Weiss Associates *Environmental and Geologic Services*

*5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: **510-547-5420***

TRANSMITTAL LETTER

FROM: Teresa McClish **DATE**: December 4, 1991

TO: Paul Smith
Alameda County Health Department
Hazardous Materials Department
80 Swan Way, Room 200
Oakland, California 94621

VIA:
- [x] First Class Mail
- [ ] Fax ___ pages
- [ ] UPS (Surface)
- [ ] Federal Express
- [ ] Courier

SUBJECT: CALWATER reports for Shell Oil Company. **JOB**: 81-463-02

AS:
- [ ] We discussed on the telephone on _____
- [ ] You requested _____
- [ ] We believe you may be interested
- [x] Is required

WE ARE SENDING:
- [x] Enclosed
- [ ] Under Separate Cover Via _____

Copies of 3rd quarter CALWATER reports that were sent to the RWQCB for Shell sites in your jurisdiction.

FOR:
- [x] Your information
- [ ] Your use
- [ ] Your review & comments
- [ ] Return to you

PLEASE:
- [x] Keep this material
- [ ] Return within 2
- [ ] Acknowledge receipt

cc: Kurt Miller
Shell Oil Company
P.O. Box 4023
Concord, CA 94524

10:1 PM 9-DEC 16

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SHELL OIL CORPORATION

QUARTERLY REPORT TO

THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

Date of Report: September 16, 1991

Service Station WIC Number:	20460010109
Site Address (Number, Street):	29 Wildwood
City:	Piedmont
County:	Alameda

Actions in the past three months:

Collected 3rd Quarter ground water samples and Submitted 3rd Quarter Status report.

Actions planned for next three months:

Continue quarterly ground water monitoring.

Soil Contamination defined? Y\N	N
Soil Clean-up in progress? Y\N	N
Free-product plume defined? Y\N	NA
Free-product cleanup in progress? Y\N	NA
Dissolved constituent plume defined? Y\N	Y
Dissolved constituent cleanup in progress? Y\N	N

Contractor: Weiss Associates, Emeryville, California.

WEISS ASSOCIATES
Geologic and Environmental Services
Fax: 415-547-5043 Phone: 415-547-5420
5500 Shellmound Street, Emeryville, CA 94608

91 SEP 16 AM 11:45

TRANSMITTAL LETTER

FROM: Tom Fojut

DATE: August 30, 1991

TO: Paul Smith
Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621-1426

VIA:
- [X] First Class Mail
- [ ] Fax ___ pages
- [ ] UPS (Surface)
- [ ] Federal Express
- [ ] Courier

SUBJECT: Shell Service Station
WIC #204-6001-0109
29 Wildwood Avenue
Piedmont, California 94610

JOB: 81-463-01

AS:
- [ ] We discussed on the telephone on _____
- [ ] You requested _____
- [ ] We believe you may be interested
- [X] Is required

WE ARE SENDING:
- [X] Enclosed
- [ ] Under Separate Cover Via _____

Quarterly status report for the subject site

FOR:
- [ ] Your information
- [X] Your use
- [ ] Your review & comments
- [ ] Return to you

PLEASE:
- [X] Keep this material
- [ ] Return within 2 weeks
- [ ] Acknowledge receipt

MESSAGE: Please call if you have any questions.

cc: Kurt Miller, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998

Lester Feldman, California Regional Water Quality Control Board - San Francisco Bay, 2101 Webster Street, Suite 500, Oakland, California 94612

WEISS ASSOCIATES
Geologic and Environmental Services
Fax: 415-547-5043 Phone: 415-547-5420
5500 Shellmound Street, Emeryville, CA 94608

August 30, 1991

Mr. Paul Smith
Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621-1426

Re: Shell Service Station
WIC #204-6001-0109
29 Wildwood Avenue
Piedmont, California 94610
WA Job #81-463-01

Dear Mr. Smith:

This letter describes Weiss Associates' (WA) third quarter 1991 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 to date in the third quarter 1991, and
- Proposed work for the remainder of the third quarter 1991 and the fourth quarter 1991.

