PACIFIC
ENVIRONMENTAL
GROUP, INC.

May 4, 1994
Project 305-131.2B

Mr. Daniel T. Kirk
Shell Oil Company
P.O. Box 5278
Concord, California 94520

Re: Quarterly Report - First Quarter 1994
Shell Service Station
4411 Foothill Boulevard at High Street
Oakland, California
WIC No 204-5508-3400

Dear Mr. Kirk:

The following presents the results of the first quarter 1994 monitoring program for the site referenced above. This letter has been prepared for Shell Oil Company (Shell) by Pacific Environmental Group, Inc. (PACIFIC).

FINDINGS

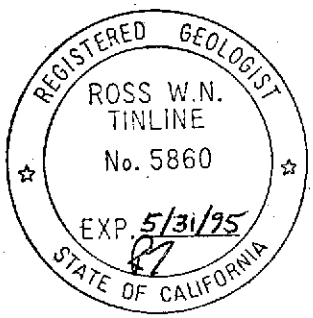
Groundwater monitoring wells were gauged and sampled by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC on March 17, 1994. Groundwater elevation contours for the sampling date are shown on Figure 1, which includes data supplied by Groundwater Technology, Inc. for the Chevron U.S.A. Products Company (Chevron) station. Data were not available for the BP Oil Company (BP) station. PACIFIC expects to coordinate joint monitoring with all three sites in the third quarter 1994, as the BP station has completed second quarter sampling. Groundwater elevation contours are presented for the Shell site only, as groundwater elevations off-site are significantly lower and possibly represent different water-bearing zones. Geologic cross-sections are being constructed to evaluate aquifer characteristics in the area. Table 1 presents groundwater elevation data.

Groundwater analytical data are presented in Table 2. The laboratory inadvertently analyzed Well S-1 for TPH as motor oil by both Standard Method 5520BF and EPA Method 8015. The concentration reported by EPA Method 8015 is presented in Table 2. Total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, and TPH calculated as diesel (TPH-d) concentrations for the March 1994 sampling event are shown on Figure 2. Blaine's groundwater sampling report, including field data, is presented as Attachment A.

If you have any questions regarding the contents of this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.



Ross W.N. Tinline
Project Geologist
RG 5860

Attachments:
- Table 1 - Groundwater Elevation Data
- Table 2 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline, BTEX Compounds, TPH-d, and TPH as Motor Oil)
- Figure 1 - Groundwater Elevation Contour Map
- Figure 2 - TPH-g/Benzene/TPH-d Concentration Map
- Attachment A - Groundwater Sampling Report

cc: Mr. Barney Chan, Alameda County Department of Environmental Health
Mr. Richard Hiett, Regional Water Quality Control Board - S.F. Bay Region

Table 1
Groundwater Elevation Data

Shell Service Station
4411 Foothill Boulevard at High Street
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)
S-1	12/18/92	NM	9.06	NA
	05/26/93	38.31	NM	NA
	05/26/93		12.13	26.18
	06/03/93		8.89	29.42
	06/08/93		8.80	29.51
	09/21/93		10.40	27.91
	12/14/93		9.66	28.65
	03/17/94		8.20	30.11
S-2	05/28/93	38.79	9.51	29.28
	06/03/93		9.51	29.28
	06/08/93		9.57	29.22
	09/21/93		10.54	28.25
	12/14/93		9.76	29.03
	03/17/94		9.92	28.87
S-3	05/28/93	37.33	8.45	28.88
	06/03/93		8.36	28.97
	06/08/93		8.41	28.92
	09/21/93		10.08	27.25
	12/94/93		8.80	28.53
	03/17/94		8.34	28.99

