Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-450-6000

93 AUG 23 AM 11:30

August 17, 1993

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

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, 2 and 3) 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.

- WA obtained an encroachment permit to install a ground water monitoring well in the traffic-island at the corner of High Street and the on-ramp to 880. The well installation is currently being scheduled.

Anticipated Second Quarter 1993 Activities:

- 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 attempt to install a ground water monitoring well in the traffic-island at the corner of High Street and the ramp to Highway 880. WA will submit a report summarizing the well installation, and presenting the analytical results for soil and water sampling in the new well.

Discussion of Analytical Results:

Chemical and bacteriological analyses were conducted to document the occurrence of in-situ biochemical oxidation at the site. Factors evaluated by the analyses include nutrient concentrations and bacterial population. For gasoline components, the ideal nutrient carbon (gasoline) - nitrogen - phosphates (C-N-P) ratio is 160 :1 :0.08 (Noonan, 1990).[1] Carbon levels are conservatively estimated at 14 ppm for this site, which is the highest TPH-G concentration detected to date. Therefore, biochemical oxidation will require at least 0.1 ppm Nitrogen and 0.01 ppm Phosphates. Since the Nitrogen and Phosphates concentration in all wells exceed the minimum required concentrations, nutrient concentrations are sufficient for biological oxidation to occur.

where are results of N+P analysis?

Micronutrients such as potassium, magnesium, and sulfur are also required for optimal growth, although in very small quantities. Dragun[2] suggests that micronutrient concentrations of about 1 ppm potassium should be adequate in most cases. Concentrations in all wells are near or above this recommended concentration.

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[1] Noonan, D., and Curtis, T., 1990, Ground Water Remediation and Petroleum, Lewis Publishers, Chelsea, Michigan, 108 pp. and 2 appendices.

[2] Dragun, J., 1988, The soil Chemistry of Hazardous Materials, HMCI, Silver Spring, Maryland, 458 pp.

August 17, 1993

Both hydrocarbon utilizing bacteria and total heterotrophic bacteria are present in the wells. Bacterial counts are relatively low, but consistent with carbon source concentrations and comparable to those reported by literature (Frankenberger, 1989; EPA, 1987)[3,4] and are adequate for biochemical oxidation.

The dissolved oxygen (D.O.) concentrations also appear adequate for biochemical oxidation. According to Barker et al[5], approximately 20 ppm D.O. are required to biochemically oxidize 1 ppm of BETX. Based on the 1.5 to 9.7 ppm D.O. measured in ground water at the site, biochemical oxidation of concentrations ranging from about 0.08 to 0.5 ppm BETX is possible. Since BETX concentrations in ground water from all site wells fall withing this range, there appears to be sufficient D.O. for biochemical oxidation to occur.

Or gasoline ?

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[3] U.S. Environmental Protection agency, 1987, Underground Storage Tank Corrective Action Technology, EPA 625/6-87/105, 160 pp. and 2 appendices.

[4] Frankenberger, W.T., et al, 1989, Microbial Degradation of Benzene and Toluene in Ground Water, Bulletin of Environmental Contamination and Toxicology (1989), 43: 505-510.

[5] Barker, J.F., et al, 1987, Natural Attenuation of Aromatic Hydrocarbons in a Shallow Sand Aquifer, Ground Water Monitoring Review, 7(1): 64-71.

Please call if you have any questions.

Sincerely,
Weiss Associates

FOR
J. Michael Asport
Technical Assistant

N. Scott MacLeod, R.G.
Project Geologist

JMA/NSM:mb

J:\SHELL\600\QMRPTS\602QMAU3.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

