Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411
Fax: 510-547-5043 Phone: 510-547-5420

April 15, 1993

Barney Chan
Alameda County Department
of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Rec 8/30/93

Re: Shell Service Station
WIC #204-5508-5801
630 High Street
Oakland, California
ACDEH STID #3737
WA Job #81-602-203

Dear Mr. Chan:

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 first quarter 1993 and proposed work for the second quarter 1993.

First Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured depths to ground water and collected ground water samples from the ten site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.

- Weiss Associates (WA) compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).

- On February 16, 1993, representatives of Shell Oil Company, WA and Alameda County Department of Environmental Health met to discuss future work at the site. During the meeting, it was agreed that Shell would install one ground water monitoring well to assess the crossgradient extent of hydrocarbons in the street north of the site. Shell also agreed to sample ground water in selected wells for nutrients, dissolved oxygen and hydrocarbon utilizing bacteria annually to monitor naturally occurring hydrocarbon biodegradation.

April 15, 1993

Anticipated Second Quarter 1993 Activities:

- BTS will collect ground water samples at the site including samples for hydrocarbon utilizing bacteria, dissolved oxygen, and nutrients including nitrates, total Kjeldahl nitrogen, total phosphorous, total potassium and total dissolved solids from monitoring wells MW-1, MW-4, MW-5, MW-6 and MW-9. Depth to ground water measurements will also be recorded in each well.

- WA will submit a report presenting the results of the second quarter 1993 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.

- WA will obtain encroachment permits to install a ground water monitoring well in the traffic-island at the corner of High Street and the ramp to Highway 880. The well will be installed once the permits are secured.

Conclusions and Recommendations:

WA recommends reviewing the results of the upcoming quarterly sampling to assess the effects of natural hydrocarbon biodegradation. WA will also continue to sample the site wells for hydrocarbons to monitor hydrocarbon concentrations and downgradient plume migration.

April 15, 1993

Please call if you have any questions.

Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

for

Joseph P. Theisen, C.E.G.
Senior Hydrogeologist

JMA/JPT:fcr

J:\SHELL\600\QMRPTS\602QMMA3.WP

Attachments: Figures
Tables
A - BTS' Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520
Paul McAllister, Shell Oil Company, P.O. Box 1380, Houston, TX 77251
Richard Hiett, Water Quality Control Board - San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, CA 94612

