Weiss Associates *Environmental and Geologic Services*

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

94 OCT -5 PM 3:52

September 28, 1994

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

Re: Shell Service Station
WIC #204-5510-0204
350 Grand Avenue
Oakland, California
WA Job #81-0701-104

Dear Ms. Eberle:

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 2652.d. Included below are descriptions and results of activities performed in the third quarter 1994 and proposed work for the fourth quarter 1994.

Third Quarter 1994 Activities:

- 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.
- 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).
- WA reviewed ground water oxygenation alternatives to stimulate hydrocarbon biodegradation in the vicinity of monitoring well S-2.

September 28, 1994

Anticipated Fourth Quarter 1994 Activities:

- WA will submit a report presenting the results of the fourth 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.
- WA will continue reviewing remedial alternatives.

Conclusions and Recommendations:

On both July 14 and 19, 1994, ground water flowed southerly beneath the site, which is consistent with historical ground water flow directions. Hydrocarbon concentrations remained within historical ranges.

Quarterly monitoring will continue at this site.

Please call if you have any questions.

Sincerely,
Weiss Associates

John Wolf
Technical Assistant

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

JW/JWC:jw

J:\SHELL\0701\QM\701QMAU4.WP

Attachments: A - BTS Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 4023, Concord, California 94524
John Jang, Regional Water Quality Control Board - San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, California 94612

