

PACIFIC
ENVIRONMENTAL
GROUP INC.

ALSO
HAZMAT
94 AUG - 1 PM 4:30

July 22, 1994
Project 305-131.2B

Mr. Daniel T. Kirk
Shell Oil Company
P.O. Box 4023
Concord, California 94524

Re: Quarterly Report - Second 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 second 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 June 16, 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 station. Data were not available for the BP Oil Company station. 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. Table 1 presents groundwater elevation data.

Groundwater analytical data are presented in Table 2. The laboratory noted the positive results of gasoline to be in the C₆-C₁₂ hydrocarbon range. Total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, and TPH calculated as diesel (TPH-d) concentrations for the June 1994 sampling event are

July 22, 1994

Page 2

shown on Figure 2. Blaine's groundwater sampling report, including field data, is presented as Attachment A.

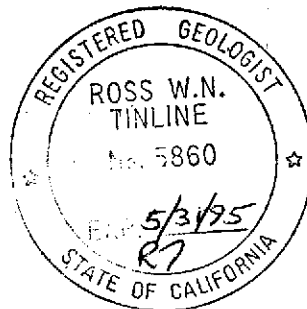
If you have any questions regarding the contents of this letter, please call.

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 as Diesel,
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 Hiatt, 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
	05/28/93		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
	06/16/94		9.41	28.90
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
		06/16/94		10.11
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
		06/16/94		9.12
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
	06/16/94	57,000	1,600	6,000	2,000	13,000	3,000	210
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
	06/16/94	2,800	690	45	97	140	NA	NA
S-3	06/29/93	29,000	1,500	1,800	950	8,200	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
	06/16/94	20,000	700	690	1,400	4,100	NA	NA
	06/16/94 (D)	19,000	680	560	1,300	3,700	NA	NA
ppb	= Parts per billion							
a.	Phenolic and naphthalene 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							



EAST 17th STREET

C-8
*(1.32)

C-6
*(3.90)

C-7
*(2.12)

BOND STREET

CHEVRON SERVICE STATION

C-5
*(14.10)

C-3
*(14.06)

C-2
*(13.55)

C-4
*(13.99)

C-1
*(20.58)

FOOTHILL BOULEVARD

MW-8

KIOSK

PRODUCT ISLANDS

HIGH STREET

CANOPY

S-3
(28.21)

S-2
(28.68)

S-1
(28.90)

UNDERGROUND FUEL STORAGE TANKS

CANOPY

STATION BUILDING

PRODUCT ISLANDS

BP SERVICE STATION

MW-2

MW-4

STATION BUILDING

MW-6

PRODUCT ISLANDS

MW-3

MW-5

MW-9

LEGEND

- S-3 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION, (SHELL)
- C-1 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION, (CHEVRON)
- MW-5 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION, (BP)
- (28.68) GROUNDWATER ELEVATION IN FEET - MSL, 6-16-94
- 28.80 — GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 6-16-94
- * NOT USED IN CONTOURING

