



June 23, 1994

WOP 36/18

ALCOO
HAZMAT
94 JUL 11 AM 9:47

Susan Hugo
Alameda County Department of
Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621-1426

Re: Shell Service Station
WIC #204-5510-0303
5755 Broadway
Oakland, California 94606
WA Job #81-619-104

Dear Ms. Hugo:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are descriptions and results of activities performed in the second quarter 1994 and proposed work for the third quarter 1994.

Second Quarter 1994 Activities:

Hydrocarbon and Ground Water Removal Summary		
<i>Type of Fluid</i>	<i>Hydrocarbons or Ground Water Removed by Sampling Date this Quarter (Gal)</i>	<i>Total Hydrocarbons or Ground Water Removed (Gal)</i>
Separate Phase Hydrocarbons	0.0	0.55
Ground Water with dissolved hydrocarbons	11,038	48,838

- Weiss Associates (WA) pumped a total of 11,038 gallons of ground water from tank backfill well T-1 on March 16, 1994, to maintain ground water more than 2.5 ft below ground surface, and to remediate possible hydrocarbons in ground water. The ground water was transported to the Shell refinery in Martinez, California, for recycling.
- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- WA calculated ground water elevations, compiled the analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).

Anticipated Third Quarter 1994 Activities:

- Separate phase hydrocarbons, if detected, will be removed and its volume will be estimated and reported.
- WA will submit a report presenting the results of the third quarter 1994 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, ground water elevations and a ground water elevation contour map.

Conclusion and Recommendations:

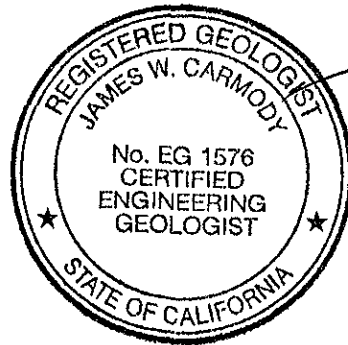
Total petroleum hydrocarbons as gasoline (TPH-G) concentrations detected in ground water samples collected from well S-2 decreased this quarter compared to the first quarter results. This decrease may be attributed to seasonal ground water elevation fluctuations. We will continue monitoring hydrocarbon concentrations.

Susan Hugo
January 13, 1994

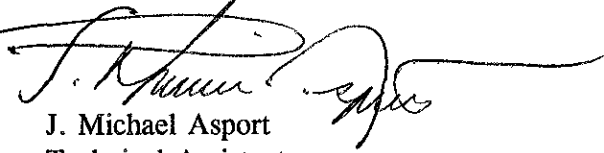
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Weiss Associates 

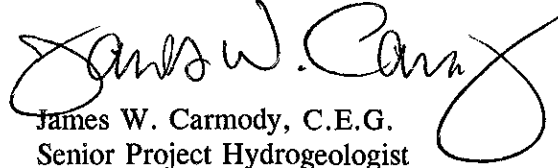
Please call if you have any questions.



