

Shell Oil Company



EAST BAY  
MARKETING DISTRICT

P.O. Box 4023  
Concord, CA 94524  
(415) 676-1414

November 6, 1989

11/8/89

ALAMEDA COUNTY  
DEPT. OF ENVIRONMENTAL HEALTH  
HAZARDOUS MATERIALS

Mr. Gil Wistar  
Alameda County Dept. of Env. Health  
80 Swan Way, Room 200  
Oakland, CA 94621

*file*

SUBJECT: 29 WILDWOOD AVENUE  
PIEDMONT, CA 94611

Dear Mr. Wistar:

As we discussed at our October 31 meeting, enclosed is the EMCON report detailing previous investigations at the subject site.

If you have any questions, please contact me at (415) 676-1414, Ext. 127.

Very truly yours,

Diane M. Lundquist  
District Environmental Engineer

Enclosure

CONTAINS  
1984 EMCON  
Report



**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*

Robert H. Husk  
Staff Geologist

*Susan M. Willhite*

Susan M. Willhite  
Project Coordinator

RHH/SMW:y1

Enclosures

*had no results indicated.*

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.

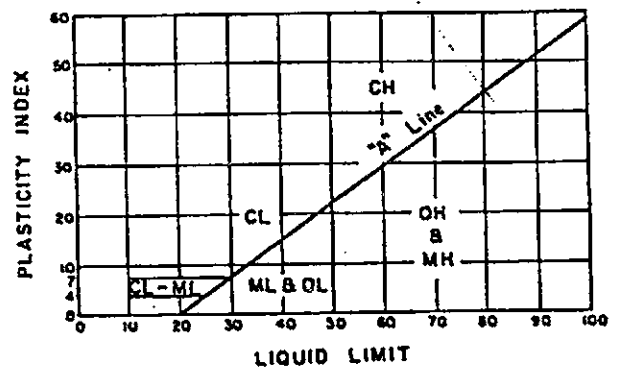
Penetration

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 SYMBOLS	DESCRIPTIONS
<b>COARSE GRAINED SOILS</b> (More than 1/2 of soil > no. 200 sieve size)	<u>GRAVELS</u>		
	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>		
	SW		Well graded sands or gravelly sands, little or no fines
	SP		Poorly graded sands or gravelly sands, little or no fines
<b>FINE GRAINED SOILS</b> (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	
<b>HIGHLY ORGANIC SOILS</b>	Pt		Peat and other highly organic soils

**CLASSIFICATION CHART**  
(Unified Soil Classification System)

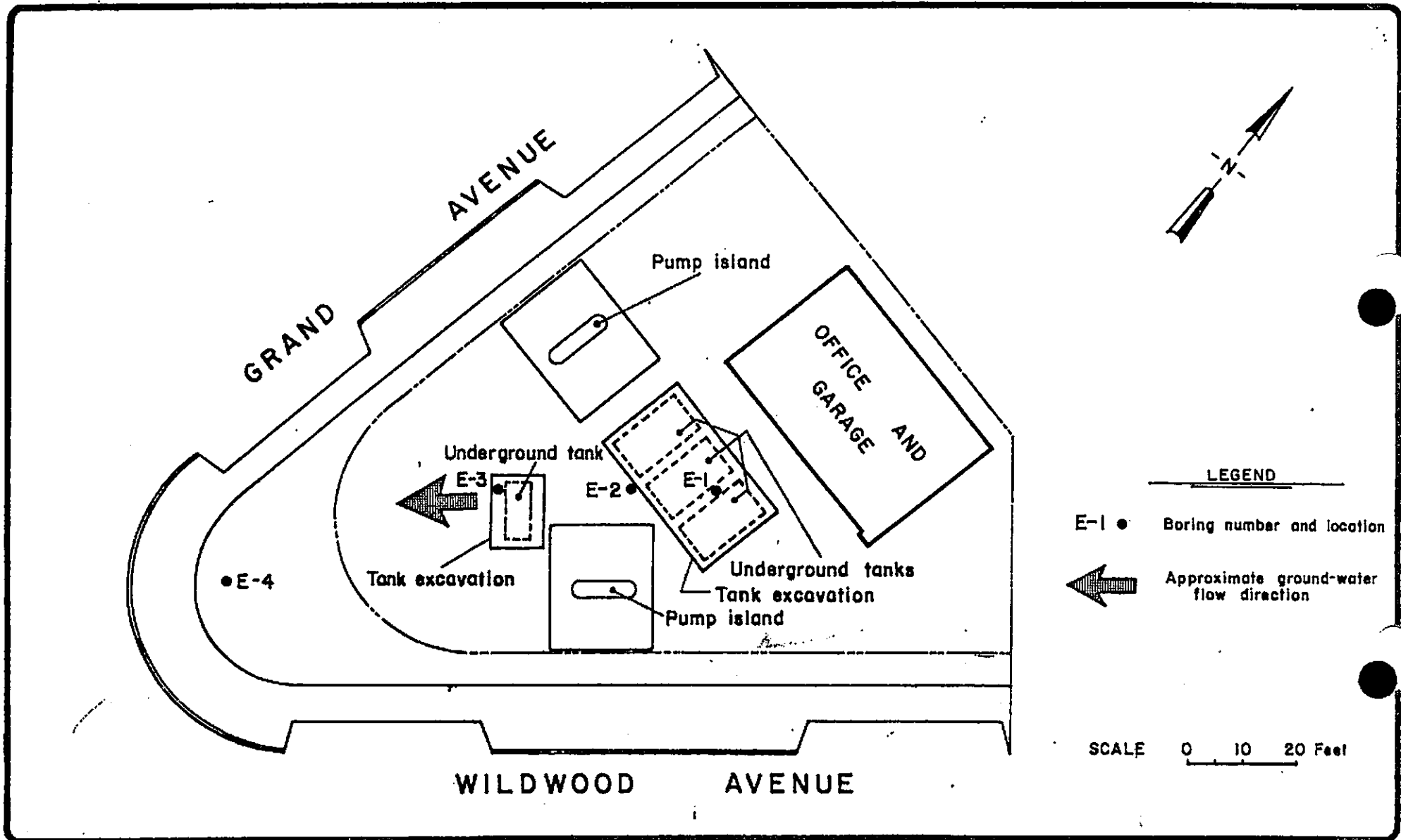
CLASSIFICATION	RANGE OF GRAIN SIZES	
	U. S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL	3" to No. 4	76.2 to 4.76
	coarse 3" to 3/4"	76.2 to 19.1
	fine 3/4" to No. 4	19.1 to 4.76
SAND	No. 4 to No. 200	4.76 to 0.074
	coarse No. 4 to No. 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



**PLASTICITY CHART**

**GRAIN SIZE CHART**

**METHOD OF SOIL CLASSIFICATION**




**EMCON**  
**Associates**  
 San Jose, 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  
 BY BH DATE 8/15/84

BORING NO. E-1  
 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  
 BY BH DATE 8/15/84

BORING NO. E-2  
 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
					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-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
					65	35		(mottled brown (7.5YR 4/2) and yellowish brown (10YR 5/6) sandy contains thin gravelly interbeds - damp to dry
								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.