APPROXIMATE DIRECTION OF GROUNDWATER FLOW



APPROXIMATE GRADIENT = 0.01

SITE LOCATION



PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE



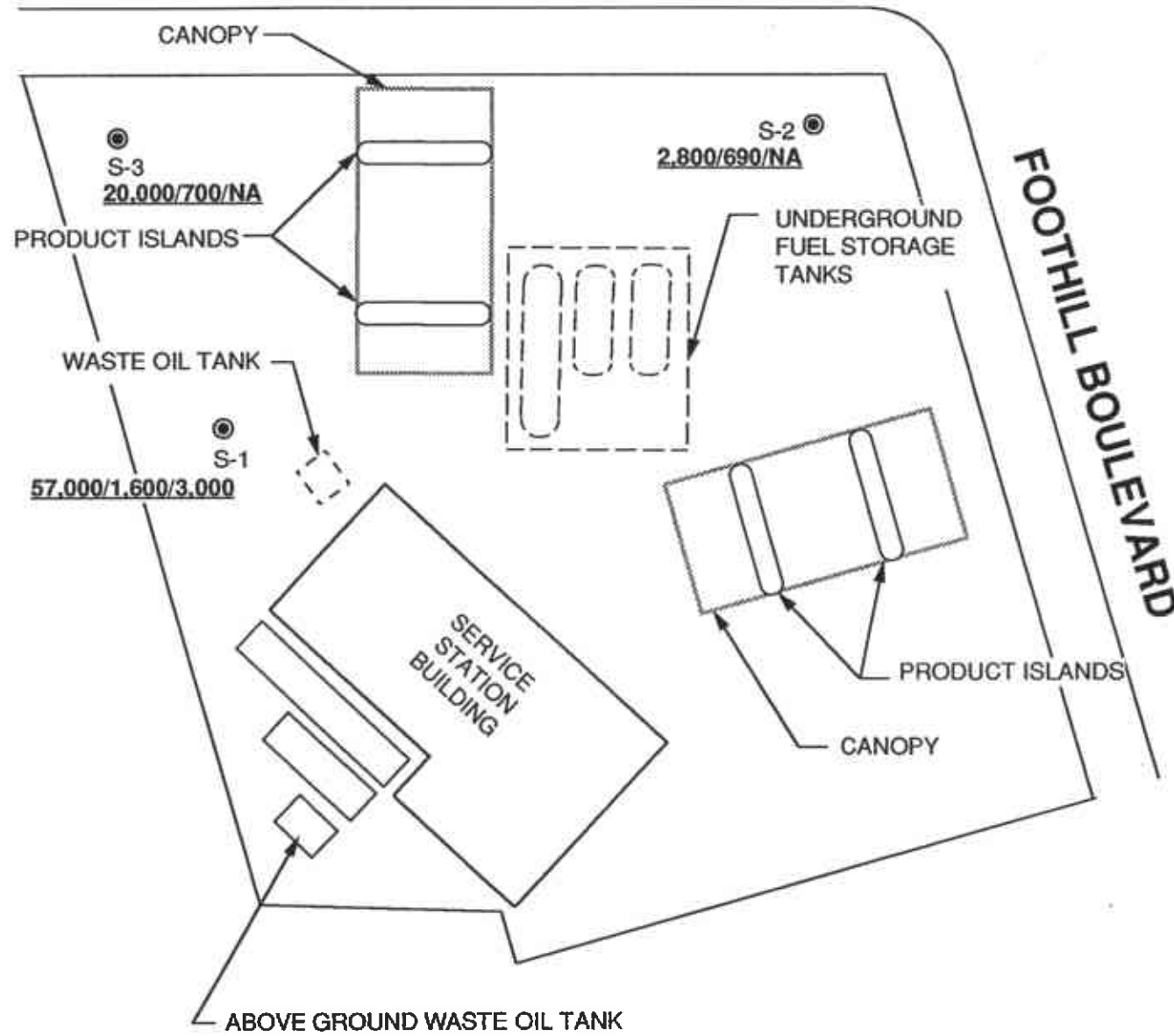
SHELL SERVICE STATION
4411 Foothill Boulevard at High Street
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE:
1
PROJECT:
305-131.2B



HIGH STREET



LEGEND

- S2 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- 20,000/700/NA TPH-g/BENZENE/TPH-d CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 6-16-94
- NA NOT ANALYZED

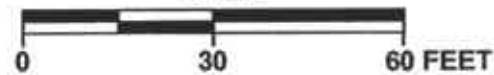


APPROXIMATE DIRECTION OF GROUNDWATER FLOW



PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE

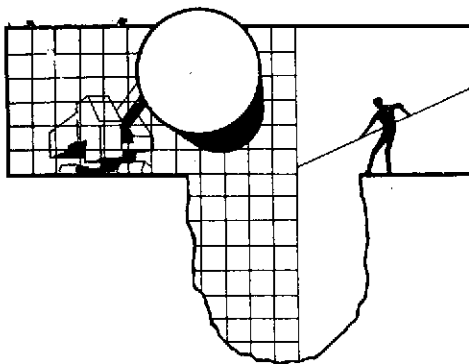


SHELL SERVICE STATION
4411 Foothill Boulevard At High Street
Oakland, California

TPH-g/BENZENE/TPH-d CONCENTRATION MAP

FIGURE:
2
PROJECT:
305-131.2B

ATTACHMENT A
GROUNDWATER SAMPLING REPORT



BLAINE TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95131
(408) 995-5531
FAX (408) 293-8771

June 28, 1994

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

Attn: Daniel T. Kirk

JUL 01 1994

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

QUARTER:
2nd quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 940616-K-3

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 dewateres 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 Sequoia Analytical Laboratory in Redwood City, California. Sequoia Analytical Laboratory is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1210.