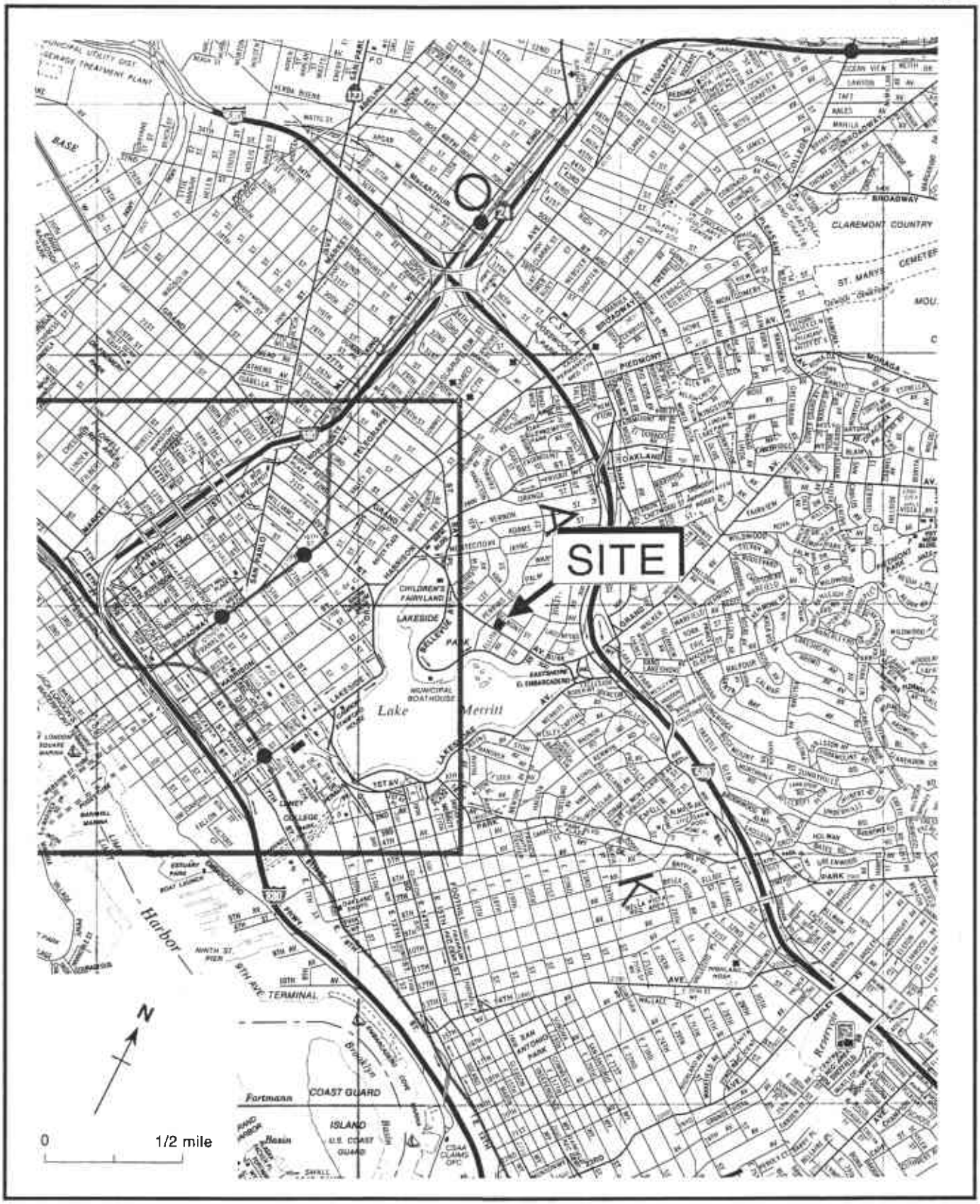

Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

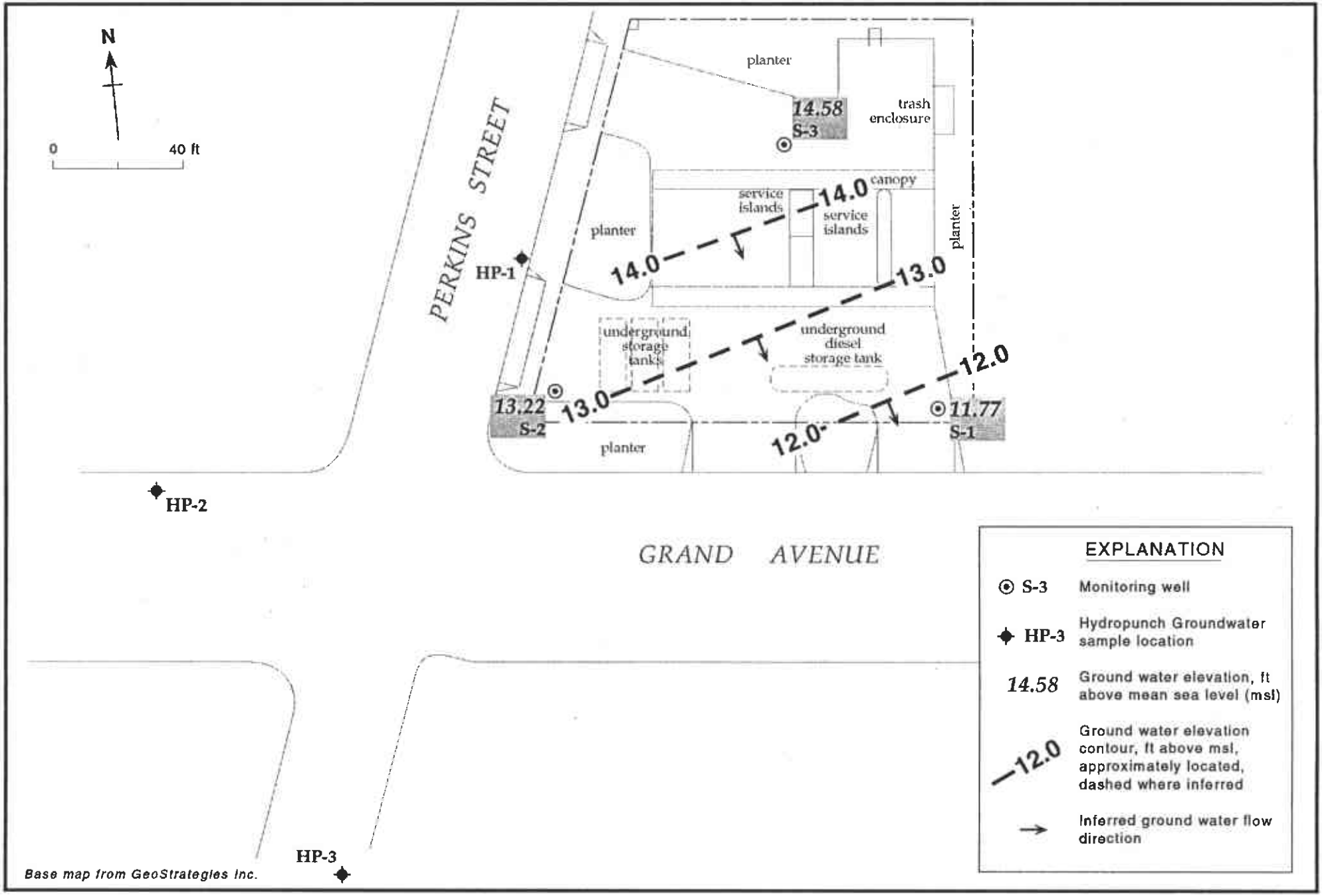

Figure 2. Monitoring Well Location and Ground Water Elevation Contour Map - July 19, 1994 - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

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	04/25/91	20.84	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**
S-2	04/25/91	21.24	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**
S-3	04/25/91	22.70	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

-- Table 1 continues on next page --

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)
	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**

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	---	<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
S-2	01/23/91	---	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
	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[e]	31,000	7,500	3,400	940	3,500
	10/06/92	9.49	4,500[e]	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[e]	32,000	10,000	4,400	500	3,600
	07/20/93	8.52	8,400[e]	25,000	5,800	2,700	300	1,400
	07/20/93[dup]	8.52	8,900[e]	25,000	5,900	2,800	310	1,400
	10/18/93	9.36	18,000[e]	23,000	3,700	2,100	200	1,600
	10/18/93[dup]	9.36	14,000[e]	28,000	3,700	2,100	210	1,600
	01/07/94	8.37	22,000[e]	120,000	6,900	3,100	400	2,600
	04/11/94	6.96	17,000[e]	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
S-3	01/23/91	---	---	<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

-- Table 2 continues on next page --

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)----->					
	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
	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	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[e]	<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
DTSC MCLs				NE	1	680	100[f]	1,750

-- Table 2 continues on next page --

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

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 = DTSC recommended action level for drinking water; MCL not established

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 8, 1994

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

Attn: Daniel T. Kirk

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