Sincerely,
Weiss Associates



J. Michael Asport
Technical Assistant



James W. Carmody, C.E.G.
Senior Project Hydrogeologist

JMA/JWC:jma

J:\SHELL\600\QMRPTS\619QMJU4.WP

Attachments: A - Blaine Tech's Ground Water Monitoring Report

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

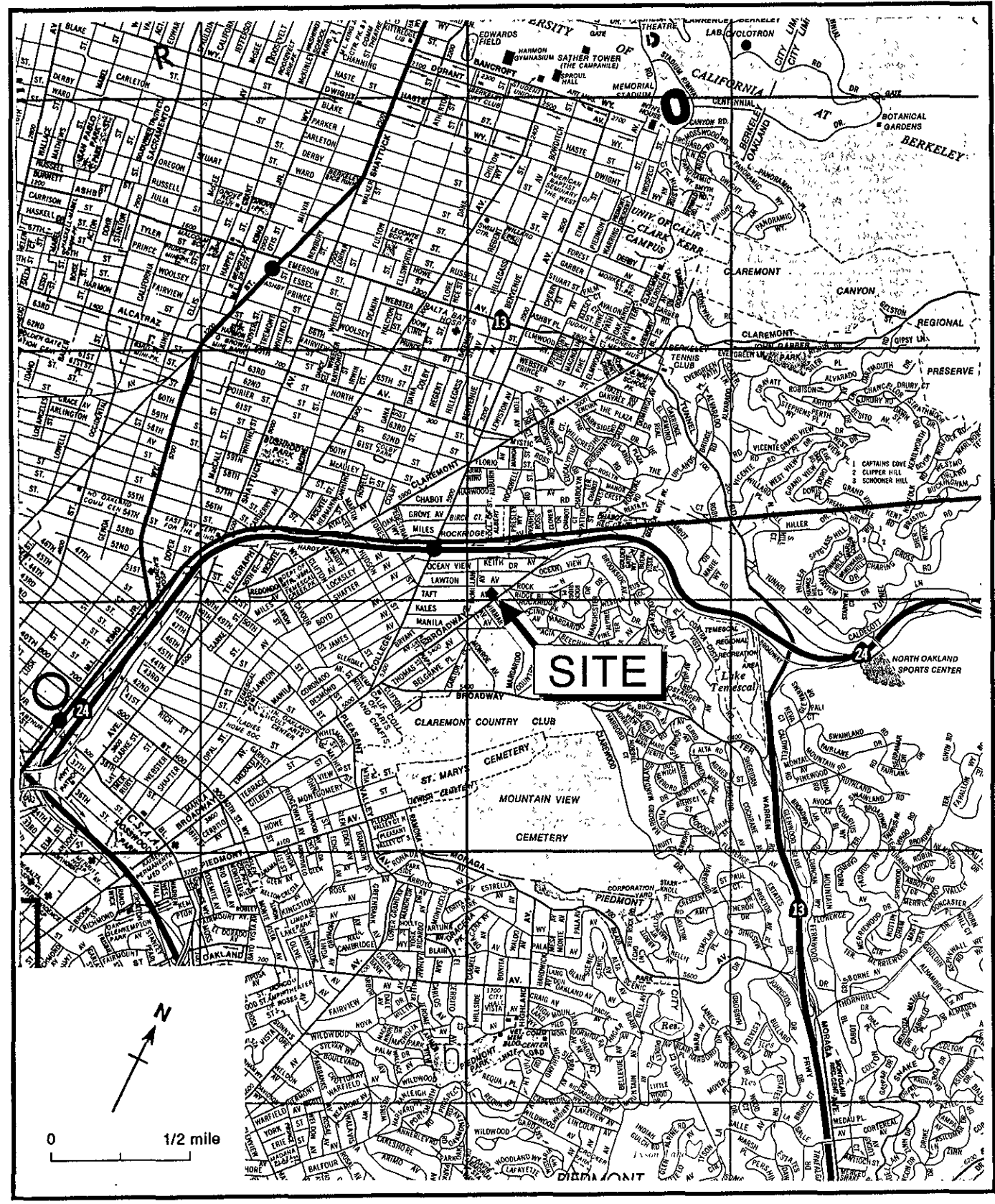
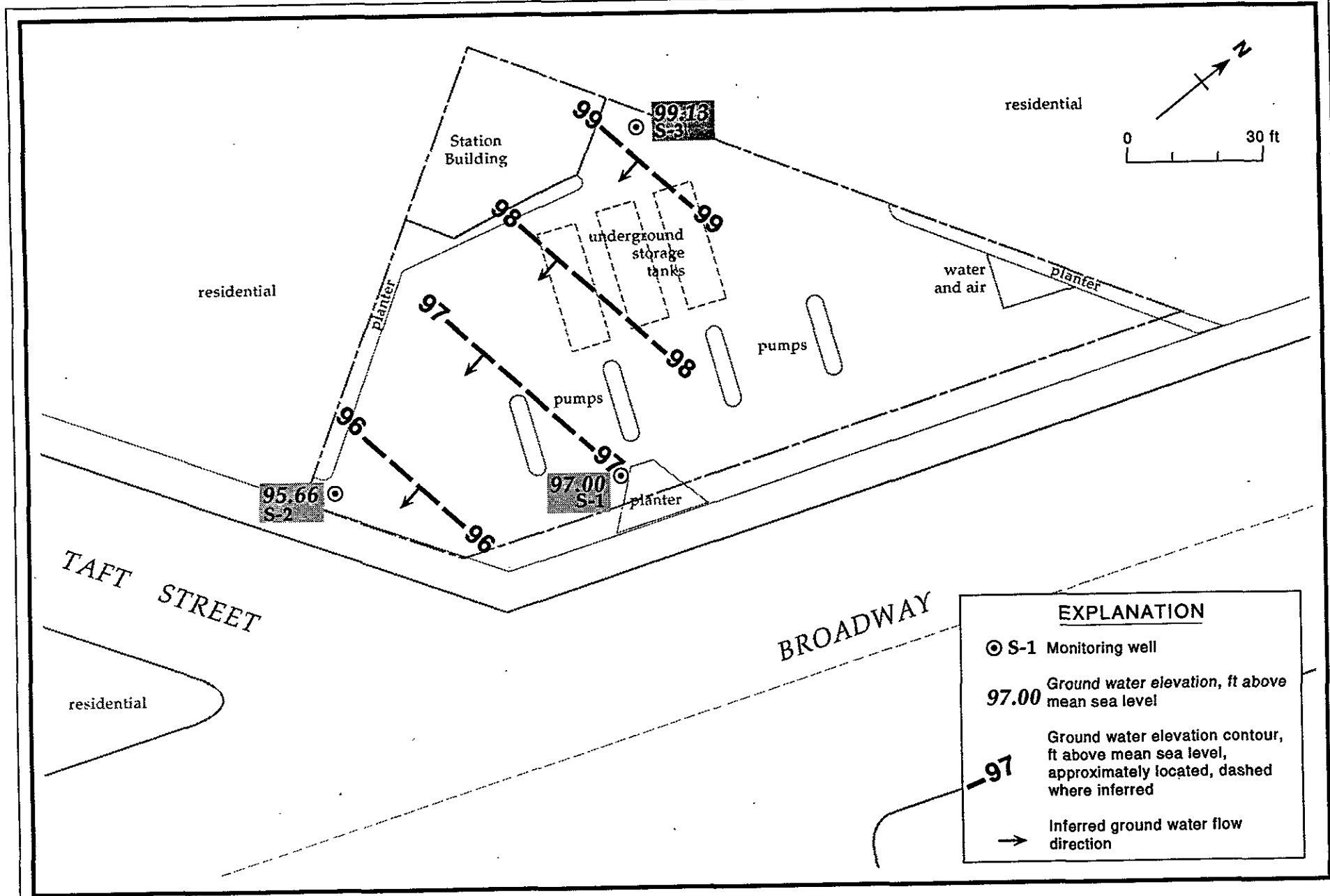


Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California



EXPLANATION	
⊙ S-1	Monitoring well
97.00	Ground water elevation, ft above mean sea level
-97-	Ground water elevation contour, ft above mean sea level, approximately located, dashed where inferred
→	Inferred ground water flow direction

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - May 4, 1994 - Shell Service Station WIC#204-2004-0204, 5755 Broadway, Oakland, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California

Well ID	Date	Top-of-Casing Elevation*	Depth to Water (ft)	Ground Water Elevation (ft above msl)
S-1	06/03/91	100.00	3.51	96.49
	08/30/91		4.24	95.76
	11/22/91		4.29	95.71
	03/13/92		2.87	97.13
	05/28/92		3.79	96.21
	08/19/92		4.43	95.57
	11/18/92		4.34	95.66
	02/10/93		4.20	95.80
	06/11/93		3.39	96.61
	08/03/93		3.69	96.31
	11/02/93		4.26	95.74
	12/16/93 ^a		2.73	97.27
	02/01/94		3.38	96.62
	05/04/94		3.00	97.00
S-2	06/03/91	98.92	4.02	94.90
	08/30/91		4.70	94.22
	11/22/91		4.72	94.20
	03/13/92		3.47	95.45
	05/28/92		4.45	94.45
	08/19/92		4.84	94.08
	11/18/92		4.73	94.19
	02/10/93		4.83	94.09
	06/11/93		3.74	95.18
	08/03/93		4.23	94.69
	11/02/93		4.72	94.20
	12/16/93 ^a		3.00	95.92
	02/01/94		3.48	95.44
	05/04/94		3.26	95.66
S-3	06/03/91	101.67	3.25	98.42
	08/03/91		4.73	96.94
	11/22/91		4.81	96.86
	03/13/92		2.29	99.38
	05/28/92		3.62	98.05
	08/19/92		4.66	97.01
	11/18/92		4.51	97.16
	02/10/93		4.36	97.31
	06/11/93		2.91	98.76
	08/03/93		3.70	97.97

-- Table 1 continues on next page --

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

Well ID	Date	Top-of-Casing Elevation*	Depth to Water (ft)	Ground Water Elevation (ft above msl)
	11/02/93 ^b		---	---
	12/16/93 ^a		2.12	99.55
	02/01/94		2.90	98.77
	05/04/94		2.54	99.13

Note:

- * = Top of casing elevations referenced to arbitrary elevation of 100 ft
- a = Depth to water measured by Weiss Associates
- b = Well inaccessible

Table 2. Analytic Results for Ground Water, Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California

Sample ID	Date	Depth to Water (ft)	TPH-G	B	E	T	X	
-----parts per billion (µg/L)-----								
S-1	06/03/91	3.51	<30	<0.3	<0.3	<0.3	<0.3	
	08/30/91	4.24	<30	<0.3	<0.3	<0.3	<0.3	
	11/22/91	4.29	<30	2.3	0.3	<0.46	<0.65	
	03/13/92	2.87	<30	<0.52	<0.3	<0.3	<0.3	
	05/28/92	3.79	<50	<0.5	<0.5	<0.5	<0.5	
	08/19/92	4.43	<50	<0.5	<0.5	<0.5	<0.5	
	11/18/92	4.34	<50	<0.5	<0.5	<0.5	<0.5	
	02/10/93	4.20	51	1.4	<0.5	<0.5	<0.5	
	02/10/93 ^{dup}	4.20	<50	1.2	<0.5	<0.5	<0.5	
	06/11/93	3.39	<50	<0.5	<0.5	<0.5	<0.5	
	08/03/93	3.69	<50	<0.5	<0.5	<0.5	<0.5	
	11/02/93	4.26	70 ^a	<0.5	<0.5	<0.5	<0.5	
	02/01/94	3.38	60 ^a	<0.5	<0.5	<0.5	<0.5	
	05/04/94	3.00	<50	1.1	<0.5	<0.5	<0.5	
	S-2	06/03/91	4.02	490	150	8.2	2.7	7
		08/30/91	4.70	70	0.37	<0.3	<0.3	<0.3
11/22/91		4.72	1,600	110	29	9.3	150	
03/13/92		3.47	1,300	210	34	5.7	79	
05/28/92		4.45	100	28	<0.5	<0.5	<0.5	
08/19/92		4.84	470	42	8.3	<0.5	4.0	
11/18/92		4.73	490	43	17	39	29	
02/10/93		4.83	19,000	710	80	760	370	
06/11/93		3.74	33,000	3,100	370	1,600	1,100	
08/03/93		4.23	18,000	1,400	81	130	130	
08/03/93 ^{dup}		4.23	19,000	1,400	86	140	150	
11/02/93		4.72	12,000 ^a	470	31	47	92	
11/02/93 ^{dup}		4.72	13,000 ^a	530	35	47	96	
02/01/94		3.48	31,000 ^a	430	50	46	130	
02/01/94 ^{dup}		3.48	31,000 ^a	300	30	33	100	
05/04/94		3.26	3,900	1,200	53	31	71	
05/04/94^{dup}	3.26	4,500	1,200	57	37	110		
S-3	06/03/91	3.25	<30	<0.3	0.3	0.3	0.3	
	08/30/91	4.73	<30	<0.3	<0.3	<0.3	<0.3	
	11/22/91	4.81	<30	<0.3	<0.3	<0.3	<0.3	
	03/13/92	2.29	<30	<0.3	0.3	0.3	0.3	
	05/28/92	3.62	<50	<0.5	<0.5	<0.5	<0.5	
	08/19/92	4.66	<50	<0.5	<0.5	<0.5	0.5	
	11/18/92	4.51	<50	<0.5	<0.5	<0.5	<0.5	
	02/10/93	4.36	30	1.9	2.4	3.2	5.6	
	06/11/93	2.91	<50	<0.5	<0.5	<0.5	<0.5	
	06/11/93 ^{dup}	2.91	<50	<0.5	<0.5	<0.5	<0.5	
	08/03/93	3.70	<50	<0.5	<0.5	<0.5	<0.5	
	11/02/93 ^b	---	---	---	---	---	---	
	02/01/94	2.90	<50	<0.5	<0.5	<0.5	<0.5	
	05/04/94	2.54	<50	<0.5	<0.5	<0.5	<0.5	

-- Table 2 continues on next page --



Table 2. Analytic Results for Ground Water, Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

Sample ID	Date	Depth to Water (ft)	TPH-G B E T X				
			-----parts per billion (µg/L)-----				
Bailer	08/19/92		<50	<0.5	<0.5	<0.5	<0.5
Blank	11/22/91		<50	<0.5	<0.5	<0.5	<0.5
Trip	03/13/92		<50	<0.3	<0.3	<0.3	<0.3
Blank	05/28/92		<50	<0.5	<0.5	<0.5	<0.5
	08/19/92		<50	<0.5	<0.5	<0.5	<0.5
	11/18/92		<50	<0.5	<0.5	<0.5	<0.5
	02/10/93		<50	<0.5	<0.5	<0.5	<0.5
	08/03/93		<50	<0.5	<0.5	<0.5	<0.5
	11/02/93		<50	<0.5	<0.5	<0.5	<0.5
	02/01/94		<50	<0.5	<0.5	<0.5	<0.5
	05/04/94		<50	<0.5	<0.5	<0.5	<0.5
DTSC MCLs			NE	1	680	100 ^c	1750

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
 B = Benzene by EPA Method 8020
 E = Ethylbenzene by EPA Method 8020
 T = Toluene by EPA Method 8020
 X = Xylenes by EPA Method 602 or 8020
 --- = Not analyzed
 DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
 NE = Not established
 <n = Not detected at detection limits of n ppb
 dup = Duplicate sample

Notes:

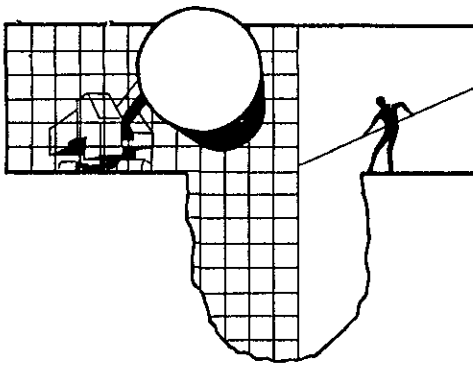
a = Concentrations reported as gasoline are primarily due to presence of a discrete peak not indicative of gasoline.
 b = Wells inaccessible.
 c = DTSC recommended action level for drinking water; MCL not established

Table 3. Separate Phase Hydrocarbon Removal - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California

Well ID	Date	Separate Phase Hydrocarbon Thickness (ft)	Volume of Hydrocarbons Removed (gal)	Cumulative Volume of Hydrocarbons Removed (gal)
T-1	02/10/93	<0.01	0.01	0.01
	06/11/93	<0.01	0.01	0.02
	08/03/93	0.01	0.01	0.03
	11/02/93	0.02	0.03	0.06
	02/01/94	0.00	0.01	0.07
	05/04/94	0.00	0.00	0.07
T-2	02/10/93	0.43	0.40	0.40
	06/11/93	<0.01	0.01	0.41
	08/03/93	0.01	0.01	0.41
	11/02/93	0.02	0.02	0.43
	02/01/94	0.00	0.01	0.44
	05/04/94	0.00	0.00	0.44
T-3	08/03/93	0.03	0.02	0.02
	11/02/93	0.02	0.01	0.03
	02/01/94	0.03	0.01	0.04
	05/04/94	0.00	0.00	0.04
Total Volume of Hydrocarbons Removed:				0.55

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT



BLAINE TECH SERVICES INC.

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

May 31, 1994

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

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-5510-0303
5755 Broadway
Oakland, California

QUARTER:
2nd quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 940504-K-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 in cases where more evacuation is needed to achieve stabilization of water parameters 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 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.

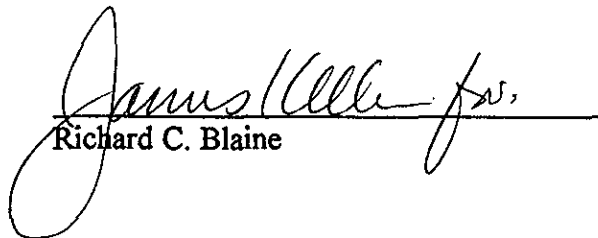
Objective Information Collection

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/lp


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

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Michael Asport

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	5/4/94	TOC	—	NONE	—	—	3.00	11.52
S-2 *	5/4/94	TOC	ODOR	NONE	--	--	3.26	9.43
S-3	5/4/94	TOC	--	NONE	--	--	2.54	9.53
T-1	5/4/94	TOC	SHEEN	--	--	--	2.21	13.46
T-2	5/4/94	TOC	SHEEN	--	--	--	1.38	12.98
T-3	5/4/94	TOC	SHEEN	--	--	--	0.02	9.54

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

 SHELL OIL COMPANY RETAIL ENVIRONMENTAL ENGINEERING - WEST		CHAIN OF CUSTODY RECORD Serial No: <u>940504-1-1</u>				Date: <u>9/9</u> Page: <u>1</u> of <u>1</u>	
Site Address: <u>5755 Broadway, Oakland</u>		Analysis Required				LAB: <u>SEA</u>	
WIC#: <u>204-5510-0303</u>		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 Preparation Used Composite Y/N	<input type="checkbox"/> CHECK ONE (1) BOX ONLY <input checked="" type="checkbox"/> QUANTITY MONITORING <input type="checkbox"/> SOIL INVESTIGATION <input type="checkbox"/> SOIL CLASSIFY/DISPOSAL <input type="checkbox"/> WATER CLASSIFY/DISPOSAL <input type="checkbox"/> SOIL/AIR REM. AT SYN. O & M <input type="checkbox"/> WATER REM. AT SYN. O & M <input type="checkbox"/> OTHER	CUDI 24 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 16 days <input checked="" type="checkbox"/> (Hemol) Other <input type="checkbox"/>	TURN AROUND TIME NOTE: Notify Lab as soon as possible of 24/48 hr. TAT.		
Shell Engineer: <u>Dan Kirk</u> Phone No.: (510) <u>575-6168</u> Fax #: <u>675-6160</u>					MATERIAL DESCRIPTION	SAMPLE CONDITION/COMMENTS	
Consultant Name & Address: <u>Blaine Tech Services, Inc.</u> <u>985 Timothy Drive San Jose, CA 95133</u>							
Consultant Contact: <u>Jim Keller</u> Phone No.: (408) <u>995-5535</u> Fax #: <u>293-8773</u>					Comments:		Sample ID Date Sludge Soil Water Air No. of conls.
Sampled by: <u>KCB</u> Printed Name: <u>Keith Brown</u>		S-1 9/4 W 3 S-2 W 3 S-3 W 3 DUP W 3 TB W 2		9405297 -01 -02 -03 -04 -05			
Relinquished By (signature): <u>[Signature]</u> Printed Name: <u>Keith Brown</u> Date: <u>9/9/94</u> Time: <u>09:00</u>		Received (signature): <u>[Signature]</u> Printed Name: <u>GRES FULTCHER</u> Date: <u>9-5-94</u> Time: <u>9:10</u>		Relinquished By (signature): <u>[Signature]</u> Printed Name: <u>GRES FULTCHER</u> Date: <u>9-5-94</u> Time: <u>10:45</u>			
Relinquished By (signature): <u>[Signature]</u> Printed Name: <u>GRES FULTCHER</u> Date: <u>9-5-94</u> Time: <u>10:45</u>		Received (signature): <u>[Signature]</u> Printed Name: <u>GRES FULTCHER</u> Date: <u>9-5-94</u> Time: <u>10:45</u>		Relinquished By (signature): <u>[Signature]</u> Printed Name: <u>KEITH E. GRESS</u> Date: <u>05/28/94</u> Time: <u>10:17</u>			

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



Sequoia Analytical

680 Chesapeake Drive
1900 Bates Avenue, Suite L
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Concord, CA 94520
Sacramento, CA 95834

(415) 364-9600
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(916) 921-9600

FAX (415) 364-9233
FAX (510) 686-9689
FAX (916) 921-0100

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

Project: 940504-K1, Shell, 5755 Broadway

Enclosed are the results from 5 water samples received at Sequoia Analytical on May 5, 1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
4E29701	Water, S-1	5/4/94	EPA 5030/8015 Mod./8020
4E29702	Water, S-2	5/4/94	EPA 5030/8015 Mod./8020
4E29703	Water, S-3	5/4/94	EPA 5030/8015 Mod./8020
4E29704	Water, DUP	5/4/94	EPA 5030/8015 Mod./8020
4E29705	Water, TB	5/4/94	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: 940504-K1, Shell, 5755 Broadway	Sampled: May 4, 1994
985 Timothy Drive	Sample Matrix: Water	Received: May 5, 1994
San Jose, CA 95133	Analysis Method: EPA 5030/8015 Mod./8020	Reported: May 13, 1994
Attention: Jim Keller	First Sample #: 4E29701	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 4E29701 S-1	Sample I.D. 4E29702 S-2	Sample I.D. 4E29703 S-3	Sample I.D. 4E29704 DUP	Sample I.D. 4E29705 TB
Purgeable Hydrocarbons	50	N.D.	3,900	N.D.	4,500	N.D.
Benzene	0.50	1.1	1,200	N.D.	1,200	N.D.
Toluene	0.50	N.D.	31	N.D.	37	N.D.
Ethyl Benzene	0.50	N.D.	53	N.D.	57	N.D.
Total Xylenes	0.50	N.D.	71	N.D.	110	N.D.
Chromatogram Pattern:		C6	C6 - C12	--	64 - C12	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	50	1.0	20	1.0
Date Analyzed:	5/9/94	5/9/94	5/9/94	5/9/94	5/9/94
Instrument Identification:	GCHP-3	GCHP-2	GCHP-2	GCHP-17	GCHP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	87	77	82	100	78

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
Suzanne Chin
Project Manager





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

Client Project ID: 940504-K1, Shell, 5755 Broadway
Matrix: Liquid

QC Sample Group: 4E29701

Reported: May 13, 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#:	4E29703	4E29703	4E29703	4E29703
Date Prepared:	-	-	-	-
Date Analyzed:	5/9/94	5/9/94	5/9/94	5/9/94
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:	99	98	99	97
Matrix Spike Duplicate % Recovery:	100	100	99	100
Relative % Difference:	1.0	2.0	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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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.





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

Client Project ID: 940504-K1, Shell, 5755 Broadway
 Matrix: Liquid

QC Sample Group: 4E29702-03, 05

Reported: May 13, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab

MS/MSD				
Batch#:	4E22801	4E22801	4E22801	4E22801
Date Prepared:	-	-	-	-
Date Analyzed:	5/8/94	5/8/94	5/8/94	5/8/94
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:	99	100	100	100
Matrix Spike Duplicate				
% Recovery:	98	97	99	97
Relative % Difference:	1.0	3.0	1.0	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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SEQUOIA ANALYTICAL

Suzanne Chin
 Project Manager

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

Client Project ID: 940504-K1, Shell, 5755 Broadway
Matrix: Liquid

QC Sample Group: 4E29704

Reported: May 13, 1994

QUALITY CONTROL DATA REPORT

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

MS/MSD				
Batch#:	4DH7901	4DH7901	4DH7901	4DH7901
Date Prepared:	-	-	-	-
Date Analyzed:	5/9/94	5/9/94	5/9/94	5/9/94
Instrument I.D.#:	GCHP-17	GCHP-17	GCHP-17	GCHP-17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Matrix Spike % Recovery:	99	100	98	100
Matrix Spike Duplicate % Recovery:	94	94	91	93
Relative % Difference:	5.2	6.2	7.4	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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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.