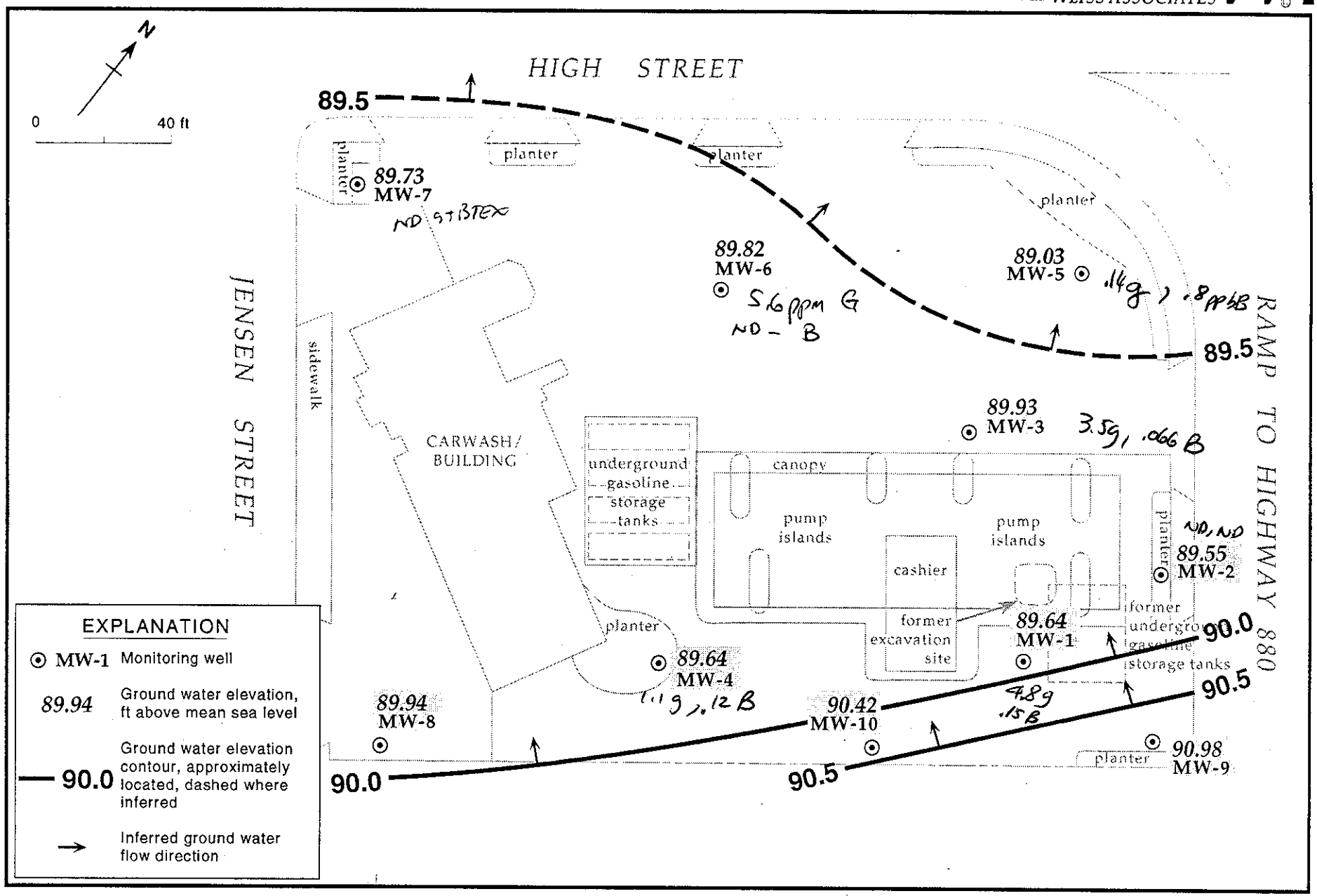

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - June 16, 1993 - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

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
	06/16/93		**9.71**	**89.64**
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
	06/16/93		**11.60**	**89.55**
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
	06/16/93		**9.56**	**89.93**
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
	06/16/93		**9.60**	**89.64**
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
	06/16/93		**11.05**	**89.03**

-- 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)
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
	06/16/93		**8.74**	**89.82**
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
	08/20/92		8.89	88.64
	11/18/92		9.54	87.99
	02/09/93		7.84	89.69
	06/16/93		**7.80**	**89.73**
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
	06/16/93		**7.19**	**89.94**
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
	06/16/93		**8.74**	**90.98**
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
	06/16/93		**8.57**	**90.42**

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
	06/16/93	9.71	4.8	---	---	0.15	0.32	0.031	0.13
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
	06/16/93	11.60	<0.05	---	---	<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]	9.35	3.5	0.130	---	0.018	0.0072	0.0088	<0.0005
	06/16/93	9.56	3.5	---	---	0.066	<0.0005	0.006	<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
	06/16/93	9.60	1.1	---	---	0.12	0.0051	0.047	0.019
MW-5	02/23/92	9.24	0.24	0.18[a]	<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
	06/16/93	11.05	0.14	---	---	0.0008	<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	---	---	---	---	---

-- 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)---------->						
	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
	06/16/93	8.74	5.7[f]	---	---	<0.0005	<0.0005	0.022	0.034
	06/16/93[dup]	8.74	5.6	---	---	<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
	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
	06/16/93	7.80	<0.05	---	---	<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
	06/16/93	7.19	<0.05	---	---	<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	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	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
	06/16/93	8.74	0.09[f]	---	---	<0.0005	<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
	06/16/93	8.57	<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

-- 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)---------->						
	02/09/93		<0.05	---	---	<0.0005	<0.0005	<0.0005	<0.0005
	06/16/93		<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[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
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
DUP = Duplicate sample

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 partially or primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline
g = DTSC recommended action level; MCL not established

Table 3. Analytical Results for Nutrients, Hydrocarbon Utilizing Bacteria and Dissolved Oxygen for Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

Well	Date Sampled	Potassium (mg/L)	Phosphorous (mg/L)	Phosphate (mg/L)	Kjeldahl Nitrogen (mg/L)	Heterotrophic Bacteria Plate Count (CFU/ml)	Hydrocarbon Utilizing Bacteria (CFU/ml)	Dissolved Oxygen[a] (mg/L)
MW-1	06/17/93	12.0	0.80	2.4	5.4	80,000	310	1.73/1.58
MW-4	06/17/93	1.5	3.50	11.0	4.2	8,200	200	1.86/4.82
MW-5	06/17/93	8.8	0.07	0.21	1.0	3,200	490	1.53/2.72
MW-6	06/17/93	0.8	0.06	0.19	1.1	2,000	450	8.46/9.73
MW-9	06/17/93	14.0	0.22	0.66	0.8	9,200	2,300	1.51/2.17

Abbreviations and Notes:

CFU/ml = Colony forming units per milliliter
a = Field measurement of dissolved oxygen concentrations before and after well purging

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

June 25, 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:
2nd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930616-V-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	06-16-93	TOC	SHEEN	NONE	--	--	9.71	13.81
MW-2	4	06-16-93	TOC	--	NONE	--	--	11.60	19.05
MW-3	4	06-16-93	TOC	--	NONE	--	--	9.56	17.23
MW-4	4	06-16-93	TOC	--	NONE	--	--	9.60	18.34
MW-5	4	06-16-93	TOC	--	NONE	--	--	11.05	17.70
MW-6 *	4	06-16-93	TOC	--	NONE	--	--	8.74	19.38

* Sample DUP is a duplicate sample taken from well MW-6.