QUARTER:
3rd quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 940719-R-1

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

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

STANDARD PROCEDURES

Evacuation

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

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

Decontamination

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

Free Product Skimmer

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

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such 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 #178.

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	7/19/94	TOB	--	NONE	--	--	9.07	17.70
S-2 *	7/19/94	TOB	ODOR	NONE	--	--	8.02	15.06
S-3	7/19/94	TOB	--	NONE	--	--	8.12	15.06

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

1510

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 940719 RB1

Date: 7/19/94
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: R. BROWN
Printed Name: R. BROWN

LAB: NET

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring [X]	5461
Site Investigation [ ]	5441
Soil Classify/Disposal [ ]	5442
Water Classify/Disposal [ ]	5443
Soil/Air Rem. or Sys. O & M [ ]	5462
Water Rem. or Sys. O & M [ ]	5463
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
S-1	7/19			X		5		X				X								
S-2	↓			↓		3						↓								
S-3	↓			↓		4		X				↓							*ONLY ENOUGH FOR 1 LITRE	
EB	↓			↓		7/5		X				↓								
DUP	↓			↓		3						↓								CUSTODY SEALED 7/21 [signature] seal intact
T.B	↓			↓		2						↓								

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
R. Brown	R. BROWN	Date: 7/21/94 Time: 11:2	[signature]	GP LUMARE	Date: 7/21/94 Time: 11:20
[signature]	GP LUMBRE	Date: 7/21/94 Time: 19:30			
(via NCS)			[signature]	K. Temple	Date: 7/21/94 Time: 0840

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

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

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

Date: 08/01/1994
NET Client Acct. No: 1821
NET Pacific Job No: 94.03156
Received: 07/22/1994

Client Reference Information

SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

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:

Judy Ridley
Project Coordinator

Jim Hoch
Operations Manager

Enclosure(s)

