Weiss Associates Environmental and Geologic Services

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

September 18, 1995

Jennifer Eberle
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Re: **Third Quarter 1995**
Shell Service Station
WIC #204-5510-0204
350 Grand Avenue
Oakland, California
WA Job #81-0701-205

Dear Ms. Eberle:

This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Division 3, Chapter 16, Article 5, Section 2652.d.

Third Quarter 1995 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the site wells (Figures 1 and 2). 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 contoured ground water elevations and plotted benzene concentrations in ground water (Figure 2).

Anticipated Fourth Quarter 1995 Activities:

- WA will submit a report presenting the results of the fourth quarter 1995 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, and ground water elevations and contoured ground water elevations and plotted benzene concentrations in ground water.

- WA will install at least one offsite ground water monitoring well. However, obtaining encroachment permits and necessary performance bonds has delayed this work. We will notify the county when we will install the well.

Conclusions and Recommendations:

In July 1995, ground water flowed to the south beneath the site. Hydrocarbon concentrations in all monitoring wells remained within historical range.

Please call if you have any questions.

Sincerely,
Weiss Associates

Grady S. Glasser
Technical Assistant

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

Attachments: A - BTS Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Products Company, P.O. Box 4023, Concord, California 94524

GSG/JWC:all
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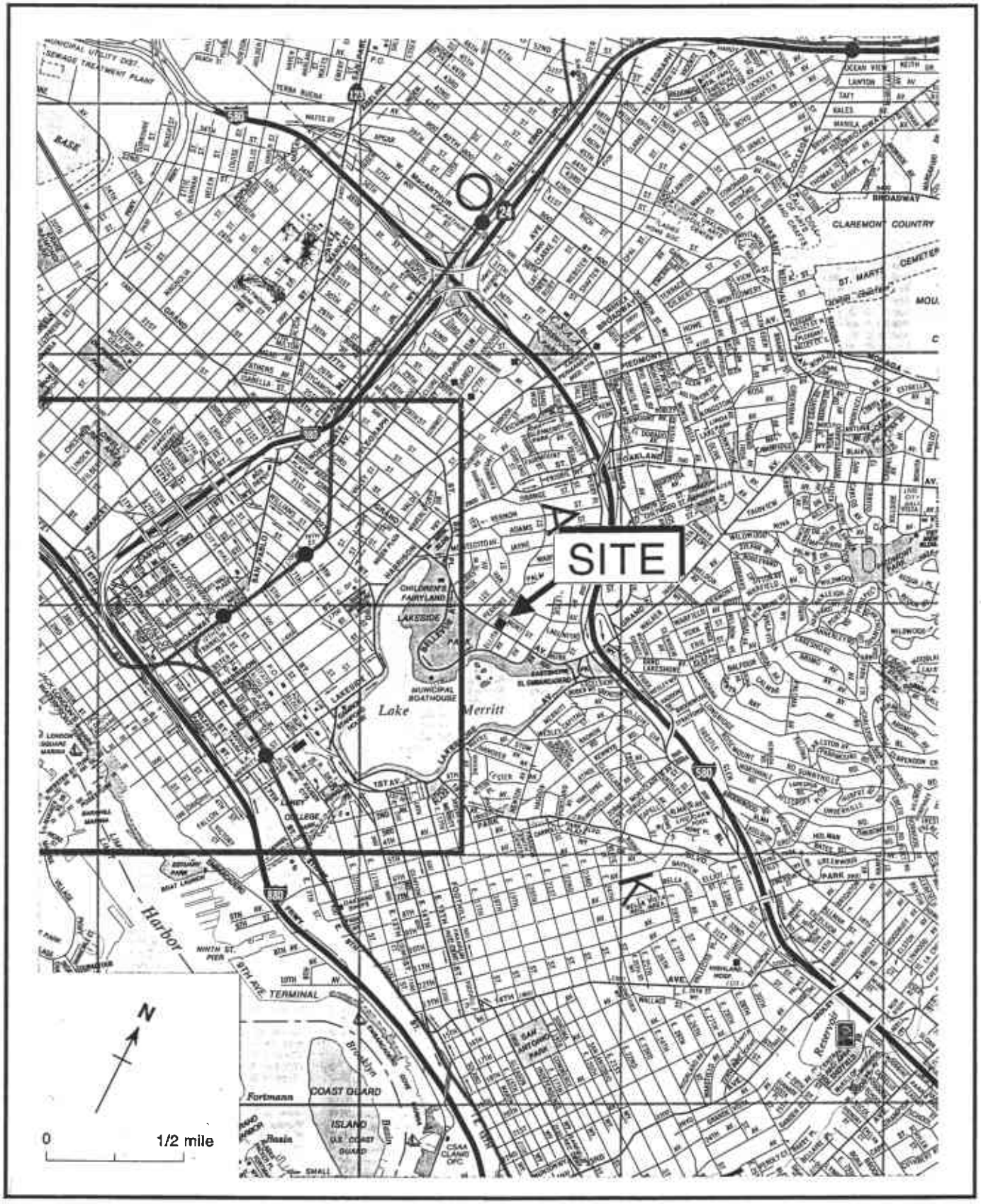
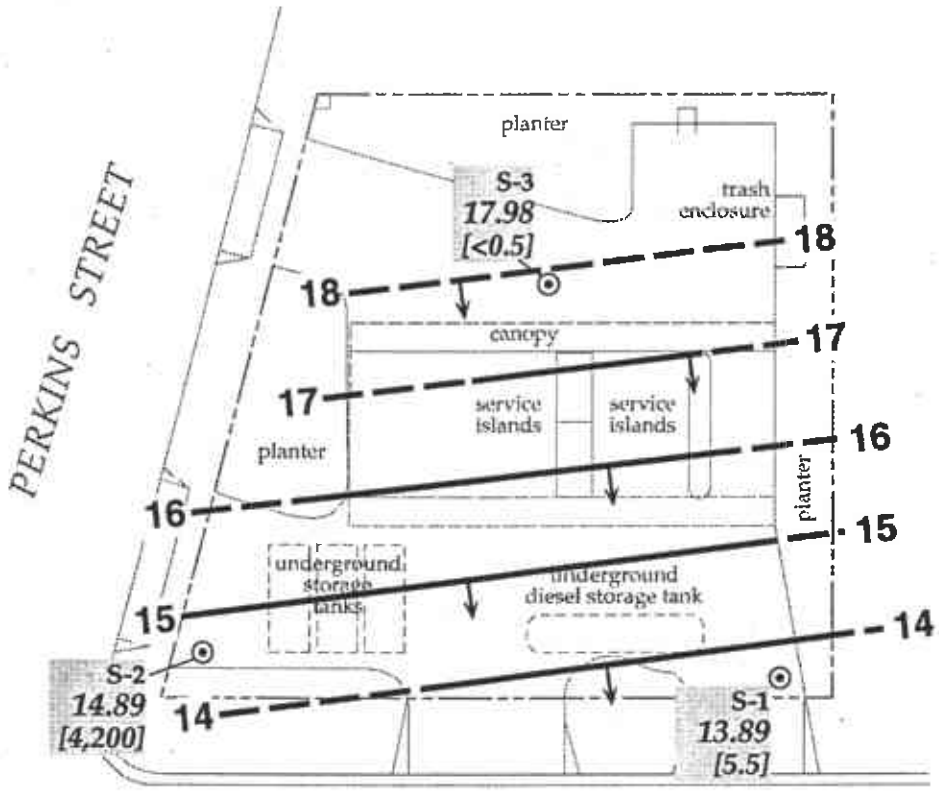


Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California



EXPLANATION

⊙S-1	Monitoring well
13.89	Ground water elevation, ft above mean sea level (msl)
[5.5]	Benzene concentrations in parts per billion (ppb)
14	Ground water elevation contour, ft above msl, approximately located, dashed where inferred
→	Inferred ground water flow direction

N

0 40 ft

Base map from GeoStrategies Inc.