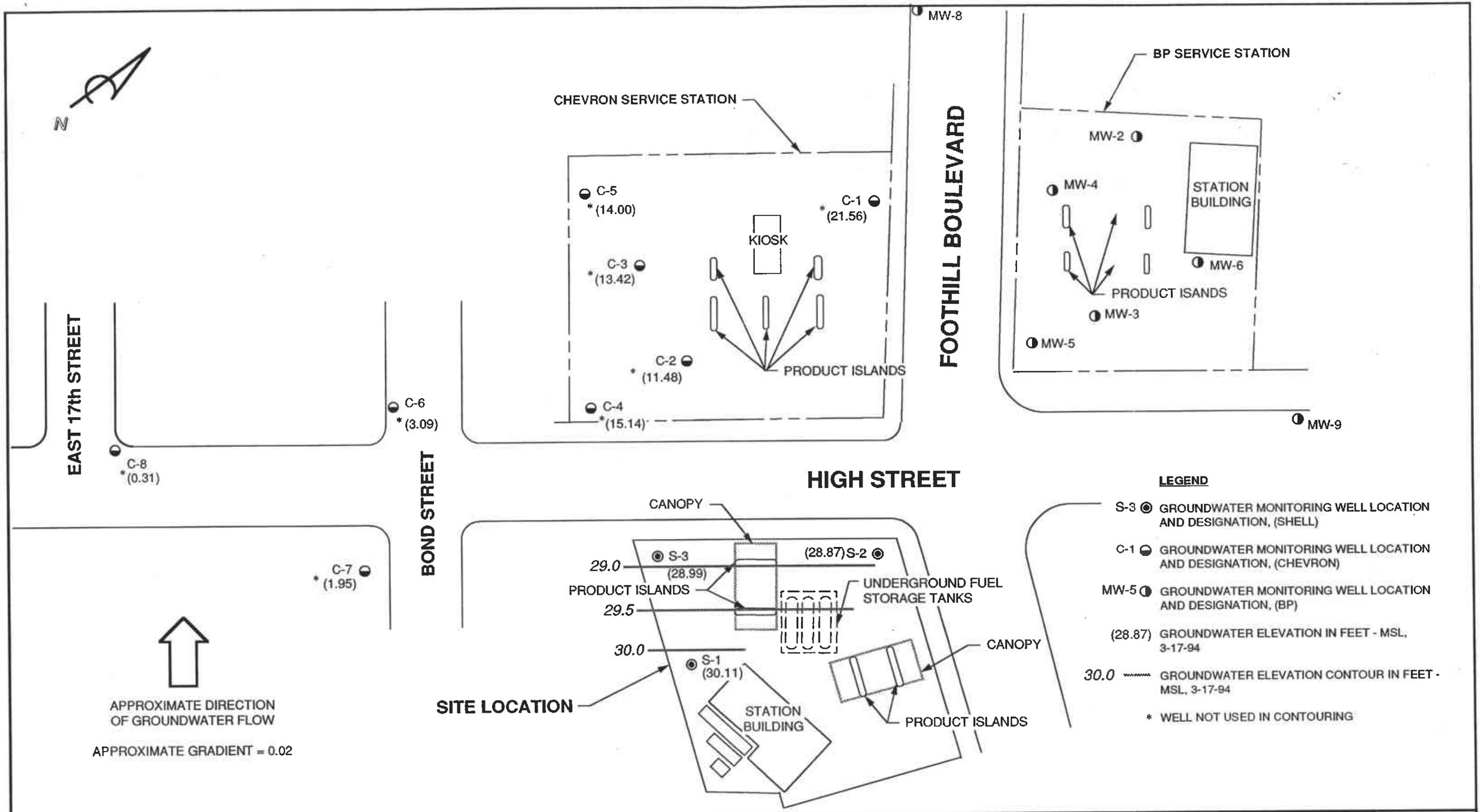
MSL = Mean sea level
TOB = Top of box
NM = Not measured
NA = Not available

Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, TPH as Diesel, and TPH as Motor Oil)