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

SAMPLE DESCRIPTION: S-1
Date Taken: 07/19/1994
Time Taken:
NET Sample No: 201011

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						07/28/1994
DILUTION FACTOR*	1						07/28/1994
as Gasoline	ND		50	ug/L	5030		07/28/1994
Carbon Range:	--						07/28/1994
METHOD 8020 (GC,Liquid)	--						07/28/1994
DILUTION FACTOR*	1						07/28/1994
Benzene	ND		0.5	ug/L	8020		07/28/1994
Toluene	ND		0.5	ug/L	8020		07/28/1994
Ethylbenzene	ND		0.5	ug/L	8020		07/28/1994
Xylenes (Total)	ND		0.5	ug/L	8020		07/28/1994
SURROGATE RESULTS	--						07/28/1994
Bromofluorobenzene (SURR)	82			% Rec.	5030		07/28/1994
METHOD M8015 (EXT., Liquid)						07/25/1994	
DILUTION FACTOR*	1						07/30/1994
as Diesel	110		50	ug/L	3510		07/30/1994
Carbon Range:	C12-C18						07/30/1994

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

SAMPLE DESCRIPTION: S-2
Date Taken: 07/19/1994
Time Taken:
NET Sample No: 201012

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						07/28/1994
DILUTION FACTOR*	100						07/28/1994
as Gasoline	23,000		5000	ug/L	5030		07/28/1994
Carbon Range:	C5-C12						07/28/1994
METHOD 8020 (GC,Liquid)	--						07/28/1994
DILUTION FACTOR*	100						07/28/1994
Benzene	4,300		50	ug/L	8020		07/28/1994
Toluene	210		50	ug/L	8020		07/28/1994
Ethylbenzene	1,100		50	ug/L	8020		07/28/1994
Xylenes (Total)	1,000		50	ug/L	8020		07/28/1994
SURROGATE RESULTS	--						07/28/1994
Bromofluorobenzene (SURR)	84			% Rec.	5030		07/28/1994

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

SAMPLE DESCRIPTION: S-3
Date Taken: 07/19/1994
Time Taken:
NET Sample No: 201013

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						07/28/1994
DILUTION FACTOR*	1						07/28/1994
as Gasoline	ND		50	ug/L	5030		07/28/1994
Carbon Range:	--						07/28/1994
METHOD 8020 (GC,Liquid)	--						07/28/1994
DILUTION FACTOR*	1						07/28/1994
Benzene	ND		0.5	ug/L	8020		07/28/1994
Toluene	ND		0.5	ug/L	8020		07/28/1994
Ethylbenzene	ND		0.5	ug/L	8020		07/28/1994
Xylenes (Total)	ND		0.5	ug/L	8020		07/28/1994
SURROGATE RESULTS	--						07/28/1994
Bromofluorobenzene (SURR)	87			% Rec.	5030		07/28/1994
METHOD M8015 (EXT., Liquid)						07/25/1994	
DILUTION FACTOR*	1						07/27/1994
as Diesel	110	D-	50	ug/L	3510		07/27/1994
Carbon Range:	C12-C20						07/27/1994

D- : The positive result has an atypical pattern for Diesel analysis.

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

SAMPLE DESCRIPTION: EB
Date Taken: 07/19/1994
Time Taken:
NET Sample No: 201014

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						07/28/1994
DILUTION FACTOR*	1						07/28/1994
as Gasoline	ND		50	ug/L	5030		07/28/1994
Carbon Range:	--						07/28/1994
METHOD 8020 (GC,Liquid)	--						07/28/1994
DILUTION FACTOR*	1						07/28/1994
Benzene	ND		0.5	ug/L	8020		07/28/1994
Toluene	ND		0.5	ug/L	8020		07/28/1994
Ethylbenzene	ND		0.5	ug/L	8020		07/28/1994
Xylenes (Total)	ND		0.5	ug/L	8020		07/28/1994
SURROGATE RESULTS	--						07/28/1994
Bromofluorobenzene (SURR)	78			% Rec.	5030		07/28/1994
METHOD M8015 (EXT., Liquid)						07/25/1994	
DILUTION FACTOR*	1						07/27/1994
as Diesel	ND		50	ug/L	3510		07/27/1994
Carbon Range:	--						07/27/1994