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-7	4	06-16-93	TOC	--	NONE	--	--	7.80	19.27
MW-8	4	06-16-93	TOC	--	NONE	--	--	7.19	20.61
MW-9	4	06-16-93	TOC	--	NONE	--	--	8.74	11.52
MW-10	4	06-16-93	TOC	--	NONE	--	--	8.57	12.57

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.

for Ingrid Blaine
Richard C. Blaine

RCB/cdk

attachments: chain of custody
certified analytical report

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

9306220 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ______

Date:
Page 1 of 2

Site Address: 630 HIGH STREET, OAKLAND

WIC#: 204-5508-5801

Shell Engineer: DANIEL KIRK — Phone No.: 510 675-6168 Fax #675-6160

Consultant Name & Address: BLAINE TECH SERVICES INC 985 TIMOTHY DRIVE

Consultant Contact: JIM KELLER — Phone No.: 408 995-5535 Fax #: 293-8773

Comments:

Sampled by:

Printed Name:

Analysis Required

LAB: ANAMETRIX

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring ☐	5461	24 hours ☐
Site Investigation ☐	5441	48 hours ☐
Soil Classify/Disposal ☐	5442	15 days ☐ (Normal)
Water Classify/Disposal ☐	5443	Other ☐
Soil/Air Rem. or Sys. O & M ☐	5452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M ☐	5453	
Other ☐		

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	6/16/93			X		3						X								
(2) MW-2	↓			X		3						X								
(3) MW-3	↓			X		3						X								
(4) MW-4	↓			X		3						X								
(5) MW-5	↓			X		3						X								
(6) MW-6	↓			X		3						X								
(7) MW-7	↓			X		3						X								
(8) MW-8	↓			X		3						X								

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Tom Carson	Tom Carson	Date: 6/16/93 Time: 17:15	[signature]	Maria Barajas	Date: 6/16/93 Time: 17:15
		Date: Time:			Date: Time:
		Date: Time:			Date: Time:

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

9306 220 · (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:_____

Date:
Page 2 of 2

Site Address: 630 HIGH STREET, OAKLAND

WIC#: 204-5508-5801

Shell Engineer: DANIEL KIRK — Phone No.: 510 675-6168 Fax #675-6160

Consultant Name & Address: BLAINE TECH SERVICES INC 985 TIMOTHY DRIVE

Consultant Contact: JIM KELLER — Phone No.: 408 995-5535 Fax #: 293-8773

Comments:

Sampled by:

Printed Name:

LAB: ANAMETRIX

CHECK ONE (1) BOX ONLY — CT/DT

- Quarterly Monitoring ☐ 6461
- Site Investigation ☐ 6421
- Soil Closure/Disposal ☐ 6422
- Water Closure/Disposal ☐ 6423
- Soil/Air Rem. or Sys. O & M ☐ 6462
- Water Rem. or Sys. O & M ☐ 6463
- Other ☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☐ (Normal)
- Other ☐ ____

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

	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	6/14/93			X		3						X								
(10)	MW-10	↓			X		3						X								
(11)	TB				X		2						X								
(12)	DUP				X		3						X								

Relinquished By (signature): Tom Carlson	Printed Name: Tom Carlson	Date: 6/16/93 Time: 17:15	Received (signature):	Printed Name: Maria Barajas	Date: 6/16/93 Time: 17:15
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:
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

BLAINE
TECH SERVICES INC.

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

August 11, 1993

Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411

Attn: Scott McLeod

Re: 2nd Q - 1993 D. O. readings taken 6-16-1993 at Shell 630 High Street, Oakland (WIC # 204-5508-5801) converted to PPM from %.

MW-1	INITIAL D.O. READING	1.73 PPM
	FINAL D.O. READING	1.58 PPM
MW-4	INITIAL D.O. READING	1.86 PPM
	FINAL D.O. READING	4.82 PPM
MW-5	INITIAL D.O. READING	1.53 PPM
	FINAL D.O. READING	2.72 PPM
MW-6	INITIAL D.O. READING	8.46 PPM
	FINAL D.O. READING	9.73 PPM
MW-9	INITIAL D.O. READING	1.51 PPM
	FINAL D.O. READING	2.17 PPM

Since you are accustomed to D.O. PPM readings rather than % readings, I have placed a note in the folder stating that our personnel should collect PPM readings for your use in the future.

Your truly,

Rich Blaine

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

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

Workorder # : 9306220
Date Received : 06/16/93
Project ID : 204-5508-5801
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9306220- 1	MW-1
9306220- 2	MW-2
9306220- 3	MW-3
9306220- 4	MW-4
9306220- 5	MW-5
9306220- 6	MW-6
9306220- 7	MW-7
9306220- 8	MW-8
9306220- 9	MW-9
9306220-10	MW-10
9306220-11	TB
9306220-12	DUP

This report consists of 7 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.

