LL &gt; 50</u>	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS	Pt	Peat and other highly organic soils	

CLASSIFICATION CHART  
(Unified Soil Classification System)

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL	3" to No. 4	76.2 to 4.76
	coarse 3" to 3/4"	76.2 to 19.1
	fine 3/4" to No. 4	19.1 to 4.76
SAND	No. 4 to No. 200	4.76 to 0.074
	coarse No. 4 to No. 10	4.76 to 2.00
	medium No. 10 to No. 40	2.00 to 0.420
	fine No. 40 to No. 200	0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074

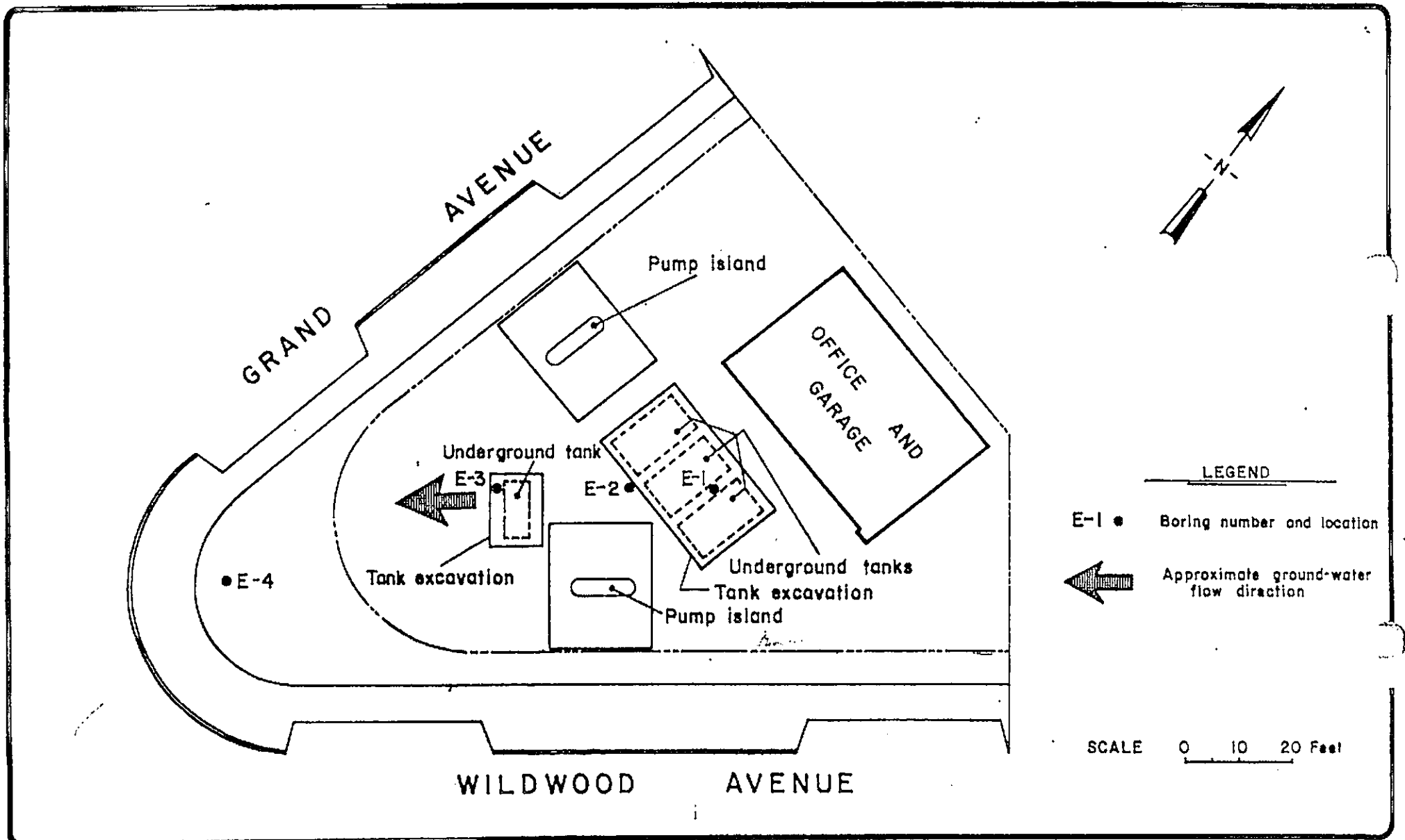
GRAIN SIZE CHART



PLASTICITY CHART

METHOD OF SOIL CLASSIFICATION






**EMCON**  
Associates  
San José, California

GETTLER - RYAN, INC.  
SUBSURFACE HYDROGEOLOGIC INVESTIGATIONS  
SHELL STATION, GRAND AVE. AND WILDWOOD AVE.  
PIEDMONT, CALIFORNIA

---

SITE PLAN AND BORING LOCATION MAP

FIGURE  
|  
PROJECT NO.  
438-37.01


# LOG OF EXPLORATORY BORING

PROJECT NUMBER 438-37.01

BORING NO. E-1

BY BH DATE 8/15/84

SURFACE ELEV. -

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index	Compressive Strength (TSF)	Penetration (Blows/Ft.)					
						5			4-inch Concrete FILL - Dark gray (2.5Y N4/0) fine SAND has a very strong product odor - damp (very dark grayish brown (2.5Y 3/2) sandy CLAY has product sheen - wet)
						10			BOTTOM OF BORING

REMARKS: Boring was backfilled to 4-inch with cuttings and capped with 4-inches of concrete.





# LOG OF EXPLORATORY BORING

PROJECT NUMBER 438-37.01

BORING NO. E-2

BY BH DATE 8/15/84

SURFACE ELEV. -

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No. 200)	Liquid Limit	Plasticity Index	Compressive Strength (TSF)	Penetration (Blows/Ft.)					
				9		5	█	█	4-inch Concrete FILL - Black (2.5Y N2/0) silty CLAY has strong product odor - damp (has strong product sheen) BOTTOM OF BORING
						10			

REMARKS: Boring was backfilled to 4-inches with cuttings and capped with 4-inches of concrete.




# LOG OF EXPLORATORY BORING

PROJECT NUMBER 438-37.01