Figure 2. Monitoring Well Location, Ground Water Elevation, and Benzene Concentrations in Ground Water - July 7, 1995 - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Well ID	Date	Top-of-Casing Elevation	Depth to Water (ft)	Ground Water Elevation (ft above msl)
S-1	01/23/91	20.84	9.73	11.11
	04/25/91		7.37	13.47
	07/19/91		8.92	11.92
	10/09/91		9.62	11.22
	01/23/92		8.94	11.90
	04/27/92		7.06	13.78
	07/10/92		8.31	12.53
	10/06/92		9.55	11.29
	01/06/93		9.86	10.98
	04/26/93		6.30	14.54
	07/20/93		8.78	12.06
	10/18/93		9.20	11.64
	01/07/94		9.53	11.31
	04/11/94		8.50	12.34
	07/14/94		8.45	12.39
	07/19/94		9.07	11.77
	10/06/94		11.68	9.16
	01/04/95		8.51	12.33
	04/12/95		6.66	14.18
	07/07/95		6.95	13.89
S-2	01/23/91	21.24	10.55	10.69
	04/25/91		8.24	13.00
	07/19/91		9.55	11.69
	10/09/91		10.26	10.98
	01/23/92		9.51	11.73
	04/27/92		7.83	13.41
	07/10/92		8.57	12.67
	10/06/92		9.49	11.75
	01/06/93		8.56	12.68
	04/26/93		6.84	14.40
	07/20/93		8.52	12.72
	10/18/93		9.36	11.88
	01/07/94		8.37	12.87
	04/11/94		6.96	14.28
	07/14/94		7.49	13.75
	07/19/94		8.02	13.22
	10/06/94		11.00	10.24
	01/04/94		8.07	13.17
	04/12/95		6.12	15.12
	07/07/95		6.35	14.89

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California (continued)

Well ID	Date	Top-of-Casing Elevation	Depth to Water (ft)	Ground Water Elevation (ft above msl)
S-3	01/23/91	22.70	14.67	8.03
	04/25/91		12.96	9.74
	07/19/91		12.45	10.25
	10/09/91		12.98	9.72
	01/23/92		13.06	9.64
	04/27/92		7.25	15.45
	07/10/92		8.46	14.24
	10/06/92		11.77	10.93
	01/06/93		12.53	10.17
	04/26/93		4.28	18.42
	07/20/93		5.70	17.00
	10/18/93		10.30	12.40
	01/07/94		12.40	10.30
	04/11/94		10.94	11.76
	07/14/94		7.90	14.80
	07/19/94		8.12	14.58
	10/06/94		12.15	10.55
	01/04/95		11.18	11.52
	04/12/95		3.76	18.94
	07/07/95		4.72	17.98