Sarah Schoen, Ph.D.
Laboratory Director

07-02-93
Date

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

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

Workorder # : 9306220
Date Received : 06/16/93
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
9306220- 1	MW-1	WATER	06/16/93	TPHgBTEX
9306220- 2	MW-2	WATER	06/16/93	TPHgBTEX
9306220- 3	MW-3	WATER	06/16/93	TPHgBTEX
9306220- 4	MW-4	WATER	06/16/93	TPHgBTEX
9306220- 5	MW-5	WATER	06/16/93	TPHgBTEX
9306220- 6	MW-6	WATER	06/16/93	TPHgBTEX
9306220- 7	MW-7	WATER	06/16/93	TPHgBTEX
9306220- 8	MW-8	WATER	06/16/93	TPHgBTEX
9306220- 9	MW-9	WATER	06/16/93	TPHgBTEX
9306220-10	MW-10	WATER	06/16/93	TPHgBTEX
9306220-11	TB	WATER	06/16/93	TPHgBTEX
9306220-12	DUP	WATER	06/16/93	TPHgBTEX

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

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

Workorder #	: 9306220
Date Received	: 06/16/93
Project ID	: 204-5508-5801
Purchase Order	: MOH-B813
Department	: GC
Sub-Department	: TPH

QA/QC SUMMARY :

- The concentration reported as gasoline for sample MW-3 is due to the presence of a combination of gasoline and a discrete hydrocarbon peak not indicative of gasoline.
- The concentrations reported as gasoline for samples MW-6, MW-9 and DUP are primarily due to the presence of a discrete peak not indicative of gasoline.

Cheryl Balmer 7/1/93
Department Supervisor Date

Lucia Shoa 7/1/93
Chemist Date

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

Anametrix W.O.: 9306220
Matrix : WATER
Date Sampled : 06/16/93

Project Number : 204-5508-5801
Date Released : 06/30/93

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	150	ND	66	120	0.8
Toluene	0.5	31	ND	6	47	ND
Ethylbenzene	0.5	320	ND	ND	5.1	ND
Total Xylenes	0.5	130	ND	ND	19	ND
TPH as Gasoline	50	4800	ND	3500	1100	140
% Surrogate Recovery		119%	103%	110%	68%	110%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		06/23/93	06/23/93	06/23/93	06/23/93	06/23/93
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.

Charlotte Brunk 7.1.93
Analyst Date

Cheryl Balmer 7/1/93
Supervisor Date

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

Anametrix W.O.: 9306220
Matrix : WATER
Date Sampled : 06/16/93

Project Number : 204-5508-5801
Date Released : 06/30/93

	Reporting Limit	Sample I.D.# MW-6	Sample I.D.# MW-7	Sample I.D.# MW-8	Sample I.D.# MW-9	Sample I.D.# MW-10
COMPOUNDS	(ug/L)	-06	-07	-08	-09	-10
Benzene	0.5	ND	ND	ND	ND	ND
Toluene	0.5	22	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND	ND
Total Xylenes	0.5	34	ND	ND	ND	ND
TPH as Gasoline	50	5700	ND	ND	90	ND
% Surrogate Recovery		121%	107%	109%	106%	103%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		06/23/93	06/22/93	06/22/93	06/22/93	06/22/93
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.

Lena Shen 6/30/93
Analyst Date

Cheryl Balmer 6/30/93
Supervisor Date

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

Anametrix W.O.: 9306220
Matrix : WATER
Date Sampled : 06/16/93

Project Number : 204-5508-5801
Date Released : 06/30/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# TB -11	Sample I.D.# DUP -12	Sample I.D.# BU2201E3 BLANK	Sample I.D.# BU2301E3 BLANK
Benzene	0.5	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND
TPH as Gasoline	50	ND	5600	ND	ND
% Surrogate Recovery		106%	125%	106%	114%
Instrument I.D.		HP12	HP12	HP12	HP12
Date Analyzed		06/22/93	06/23/93	06/22/93	06/23/93
RLMF		1	25	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.

Charlotte Brink 7.1.93
Analyst Date

Cheryl Balmer 7/1/93
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
Matrix : WATER
Date Sampled : 06/16/93
Date Analyzed : 06/23/93

Anametrix I.D. : 06220-02
Analyst : JS
Supervisor : [illegible]
Date Released : 06/30/93
Instrument ID : HP12

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC MS (ug/L)	% REC MS	REC MD (ug/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	500	0	470	94%	460	92%	-2%	48-149
P-BFB				92%		93%		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
Matrix : WATER
Date Sampled : N/A
Date Analyzed : 06/23/93

Anametrix I.D. : MU2202E1
Analyst : IS
Supervisor : [illegible]
Date Released : 06/30/93
Instrument I.D.: HP12

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	420	84%	67-127
p-BFB			99%	61-139

* Quality control established by Anametrix, Inc.

9306219

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 930617-V-3

Date: 6-17-93
Page 1 of 1

Site Address: 630 HIGH ST. OAKLAND

WIC#: 204-5508-5801

Shell Engineer: DANIEL KIRK
Phone No.: (510) 675-6168
Fax #: 675-6160

Consultant Name & Address: BLAINE TECH SERVICES, INC 985 TIMOTHY DR. SAN JOSE, CA

Consultant Contact: JIM KELLER
Phone No.: 408-995-5535
Fax #: 2938773

Comments:

Sampled by: F.A. van den Broek (signature)

Printed Name: F.A. VANDENBROEK

LAB:

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring ☒	5461	24 hours ☐
Site Investigation ☐	5441	48 hours ☐
Soil Classify/Disposal ☐	5442	15 days ☐ (Normal)
Water Classify/Disposal ☐	5443	Other ☒ 6 hrs
Soil/Air Rem. or Sys. O & M ☐	5452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M ☐	5453	
Other ☐		

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	BACTERIA PLATE COUNTS		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) MW-1 1325	6/17			↓		2							X						Purged Well Water	
(2) MW-4 1335	↓			↓		2							X						↓	
(3) MW-5 1350	↓			↓		2							X						↓	
(4) MW-6 1400	↓			↓		2							X						↓	
(5) MW-9 1410	↓			↓		2							X						↓	