BORING NO. E-3

BY BH DATE 8/15/84

SURFACE ELEV. -

CLASSIFICATION DATA			FIELD DATA		Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No 200)	Liquid Limit	Plasticity Index	Compressive Strength (TSF)	Penetration (Blows/Ft.)				
				8 5	5			4-inch Concrete FILL - Dark olive gray (5Y 3/2) fine SAND has strong product odor - damp (has strong product sheen) BOTTOM OF BORING

REMARKS: Boring was backfilled to 4-inches with cuttings and capped with 4-inches of concrete.



# LOG OF EXPLORATORY BORING

PROJECT NUMBER 438-37.01

BORING NO. E-4

BY BH DATE 8/15/84

SURFACE ELEV. -

CLASSIFICATION DATA			FIELD DATA		Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index	Compressive Strength (TSF)	Penetration (Blows/Ft.)				
								2-inch Asphalt and 4-inch Baserock
					29	5		(SC)Very dark grayish brown (10YR 3/2) clayey SAND - damp
								(CL)Dark olive gray (5Y 3/2) sandy CLAY - damp
								(SC)Dark olive gray (5Y 3/2) clayey SAND - damp
					35	10		(CL)Dark yellowish brown (10YR 3/6) fine sandy CLAY - damp (brown (7.5YR 5/2) sandy - damp to dry) (contains thin gravelly interbeds)
					35	15		(dark brown (7.5YR 3/4) sandy damp)
					70	20		(gray (5Y 5/1) silty very fine sandy - damp to dry)
					58	25		(light olive gray (5Y 6/2) very fine sandy contains minor medium to coarse sand - damp to dry)
					55	30		(SM)Olive gray (5Y 5/2) silty fine SAND - wet
								(CL)Mottled brown (7.5YR 4/2) and dark yellowish brown (10YR 4/6) CLAY - damp to dry (mottled brown (7.5YR 4/2) and yellowish brown (10YR 5/6) sandy contains thin gravelly interbeds - damp to dry
					65	35		BOTTOM OF BORING

REMARKS: Boring was converted to a ground-water monitoring well with the installation of 35 feet of 3-inch PVC casing. The lower 12 feet of casing was slotted and the annular space backfilled to 15 feet with coarse aquarium sand. A bentonite-concrete seal was placed from 15 feet to 1 foot. The well was capped with a protective vault box and a locking device.