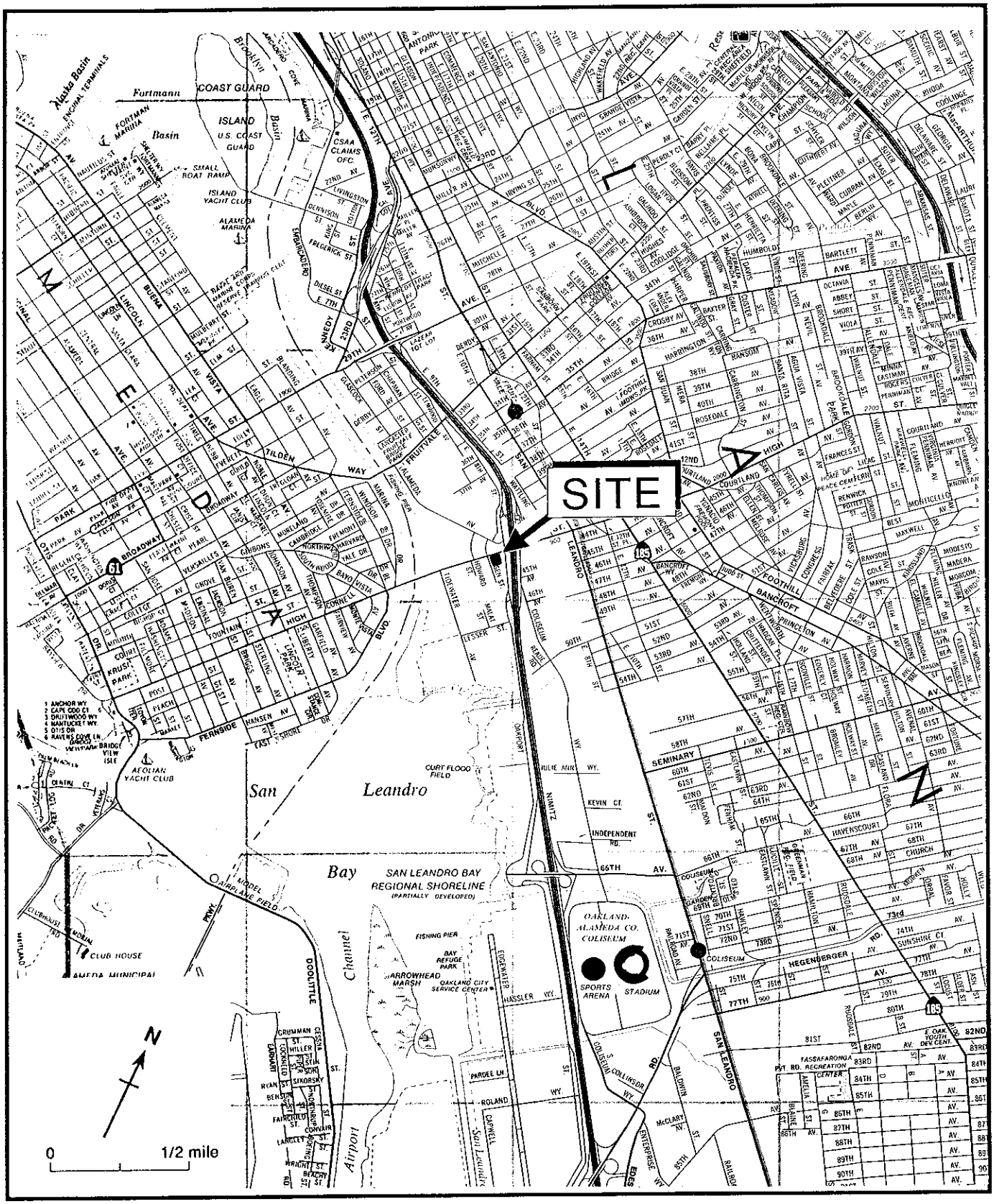

Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

2/28/92

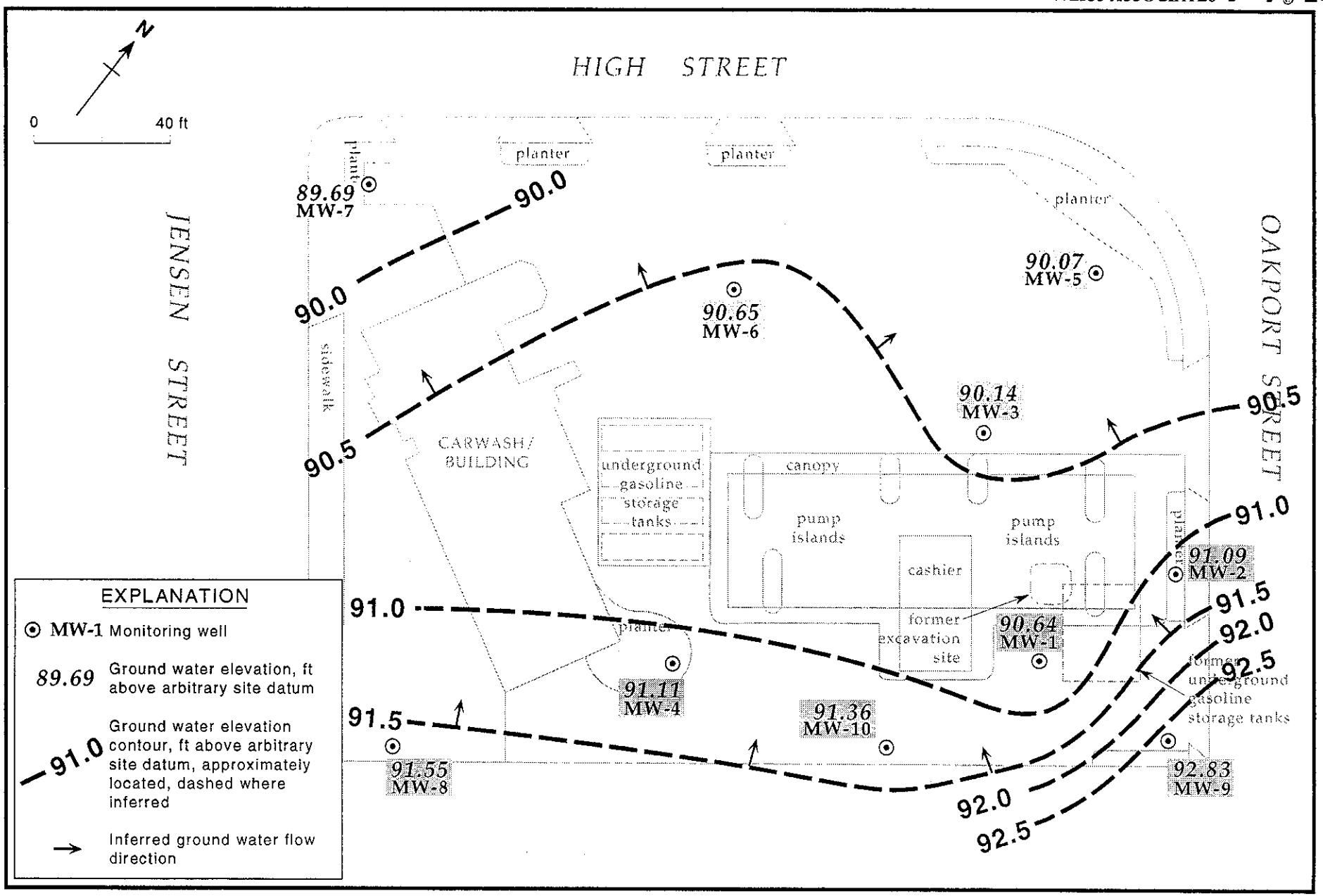

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - February 8, 1993 - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

4/14/93

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	02/21/92	99.35	8.31	91.04
	05/22/92		10.02	89.33
	07/07/92		10.06	89.29
	08/20/92		10.32	89.03
	11/18/92		10.64	88.71
	02/09/93		8.71	90.64
MW-2	02/21/92	101.15	10.08	91.07
	05/22/92		11.52	89.63
	07/07/92		11.50	89.65
	08/20/92		11.72	89.43
	11/18/92		13.06	88.09
	02/09/93		10.06	91.09
MW-3	02/21/92	99.49	8.97	90.52
	05/22/92		9.32	90.17
	07/07/92		10.22	89.27
	08/20/92		10.44	89.05
	11/18/92		10.79	88.70
	02/09/93		9.35	90.14
MW-4	02/21/92	99.24	7.60	91.64
	05/22/92		9.90	89.34
	07/07/92		10.02	89.22
	08/20/92		10.32	88.92
	11/18/92		10.51	88.73
	02/09/93		8.13	91.11
MW-5	02/21/92	100.08	9.24	90.84
	05/22/92		10.97	89.11