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
F.A. van den Broek (signature)	F.A. VANDENBROEK	Date: 6-17-93 Time: 1508	Calvin Robinson (signature)	CALVIN ROBINSON	Date: 6-17-93 Time: 1508
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:
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

9306219 (10/34)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date:
Page 1 of 2

Site Address: 630 HIGH STREET, OAKLAND

WIC#: 204-5508-5801

Shell Engineer: DANIEL KIRK
Phone No.: (510) 675-6168
Fax #: 675-6160

Consultant Name & Address: BLAINE TECH SERVICES INC. 985 TIMOTHY DRIVE SANJOSE CA

Consultant Contact: JIM KELLER
Phone No.: 408 995-5535
Fax #: 2938773

Comments: HOLDING TIME IS CRITICAL

Sampled by:

Printed Name:

LAB: ANAMETRIX/CCAS

CHECK ONE (1) BOX ONLY — CT/DI

- Quarterly Monitoring ☐ 6441
- Site Investigation ☐ 6441
- Soil Closure/Disposal ☐ 6442
- Water Closure/Disposal ☐ 6443
- Soil/Air Rem. or Sys. O & M ☐ 6452
- Water Rem. or Sys. O & M ☐ 6453
- Other ☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☐ (Normal)
- Other ☑ 6hr

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) NITRATES EPA 300	Test for Disposal BACTERIA PLATE COUNTS	Combination TPH 8015 & BTEX 8020 EPA 351.4	TOTAL KJELDAHL NITROGEN (TKN) TOTAL PHOSPHORUS EPA 365.2	TOTAL POTASSIUM EPA 7610	Asbestos TOTAL DISSOLVED SOLIDS (TDS)	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1)	MW-1	6/16/93			X		5				X	X		X	X	X					
(2)	MW-4				X		5				X	X		X	X	X					
(3)	MW-5				X		5				X	X		X	X	X					
(4)	MW-6				X		5				X	X		X	X	X					
(5)	MW-9				X		5				X	X		X	X	X					

Relinquished By (signature): Tom Carson	Printed Name: Tom Carson	Date: 6/16/93 Time: 17:15	Received (signature):	Printed Name: Maria Barajas	Date: 6/16/93 Time: 17:15
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:
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

Shell CA Chain of Custody

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

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

Workorder # : 9306219
Date Received : 06/16/93
Project ID : 204-5508-5801
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9306219- 1	MW-1
9306219- 2	MW-4
9306219- 3	MW-5
9306219- 4	MW-6
9306219- 5	MW-9

This report consists of 7 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.

Sarah Schoen, Ph.D.
Laboratory Director

07-06-93
Date

ANAMETRIX REPORT DESCRIPTION
INORGANICS

Analytical Data Report (ADR)

The ADR contains tabulated results for inorganic analytes. All field samples, QC samples and blanks were prepared and analyzed according to procedures in the following references:

- EPA Method 6010/7000/9000 series - "Test Methods for Evaluating Solid Waste," SW-846, EPA, 3rd Edition, November 1986.
- EPA Method 100, 200, 300 series - "Methods for Chemical Analysis of Water and Wastes," EPA, 3rd Edition, 1983.
- Toxicity Characteristic Leaching Procedure (EPA Method 1311) - 40 CFR, Part 268, Appendix 1, June 1990.
- Waste Extraction Test - Results are reported in mg/L of extract according to procedures of CCR Title 22, Section 66261, Appendix II.
- Organic Lead - CCR Title 22, Section 66261, Appendix XI.
- Standard Method 2340B - "Standard Methods for the Examination of Water and Wastewater," APHA, AWWA, WEF, 18th Edition, 1992.

Matrix Spike Report (MSR)

The MSR summarizes percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. MSRs may not be provided with all analytical reports. Anametrix control limit for MSR is 75-125% with 25% for RPD limits.

Laboratory Control Sample Report (LCSR)

The LCSR summarizes percent recovery information for laboratory control spikes on reagent water or soil. This information is a statement of performance for the method, i.e., the samples are properly prepared and analyzed according to the applicable methods. Anametrix control limit for LCSR is 80-120%.

Method Blank Report (MBR)

The MBR summarizes quality control information for reagents used in preparing samples. The absolute value of each analyte measured in the method blank should be below the method reporting limit for that analyte.

Post Digestion Spike Report (PDSR)

The PDSR summarizes percent recovery information for post digestion spikes. A post digestion spike is performed for a particular analyte if the matrix spike recovery is outside of established control limits. Any percent recovery for a post digestion spike outside of established limits for an analyte indicates probable matrix effects and interferences for that analyte. Anametrix control limit for PDSR is 85-115%.

Qualifiers (Q)

Anametrix uses several data qualifiers in inorganic reports. These qualifiers give additional information on the analytes reported. The following is a list of qualifiers and their meanings:

I - Sample was analyzed at the stated dilution due to spectral interferences.
U - Analyte concentration was below the method reporting limit. For matrix and post digestion spike reports, a value of "0.0" is entered for calculation of the percent recovery.
B - Sample concentration was below the reporting limit but above the instrument detection limit. Result is entered for calculation of the percent recovery only.
H - Spike percent recovery was outside of Anametrix control limits due to interferences from relatively high concentration level of the analyte in the unspiked sample.

Comment Codes

In addition to qualifiers, the following codes are used in the comment section of all reports to give additional information about sample preparation methods:

A - Sample was prepared for silver based on the silver digestion method developed by the Southern California Laboratory, Department of Health Services, "Acid Digestion for Sediments, Sludges, Soils and Solid Wastes. A Proposed Alternative to EPA SW846, Method 3050." Environmental Science and Technology, 1989, 23, 898-900.
T - Spikes were prepared after extraction by the Toxicity Characteristic Leaching Procedure (TCLP).
C - Spikes were prepared after extraction by the California Waste Extraction Test (CWET) method.
D - Reported results are dissolved, not total, metals.