**ATTACHMENT C**  
**TANK CERTIFICATION DOCUMENTS**

Facility WIC Number: 204-6001-0109 District: East Bay

Facility Address: 29 Wildwood AVE.  
Piedmont, CA. 94610

Purpose of Visit: Tank and Line Testing

Tank Material:  Steel  Fiberglass  
 Line Material:  Steel  Fiberglass  
 Product Tanks:  Single Wall  Double Wall  
 Product Lines:  Single Wall  Double Wall  
 Waste Oil Tank:  Single Wall  Double Wall  None

PRODUCT TANK MONITORING SYSTEM:

QTY TYPE  Wet  Dry  
 Interstitial Monitor  
 Vadose Zone Monitor  
 Fill/Vapor Recovery Risers  
 Monitored Visually (Daily Inventory)

Manufacturer:  API Reservoir  API IR (VADOSE)  
 API MOS(VADOSE)  Geneico  Leakalert  
 OC reservoir  Pollualert  Red Jacket  
 Soil Sentry  Spearhead  Other \_\_\_\_\_

Model: \_\_\_\_\_

Arriving Status:  Operational  Non-operational  
 Corrective Action:  Performed  Required  
 Departing Status:  Operational  Non-operational

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

PRODUCT LINE MONITORING SYSTEM:

QTY TYPE  
 Electronic Line Pressure Monitor w/ Mech. Leak Detector  
 Electronic Line Pressure Monitor w/o Mech. Leak Detector  
 Interstitial Monitor w/ Mech. Leak Detector  
 Mechanical Leak Detector Alone

Electronic Line Pressure or Interstitial Monitor Manufacturer:  
 API Pressure  API Sump  API Sump/Line  
 Leakalert  Other \_\_\_\_\_

Model: \_\_\_\_\_

Arriving Status:  Operational  Non-operational  
 Corrective Action:  Performed  Required  
 Departing Status:  Operational  Non-operational

PRODUCT LINE MONITORING SYSTEM-Cont'd.

Mechanical Leak Detector Manufacturer:

RJ slow flow:             Round Diaphragm     Hex Diaphragm  
RJ shut off:             PLD Piston             XLP Piston  
Vaporless LD 2000:     Piston                 Other: \_\_\_\_\_

Model: \_\_\_\_\_

Arriving Status:             Operational             Non-operational  
Corrective Action:         Performed             Required  
Departing Status:         Operational             Non-operational

Remarks: \_\_\_\_\_

Waste Oil Tank Monitoring System

QTY	TYPE		
<input type="checkbox"/>	Visually Monitored (Daily Inventory)		
<input type="checkbox"/>	Site Well Vapor Probes		
<input checked="" type="checkbox"/>	Interstitial Monitor	<input checked="" type="checkbox"/> Wet	<input type="checkbox"/> Dry
<input type="checkbox"/>	Sump		

Manufacturer:  
 API                     Leakalert             Pollualert  
 OC reservoir         Other \_\_\_\_\_

Model: \_\_\_\_\_

Arriving Status:             Operational             Non-operational  
Corrective Action:         Performed             Required  
Departing Status:         Operational             Non-operational

Remarks: \_\_\_\_\_

I certify that the above information and operating status is representative of the actual condition of the monitoring system.