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/p

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	6/16/94	TOB	ODOR	NONE	-	-	9.41	24.66
S-2	6/16/94	TOB	ODOR	NONE	-	-	10.11	22.40
S-3 *	6/16/94	TOB	ODOR	NONE	-	-	9.12	20.49

* Sample DUP was a duplicate sample taken from well S-3.



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: 940616-K3

Date: 6/16

Page 1 of 1

Site Address: 4411 Foothill Blvd., Oakland

WICI: 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: KCB

Printed Name: Keith Brown

Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel) + Motor Oil	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N
	X				X				

LAB: Sequoia

CHECK ONE (1) BOX ONLY	CTDI	TURN AROUND TIME
Quantity Monitoring <input checked="" type="checkbox"/> 641		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 642		48 hours <input type="checkbox"/>
Soil Cleanup/Disposal <input type="checkbox"/> 643		16 days <input checked="" type="checkbox"/> (Normal)
Water Cleanup/Disposal <input type="checkbox"/> 644		Other <input type="checkbox"/>
Soil/Air Rem. of Typ. O & M <input type="checkbox"/> 645		NOTE: Holly Lab as soon as possible of 24/48 hrs. SAT.
Water Rem. of Typ. O & M <input type="checkbox"/> 646		
Other <input type="checkbox"/>		

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel) + Motor Oil	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
✓ S-1	6/16			W		5		X				X					9406A93	-01
✓ S-2	↓			↓		3						X						-02
✓ S-3	↓			↓		3						X						-03
✓ DUP	↓			↓		3						X						-04
✓ EB	↓			↓		3						X						-05
✓ TB	↓			↓		2						X						-06

Relinquished By (Signature): <u>Keith Brown</u>	Printed Name: <u>Keith Br</u>	Date: <u>6/16</u>	Time: <u>10:30</u>	Received (Signature): <u>Dan Buchner</u>	Printed Name: <u>DAN BUCHNER</u>	Date: <u>6/17</u>	Time: <u>10:10</u>
Relinquished By (Signature): <u>Jim Keller</u>	Printed Name: <u>JK</u>	Date: <u>6/16</u>	Time: <u>11:35</u>	Received (Signature): <u>Chris Lee</u>	Printed Name: <u>Chris Lee</u>	Date: <u>6/17/94</u>	Time: <u>11:57</u>



Sequoia Analytical

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233
1900 Bates Avenue, Suite L Concord, CA 94520 (510) 686-9600 FAX (510) 686-9689
819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Project: 940616-K3, Shell, 4411 Foothill Blvd.

Enclosed are the results from 6 water samples received at Sequoia Analytical on June 17, 1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4FA9301	Water, S-1	6/16/94	EPA 3510/3520/8015 Mod. EPA 3510/3520/8015 Mod. EPA 5030/8015 Mod./8020
4FA9302	Water, S-2	6/16/94	EPA 5030/8015 Mod./8020
4FA9303	Water, S-3	6/16/94	EPA 5030/8015 Mod./8020
4FA9304	Water, DUP	6/16/94	EPA 5030/8015 Mod./8020
4FA9305	Water, EB	6/16/94	EPA 5030/8015 Mod./8020
4FA9306	Water, TB	6/16/94	EPA 5030/8015 Mod./8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager





Blaine Tech Services, Inc.	Client Project ID: 940616-K3, Shell, 4411 Foothill Blvd.	Sampled: Jun 16, 1994
985 Timothy Drive	Sample Matrix: Water	Received: Jun 17, 1994
San Jose, CA 95133	Analysis Method: EPA 5030/8015 Mod./8020	Reported: Jun 28, 1994
Attention: Jim Keller	First Sample #: 4FA9301	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 4FA9301 S-1	Sample I.D. 4FA9302 S-2	Sample I.D. 4FA9303 S-3	Sample I.D. 4FA9304 DUP	Sample I.D. 4FA9305 EB	Sample I.D. 4FA9306 TB
Purgeable Hydrocarbons	50	57,000	2,800	20,000	19,000	N.D.	N.D.
Benzene	0.50	1,600	690	700	680	N.D.	N.D.
Toluene	0.50	6,000	45	690	560	N.D.	N.D.
Ethyl Benzene	0.50	2,000	97	1,400	1,300	N.D.	N.D.
Total Xylenes	0.50	13,000	140	4,100	3,700	N.D.	N.D.
Chromatogram Pattern:		C6 - C12	C6 - C12	C6 - C12	C6 - C12	--	--