	07/07/92		10.98	89.10
	08/20/92		11.14	88.94
	11/18/92		11.21	88.87
	02/09/93		10.01	90.07
MW-6	02/21/92	98.56	7.15	91.41
	05/22/92		9.55	89.01
	07/07/92		9.53	89.03
	08/20/92		9.84	88.72
	11/18/92		10.03	88.53
	02/09/93		7.91	90.65
MW-7	02/21/92	97.53	6.87	90.66
	05/22/92		8.08	89.45
	07/07/92		8.82	88.71

-- Table 1 continues on next page --

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California (continued)

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
	08/20/92		8.89	88.64
	11/18/92		9.54	87.99
	02/09/93		7.84	89.69
MW-8	02/21/92	97.13	6.54	90.59
	05/22/92		7.68	89.45
	07/07/92		8.16	88.97
	08/20/92		8.25	88.88
	11/18/92		8.32	88.81
	02/09/93		5.58	91.55
MW-9	02/21/92	99.72	6.91	92.81
	05/22/92		8.64	91.08
	07/07/92		7.55	92.17
	08/20/92		7.38	92.34
	11/18/92		10.17	89.55
	02/09/93		6.89	92.83
MW-10	02/21/92	98.99	9.11	89.88
	05/22/92		9.14	89.85
	07/07/92		9.87	89.12
	08/20/92		9.30	89.69
	11/18/92		10.21	88.78
	02/09/93		7.63	91.36