Dean L  
Signature

Lawknology  
Company

5-7-92  
Date

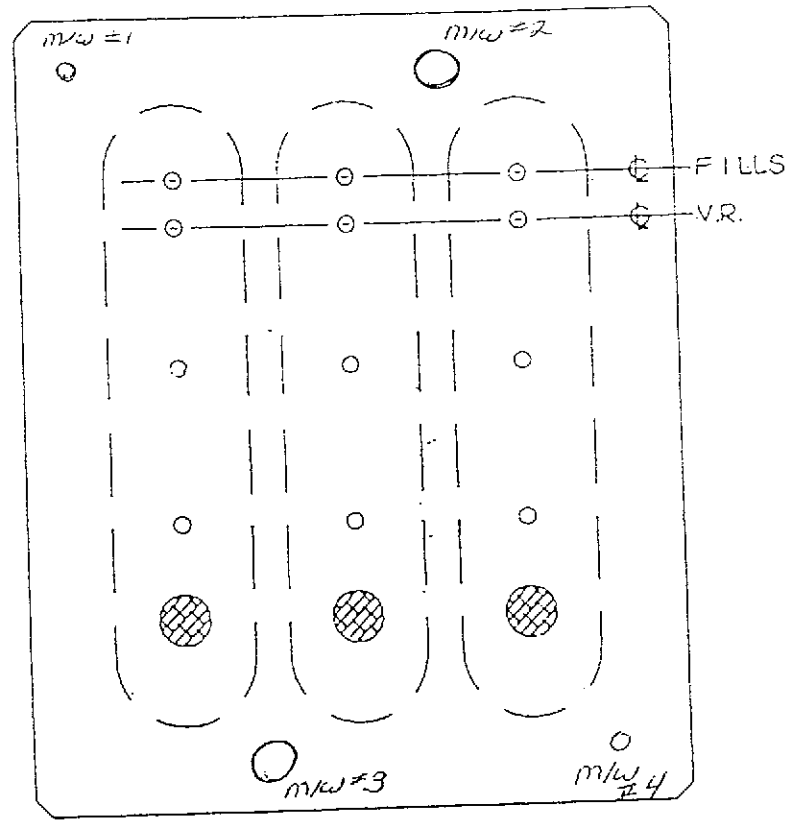
SHELL OIL COMPANY  
TANK COMPLEX OBSERVATION/MONITORING WELL  
INSPECTION PROGRAM

LOCATION: 29 Wildwood AVE,  
Piedmont, CA. 94610

WIC#: 204-60010109  
DATE: 5-7-92

	WELL TYPE	WELL DEPTH	WELL PIPE DIAMETER	LIQUID DEPTH	LIQUID TYPE	
					Water	Product
1		146	4"	63"	63"	Ø
2		149	12"	58"	58"	Ø
3		154"	12"	70"	70"	Ø
4		123"	4"	65"	65"	Ø

SITE SKETCH



COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SHELL OIL COMPANY CERTIFICATION OF FILL TUBES & INSPECTION OF SPILL BOXES

Station WIC Number: 204-6001-0109

District: East Bay

Station Address: 29 Wilburwood AVE.  
Piedmont, CA, 94601

Purpose of Visit: TANK + LINE TESTING

SPILL BOXES			
Product	Type	Condition	Drain Operational?
SU	25 GAL	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
RU	25 GAL	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
REG	25 GAL	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
DSL	NONA N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No

FILL TUBES					
Product	Distance From Tank Bottom	Overfill		Condition of Overfill Flapper	Stick Shield Present?
		Installed?	Type		
SU	3 inches	Yes	OPW	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
RU	4 inches	Yes	OPW	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
REG	4 inches	Yes	OPW	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	inches				<input type="checkbox"/> Yes <input type="checkbox"/> No
DSL	N/A inches			N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No

- ARE PRODUCT IDENTIFICATION TAGS/COLLARS INSTALLED?  YES  NO
- TURBINE TYPE:  Cathodic Protective  Enclosed  Sacrificial Anode  
 Secondary Contained  Unprotected

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

I certify the above measurements regarding fill tube distances are correct.