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

SAMPLE DESCRIPTION: DUP
Date Taken: 07/19/1994
Time Taken:
NET Sample No: 201015

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						07/28/1994
DILUTION FACTOR*	10						07/28/1994
as Gasoline	29,000	FF	500	ug/L	5030		07/28/1994
Carbon Range:	C5-C12						07/28/1994
METHOD 8020 (GC,Liquid)	--						07/28/1994
DILUTION FACTOR*	10						07/28/1994
Benzene	4,700	FF	5	ug/L	8020		07/28/1994
Toluene	270		5	ug/L	8020		07/28/1994
Ethylbenzene	1,200	FF	5	ug/L	8020		07/28/1994
Xylenes (Total)	1,200	FF	5	ug/L	8020		07/28/1994
SURROGATE RESULTS	--						07/28/1994
Bromofluorobenzene (SURR)	113			% Rec.	5030		07/28/1994

FF : Compound quantitated at a 100X dilution factor.

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

SAMPLE DESCRIPTION: TB
Date Taken: 07/19/1994
Time Taken:
NET Sample No: 201016

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						
DILUTION FACTOR*	1						
as Gasoline	ND		50	ug/L	5030		
Carbon Range:	ND						
METHOD 8020 (GC,Liquid)	--						
DILUTION FACTOR*	1						
Benzene	ND		0.5	ug/L	8020		
Toluene	ND		0.5	ug/L	8020		
Ethylbenzene	ND		0.5	ug/L	8020		
Xylenes (Total)	ND		0.5	ug/L	8020		
SURROGATE RESULTS	--						
Bromofluorobenzene (SURR)	82			% Rec.	5030		

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)						
as Gasoline	108.0	1.08	1.00	mg/L	07/28/1994	jmh
Benzene	102.0	5.10	5.00	ug/L	07/28/1994	jmh
Toluene	102.0	5.10	5.00	ug/L	07/28/1994	jmh
Ethylbenzene	99.8	4.99	5.00	ug/L	07/28/1994	jmh
Xylenes (Total)	102.0	15.3	15.0	ug/L	07/28/1994	jmh
Bromofluorobenzene (SURR)	93.0	93	100	% Rec.	07/28/1994	jmh
TPH (Gas/BTXE,Liquid)						
as Gasoline	102.0	1.02	1.00	mg/L	07/28/1994	aal
Benzene	94.4	4.72	5.00	ug/L	07/28/1994	aal
Toluene	93.6	4.68	5.00	ug/L	07/28/1994	aal
Ethylbenzene	95.4	4.77	5.00	ug/L	07/28/1994	aal
Xylenes (Total)	95.3	14.3	15.0	ug/L	07/28/1994	aal
Bromofluorobenzene (SURR)	99.0	99	100	% Rec.	07/28/1994	aal
TPH (Gas/BTXE,Liquid)						
as Gasoline	104.0	1.04	1.00	mg/L	07/29/1994	jmh
Benzene	91.0	4.55	5.00	ug/L	07/29/1994	jmh
Toluene	97.2	4.86	5.00	ug/L	07/29/1994	jmh
Ethylbenzene	93.0	4.65	5.00	ug/L	07/29/1994	jmh
Xylenes (Total)	99.3	14.9	15.0	ug/L	07/29/1994	jmh
Bromofluorobenzene (SURR)	92.0	92	100	% Rec.	07/29/1994	jmh
METHOD M8015 (EXT., Liquid)						
as Diesel	102.0	1020	1000	mg/L	07/27/1994	tts