Reporting Conventions

Analytical values reported are gross values, i.e., not corrected for method blank contamination.
Solid matrices are reported on a wet weight basis, unless specifically requested otherwise.

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

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

Workorder # : 9306219
Date Received : 06/16/93
Project ID : 204-5508-5801
Purchase Order: MOH-B813
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9306219- 1	MW-1	WATER	06/16/93	160.1
9306219- 2	MW-4	WATER	06/16/93	160.1
9306219- 3	MW-5	WATER	06/16/93	160.1
9306219- 4	MW-6	WATER	06/16/93	160.1
9306219- 5	MW-9	WATER	06/16/93	160.1
9306219- 1	MW-1	WATER	06/16/93	300.0
9306219- 2	MW-4	WATER	06/16/93	300.0
9306219- 3	MW-5	WATER	06/16/93	300.0
9306219- 4	MW-6	WATER	06/16/93	300.0
9306219- 5	MW-9	WATER	06/16/93	300.0
9306219- 1	MW-1	WATER	06/16/93	7610
9306219- 2	MW-4	WATER	06/16/93	7610
9306219- 3	MW-5	WATER	06/16/93	7610
9306219- 4	MW-6	WATER	06/16/93	7610
9306219- 5	MW-9	WATER	06/16/93	7610

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

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

Workorder # : 9306219
Date Received : 06/16/93
Project ID : 204-5508-5801
Purchase Order: MOH-B813
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor 7/2/93 Date

Chemist 7/2/93 Date

INORGANIC ANALYSIS DATA SHEET
ANAMETRIX, INC. (408) 432-8192

Analyte-Method: Nitrate-300.0
Project I.D. : 204-5508-5801
Matrix : WATER
Reporting Unit: mg/L

Analyst : MK
Supervisor : MW
Date Sampled : 06/16/93
Date Released : 07/01/93
Instrument I.D. : IC1

ANAMETRIX SAMPLE I.D.	CLIENT I.D.	DATE PREPARED	DATE ANALYZED	REP. LIMIT	DIL. FACTOR	RESULT	Q
9306219-01	MW-1	06/18/93	06/18/93	0.020	1	0.050	
9306219-02	MW-4	06/18/93	06/18/93	0.020	1	ND	
9306219-03	MW-5	06/18/93	06/18/93	0.020	1	0.044	
9306219-04	MW-6	06/18/93	06/18/93	0.020	1	ND	
9306219-05	MW-9	06/18/93	06/18/93	0.020	1	0.439	
MB0618W	METHOD BLANK	06/18/93	06/18/93	0.020	1	ND	

COMMENT:

INORGANIC ANALYSIS DATA SHEET
ANAMETRIX, INC. (408) 432-8192

Analyte-Method: Total Dissolved Solids-160.1
Project I.D. : 204-5508-5801
Matrix : WATER
Reporting Unit: mg/L

Analyst : MK
Supervisor : MK
Date Sampled : 06/16/93
Date Released : 07/01/93
Instrument I.D. : N/A

ANAMETRIX SAMPLE I.D.	CLIENT I.D.	DATE PREPARED	DATE ANALYZED	REP. LIMIT	DIL. FACTOR	RESULT	Q
9306219-01	MW-1	06/18/93	06/18/93	50.0	1	1360	
9306219-02	MW-4	06/18/93	06/18/93	50.0	1	2030	
9306219-03	MW-5	06/30/93	07/01/93	50.0	1	748	
9306219-04	MW-6	06/30/93	07/01/93	50.0	1	812	
9306219-04DUP	MW-6D	06/30/93	07/01/93	50.0	1	844	
9306219-05	MW-9	06/30/93	07/01/93	50.0	1	409	
MB0618W	METHOD BLANK	06/18/93	06/18/93	50.0	1	ND	
MB0630W	METHOD BLANK	06/30/93	07/01/93	50.0	1	ND	

COMMENT:

LABORATORY CONTROL SAMPLE REPORT
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.# : 9306219
Spike I.D. : LCS0618W, LCS0630W
Project I.D. : 204-5508-5801
Matrix : WATER
Reporting Unit : mg/L

Analyst : MK
Supervisor : MW
Date Released : 07/01/93
Instrument I.D : IC1

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	SPIKE AMT.	METHOD SPIKE	% REC.	Q
Nitrate-300.0	06/18/93	06/18/93	1.00	0.977	97.7	
Total Dissolved Solids-160.1	06/18/93	06/18/93	1500	1510	101	
Total Dissolved Solids-160.1	06/30/93	07/01/93	1500	1500	100	

COMMENT:

MATRIX SPIKE REPORT
ANAMETRIX, INC. (408) 432-8192

Spike I.D. : 9306219-05MS,MD
Client I.D. : MW-9
Project I.D. : 204-5508-5801
Matrix : WATER
Reporting Unit: ug/L

Date Prepared : 06/18/93
Date Analyzed : 06/18/93
Analyst : MK
Supervisor : MN
Date Released : 07/01/93
Instrument I.D. : IC1

ANALYTE-METHOD	SPIKE AMOUNT	SAMPLE CONC.	M.S. CONC.	% REC.	M.S.D. CONC.	% REC.	RPD	Q
Nitrate-300.0	0.500	0.439	0.937	99.6	0.924	97.0	1.4	

COMMENT:

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

July 6, 1993

Mr. Jim Keller
BLAINE TECH
985 Timothy Street
San Jose, CA 95133

Dear Mr. Keller:

Enclosed are the analytical results from your project number 204-5508-5801, received by Anametrix, Inc. on June 16, 1993. The enclosed work was performed by a laboratory subcontracted by Anametrix, Inc.