Dean Lutek  
SIGNATURE

Tankology  
COMPANY

5-7-92  
DATE

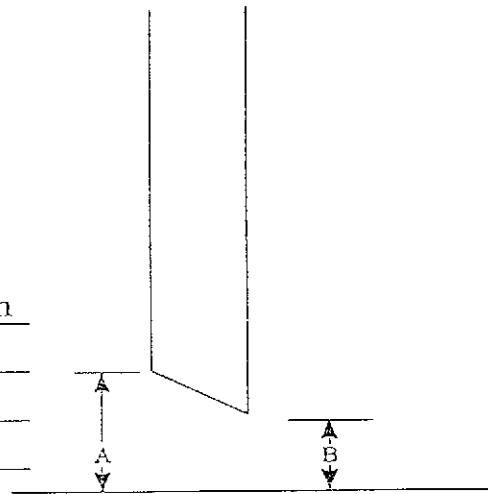


CERTIFICATION OF FILL TUBE MEASUREMENT

Station Number: 204-6001-0109 District: EAST Bay  
 Station Address: She 11  
29 Wildwood AVE.  
Piedmont, CA. 94601  
 Purpose of visit: TANK and LINE TESTING

FILL TUBE MEASUREMENT  
 (DO NOT ROUND OFF)

Product	Distance From Tank Bottom
SU	A 3" B 2" in.
RU	A 4" B 2" in.
SR	A 4" B 2" in.



"A" DIMENSION MUST NOT EXCEED 6"

I do certify that the above measurements are correct and that the highest point of each fill tube is within 6 inches from the tank bottom.

SIGNATURE Dean K  
 COMPANY TANKSOL  
 DATE 5-7-92

**ATTACHMENT D**

**WEISS ASSOCIATES' NOVEMBER 18, 1992 LETTER**



November 18, 1992

Jennifer Eberle  
Alameda County Department of  
Environmental Health  
80 Swan Way, Room 200  
Oakland, California 94621

Re: STID #1107  
Shell Service Station  
29 Wildwood Avenue  
Piedmont, California  
WA Job #81-463-100

Dear Ms. Eberle:

As you requested in your November 9, 1992 meeting with Shell Oil Company Environmental Engineer Dan Kirk and Weiss Associates (WA) Geologist Scott MacLeod, WA has identified and located underground utilities lines beneath Wildwood Avenue south of the site referenced above (Figure 1). Our objective was to assess whether these lines are deep enough to impact hydrocarbon migration in ground water. Our findings are presented below.

WA contacted Underground Service Alert to determine which parties have underground utilities beneath Wildwood Avenue near the site. WA then contacted each party directly and inquired about the depth and location of their lines:

- ***Pacific Gas and Electric.*** A 3-inch diameter plastic gas main was installed in 1985 and is located about 23 ft south of the north property line at about 36 inches below grade. An electrical line runs along the south side of Wildwood Avenue and is probably between 36 and 42 inches below ground surface.
- ***Pacific Bell (PacBell).*** Telephone lines are beneath Wildwood Avenue south of the site. PacBell will mark the exact locations at the site of the lines by November 23, 1992; however, they do not have any information about the depth of these lines.
- ***East Bay Municipal Water District.*** A 6-inch diameter cast iron water main runs beneath Wildwood Avenue about 15 ft southeast of the center line. The main, which was installed in 1930, is probably about 3 ft below ground surface.

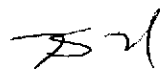
- **Cable Oakland.** A cable line is about 12 inches beneath each side of Wildwood Avenue and about 2 to 4 ft inside each curb.
- **City of Piedmont Public Works Department.** A Piedmont city 10-inch diameter sanitary sewer and a 48-inch diameter storm sewer run beneath the northern Wildwood Avenue sidewalk. Another 18-inch diameter sanitary sewer is beneath the avenue's center line. City records do not contain information about the depths of these lines.
- **City of Oakland Public Works Department.** A 6-inch diameter sanitary sewer runs beneath Wildwood Avenue about 5 ft south of the center line. The city could not provide information about the sewer's depth at this time.

WA will visit the site next week to collect more information about the sewer and telephone lines and will provide you with this information. We trust that submittal meets your needs. Please call us if you have any questions or comments.