Quality Control Data

Report Limit Multiplication Factor:	100	10	40	40	1.0	1.0
Date Analyzed:	6/21/94	6/21/94	6/21/94	6/21/94	6/21/94	6/21/94
Instrument Identification:	GCHP-2	GCHP-2	GCHP-2	GCHP-2	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%)	97	97	103	90	97	97

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL


Suzanne Chin
Project Manager





Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133 Attention: Jim Keller	Client Project ID: 940616-K3, Shell, 4411 Foothill Blvd. Sample Matrix: Water Analysis Method: EPA 3510/3520/8015 Mod. First Sample #: 4FA9301	Sampled: Jun 16, 1994 Received: Jun 17, 1994 Reported: Jun 28, 1994
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TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 4FA9301 S-1
Extractable Hydrocarbons	50	3,000
Chromatogram Pattern:		C9 - C21

Quality Control Data

Report Limit	
Multiplication Factor:	1.0
Date Extracted:	6/20/94
Date Analyzed:	6/21/94
Instrument Identification:	GCHP-5

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL


Suzanne Chin
Project Manager





Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940616-K3, Shell, 4411 Foothill Blvd.
Sample Matrix: Water
Analysis Method: EPA 3510/3520/8015 Mod.
First Sample #: 4FA9301

Sampled: Jun 16, 1994
Received: Jun 17, 1994
Reported: Jun 28, 1994

FUEL FINGERPRINT: MOTOR OIL

Analyte	Reporting Limit µg/L	Sample I.D. 4FA9301 S-1
Extractable Hydrocarbons	50	210
Chromatogram Pattern:		C14 - C28

Quality Control Data

Report Limit Multiplication Factor:	5.0
Date Extracted:	6/20/94
Date Analyzed:	6/22/94
Instrument Identification:	GCHP-4

Extractable Hydrocarbons are quantitated against a fresh motor oil standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL


Suzanne Chin
Project Manager





Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940616-K3, Shell, 4411 Foothill Blvd.
Matrix: Liquid

QC Sample Group: 4FA9301-04

Reported: Jun 28, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent

MS/MSD Batch#:	4FA2104	4FA2104	4FA2104	4FA2104
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	6/21/94	6/21/94	6/21/94	6/21/94
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	93	100	110	100
Matrix Spike Duplicate % Recovery:	97	100	110	103
Relative % Difference:	4.2	0.0	0.0	3.0

LCS Batch#:

Date Prepared:
Date Analyzed:
Instrument I.D.#:

LCS % Recovery:

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager





Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940616-K3, Shell, 4411 Foothill Blvd.
Matrix: Liquid

QC Sample Group: 4FA9305-06

Reported: Jun 28, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.Minkel	J.Minkel	J.Minkel	J.Minkel

MS/MSD Batch#:	4FA2803	4FA2803	4FA2803	4FA2803
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	6/20/94	6/20/94	6/20/94	6/20/94
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	94	93	95	93
Matrix Spike Duplicate % Recovery:	99	98	100	100
Relative % Difference:	5.2	5.2	5.1	7.3

LCS Batch#:

Date Prepared:
Date Analyzed:
Instrument I.D.#:

LCS %
Recovery:

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Suzanne Chin
Project Manager





Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: 940616-K3, Shell, 4411 Foothill Blvd.
Matrix: Liquid

QC Sample Group: 4FA9301

Reported: Jun 28, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Diesel
Method:	EPA 8015 Mod.
Analyst:	M. Cassidy

MS/MSD
Batch#: 4F39115
Date Prepared: 6/14/94
Date Analyzed: 6/15/94
Instrument I.D.#: GCHP-4
Conc. Spiked: 600 µg/L

Matrix Spike
% Recovery: 89

Matrix Spike
Duplicate %
Recovery: 90

Relative %
Difference: 1.1

LCS Batch#:

Date Prepared:
Date Analyzed:
Instrument I.D.#:

LCS %
Recovery:

% Recovery Control Limits:	28-122
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SEQUOIA ANALYTICAL


Suzanne Chin
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.