Anametrix I.D.#	Client I.D. #
9306219 - 1	MW-1
9306219 - 2	MW-4
9306219 - 3	MW-5
9306219 - 4	MW-6
9306219 - 5	MW-9

If you have any questions concerning this workorder, please call our Client Services Department at (408)432-8192.

Sincerely,

ANAMETRIX LABORATORIES

Cristina

Cristina Velasquez Rayburn
Client Services Representative

CVR/mnh/10104

Enclosures

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER: 9306219 | PROJECT NAME:

Send Report Attention of: CRISTINA V. RAYBURN | Report Due: Standard / / | Verbal Due: / /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: Bacteria Plate Counts	TKN (351.4)	Total Phosphorus 365.2	Total Potassium 7610	Condition of Samples	Initial
1	6/16/93	15:15		Water	MW-1		1X125 2X250	X	X	X	X	JJ0814-1	
2		16:40			MW-4			X	X	X	X	2	
3		14:50			MW-5			X	X	X	X	3	
4		15:45			MW-6			X	X	X	X	4	
5		15:10			MW-9			X	X	X	X	5	

*improper containers- client to resample. SK 6-17-93

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Josephine DeCarli	6/16/93 7:40		6-16-93
	6-16-93		06/16/93
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	7:50	Allison Abraham	1750
Relinquished by: (Signature)	Date/Time	Received by Lab: (Cool, Intact)	Date/Time

Remarks: PLEASE SEND ORIGINAL CHAIN OF CUSTODY ALONG WITH THE REPORT.
Subbed to Coast to Coast

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0814-1
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MW-1	Monitoring Water	Josephine DeCarli	06/16/93	06/16/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Potassium, Total Recoverable	0.1	12.	mg/L	EPA 7610	06/23/93	DS	1
Total Kjeldahl Nitrogen	0.1	5.4	mg/L	EPA 351.2	06/17/93	CL	
Total Phosphorus							
Total Phosphorus	0.02	0.80	mg/L	EPA 365.1	06/29/93	SB	
Total Phosphate	0.06	2.4	mg/L	EPA 365.1	06/29/93	SB	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG/sab
0593061801

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick J. Gaone

Nick Gaone
Inorganics Manager

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0814-2
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MW-4	Monitoring Water	Josephine DeCarli	06/16/93	06/16/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Potassium, Total Recoverable	0.1	1.5	mg/L	EPA 7610	06/23/93	DS	1
Total Kjeldahl Nitrogen	0.1	4.2	mg/L	EPA 351.2	06/17/93	CL	
Total Phosphorus							
Total Phosphorus	0.02	3.5	mg/L	EPA 365.1	06/29/93	SB	
Total Phosphate	0.06	11.	mg/L	EPA 365.1	06/29/93	SB	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG/sab
0593061801

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick Gaone
Inorganics Manager

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0814-3
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MW-5	Monitoring Water	Josephine DeCarli	06/16/93	06/16/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Potassium, Total Recoverable	0.1	8.8	mg/L	EPA 7610	06/23/93	DS	1
Total Kjeldahl Nitrogen	0.1	1.0	mg/L	EPA 351.2	06/17/93	CL	
Total Phosphorus							
Total Phosphorus	0.02	0.07	mg/L	EPA 365.1	06/29/93	SB	
Total Phosphate	0.06	0.21	mg/L	EPA 365.1	06/29/93	SB	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG/sab
0593061801

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick F. Gaone

Nick Gaone
Inorganics Manager

COAST · TO · COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0814-4
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MW-6	Monitoring Water	Josephine DeCarli	06/16/93	06/16/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Potassium, Total Recoverable	0.1	0.8	mg/L	EPA 7610	06/23/93	DS	1
Total Kjeldahl Nitrogen	0.1	1.1	mg/L	EPA 351.2	06/17/93	CL	
Total Phosphorus							
Total Phosphorus	0.02	0.06	mg/L	EPA 365.1	06/29/93	SB	
Total Phosphate	0.06	0.19	mg/L	EPA 365.1	06/29/93	SB	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG/sab
0593061801

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick J. Gaone

Nick Gaone
Inorganics Manager

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0814-5
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MW-9	Monitoring Water	Josephine DeCarli	06/16/93	06/16/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Potassium, Total Recoverable	0.1	14.	mg/L	EPA 7610	06/23/93	DS	1
Total Kjeldahl Nitrogen	0.1	0.8	mg/L	EPA 351.2	06/17/93	CL	
Total Phosphorus							
Total Phosphorus	0.02	0.22	mg/L	EPA 365.1	06/29/93	SB	
Total Phosphate	0.06	0.66	mg/L	EPA 365.1	06/29/93	SB	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG/sab
0593061801

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick F. Gaone

Nick Gaone
Inorganics Manager

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

QC Batch ID: 0593061801

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Aqueous			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Potassium, Total Recoverable	0.1	ND	mg/L	EPA 7610	06/23/93	DS	1

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG
JJ0814-5

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick F. Gaone

Nick Gaone
Inorganics Manager

COAST · TO · COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

QC Batch ID: 0593061801

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MATRIX SPIKE	Aqueous			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Potassium, Total Recoverable	14.	50.	64.	100.	mg/L	EPA 7610	06/23/93	DS	1