Sincerely,  
Weiss Associates



Thomas Fojut  
Senior Staff Geologist



N. Scott MacLeod  
Project Geologist

TF/NSM:tf

C:\SHELL\463L1NO2.WP

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998

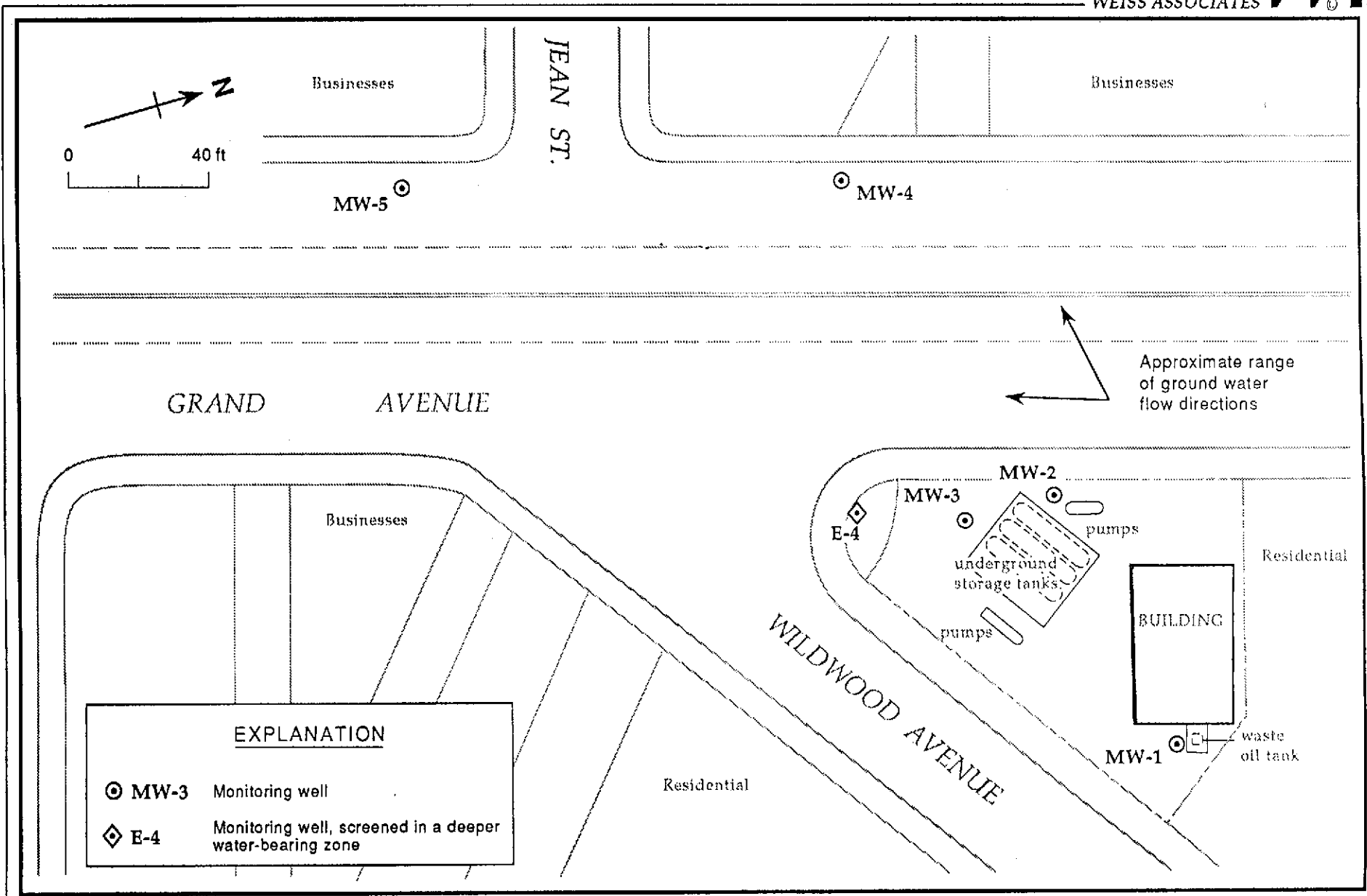


Figure 1. Site Base Map - Shell Service Station, WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California