Table 2. Analytical Results for Ground Water Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	B	E	T	X
			<----------parts per million (mg/L)---------->						
MW-1	02/24/92	8.31	7.3	8.9[a]	0.8	0.20	0.34	0.036	0.27
	05/22/92	10.02	7.6	18[ab]	---	0.14	0.30	<0.05	0.14
	07/07/92	10.06	---	---	---	---	---	---	---
	08/20/92	10.32	9.1	5.2[a]	---	0.53	0.86	0.34	0.54
	11/18/92	10.64	15	4.1[a]	---	0.22	0.79	0.050	0.34
	02/09/93	8.71	7.0	1.2	---	0.130	0.22	0.023	0.16
MW-2	02/23/92	10.08	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	05/22/92	11.52	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	07/07/92	11.50	---	---	---	---	---	---	---
	08/20/92	11.72	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92	13.06	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/09/93	10.046	0.095	---	---	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	02/24/92	8.97	2.8	0.64[c]	---	0.015	<0.0025	0.0028	0.012
	05/22/92	9.32	3.7	0.22[ab]	---	0.027	0.020	0.011	0.11
	07/07/92	10.22	---	---	---	---	---	---	---
	08/20/92	10.44	13	0.34[a]	---	0.072	0.071	0.085	0.14
	11/18/92	10.79	2.1	0.43[a]	---	0.021	0.011	0.0036	0.013
	02/09/93	9.35	3.3	0.083	---	0.021	0.0061	0.0056	<0.0005
	02/02/93[d]		3.5	0.130	---	0.018	0.0072	0.0088	<0.0005
MW-4	02/24/92	7.60	2.0	8.3[a]	---	0.031	0.0035	0.0063	0.0066
	05/22/92	9.90	3.6	3.4[ab]	---	0.055	0.003	0.005	0.010
	07/07/92	10.02	---	---	---	---	---	---	---
	08/20/92	10.32	3.1	3.4	---	0.10	0.014	0.045	0.045
	11/18/92	10.51	2.2	1.4	---	0.032	0.0042	0.012	0.024
	02/09/93	8.13	1.5	0.180	---	0.0011	<0.0005	<0.0005	<0.0005
MW-5	02/23/92	9.24	0.24	0.18[e]	<0.5	0.0010	<0.0005	<0.0005	0.0010
	05/22/92	10.97	6.2	7.1[ab]	---	0.006	0.056	0.095	0.099
	07/07/92	10.98	---	NA	---	---	---	---	---
	08/20/92	11.14	7.4	0.12[a]	---	0.056	0.091	0.095	0.15
	11/18/92	11.21	3.3	0.32[a]	---	0.027	0.020	<0.0125	0.047
	02/09/93	10.01	0.160	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005
MW-6	02/23/92	7.15	<0.05	0.06[c]	---	<0.0005	<0.0005	<0.0005	<0.0005
	05/22/92	9.55	<0.05	0.65[b]	---	<0.0005	<0.0005	<0.0005	<0.0005
	07/07/92	9.53	---	NA	---	---	---	---	---
	08/20/92	98.84	0.14[f]	0.51[b]	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92	10.03	0.20[f]	0.35	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/09/93	7.91	14.0	---	---	<0.0005	<0.0005	<0.0005	<0.0005
MW-7	02/23/92	6.87	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	05/22/92	8.08	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005

-- Table 2 continues on next page --

Table 2. Analytical Results for Ground Water Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	B	E	T	X
			<----------parts per million (mg/L)---------->						
	07/07/92	8.82	---	---	---	---	---	---	---
	08/20/92	8.89	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92	9.54	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/09/93	7.84	0.072	---	---	<0.0005	<0.0005	<0.0005	<0.0005
MW-8	02/23/92	6.54	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	05/22/92	7.68	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	07/07/92	8.16	---	---	---	---	---	---	---
	08/20/92	8.25	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92	8.32	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/09/93	5.58	0.063	---	---	<0.0005	<0.0005	<0.0005	<0.0005
MW-9	02/23/902	6.91	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	05/22/92	8.64	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	07/07/92	7.55	---	---	---	---	---	---	---
	08/20/92[f]	7.38	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	08/20/92[f]	7.38	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92[f]	10.17	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92[f]	10.17	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/09/93	6.89	0.290	0.110		0.006	<0.0005	<0.0005	<0.0005
MW-10	02/23/92	9.11	<0.05	0.12	---	<0.0005	<0.0005	<0.0005	<0.0005
	05/22/92	9.14	<0.05	0.31	---	<0.0005	<0.0005	<0.0005	<0.0005
	07/07/92	9.87	---	---	---	---	---	---	---
	08/20/92	9.30	<0.05	0.46	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92	10.21	<0.05	0.47	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/09/93	7.63	<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
Trailer Blank	02/24/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	05/22/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	08/20/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	02/09/93		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
Bailer Blank	08/20/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	11/18/92		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
DTSC MCLs			NE	NE	NE	0.001	0.680	0.10[e]	1.750