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG
JJ0814-5

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick F. Gaone

Nick Gaone
Inorganics Manager

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

San Luis Obispo, CA • Benicia, CA • Camarillo, CA • San Jose, CA • Goleta, CA
Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

QC Batch ID: 0593061801

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Aqueous			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Potassium, Total Recoverable	14.	50.	63.	2.	mg/L	EPA 7610	06/23/93	DS	1

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 06/18/93 by LW using EPA 3005

06/30/93

NG
JJ0814-5

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Nick Gaone
Inorganics Manager

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER: 9306219 | PROJECT NAME:

Send Report Attention of: CRISTINA V. RAYBURN | Report Due: / / | Verbal Due: / /

Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: 15 ACETATE PLUS COMPS	Condition of Samples	Initial
1	6-17-93	13:25		W	MW-1	2	120mL	X	JJ0829-1	
2	6-17-93	13:35		W	MW-4	2	120mL	X	2	
3	6-17-93	13:50		W	MW-5	2	120mL	X	3	
4	6-17-93	14:00		W	MW-6	2	120 mL	X	4	
5	6-17-93	14:10		W	MW-9sh	2	120 mL	X	5	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Calvin Rayburn	6-17-93	Simon Hague	6-17-93
Simon Hague	6-17-93 2:25		
		Received by Lab: Shellie Hoff	6-17-93 16:25

Remarks: PLEASE SEND ORIGINAL CHAIN OF CUSTODY ALONG WITH THE REPORT.

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A member of Inchcape Environmental Inc.

del Simon Hague

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NorCal Division (San Jose Laboratory) San Jose, CA 95131
2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0829-1
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MW-1	Monitoring Water	Calvin Robinson	06/17/93	06/17/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Heterotrophic Plate Count	1.	80000.	CFU/ml	SM9215 A&B	06/17/93	JE	1
Hydrocarbon utilizing bacteria	1.	310.	CFU/ml	ASTM G-22/	06/17/93	CL	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) CFU = Colony Forming Units.

07/02/93

NG/sab/cml

Respectfully submitted,
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2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0829-2
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MW-4	Monitoring Water	Calvin Robinson	06/17/93	06/17/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Heterotrophic Plate Count	1.	8200.	CFU/ml	SM9215 A&B	06/17/93	JE	1
Hydrocarbon utilizing bacteria	1.	200.	CFU/ml	ASTM G-22/	06/17/93	JE	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) CFU = Colony Forming Units.

07/02/93

NG/sab/cml

Respectfully submitted,
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Lab Number : JJ-0829-3
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MW-5	Monitoring Water	Calvin Robinson	06/17/93	06/17/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Heterotrophic Plate Count	1.	3200.	CFU/ml	SM9215 A&B	06/17/93	JE	1
Hydrocarbon utilizing bacteria	1.	490.	CFU/ml	ASTM G-22/	06/17/93	CL	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) CFU = Colony Forming Units.

07/02/93

NG/sab/cml

Respectfully submitted,
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2059 Junction Ave. (408) 955-9077

Lab Number : JJ-0829-4
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MW-6	Monitoring Water	Calvin Robinson	06/17/93	06/17/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Heterotrophic Plate Count	1.	2000.	CFU/ml	SM9215 A&B	06/17/93	JE	1
Hydrocarbon utilizing bacteria	1.	450.	CFU/ml	ASTM G-22/	06/17/93	CL	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) CFU = Colony Forming Units.

07/02/93

NG/sab/cml

Respectfully submitted,
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Lab Number : JJ-0829-5
Project : 9306219

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MW-9	Monitoring Water	Calvin Robinson	06/17/93	06/17/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Heterotrophic Plate Count	1.	9200.	CFU/ml	SM9215 A&B	06/17/93	JE	1
Hydrocarbon utilizing bacteria	1.	2300.	CFU/ml	ASTM G-22/	06/17/93	CL	

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) CFU = Colony Forming Units.

07/02/93

NG/sab/cml

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2059 Junction Ave. (408) 955-9077

JJ-0829-5

CLIENT: Cristina Rayburn
Anametrix
1961 Concourse Drive, Suite E
San Jose, CA 95131

Project : 9306219

QC DUPLICATE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MW-9	Aqueous	Calvin Robinson	06/17/93	06/17/93

CONSTITUENT	*PQL	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Heterotrophic Plate Count	1.	8900.	3.3	CFU/ml	SM9215 A&B	06/17/93	JE	1

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) CFU = Colony Forming Units.

07/02/93

NG
JJ0829-5

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CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Aqueous			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY NOTE
Hydrocarbon utilizing bacteria	1.	ND	CFU/ml	ASTM G-22/	06/17/93	CL

San Jose Lab Certifications: CAELAP #1204
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CLIENT: Coast-to-Coast Analytical Services, Inc.

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Aqueous			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY NOTE
Hydrocarbon utilizing bacteria	1.	ND	CFU/ml	ASTM G-22/	06/17/93	CL

San Jose Lab Certifications: CAELAP #1204
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JJ0829-5

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

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0614
Matrix	: WATER	Analyst	:
Date Sampled	: N/A	Supervisor	:
Date Analyzed	: 06/14/93	Date Released	: 06/22/93
		Instrument ID	: HP21

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	21.7	109%	52-133
Toluene	20.0	23.5	118%	57-136
Ethylbenzene	20.0	24.4	122%	56-139
TOTAL Xylenes	20.0	24.4	122%	56-141
P-BFB			125%	61-139

* Limits established by Anametrix, Inc.