Shell Service Station
4411 Foothill Boulevard at High Street
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TPH as Diesel (ppb)	TPH as Motor Oil (ppb)
S-1	12/18/92 a	41,000	3,100	1,100	1,200	8,700	NA	9,400 b
	05/26/93	39,000	1,300	4,700	1,500	7,800	6,000 c	370
	09/21/93	34,000	480	5,000	3,800	18,000	5,900 c	ND
	12/14/93	25,000	1,100	5,000	2,200	11,000	13,000 d	ND
	03/17/94	57,000	1,300	5,400	2,100	11,000	1,600 c	2,300 c
S-2	06/29/93	1,300	290	35	38	130	NA	NA
	09/21/93	3,300	870	24	190	120	NA	NA
	12/14/93	1,300	400	16	36	27	NA	NA
	03/17/94	4,500	610	27	92	110	NA	NA
	03/17/94(D)	4,000	610	26	93	120	NA	NA
S-3	06/29/93	29,000	1,500	1,800	950	6,200	NA	NA
	09/21/93	15,000	900	2,200	2,600	11,000	NA	NA
	12/14/93	20,000	1,100	2,400	1,800	8,500	NA	NA
	03/17/94	14,000	580	190	750	1,700	NA	NA

ppb = Parts per billion
a. Phenolic and napthalene compounds detected in Sample S-1 by semi-volatile organics (EPA Method 8270).
b. Laboratory noted concentration due to hydrocarbon range $<C_{22}$.
c. Laboratory noted concentration due to a lighter petroleum product of hydrocarbon range C_6-C_{12}.
d. Laboratory noted concentration due to hydrocarbon range C_6-C_{12}.
NA = Not analyzed
ND = Not detected
(D) = Duplicate sample



PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 50 100 FEET

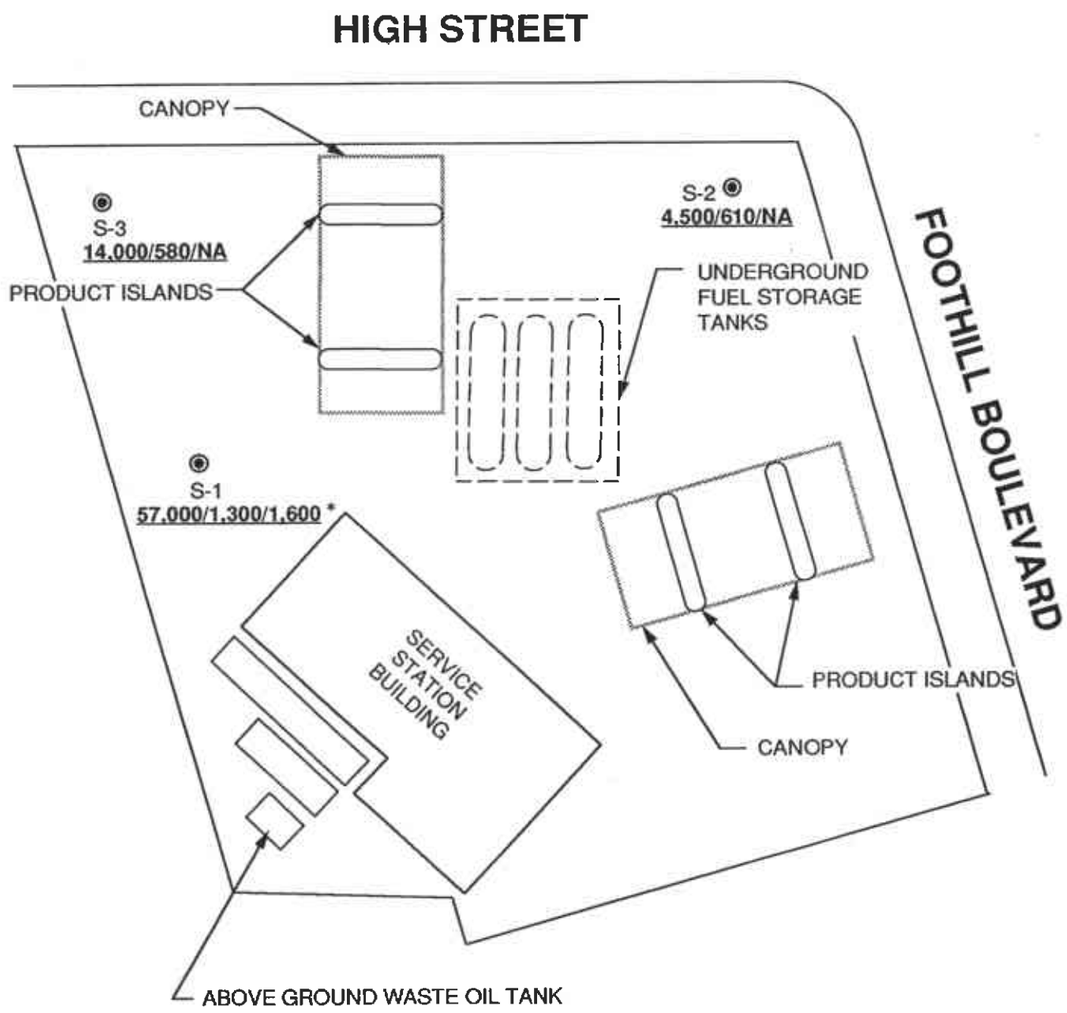
SHELL SERVICE STATION
4411 Foothill Boulevard at High Street
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 1
PROJECT: 305-131.2B