Table 2. Analytic Results for Ground Water, Former Shell Service Station, WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
			← parts per billion (µg/L) →					
WELLS								
S-1	01/23/91	9.73	<50	<50	<0.5	<0.5	<0.5	<0.5
	04/25/91	7.37	<50	<50	<0.5	<0.5	<0.5	<0.5
	07/19/91	8.92	<50	<50	6.8	<0.5	<0.5	<0.5
	10/09/91	9.62	260[a]	120	10	<0.5	<0.5	<0.5
	01/23/92	8.94	<50	<50	<0.5	<0.5	<0.5	<0.5
	04/27/92	7.06	70[b]	<50	1.2	<0.5	<0.5	<0.5
	07/10/92	8.31	930	<50	13	<0.5	<0.5	<0.5
	10/06/92	9.55	110	62	<0.5	<0.5	<0.5	<0.5
	01/06/93	9.86	81	85	1.1	<0.5	<0.5	<0.5
	04/26/93	6.30	53[c]	<50	<0.5	<0.5	<0.5	<0.5
	04/26/93[dup]	6.30	53[c]	<50	<0.5	<0.5	<0.5	<0.5
	07/20/93	8.78	140	<50	<0.5	<0.5	<0.5	<0.5
	10/18/93	9.20	210	<50	<0.5	<0.5	<0.5	<0.5
	01/07/94	9.53	<50	<50	1.4	0.55	1.5	2.8
	01/07/94[dup]	9.53	53	<50	1.2	<0.5	1.5	2.7
	04/11/94	8.50	320	<50	2.8	<0.5	<0.5	<0.5
	04/11/94[dup]	8.50	220	<50	2.6	<0.5	<0.5	<0.5
	07/19/94	9.07	110	<50	<0.5	<0.5	<0.5	<0.5
	10/06/94	11.68	370	110	1.4	<0.5	<0.5	<0.5
	01/04/95	8.51	1,000	120	2.5	1.5	<0.5	1.7
	04/12/95	6.66	290	<50	2.1	<0.5	<0.5	<0.5
	04/12/95[dup]	6.66	480	<50	<0.5	<0.5	<0.5	<0.5
	07/07/95	6.95	370	<50	5.5	<0.5	<0.5	<0.5
	07/07/95[dup]	6.95	450	<50	6.5	<0.5	<0.5	<0.5
S-2	01/23/91	10.55	1,200	2,500	550	33	15	42
	04/25/91	8.24	20,000[b]	32,000	2,900	1,400	480	2,300
	07/19/91	9.55	30,000[b]	21,000	4,700	1,200	430	2,400
	10/09/91	10.26	32,000[b]	29,000	6,300	1,700	510	2,400

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
			← parts per billion (µg/L) →					
	01/23/92	9.51	36,000[b]	31,000	5,800	2,000	480	2,700
	04/27/92	7.83	12,000[b]	21,000[d]	4,800	1,600	320	1,400
	07/10/92	8.57	3,700[c]	31,000	7,500	3,400	940	3,500
	10/06/92	9.49	4,500[c]	57,000	9,300	4,000	1,200	4,900
	01/06/93	8.56	5,600	55,000	5,600	3,000	360	3,000
	04/26/93	6.84	9,400[c]	32,000	10,000	4,400	500	3,600
	07/20/93	8.52	8,400[c]	25,000	5,800	2,700	300	1,400
	07/20/93[dup]	8.52	8,900[c]	25,000	5,900	2,800	310	1,400
	10/18/93	9.36	18,000[c]	23,000	3,700	2,100	200	1,600
	10/18/93[dup]	9.36	14,000[c]	28,000	3,700	2,100	210	1,600
	01/07/94	8.37	22,000[c]	120,000	6,900	3,100	400	2,600
	04/11/94	6.96	17,000[c]	34,000	4,800	1,900	170	880
	07/19/94	8.02	---	23,000	4,300	1,100	210	1,000
	07/19/94[dup]	8.02	---	29,000	4,700	1,200	270	1,200
	10/06/94	11.00	---	61,000	4,600	1,900	290	1,900
	10/06/94[dup]	11.00	---	52,000	5,200	2,100	270	1,900
	01/04/95	8.07	---	23,000	4,500	1,300	49	500
	01/04/95[dup]	8.07	---	18,000	3,800	1,100	33	390
	04/12/95	6.12	---	29,000	4,300	990	210	700
	07/07/95	**6.35**	**---**	**26,000**	**4,200**	**1,100**	**180**	**730**
S-3	01/23/91	14.67	---	<50	<0.5	<0.5	<0.5	<0.5
	04/25/91	12.96	---	<50	<0.5	<0.5	<0.5	<0.5
	07/19/91	12.45	---	<50	<0.5	<0.5	<0.5	<0.5
	10/09/91	12.98	---	<50	<0.5	<0.5	<0.5	<0.5
	01/23/92	13.06	---	<50	<0.5	<0.5	<0.5	<0.5
	04/27/92	7.25	100	<50	<0.5	<0.5	<0.5	<0.5
	07/10/92	8.46	68	<50	<0.5	<0.5	<0.5	<0.5
	10/06/92	11.77	<10	<50	<0.5	<0.5	<0.5	<0.5
	01/06/93	12.53	<10	<50	<0.5	<0.5	<0.5	<0.5