SHELL OIL WELL MONITORING DATA SHEET

Project #: <u>940616-K3</u>	Wic # <u>204-5508-3400</u>
Sampler: <u>Ker</u>	Date Sampled: <u>6/16</u>
Well I.D.: <u>S1</u>	Well Diameter: (circle one) 2 3 <u>4</u> 6
Total Well Depth: Before <u>2466</u> After	Depth to Water: Before <u>941</u> After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC <u>Grade</u> Other --	

Volume Conversion Factor (VCF):
 $VCF = (d^2/4) \times \pi / 2.31$
 where:
 d = diameter (in.)
 π = 3.1416
 2.31 = ft/gal

Well dia.	VCF
2"	0.16
3"	0.37
4"	0.68
5"	1.07
6"	1.54
8"	2.94
10"	5.17

9.9 x 3 = 29.7
 1 Case Volume Specified Volumes gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
---	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1331	66.9	7.3	1200	2200	10	very strong
1333	67.1	7.2	1200	2200	20	alc
1335	66.4	7.2	1200	193.6	30	

Did Well Dewater? If yes, gals. _____ Gallons Actually Evacuated: 30

Sampling Time: 1345

Sample I.D.: S-1 Laboratory: SIF

Analyzed for: TPH, TPHT, RTX, MO

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

Analyzed for: _____

Shipping Notations: _____

Additional Notations: _____

SHELL WELL MONITORING DATA SHEET

Project #: <u>940616-K3</u>	Wic # <u>204-5508-3400</u>
Sampler: <u>KCB</u>	Date Sampled: <u>8/16</u>
Well I.D.: <u>S-2</u>	Well Diameter: (circle one) 2 3 <u>4</u> 6
Total Well Depth: Before <u>2240</u> After	Depth to Water: Before <u>10.11</u> After
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Measurements referenced to:	PVC <input type="checkbox"/> <u>Grade</u> <input checked="" type="checkbox"/> Other -- <input type="checkbox"/>

Volume Conversion Factor (VCF):
 $(\pi \times d^2) / 4 \times 7.48$
 where
 $d = \text{in./foot}$
 $d = \text{Diameter (in.)}$
 $\pi = 3.1416$
 $7.48 = \text{gal}$

Well dia.	VCF
2"	0.14
3"	0.33
4"	0.48
6"	1.47
8"	3.04
12"	6.72

8.0 x 3 = 24
 1 Case Volume Specified Volumes = gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
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TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
<u>1238</u>	<u>70.0</u>	<u>7.4</u>	<u>1100</u>	<u>7200</u>	<u>8</u>	<u>gas odor</u>
<u>1240</u>	<u>69.6</u>	<u>7.2</u>	<u>1000</u>	<u>127.6</u>	<u>16</u>	
<u>1242</u>	<u>69.7</u>	<u>7.1</u>	<u>1200</u>	<u>52.8</u>	<u>24</u>	

Did Well Dewater? N If yes, gals. _____ Gallons Actually Evacuated: 24

Sampling Time: 1250

Sample I.D.: S-2 Laboratory: Seq

Analyzed for: TPHC, BTEX

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

Analyzed for: _____

Shipping Notations: _____

Additional Notations: _____

SHELL WELL MONITORING DATA SHEET

Project #: 740616-K3	Wic # 204-5508-3400
Sampler: KOP	Date Sampled: 6/16
Well I.D.: S-3	Well Diameter: (circle one) 2 3 4 6
Total Well Depth: Before 2049 After	Depth to Water: Before 912 After
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Measurements referenced to:	PVC grade Other --

Volume Conversion Factor (VCF):
 $VCF = (d^2/4) \times \pi / 2.31$
 where:
 d = diameter (in.)
 $\pi = 3.1416$
 2.31 = constant

Well dia.	VCF
2"	0.16
3"	0.35
4"	0.61
6"	1.47
8"	3.04
10"	5.17

<u>7.4</u>	x	<u>3</u>	=	<u>22.2</u>
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:
1301	68.4	7.4	1000	34.1	8	
1303	67.7	7.5	1100	67.6	16	
1305	67.8	7.2	1100	158.2	24	

Did Well Dewater? If yes, gals. _____ Gallons Actually Evacuated: **24**

Sampling Time: **1315**

Sample I.D.: **S-3** Laboratory: **SLC**

Analyzed for: **TPH, BTEX**

Duplicate I.D.: **DUP** Cleaning Blank I.D.: _____

Analyzed for: **TPH, BTEX**

Shipping Notations: _____

Additional Notations: _____