05/05/94

N



LEGEND

S2 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

57,000/1,300/2,300 TPH-g/BENZENE/TPH-d CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 3-17-94

NA NOT ANALYZED

* THE CONCENTRATION REPORTED AS DIESEL IS DUE TO THE PRESENCE OF A LIGHTER PETROLEUM PRODUCT OF HYDROCARBON RANGE C6 - C12

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 30 60 FEET

SHELL SERVICE STATION
4411 Foothill Boulevard At High Street
Oakland, California

TPH-g/BENZENE/TPH-d CONCENTRATION MAP

FIGURE: 2
PROJECT: 305-131.2B

05/05/94

ATTACHMENT A

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

April 4, 1994

Shell Oil Company
P.O. Box 5278
Concord, CA 94520-9998

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-5508-3400
4411 Foothill Blvd.
Oakland, California

QUARTER:
1st quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 940317-Z-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be removed in cases where the well dewaters and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California.

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such sites is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/lp

attachments: table of well gauging data
chain of custody
certified analytical report

cc: Pacific Environmental Group, Inc.
2025 Gateway Place, Suite #440
San Jose, CA 95110
ATTN: Rhonda Barrick

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-1	3/17/94	TOB	ODOR	NONE	--	--	8.20	24.74
S-2 *	3/17/94	TOB	ODOR	NONE	--	--	9.92	22.43
S-3	3/17/94	TOB	ODOR	NONE	--	--	8.34	20.49

* Sample DUP was a duplicate sample taken from well S-2.

1669

9403283 (18) (40/40)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 940317-Z1

Date: 3/17/94
Page 1 of 1

Site Address: 4411 Foothill Blvd., Oakland

WIC#: 204-5508-3400

Shell Engineer: Dan Kirk — Phone No.: (510) 675-6168 Fax #: 675-6160

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller — Phone No.: (408) 995-5535 Fax #: 293-8773

Comments:

Sampled by: Brett Bleam

Printed Name: Brett Bleam

LAB: Anametrix

Analysis Required

Sample ID	Date	Sludge	Soil	Water	Air	No. of conh.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Oil & Grease B+F 8010		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) S-1	3/17/94			X		*7		X				X	X							
(2) S-2	"			X		3						X								
(3) TB	"			X		2						X								
(4) DUP	"			1		3						X			1					
(5) EB	"			X		3						X								

CHECK ONE (1) BOX ONLY — CT/01

- Quarterly Monitoring ☒ 8441
- Site Investigation ☐ 8441
- Soil Classify/Disposal ☐ 8442
- Water Classify/Disposal ☐ 8443
- Soil/Air Rem. or Sys. O & M ☐ 8452
- Water Rem. or Sys. O & M ☐ 8453
- Other ☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐ ___

NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

Relinquished by (signature)	Printed Name	Date/Time	Received (signature)	Printed Name	Date/Time
	Brett Bleam	Date: 3-18-94 Time: 0830	Penny S. Cunigan	Penny S. Carrizosa	Date: 3-18-94 Time: 0830
Penny S. Cunigan	Penny S. Carrizosa	Date: 3-18-94 Time: 0850		Maria Barajas	Date: 3/18/94 Time: 08:50
Relinquished by (signature)	Printed Name	Date: Time:	Received (signature)	Printed Name	Date: Time:

THIS LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

1105

9403303 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 940317-22

Date:
Page 1 of 1

Site Address: 4411 FooTHill Blvd. OAKland, CA.

WIC#: 204 5508 3400

Shell Engineer: Daniel Kirk — Phone No.: 510-675-6168 Fax #:

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller — Phone No.: (408) 995-5535 Fax #: 293-8773

Comments:

Sampled by:

Printed Name: Tom Flory

LAB: AnaMetrix

CHECK ONE (1) BOX ONLY	C1/D1
Quarterly Monitoring	X 8461
Site Investigation	8461
Soil Classify/Disposal	8462
Water Classify/Disposal	8463
Soil/Air Rem. or Sys. O & M	8462
Water Rem. or Sys. O & M	8463
Other	

TURN AROUND TIME: 24 hours ☐ 48 hours ☐ 15 days ☒ (Normal) Other ☐ ____

NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

Analysis Required: TPH (EPA 8015 Mod. Gas); TPH (EPA 8015 Mod. Diesel); BTEX (EPA 8020/602); Volatile Organics (EPA 8240); Test for Disposal; Combination TPH 8015 & BTEX 8020; Asbestos; Container Size 40 mL VOA; Preparation Used HCl; Composite Y/N

Sample ID	Time	Date	Sludge	Soil	Water	Air	No. of conts.	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-3	1025	3/18/94			X		3		

	Printed Name	Date	Time		Printed Name	Date	Time
Relinquished By (signature):	Tom Flory	3.21.94	1215	Received (signature): Josephine DeCarli	Josephine DeCarli	3/21/94	12:15
Relinquished By (signature):				Received (signature):			
Relinquished By (signature):				Received (signature):			

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403283
Date Received : 03/18/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9403283- 1	S-1
9403283- 2	S-2
9403283- 3	TB
9403283- 4	DUP
9403283- 5	EB

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Corinne Khan for
Doug Robbins
Laboratory Director

03/31/94
Date

This report consists of ____ pages.

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9403283
Matrix : WATER

Client Project ID : 204-5508-3400
Units : ug/L

Compound Name	Method Reporting Limit*	Client ID S-1 Lab ID 9403283-01	Client ID S-2 Lab ID 9403283-02	Client ID TB Lab ID 9403283-03	Client ID DUP Lab ID 9403283-04	Client ID Lab ID METHOD BLANK
Benzene	0.50	1300	610	ND	610	ND
Toluene	0.50	5400	27	ND	26	ND
Ethylbenzene	0.50	2100	92	ND	93	ND
Total Xylenes	0.50	11000	110	ND	120	ND
TPH as Gasoline	50	57000	4500	ND	4000	ND
Surrogate Recovery		105%	96%	95%	97%	108%
Instrument ID		HP4	HP4	HP4	HP4	HP4
Date Sampled		03/17/94	03/17/94	03/17/94	03/17/94	N/A
Date Analyzed		03/23/94	03/22/94	03/22/94	03/22/94	03/22/94
RLMF		250	25	1	25	1
Filename Reference		FRM28301.D	FPM28302.D	FPM28303.D	FPM28304.D	BM2201E1.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst

03/24/94.
Date

Supervisor

3/24/94
Date

Issued on 3/24/94 @ 12:13 PM

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9403283
Matrix : WATER

Client Project ID : 204-5508-3400
Units : ug/L

Compound Name	Method Reporting Limit*	Client ID	Client ID	Client ID	Client ID	Client ID
		Lab ID	Lab ID	Lab ID	Lab ID	Lab ID
		METHOD BLANK				
Benzene	0.50	ND				
Toluene	0.50	ND				
Ethylbenzene	0.50	ND				
Total Xylenes	0.50	ND				
TPH as Gasoline	50	ND				
Surrogate Recovery		100%				
Instrument ID		HP4				
Date Sampled		N/A				
Date Analyzed		03/23/94				
RLMF		1				
Filename Reference		BM2301E1.D				

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 03/24/94 Date

Supervisor 3/24/94 Date

Issued on 3/24/94 @ 12:16 PM

Matrix Spike Report

Total Petroleum Hydrocarbons as BTEX

ITS - Anametrix Laboratories - (408)432-8192

Project ID : 204-5508-3400
Sample ID : S-2
Matrix : WATER
Date Sampled : 03/17/94

Laboratory ID : 9403283-02
Analyst : MP
Supervisor : [illegible]
Instrument ID : HP4
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	500	610	118%	98%	45-139	19%	30
Toluene	500	27	101%	101%	51-138	0%	30
Ethylbenzene	500	92	96%	94%	48-146	2%	30
Total Xylenes	500	110	92%	92%	50-139	0%	30
Surrogate Recovery		96%	99%	99%			
Date Analyzed		03/22/94	03/22/94	03/22/94			
Multiplier		25	25	25			
Filename Reference		FPM28302.D	FMM28302.D	FDM28302.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP4
Matrix : LIQUID

Analyst : AR
Supervisor : CD
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Benzene	20	110%	52-133
Toluene	20	105%	57-136
Ethylbenzene	20	105%	56-139
Total Xylenes	20	105%	56-141
Surrogate Recovery		109%	61-139
Date Analyzed		03/22/94	
Multiplier		1	
Filename Reference		MM2202E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP4
Matrix : LIQUID

Analyst : NP
Supervisor : CJ
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	LCSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	20	90%	115%	52-133	-24%	30
Toluene	20	85%	110%	57-136	-26%	30
Ethylbenzene	20	85%	110%	56-139	-26%	30
Total Xylenes	20	85%	110%	56-141	-26%	30
Surrogate Recovery		106%	105%	61-139		
Date Analyzed		03/23/94	03/23/94			
Multiplier		1	1			
Filename Reference		MM2301E1.D	NM2301E1.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403283
Date Received : 03/18/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9403283- 1	S-1	WATER	03/17/94	TPHd
9403283- 1	S-1	WATER	03/17/94	TPHgBTEX
9403283- 2	S-2	WATER	03/17/94	TPHgBTEX
9403283- 3	TB	WATER	03/17/94	TPHgBTEX
9403283- 4	DUP	WATER	03/17/94	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403283
Date Received : 03/18/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as diesel for sample S-1 is primarily due to the presence of a lighter petroleum product of hydrocarbon range C6-C12, possibly gasoline.

Cheryl Bateman 3/24/94
Department Supervisor Date

Chemist 03/24/94.
Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9403283
Matrix : WATER
Date Sampled : 03/17/94
Date Extracted: 03/22/94

Project Number : 204-5508-3400
Date Released : 03/24/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9403283-01	S-1	03/23/94	50	1600	101%
BM2211F9	METHOD BLANK	03/23/94	50	ND	96%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for o-terphenyl are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 03/24/94. Date

Supervisor Cheryl Balmer 3/24/94 Date

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 03/22/94
Date Analyzed : 03/23/94

Anametrix I.D. : MM2211F9
Analyst : AP
Supervisor : CS
Date Released : 03/24/94
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	1080	86%	950	76%	-13%	47-130
SURROGATE			111%		105%		30-130

* Quality control limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403283
Date Received : 03/18/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9403283- 1	S-1	WATER	03/17/94	5520BF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403283
Date Received : 03/18/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Department Supervisor 3/31/94 Date