-- Table 2 continues on next page --

Table 2. Analytical Results for Ground Water Shell Service Station WIC #204-5508-5801, 630 High Street, 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
TPH-MO = Total petroleum hydrocarbons as motor oil by EPA Method 8015
B = Benzene by EPA Method
E = Ethylbenzene by EPA Method
T = Toluene by EPA Method
X = Xylenes by EPA Method
NE = Not established
--- = Not analyzed
<n = Not detected at detection limits of n ppb
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water

Notes:

a = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possible gasoline or kerosene
b = Concentration reported as diesel is primarily due to a heavier petroleum product, possible motor oil or aged diesel fuel
c = Compounds detected within the diesel range are not characteristics of the standard diesel chromatographic pattern
d = Duplicate sample
e = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
f = Concentration reported as gasoline is primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline
g = DTSC recommended action level; MCL not established

ATTACHMENT A

BTS' 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

February 23, 1993

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

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-5508-5801
630 High St.
Oakland, California

QUARTER:
1st quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930209-T-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 the 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.

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	4	02-09-93	TOP OF PIPE	--	NONE	--	--	8.71	13.83
MW-2	4	02-09-93	TOP OF PIPE	--	NONE	--	--	10.06	19.12
MW-3	4	02-09-93	TOP OF PIPE	--	NONE	--	--	9.35	17.26
MW-4	4	02-09-93	TOP OF PIPE	--	NONE	--	--	8.13	18.30
MW-5	4	02-09-93	TOP OF PIPE	--	NONE	--	--	10.01	17.76
MW-6	4	02-09-93	TOP OF PIPE	--	NONE	--	--	7.91	19.38
MW-7	4	02-09-93	TOP OF PIPE	--	NONE	--	--	7.84	19.34
MW-8	4	02-09-93	TOP OF PIPE	--	NONE	--	--	5.58	20.56
MW-9	4	02-09-93	TOP OF PIPE	--	NONE	--	--	6.89	11.50
MW-10	4	02-09-93	TOP OF PIPE	--	NONE	--	--	7.63	12.50

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 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 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. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

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: chain of custody
certified analytical report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Kristina Koltavary

9302158 (10/29) (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date: 2·9·93
Page 1 of 2

Site Address: 630 HIGH ST. OAKLAND

WIC#: 204 5508 5801

Shell Engineer: DANIEL T. KIRK — Phone No.: 510 — Fax #: 675-6171

Consultant Name & Address: BLAINE TECH SERVICES SAN JOSE

Consultant Contact: GLEN BENNETT — Phone No.: 408 — Fax #: 995 5535

Comments:

Sampled by: Francis Thie

Printed Name: FRANCIS THIE

LAB: ANAMETRIX

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	[ ] 5452
Water Rem. or Sys. O & M	[ ] 5453
Other	[ ]

TURN AROUND TIME: 24 hours [ ] 48 hours [ ] 16 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) MW-1	2·9			✓		4		✓				✓								
(2) MW-2	2·10			✓		3						✓								
(3) MW-3	2·9			✓		4		✓				✓								
(4) MW-4	2·10			✓		4		✓				✓								
(5) MW-5	2·10			✓		4		✓				✓								
(6) MW-6	2·9			✓		4		✓				✓								
(7) MW-7	2·9			✓		3						✓								
(8) MW-8	2·9			✓		3						✓								

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Francis Thie	FRANCIS THIE	Date: 2/11/93 Time: 1545	Benny S. Carrizosa	BENNY S. CARRIZOSA	Date: 2-11-93 Time: 1545
Benny S. Carrizosa	BENNY S. CARRIZOSA	Date: 2-11-93 Time: 1605	Maria Bargas	Maria Bargas	Date: 2/11/93 Time: 16:05
		Date: Time:			Date: Time:

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

9302158 (18) 10/29

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:_____

Date: 2-9-93
Page 2 of 2

Site Address: 630 HIGH ST., OAKLAND

WIC#: 204 - 5508 - 5801

Shell Engineer: DANIEL T KIRIK | Phone No.: 510 | Fax #: 675-6171

Consultant Name & Address: BLAINE TECH SERVICES

Consultant Contact: GLEN BENNETT | Phone No.: 408 | Fax #: 995-5535

Comments:

Sampled by: Francis Thie

Printed Name: FRANCIS THIE

LAB: ANAMETRIX

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
(9) MW-9	2-9			✓		3						✓								
(10) MW-10	2-9			✓		4		✓				✓								
(11) DUP	2-9			✓		4		✓				✓								
(12) TB				✓		3						✓								

CHECK ONE (1) BOX ONLY | CT/DT

- Quarterly Monitoring ☒ 8441
- Site Investigation ☐ 8441
- Soil Closure/Disposal ☐ 8442
- Water Closure/Disposal ☐ 8443
- Soil/Air Rem. or Sys. O & M ☐ 8462
- Water Rem. or Sys. O & M ☐ 8463
- Other ☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐ _____

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

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Francis Thie	FRANCIS THIE	2/11/93	1515	Benny S. Carrizosa	BENNY S. CARRIZOSA	2/11/93	1515
Benny S. Carrizosa	BENNY S. CARRIZOSA	2-11-93	1605	Maria Barajas	Maria Barajas	2/11/93	16:05
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

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of Inchcape Environmental

REPORT

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9302158
Date Received : 02/11/93
Project ID : 204-5508-5801
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9302158- 1	MW-1
9302158- 2	MW-2
9302158- 3	MW-3
9302158- 4	MW-4
9302158- 5	MW-5
9302158- 6	MW-6
9302158- 7	MW-7
9302158- 8	MW-8
9302158- 9	MW-9
9302158-10	MW-10
9302158-11	DUP
9302158-12	TB

This report consists of 9 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.

Larry Kent for

Sarah Schoen, Ph.D.
Laboratory Director

2-26-93
Date

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

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9302158
Date Received : 02/11/93
Project ID : 204-5508-5801
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9302158- 1	MW-1	WATER	02/09/93	TPHd
9302158- 3	MW-3	WATER	02/09/93	TPHd
9302158- 4	MW-4	WATER	02/10/93	TPHd
9302158- 5	MW-5	WATER	02/10/93	TPHd
9302158- 6	MW-6	WATER	02/09/93	TPHd
9302158-10	MW-10	WATER	02/09/93	TPHd
9302158-11	DUP	WATER	02/09/93	TPHd
9302158- 1	MW-1	WATER	02/09/93	TPHg/BTEX
9302158- 2	MW-2	WATER	02/10/93	TPHg/BTEX
9302158- 3	MW-3	WATER	02/09/93	TPHg/BTEX
9302158- 4	MW-4	WATER	02/10/93	TPHg/BTEX
9302158- 5	MW-5	WATER	02/10/93	TPHg/BTEX
9302158- 6	MW-6	WATER	02/09/93	TPHg/BTEX
9302158- 7	MW-7	WATER	02/09/93	TPHg/BTEX
9302158- 8	MW-8	WATER	02/09/93	TPHg/BTEX
9302158- 9	MW-9	WATER	02/09/93	TPHg/BTEX
9302158-10	MW-10	WATER	02/09/93	TPHg/BTEX
9302158-11	DUP	WATER	02/09/93	TPHg/BTEX
9302158-12	TB	WATER	02/08/93	TPHg/BTEX

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

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9302158
Date Received : 02/11/93
Project ID : 204-5508-5801
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as gasoline for samples MW-2, MW-5, MW-6 and MW-9 are primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.
- The concentration reported as diesel for sample MW-1 is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene.
- The concentrations reported as diesel for samples MW-3, MW-4 and DUP are primarily due to the presence of a combination of diesel and a lighter petroleum product of hydrocarbon range C7-C12.
- The extract for sample MW-6 was broken during sample preparation. Reextraction could not be performed due to lack of sample volume.