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
			← parts per billion (µg/L) →					
	04/26/93	4.28	69	<50	<0.5	<0.5	<0.5	<0.5
	07/20/93	5.70	120	<50	<0.5	<0.5	0.6	<0.5
	10/18/93	10.30	160	<50	<0.5	<0.5	<0.5	<0.5
	01/07/94[f]	12.40	58	160	59	4.9	26	22
	04/11/94	10.94	<50	<50	<0.52	<0.5	<0.5	<0.5
	07/19/94	8.12	110[a]	<50	<0.5	<0.5	<0.5	<0.5
	10/06/94	12.15	<50	<50	<0.5	<0.5	<0.5	<0.5
	01/04/95	11.18	<50	<50	<0.5	<0.5	<0.5	<0.5
	04/12/95	3.76	110	<50	<0.5	<0.5	<0.5	<0.5
	07/07/95	**4.72**	**410**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
HP-1	01/27/93		14,000	22,000	2,500	1,400	130	140
HP-2	01/27/93		---	<50	<0.5	<0.5	4.4	<0.5
HP-3	01/27/93		---	<50	<0.5	<0.5	<0.5	<0.5
Trip Blank	01/23/91		---	<50	<0.5	<0.5	<0.5	<0.5
	04/25/91		---	---	---	---	---	---
	07/19/91		---	<50	<0.5	<0.5	<0.5	<0.5
	10/09/91		---	---	---	---	---	---
	01/23/92		<50	<50	<0.5	<0.5	<0.5	<0.5
	04/26/93		<50	<50	<0.5	<0.5	<0.5	<0.5
	07/20/93		---	<50	<0.5	<0.5	<0.5	<0.5
	10/18/93		<50	<50	<0.5	<0.5	<0.5	<0.5
	01/07/94		<50	<50	<0.5	<0.5	<0.5	<0.5
	04/11/94		<50	<50	<0.5	<0.5	<0.5	<0.5
	07/19/94		<50	<50	<0.5	<0.5	<0.5	<0.5

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X
			← parts per billion (µg/L) →					
	10/06/94		---	<50	<0.5	<0.5	<0.5	<0.5
	01/04/95		---	<50	<0.5	<0.5	<0.5	<0.5
	04/12/95		---	<50	<0.5	<0.5	<0.5	<0.5
	07/07/95		**---**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
DTSC MCLs				NE	1	680	100[g]	1,750

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
TPH-D = Total petroleum hydrocarbons as diesel 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 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
HP = Hydropunch ground water sample

Notes:

a = compounds detected and calculated as diesel are not characteristic of the standard diesel chromatographic pattern
b = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
c = Concentration reported as diesel primarily due to the presence of a heavier petroleum product, possibly motor oil
d = Compounds detected and calculated as gasoline are not characteristic of the standard gasoline chromatographic pattern
e = Concentration reported as diesel is primarily due to the presence of lighter petroleum product, possibly gasoline
f = TPH-G/BETX concentrations anomalous with historical data. Lab verified concentrations.
g = DTSC recommended action level for drinking water; MCL not established

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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

July 25, 1995

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-5510-0204
350 Grand Avenue
Oakland, California

QUARTER:
3rd quarter of 1995

QUARTERLY GROUNDWATER SAMPLING REPORT 950707-V-2

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 site 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 pre-frozen 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 National Environmental Testing, Inc. in Santa Rosa, California. NET is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1386.

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: Grady Glasser

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 *	7/7/95	TOB	--	NONE	--	--	6.95	17.70
S-2	7/7/95	TOB	SHEEN/ODOR	--	--	--	6.35	15.02
S-3	7/7/95	TOB	--	NONE	--	--	4..72	15.05

* Sample DUP was a duplicate sample taken from well S-1.

R 1491 (6)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 950707-V-2

Date:
Page 1 of 1

Site Address: 350 Grand Avenue, Oakland

WIC#: 204-5510-0204

Shell Engineer: Dan Kirk — Phone No.: (510) 675-6168 Fax #: 675-6172

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: J Vandenbrock

Printed Name: J.A. VANDENBROECK

LAB: [redacted] NET

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
S-1	7/7/95					5		✓				✓								
S-2						3		✓				✓								
S-3						5		✓				✓								
DUP						5		✓				✓							7/10/95	BB
TRIP	↓			↓		2						✓							Reel Intact	

Relinquished By (Signature): J Vandenbrock	Printed Name:	Date: 7/10 Time: 15:20	Received (Signature):	Printed Name: G. LAMBRE	Date: 7/10 Time: 15:20
Relinquished By (Signature): G Lumbre	Printed Name: G Lumbre	Date: 7/10 Time: 16:20	Received (Signature):	Printed Name: PAM GREENE	Date: 7/11/95 Time: 07:15
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

VIA: NCS

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
3636 North Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226
Tel: (707) 526-7200
Fax: (707) 541-2333

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

Date: 07/19/1995
NET Client Acct. No: 1821
NET Job No: 95.02663
Received: 07/11/1995

Client Reference Information

Shell 350 Grand Avenue, Oakland, CA/950707-V-2

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Ken Larson
Division Manager

Jennifer L. Roseberry
Project Manager

Enclosure(s)

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

SAMPLE DESCRIPTION: S-1
Date Taken: 07/07/1995
Time Taken:
NET Sample No: 245714

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						07/13/1995	3009
Purgeable TPH	ND		50	ug/L	5030/M8015		07/13/1995	3009
Carbon Range: C6 to C12	--						07/13/1995	3009
METHOD 8020 (GC, Liquid)	--						07/13/1995	3009
Benzene	5.5	C	0.5	ug/L	8020		07/13/1995	3009
Toluene	ND		0.5	ug/L	8020		07/13/1995	3009
Ethylbenzene	ND		0.5	ug/L	8020		07/13/1995	3009
Xylenes (Total)	ND		0.5	ug/L	8020		07/13/1995	3009
SURROGATE RESULTS	--						07/13/1995	3009
Bromofluorobenzene (SURR)	104			% Rec.	8020		07/13/1995	3009
METHOD 3510/8015-M (Shell)						07/13/1995		
DILUTION FACTOR*	1						07/14/1995	1033
Extractable TPH	370		50	ug/L	3510/M8015		07/14/1995	1033
Carbon range: C10 to C28	--						07/14/1995	1033

C : Positive result confirmed by secondary column or GC/MS analysis.

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

SAMPLE DESCRIPTION: S-2
Date Taken: 07/07/1995
Time Taken:
NET Sample No: 245715

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	20						07/13/1995	3009
Purgeable TPH	26,000		1,000	ug/L	5030/M8015		07/13/1995	3009
Carbon Range: C6 to C12	--						07/13/1995	3009
METHOD 8020 (GC, Liquid)	--						07/13/1995	3009
Benzene	4,200	FG	100	ug/L	8020		07/14/1995	3015
Toluene	180		10	ug/L	8020		07/13/1995	3009
Ethylbenzene	1,000	FG	100	ug/L	8020		07/14/1995	3015
Xylenes (Total)	730		10	ug/L	8020		07/13/1995	3009
SURROGATE RESULTS	--						07/13/1995	3009
Bromofluorobenzene (SURR)	117			% Rec.	8020		07/13/1995	3009

FG : Compound quantitated at a 200X dilution factor.

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

SAMPLE DESCRIPTION: S-3
Date Taken: 07/07/1995
Time Taken:
NET Sample No: 245716

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						07/13/1995	3009
Purgeable TPH	ND		50	ug/L	5030/M8015		07/13/1995	3009
Carbon Range: C6 to C12	--						07/13/1995	3009
METHOD 8020 (GC, Liquid)	--						07/13/1995	3009
Benzene	ND		0.5	ug/L	8020		07/13/1995	3009
Toluene	ND		0.5	ug/L	8020		07/13/1995	3009
Ethylbenzene	ND		0.5	ug/L	8020		07/13/1995	3009
Xylenes (Total)	ND		0.5	ug/L	8020		07/13/1995	3009
SURROGATE RESULTS	--						07/13/1995	3009
Bromofluorobenzene (SURR)	104			% Rec.	8020		07/13/1995	3009
METHOD 3510/8015-M (Shell)						07/13/1995		
DILUTION FACTOR*	1						07/14/1995	1033
Extractable TPH	410		50	ug/L	3510/M8015		07/14/1995	1033
Carbon range: C10 to C28	--						07/14/1995	1033

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

SAMPLE DESCRIPTION: DUP
Date Taken: 07/07/1995
Time Taken:
NET Sample No: 245717

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						07/13/1995	3009
Purgeable TPH	ND		50	ug/L	5030/M8015		07/13/1995	3009
Carbon Range: C6 to C12	--						07/13/1995	3009
METHOD 8020 (GC, Liquid)	--						07/13/1995	3009
Benzene	6.5	C	0.5	ug/L	8020		07/13/1995	3009
Toluene	ND		0.5	ug/L	8020		07/13/1995	3009
Ethylbenzene	ND		0.5	ug/L	8020		07/13/1995	3009
Xylenes (Total)	ND		0.5	ug/L	8020		07/13/1995	3009
SURROGATE RESULTS	--						07/13/1995	3009
Bromofluorobenzene (SURR)	106			% Rec.	8020		07/13/1995	3009
METHOD 3510/8015-M (Shell)						07/13/1995		
DILUTION FACTOR*	1						07/14/1995	1033
Extractable TPH	450		50	ug/L	3510/M8015		07/14/1995	1033
Carbon range: C10 to C28	--						07/14/1995	1033

C : Positive result confirmed by secondary column or GC/MS analysis.

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

SAMPLE DESCRIPTION: Trip
Date Taken: 07/07/1995
Time Taken:
NET Sample No: 245718

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						07/13/1995	3009
Purgeable TPH	ND		50	ug/L	5030/M8015		07/13/1995	3009
Carbon Range: C6 to C12	--						07/13/1995	3009
METHOD 8020 (GC, Liquid)	--						07/13/1995	3009
Benzene	ND		0.5	ug/L	8020		07/13/1995	3009
Toluene	ND		0.5	ug/L	8020		07/13/1995	3009
Ethylbenzene	ND		0.5	ug/L	8020		07/13/1995	3009
Xylenes (Total)	ND		0.5	ug/L	8020		07/13/1995	3009
SURROGATE RESULTS	--						07/13/1995	3009
Bromofluorobenzene (SURR)	103			% Rec.	8020		07/13/1995	3009

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials	Run Batch Number
METHOD 5030/8015-M (Shell)							
Purgeable TPH	112.0	0.56	0.50	mg/L	07/13/1995	lss	3009
Benzene	110.2	5.51	5.00	ug/L	07/13/1995	lss	3009
Toluene	103.2	5.16	5.00	ug/L	07/13/1995	lss	3009
Ethylbenzene	104.2	5.21	5.00	ug/L	07/13/1995	lss	3009
Xylenes (Total)	105.3	15.8	15.0	ug/L	07/13/1995	lss	3009
Bromofluorobenzene (SURR)	89.0	89	100	% Rec.	07/13/1995	lss	3009
METHOD 5030/8015-M (Shell)							
Purgeable TPH	106.0	0.53	0.50	mg/L	07/14/1995	lss	3015
Benzene	115.0	5.75	5.00	ug/L	07/14/1995	lss	3015
Toluene	109.8	5.49	5.00	ug/L	07/14/1995	lss	3015
Ethylbenzene	109.6	5.48	5.00	ug/L	07/14/1995	lss	3015
Xylenes (Total)	110.0	16.5	15.0	ug/L	07/14/1995	lss	3015
Bromofluorobenzene (SURR)	111.0	111	100	% Rec.	07/14/1995	lss	3015
METHOD 3510/8015-M (Shell)							
Extractable TPH	113.0	1130	1000	mg/L	07/14/1995	tts	1033