Chemist 3/31/94 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORY (408) 432-8192

Project I.D. : 204-5508-3400
Matrix : WATER
Date sampled : 03/17/94
Date extracted: 03/26/94
Date analyzed : 03/28/94

Anametrix I.D. : 9403283
Analyst : BJ
Supervisor : CM
Date released : 03/31/94

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9403283-01	S-1	5.0	ND
BM2611W4	METHOD BLANK	5.0	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
STANDARD METHOD 5520BF
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date sampled : N/A
Date extracted : 03/26/94
Date analyzed : 03/28/94

Anametrix I.D. : M/NM2611W4
Analyst : BJ
Supervisor : CM
Date Released : 03/31/94

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	%RPD	%REC LIMITS
Motor Oil	50	44	88	44	88	0	44-128

* Quality control limits established by Anametrix Laboratories.

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403303
Date Received : 03/21/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9403303- 1	S-3

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Corinne Ham for
Doug Robbins
Laboratory Director

03/28/94
Date

This report consists of 6 pages.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403303
Date Received : 03/21/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9403303- 1	S-3	WATER	03/18/94	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9403303
Date Received : 03/21/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Department Supervisor 3/25/94 Date

Chemist 03/25/94. Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9403303
Matrix : WATER

Client Project ID : 204-5508-3400
Units : ug/L

Compound Name	Method Reporting Limit*	Client ID	Client ID	Client ID	Client ID	Client ID
		S-3				
		Lab ID	Lab ID	Lab ID	Lab ID	Lab ID
		9403303-01	METHOD BLANK			
Benzene	0.50	580	ND			
Toluene	0.50	190	ND			
Ethylbenzene	0.50	750	ND			
Total Xylenes	0.50	1700	ND			
TPH as Gasoline	50	14000	ND			
Surrogate Recovery		91%	103%			
Instrument ID		HP4	HP4			
Date Sampled		03/18/94	N/A			
Date Analyzed		03/24/94	03/24/94			
RLMF		100	1			
Filename Reference		FTM30301.D	BM2401E1.D			

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 03/25/94 Date

Supervisor Cheryl Balmer 3/25/94 Date

Issued on 3/25/94 @ 6:42 AM

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP4
Matrix : LIQUID

Analyst : AP
Supervisor : CS
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	LCSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	20	80%	110%	52-133	-32%	30
Toluene	20	80%	110%	57-136	-32%	30
Ethylbenzene	20	80%	115%	56-139	-36%	30
Total Xylenes	20	75%	110%	56-141	-38%	30
Surrogate Recovery		106%	105%	61-139		
Date Analyzed		03/24/94	03/24/94			
Multiplier		1	1			
Filename Reference		MM2401E1.D	NM2401E1.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9404083
Date Received : 04/06/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9404083- 1	S-1

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Todd Spriggs for
Doug Robbins
Laboratory Director

4/20/94
Date

This report consists of 4 pages.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9404083
Date Received : 04/06/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9404083- 1	S-1	WATER	03/17/94	TPHd

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9404083
Date Received : 04/06/94
Project ID : 204-5508-3400
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as motor oil for sample S-1 is due to the presence of a combination of diesel and a lighter petroleum product of hydrocarbon range C6-C12, possibly gasoline.

Cheryl Balmer 4/20/94
Department Supervisor Date

Kamel C. Kaul 4/20/94
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9404083
Matrix : WATER
Date Sampled : 03/17/94
Date Extracted: 03/22/94

Project Number : 204-5508-3400
Date Released : 04/20/94
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9404083-01	S-1	04/20/94	100	2300	110%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for o-terphenyl are 47-114%.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as motor oil is determined by GCFID following sample extraction by EPA Method 3510.