Cheryl Balmer 2/26/93
Department Supervisor Date

Chemist 02/26/93
Chemist Date

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

Anametrix W.O.: 9302158
Matrix : WATER
Date Sampled : 02/09 & 10/93

Project Number : 204-5508-5801
Date Released : 02/25/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-1 -01	Sample I.D.# MW-2 -02	Sample I.D.# MW-3 -03	Sample I.D.# MW-4 -04	Sample I.D.# MW-5 -05
Benzene	0.5	130	ND	21	11	ND
Toluene	0.5	23	ND	5.6	ND	ND
Ethylbenzene	0.5	220	ND	6.1	ND	ND
Total Xylenes	0.5	160	ND	ND	ND	ND
TPH as Gasoline	50	7000	95	3300	1500	160
% Surrogate Recovery		89%	88%	78%	102%	101%
Instrument I.D.		HP21	HP21	HP21	HP21	HP21
Date Analyzed		02/16/93	02/16/93	02/16/93	02/16/93	02/16/93
RLMF		25	1	10	5	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.

Reggie Davison 2/26/93
Analyst Date

Cheryl Balmer 2/25/93
Supervisor Date

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

Anametrix W.O.: 9302158
Matrix : WATER
Date Sampled : 02/09/93

Project Number : 204-5508-5801
Date Released : 02/25/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-6 -06	Sample I.D.# MW-7 -07	Sample I.D.# MW-8 -08	Sample I.D.# MW-9 -09	Sample I.D.# MW-10 -10
Benzene	0.5	ND	ND	ND	6.0	ND
Toluene	0.5	ND	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND	ND
TPH as Gasoline	50	14000	72	63	290	ND
% Surrogate Recovery		116%	103%	104%	102%	111%
Instrument I.D.		HP21	HP21	HP21	HP21	HP21
Date Analyzed		02/17/93	02/16/93	02/16/93	02/16/93	02/17/93
RLMF		25	1	1	1	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.

Analyst 02/26/93 Date

Supervisor 2/26/93 Date

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

Anametrix W.O.: 9302158
Matrix : WATER
Date Sampled : 02/08 & 09/93

Project Number : 204-5508-5801
Date Released : 02/25/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# DUP -11	Sample I.D.# TB -12	Sample I.D.# BF1602E3 BLANK	Sample I.D.# BF1701E3 BLANK
Benzene	0.5	18	ND	ND	ND
Toluene	0.5	8.8	ND	ND	ND
Ethylbenzene	0.5	7.2	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND
TPH as Gasoline	50	3500	ND	ND	ND
% Surrogate Recovery		90%	107%	101%	118%
Instrument I.D.		HP21	HP21	HP21	HP21
Date Analyzed		02/16/93	02/17/93	02/16/93	02/17/93
RLMF		10	1	1	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.

Reggie Davison 2/26/93
Analyst Date

Cheryl Balman 2/25/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9302158
Matrix : WATER
Date Sampled : 02/09 & 10/93
Date Extracted: 02/16/93

Project Number : 204-5508-5801
Date Released : 02/25/93
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9302158-01	MW-1	02/18/93	50	1200
9302158-03	MW-3	02/17/93	50	83
9302158-04	MW-4	02/17/93	50	180
9302158-05	MW-5	02/17/93	50	ND
9302158-10	MW-10	02/18/93	50	110
9302158-11	DUP	02/17/93	50	130
DWBL021693	METHOD BLANK	02/17/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

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

Reggie Davison 2/26/93
Analyst Date

Cheryl Balmer 2/25/93
Supervisor Date

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

Sample I.D.	: 204-5508-5801 MW-2	Anametrix I.D.	: 9302158-02
Matrix	: WATER	Analyst	: RV
Date Sampled	: 02/10/93	Supervisor	:
Date Analyzed	: 02/16/93	Date Released	: 02/25/93
		Instrument ID	: HP21

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	375	95	393	79%	419	86%	6%	48-149
P-BFB				96%		98%		61-139

* Limits established by Anametrix, Inc.

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

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0216
Matrix	: WATER	Analyst	:
Date Sampled	: N/A	Supervisor	:
Date Analyzed	: 02/16/93	Date Released	: 02/25/93
		Instrument I.D.	: HP21

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	375	387	103%	67-127
SURROGATE			77%	61-139

* Quality control established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 02/16/93
Date Analyzed : 02/21/93

Anametrix I.D. : LCSW0216
Analyst : BV
Supervisor : CB
Date Released : 02/25/93
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	970	78%	970	78%	0%	47-130

*Quality control established by Anametrix, Inc.