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials	Run Batch Number
METHOD 5030/8015-M (Shell)						
Purgeable TPH	ND	0.05	mg/L	07/13/1995	lss	3009
Benzene	ND	0.5	ug/L	07/13/1995	lss	3009
Toluene	ND	0.5	ug/L	07/13/1995	lss	3009
Ethylbenzene	ND	0.5	ug/L	07/13/1995	lss	3009
Xylenes (Total)	ND	0.5	ug/L	07/13/1995	lss	3009
Bromofluorobenzene (SURR)	101		% Rec.	07/13/1995	lss	3009
METHOD 5030/8015-M (Shell)						
Purgeable TPH	ND	0.05	mg/L	07/14/1995	lss	3015
Benzene	ND	0.5	ug/L	07/14/1995	lss	3015
Toluene	ND	0.5	ug/L	07/14/1995	lss	3015
Ethylbenzene	ND	0.5	ug/L	07/14/1995	lss	3015
Xylenes (Total)	ND	0.5	ug/L	07/14/1995	lss	3015
Bromofluorobenzene (SURR)	107		% Rec.	07/14/1995	lss	3015
METHOD 3510/8015-M (Shell)						
Extractable TPH	ND	0.05	mg/L	07/14/1995	tts	1033

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Run Batch	Sample Spiked
METHOD 5030/8015-M (Shell)											245714
Purgeable TPH	114.0	114.0	0.0	0.50	ND	0.57	0.57	mg/L	07/13/1995	3009	245714
Benzene	98.4	98.4	0.0	7.62	5.5	13.0	13.0	ug/L	07/13/1995	3009	245714
Toluene	97.4	97.4	0.0	34.9	ND	34.0	34.0	ug/L	07/13/1995	3009	245714
METHOD 5030/8015-M (Shell)											245942
Purgeable TPH	106.0	108.0	1.9	0.50	ND	0.53	0.54	mg/L	07/14/1995	3015	245942
Benzene	100.4	97.0	3.3	7.38	ND	7.41	7.16	ug/L	07/14/1995	3015	245942
Toluene	99.1	100.3	1.1	33.6	ND	33.3	33.7	ug/L	07/14/1995	3015	245942
METHOD 3510/8015-M (Shell)											245714
Extractable TPH	86.5	90.5	4.5	2.00	0.37	2.10	2.18	mg/L	07/14/1995	1033	245714

Ref: Shell 350 Grand Avenue, Oakland, CA/950707-V-2

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	Duplicate LCS % Recovery	RPD	LCS Amount Found	Duplicate LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials	Run Batch
METHOD 3510/8015-M (Shell)										
Extractable TPH	72.0			0.720		1.00	mg/L	07/14/1995	tts	1033

NET®

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

COOLER RECEIPT FORM

Project: 960707-V-2 Log No: 7497
Cooler received on: 7-11-95 and checked on 7-11-95 by Tom Greene
(signature) Tom Greene

Were custody papers present?..... YES NO
Were custody papers properly filled out?..... YES NO *
Were the custody papers signed?..... YES NO
Was sufficient ice used?..... YES NO temp 0°
Did all bottles arrive in good condition (unbroken)?..... YES NO
Did bottle labels match COC?..... YES NO
Were proper bottles used for analysis indicated?..... YES NO
Correct preservatives used?..... YES NO
VOA vials checked for headspace bubbles?..... YES NO
Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:
TB	2 of 2

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

* 7/11/95 Recv'd 3 VOAs for S-2. Client checked COC for Diesel but listed 3 cont. No IL provided.

(coolerrec)