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	07/28/1994	jmh
Benzene	ND	0.5	ug/L	07/28/1994	jmh
Toluene	ND	0.5	ug/L	07/28/1994	jmh
Ethylbenzene	ND	0.5	ug/L	07/28/1994	jmh
Xylenes (Total)	ND	0.5	ug/L	07/28/1994	jmh
Bromofluorobenzene (SURR)	77		% Rec.	07/28/1994	jmh
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	07/28/1994	aal
Benzene	ND	0.5	ug/L	07/28/1994	aal
Toluene	ND	0.5	ug/L	07/28/1994	aal
Ethylbenzene	ND	0.5	ug/L	07/28/1994	aal
Xylenes (Total)	ND	0.5	ug/L	07/28/1994	aal
Bromofluorobenzene (SURR)	100		% Rec.	07/28/1994	aal
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	07/29/1994	jmh
Benzene	ND	0.5	ug/L	07/29/1994	jmh
Toluene	ND	0.5	ug/L	07/29/1994	jmh
Ethylbenzene	ND	0.5	ug/L	07/29/1994	jmh
Xylenes (Total)	ND	0.5	ug/L	07/29/1994	jmh
Bromofluorobenzene (SURR)	88		% Rec.	07/29/1994	jmh
METHOD M8015 (EXT., Liquid)					
as Diesel	ND	0.05	mg/L	07/27/1994	tts

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

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	Analyst Initials
TPH (Gas/BTXE,Liquid)										
as Gasoline	113.0	112.0	0.9	1.00	0.06	1.19	1.18	mg/L	07/28/1994	jmh
Benzene	104.3	103.1	1.2	35.1	ND	36.6	36.2	ug/L	07/28/1994	jmh
Toluene	101.4	101.0	0.4	98.3	ND	99.7	99.3	ug/L	07/28/1994	jmh
TPH (Gas/BTXE,Liquid)										
as Gasoline	86.0	98.6	13.7	1.00	ND	0.86	0.986	mg/L	07/28/1994	jmh
Benzene	62.7	98.0	43.9	35.1	ND	22.0	34.4	ug/L	07/28/1994	jmh
Toluene	67.1	98.4	37.8	98.3	ND	66.0	96.7	ug/L	07/28/1994	jmh
TPH (Gas/BTXE,Liquid)										
as Gasoline	100.0	101.0	1.0	1.00	ND	1.00	1.01	mg/L	07/28/1994	aal
Benzene	100.0	100.0	0.0	33.7	ND	33.7	33.7	ug/L	07/28/1994	aal
Toluene	99.7	99.5	0.2	105.8	ND	105.5	105.3	ug/L	07/28/1994	aal
TPH (Gas/BTXE,Liquid)										
as Gasoline	103.0	99.0	3.9	1.00	ND	1.03	0.99	mg/L	07/29/1994	jmh
Benzene	100.0	101.2	1.2	34.3	ND	34.3	34.7	ug/L	07/29/1994	jmh
Toluene	99.8	98.7	1.1	96.9	ND	96.7	95.6	ug/L	07/29/1994	jmh
METHOD M8015 (EXT., Liquid)										
as Diesel	67.2	69.0	2.6	1.98	0.09	1.42	1.56	mg/L	07/27/1994	tts

Ref: SHELL, 350 Grand Avenue, Oakland, Job No. 940719RB1

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	RPD	LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials
METHOD M8015 (EXT., Liquid) as Diesel	84.3		0.843	1.00	mg/L	07/27/1994	tts

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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. Actual reporting limits and results have been multiplied by the listed dilution factor. **Do not** multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
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 the 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., Rev. 1, December 1987.

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

Revised September, 1993
abb.93

COOLER RECEIPT FORM

Log No: ______

oject: Shell 350 Grand Av. Oakland

oler received on: 7/22/94 and checked on 7/22/94 by K.T.

(signature)

re custody papers present?........................ (YES) NO

re custody papers properly filled out?.............. (YES) NO

re the custody papers signed?....................... (YES) NO

s sufficient ice used?.............................. (YES) NO 5.3°C

d all bottles arrive in good condition (unbroken)?.. (YES) NO

d bottle labels match COC?.......................... (YES) NO

re proper bottles used for analysis indicated?...... (YES) NO

rrect preservatives used?........................... (YES) NO

A vials checked for headspace bubbles?.............. (YES) NO

Note which voas (if any) had bubbles:*

mple descriptor:	Number of vials:
T.B	2 of 2

ll VOAs with headspace bubbles have been set aside so they will not be sed for analysis.......................... YES NO

ist here all other jobs received in the same cooler:

lient Job #	NET log #

(coolerrec)