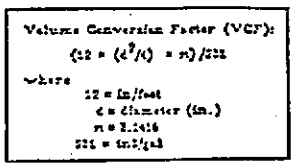
All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

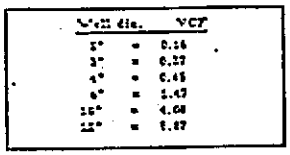
Lucia Shor 4/21/94
Analyst Date

Cheryl Balmer 4/21/94
Supervisor Date

SHELL WELL MONITORING DATA SHEET

Project #: 940317-Z1	Wic # 204 5508 3400
Sampler: BB	Date Sampled: 3/17/94
Well I.D.: S-1	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 24.74 After	Depth to Water: Before 8.20 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade) Other --	





10.8	X	3	=	32.4
1 Case Volume		Specified Volumes		gallons

Purging: Bailer ☐
Middleburg ☐
Electric Submersible ☒
Suction Pump ☐
Type of Installed Pump ___

Sampling: Bailer ☒
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1028	64.8	6.8	1100	43.6	11	odor
1031	67.3	6.6	1100	45.1	22	"
1039	67.1	6.5	1100	39.5	33	"

Did Well Dewater? No If yes, gals. Gallons Actually Evacuated: 33

Sampling Time: 1040

Sample I.D.: S-1 Laboratory: (A)

Analyzed for: TPH-G, BTEX, TPH-D, O&G

Duplicate I.D.: Cleaning Blank I.D.: EB @ 1020

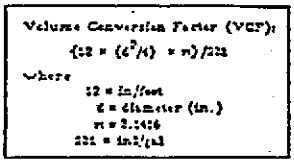
Analyzed for: TPH-G, BTEX

Shipping Notations:

Additional Notations: Slow recharge

SHELL WELL MONITORING DATA SHEET

Project #: 940317-Z1	Wic # 204 5508 3400
Sampler: BB	Date Sampled: 3/17/94
Well I.D.: S-2	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 22.43 After	Depth to Water: Before 9.92 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade) Other --	



Well dia.	VCF
2"	0.16
3"	0.37
4"	0.65
6"	1.47
10"	4.08
12"	5.87

8.1	X	3	=	24.3
1 Case Volume		Specified Volumes		gallons

Purging: Bailer ☐ Middleburg ☐ Electric Submersible ☒ Suction Pump ☐ Type of Installed Pump _____

Sampling: Bailer ☒ Middleburg ☐ Electric Submersible ☐ Suction Pump ☐ Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1002	68.0	7.4	1400	63.7	9	Slight odor
1004	67.4	7.4	1300	56.4	18	"
1008	68.7	7.4	1300	47.3	25	"

Did Well Dewater? No If yes, gals. Gallons Actually Evacuated: 25

Sampling Time: 1010

Sample I.D.: S-2 Laboratory: (A)

Analyzed for: TPH-G, BTEX

Duplicate I.D.: DUP Cleaning Blank I.D.: EB (2)

Analyzed for: TPH-G, BTEX

Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 940317-Z1	Wic # 204 5508 3400
Sampler: Tom	Date Sampled: 3-18-94
Well I.D.: S-3	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 20.49 After	Depth to Water: Before 8.34 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade) Other --	

Volume Conversion Factor (VCF):
(12 × (d^2/4) × π)/231
Where
12 = in/foot
d = diameter (in.)
π = 3.1416
231 = in³/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

8.0	x	3	=	24.0
1 Case Volume		Specified Volumes		gallons

Purging: Bailer ☐ Middleburg ☐ Electric Submersible ☑ Suction Pump ☐ Type of Installed Pump ___

Sampling: Bailer ☑ Middleburg ☐ Electric Submersible ☐ Suction Pump ☐ Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
10.17	63.5	6.7	760	31.9	8.0	odor
10.20	63.3	6.8	800	17.4	16.0	↓
10.22	64.3	6.7	810	22.8	24.0	

Did Well Dewater? no If yes, gals. Gallons Actually Evacuated: 24.0

Sampling Time: 1025

Sample I.D.: S-3 Laboratory: (A)

Analyzed for: TPH-BTEX

Duplicate I.D.: Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations: