Weiss Associates *Environmental and Geologic Services*

5500 Shellmound Street, Emeryville, CA 94608-2411 *Fax: 510-547-5043 Phone: **510-450-6000***

93 OCT 18 PM 3:56

October 11, 1993

LOP 368

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 #81-619-203

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 third quarter 1993 and proposed work for the fourth quarter 1993.

Third Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the three site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- Weiss Associates (WA) calculated ground water elevations and compiled the analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).
- Less than 0.01 ft of floating hydrocarbons were measured in the gasoline tank backfill observation wells. BTS purged approximately 0.02 gallons of floating hydrocarbons from the wells.

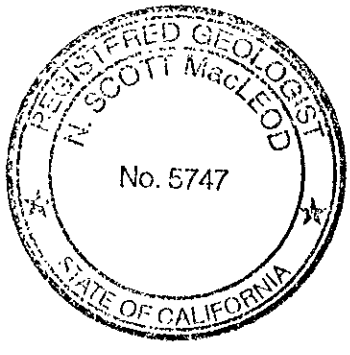
Anticipated Fourth Quarter 1993 Activities:

- WA will submit a report presenting the results of the fourth quarter 1993 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:

Hydrocarbon concentrations detected in ground water samples collected from well S-2 decreased this quarter compared to the second quarter results. We will continue monitoring hydrocarbon concentrations to assess whether the trend continues.

Please call if you have any questions.



Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

N. Scott MacLeod, R.G.
Project Geologist

JMA/NSM:jma

J:\SHELL\600\QMRPTS\619QMAU3.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

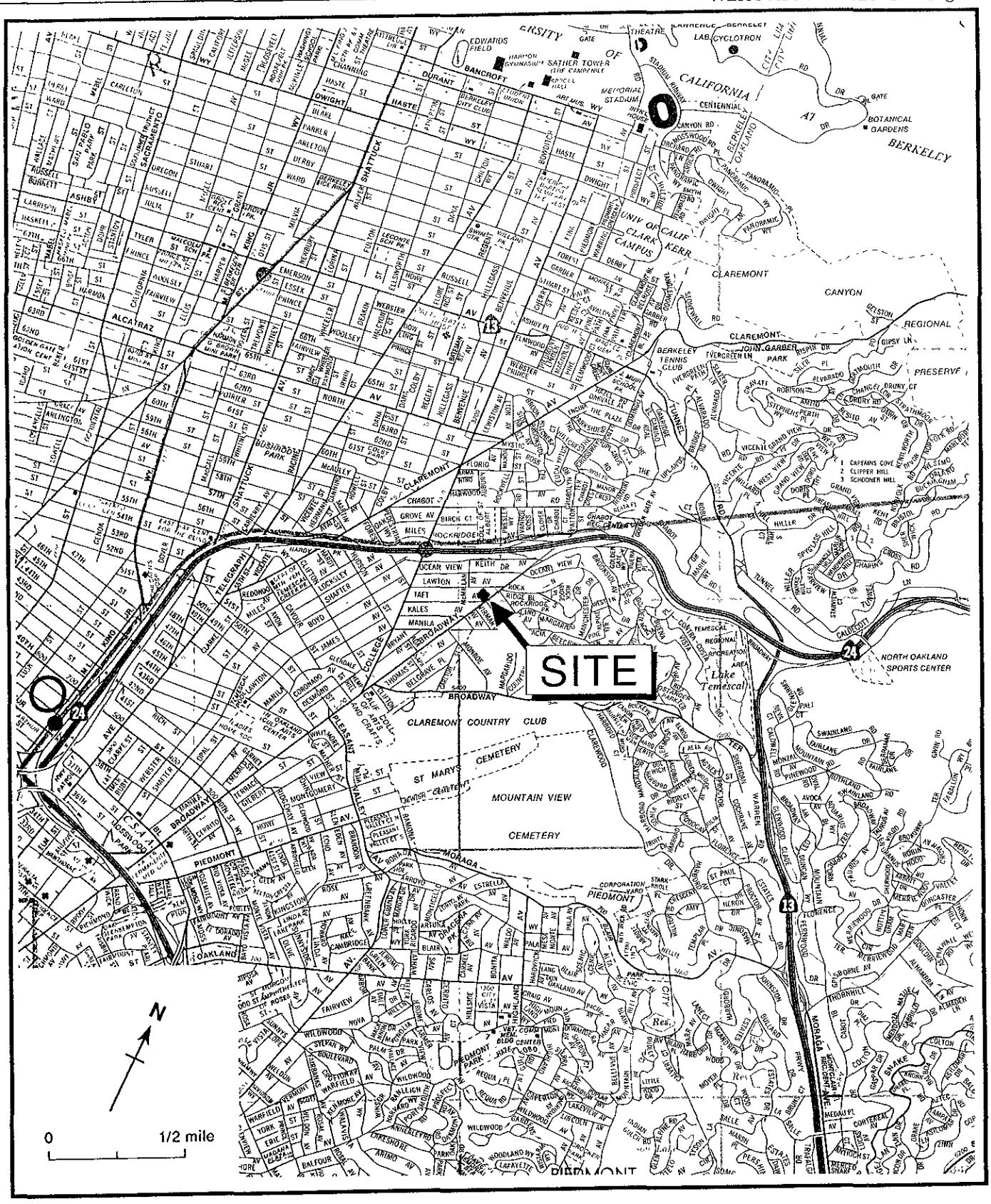


Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California

2/28/92

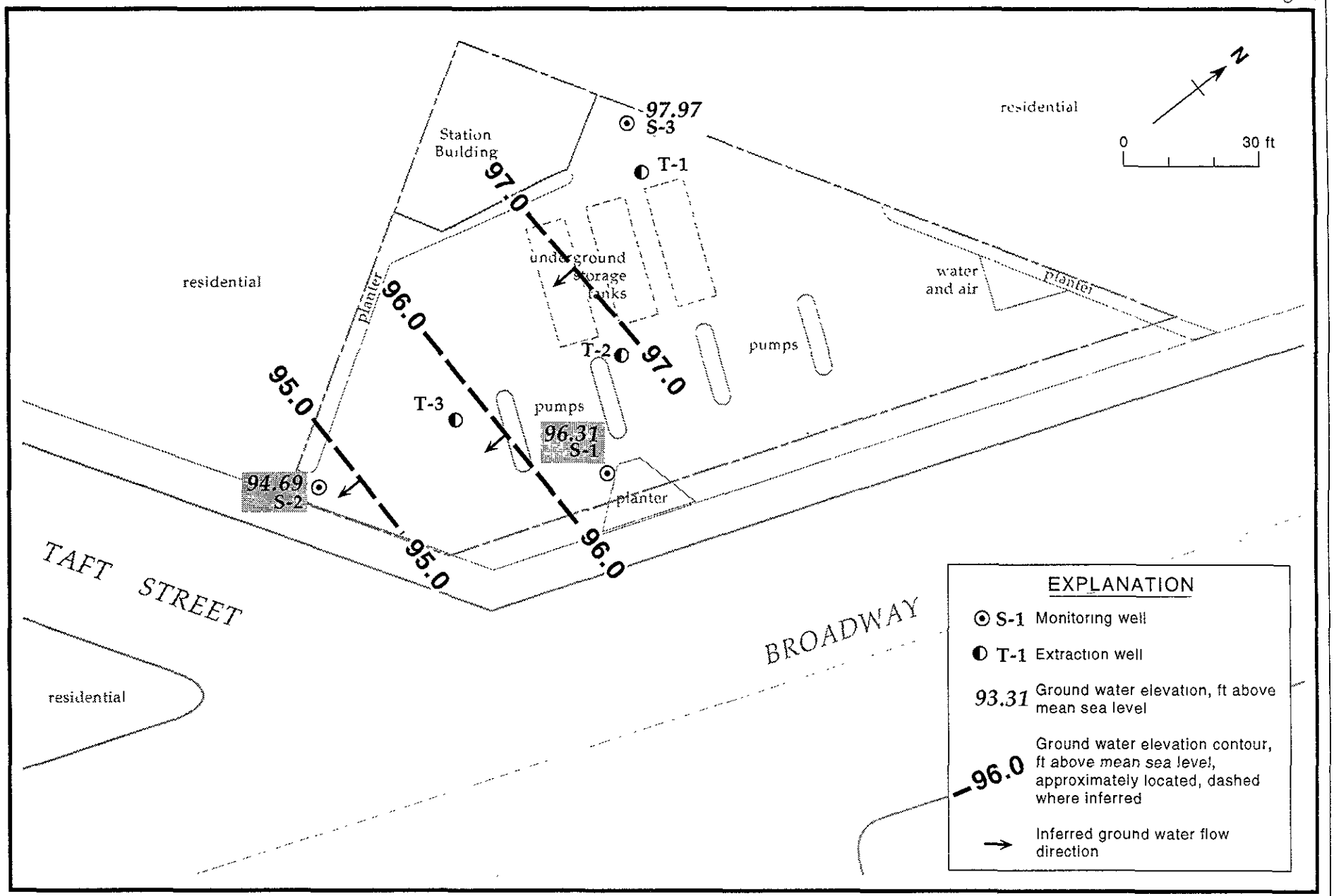


Figure 5. Monitoring Well Locations and Ground Water Elevation Contours - August 3, 1993 - Shell Service Station WIC#204-2004-0204, 5755 Broadway, Oakland, California

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**
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**
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**

Note:

Top of casing elevations referenced to arbitrary elevation of 100 ft

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 (ug/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
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	1600	110	29	9.3	150
	03/13/92	3.47	1300	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	19000	710	80	760	370
	06/11/93	3.74	33000	3100	370	1600	1100
	08/03/93	4.23	18000	1400	81	130	130
	08/03/93[dup]	4.23	19000	1400	86	140	150
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
Bailer Blank	08/19/92		<50	<0.5	<0.5	<0.5	<0.5
	11/22/91		<50	<0.5	<0.5	<0.5	<0.5
Trip Blank	03/13/92		<50	<0.3	<0.3	<0.3	<0.3
	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

-- 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 (ug/L)---------->				
	02/10/93		<50	<0.5	<0.5	<0.5	<0.5
	08/03/93		<50	<0.5	<0.5	<0.5	<0.5
DTSC MCLs			NE	1	680	100[a]	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 = DTSC recommended action level for drinking water; MCL not established

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

Well ID	Date	Floating Hydrocarbon Thickness (ft)	Volume of Hydrocarbons Removed (gal)	Cumulative Volume of Hydrocarbons Removed (gal)
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
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
T-3	08/03/93	0.03	0.02	0.02
	Total Volume of Hydrocarbons Removed			0.46

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

August 19, 1993

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:
3rd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930803-J-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in reponse 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 may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained 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.

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/lpn

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	8/3/93	TOC	--	NONE	--	--	3.69	11.37
S-2 *	8/3/93	TOC	--	NONE	--	--	4.23	9.43
S-3	8/3/93	TOC	--	NONE	--	--	3.70	9.44
T-1	8/3/93	TOC	FREE PRODUCT	--	0.01	4	--	--
T-2	8/3/93	TOC	SHEEN	--	0.01	40	--	--
T-3	8/3/93	TOC	ODOR	3.09	0.03	80	--	--

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

9308040 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 930803381

Date: 8-3-93
Page 1 of 1

Site Address: 5755 Broadway, Oakland

WIC#: 204-5510-0303

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: [signature]

Printed Name: JERRY R. BOTTORFF JR

LAB: Anametrix

CHECK ONE (1) BOX ONLY — C1/01

- Quarterly Monitoring [X] 4441
- Site Investigation [ ] 4441
- Soil Closure/Disposal [ ] 4442
- Water Closure/Disposal [ ] 4443
- Soil/Air Rem. or Sys. O & M [ ] 4462
- Water Rem. or Sys. O & M [ ] 4463
- Other [ ]

TURN AROUND TIME

- 24 hours [ ]
- 48 hours [ ]
- 15 days [X] (Normal)
- Other [ ] ____

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

Analysis Required

	Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	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	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1	S-1	8/3/93			✓		3						✓								
2	S-2	"			✓		3						✓								
3	S-3	"			✓		3						✓								
4	DUP	"			✓		3						✓								
5	TB	7/27/93			✓		2						✓								

Relinquished By (signature): [signature]	Printed Name: JERRY R BOTTORFF	Date: 8-4-93 Time: 0930	Received (signature): [signature]	Printed Name: BENNY S. CARRIZOSA	Date: 8-4-93 Time: 0930
Relinquished By (signature): [signature]	Printed Name: BENNY S. CARRIZOSA	Time: 0940	Received (signature): Josephine DeCarli	Printed Name: Josephine DeCarli	Date: 8/4/93 Time: 09:40
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:

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 # : 9308040
Date Received : 08/04/93
Project ID : 204-5510-0303
Purchase Order: MOH-B813

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9308040- 1	S-1
9308040- 2	S-2
9308040- 3	S-3
9308040- 4	DUP
9308040- 5	TB

This report consists of 6 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

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

Corinne Pham for
Sarah Schoen, Ph.D.
Laboratory Director

8/18/93
Date

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

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

Workorder # : 9308040
Date Received : 08/04/93
Project ID : 204-5510-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9308040- 1	S-1	WATER	08/03/93	TPHgBTEX
9308040- 2	S-2	WATER	08/03/93	TPHgBTEX
9308040- 3	S-3	WATER	08/03/93	TPHgBTEX
9308040- 4	DUP	WATER	08/03/93	TPHgBTEX
9308040- 5	TB	WATER	07/27/93	TPHgBTEX

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

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

Workorder # : 9308040
Date Received : 08/04/93
Project ID : 204-5510-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as gasoline for samples S-2 and DUP are primarily due to the presence of a discrete peak not indicative of gasoline.

Cheryl Bateman 8/17/93
Department Supervisor Date

Charlie Burch 8.17.93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9308040
Matrix : WATER
Date Sampled : 07/27 & 08/03/93

Project Number : 204-5510-0303
Date Released : 08/17/93

	Reporting Limit	Sample I.D.# S-1	Sample I.D.# S-2	Sample I.D.# S-3	Sample I.D.# DUP	Sample I.D.# TB
COMPOUNDS	(ug/L)	-01	-02	-03	-04	-05
Benzene	0.5	ND	1400	ND	1400	ND
Toluene	0.5	ND	130	ND	140	ND
Ethylbenzene	0.5	ND	81	ND	86	ND
Total Xylenes	0.5	ND	130	ND	150	ND
TPH as Gasoline	50	ND	18000	ND	19000	ND
% Surrogate Recovery		105%	116%	96%	126%	96%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		08/06/93	08/07/93	08/06/93	08/07/93	08/07/93
RLMF		1	50	1	50	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

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

Charlotte Burch 8-17-93
Analyst Date

Cheryl Balmer 8/17/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9308040
Matrix : WATER
Date Sampled : N/A

Project Number : 204-5510-0303
Date Released : 08/17/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BG0601E3 BLANK
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Total Xylenes	0.5	ND
TPH as Gasoline	50	ND
% Surrogate Recovery		93%
Instrument I.D.		HP4
Date Analyzed		08/06/93
RLMF		1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

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

Charlesetta Burch 8-17-93
Analyst Date

Cheryl Baemer 8/17/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 204-5510-0303 S-3	Anametrix I.D.	: 08040-03
Matrix	: WATER	Analyst	: KL
Date Sampled	: 08/03/93	Supervisor	:
Date Analyzed	: 08/07/93	Date Released	: 08/17/93
		Instrument ID	: HP4

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC MS (ug/L)	% REC MS	REC MD (ug/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	500	0	360	72%	360	72%	0%	48-149
P-BFB				92%		104%		61-139

* Limits established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Analyzed : 08/06/93

Anametrix I.D. : MG0601E3
Analyst : KK
Supervisor : CS
Date Released : 08/10/93
Instrument ID : HP4

COMPOUND	SPIKE AMT (ug/L)	LCS (ug/L)	%REC LCS	%REC LIMITS
BENZENE	20.0	14.9	75%	52-133
TOLUENE	20.0	14.8	74%	57-136
ETHYLBENZENE	20.0	14.8	74%	56-139
TOTAL-XYLENES	20.0	14.6	73%	56-141
P-BFB			95%	53-147

* Quality control limit established by Anametrix, Inc.