Proposed ground water sampling frequency modifications, which are on hold pending approval of the Alameda County Department of Environmental Health, are presented in Table 1.

THIRD QUARTER 1991 ACTIVITIES

During this quarter, WA:

- Collected ground water samples from all six site wells,

- Measured ground water depths and determined ground water elevations and flow direction, and
- Analyzed the ground water samples and tabulated the analytic results.

These activities are described below.

Ground Water Sampling

On July 30, 1991, WA collected ground water samples from monitoring wells MW-1 through MW-5 and E-4 (Figure 2) as part of the quarterly ground water monitoring program at Shell Service Station WIC #204-6001-0109 in Piedmont, California. Hydrocarbons were detected in water samples from four of the six wells, at a maximum of 3.3 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G) and 0.160 ppm benzene from well MW-3.

Sampling Personnel: WA Environmental Technician Paul Cardoza

Method of Purging Wells:

	Wells
• Steam-cleaned PVC bailer	E-4
• Dedicated PVC bailers	MW-1 through MW-5

Volume of Water Purged Prior to Sampling:

- Wells MW-1 through MW-5 were purged of four well-casing volumes, about 13 to 31 gallons each.
- Well E-4 was purged dry; water level was allowed to recover for at least two hours prior to sampling.

Method of Collecting Ground Water Samples:

	Wells
• Decanted from steam-cleaned Teflon bailer	E-4
• Drawn through the sampling ports on the sides of dedicated PVC bailers	MW-1 through MW-5

Methods of Containing Ground Water Samples:

- 40 ml glass volatile organic analysis (VOA) vials, packed in protective foam sleeves

All samples were refrigerated and transported under chain-of-custody to the analytical laboratory.

Water Samples Transported to:

- National Environmental Testing, Inc. (NET) Pacific, Santa Rosa, California, and were received on August 1, 1991

Quality Assurance/Quality Control:

- A travel blank was submitted for analysis.

Water sample collection records and chain-of-custody forms are included in Attachments A and B, respectively.

Ground Water Elevations and Flow Direction

- Water depths were measured in all wells on July 30, 1991. Ground water elevations decreased by up to 0.7 ft since the previous quarter.
- Ground water flows west to south-southwestward which is generally consistent with the ground water flow pattern over the past year.
- The potentiometric surface of flowing artesian well E-4 was greater than 4.5 ft above the top-of-casing in July 1989. This well screens a deeper water-bearing zone than wells MW-1 through MW-5.

Water depth measurements and ground water elevations are presented in Table 1. Ground water elevation contours are plotted on Figure 2. Ground water elevation contour maps for the past four quarters are included in Figure 3.

Chemical Analyses

The Ground Water Samples were Analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 8015, and
- Benzene, ethylbenzene, toluene and xylenes (BETX) by EPA Method 602.

The laboratory analyzed the samples on August 4, 1991. The results are presented in Table 2 and the analytic reports are included in Attachment B.

Discussion of Analytic Results of Ground Water for this Quarter:

- Hydrocarbons were detected in water samples from four of the six wells, at a maximum of 3.3 ppm TPH-G and 0.160 ppm benzene in monitoring well MW-3.
- No hydrocarbons were detected in samples from wells MW-1 and MW-4.
- No TPH-G were detected in samples from well MW-2 for the first time in six quarters.

ANTICIPATED WORK FOR FOURTH QUARTER 1991.

During the remainder of the third quarter 1991 and the fourth quarter 1991, on behalf of Shell Oil, WA plans to:

- Continue quarterly monitoring of ground water at this site, and
- Prepare a quarterly status report presenting all data generated during the previous quarter including water sampling results and analysis.

We trust that this submittal satisfies your requirements. Please call if you have any questions.

Sincerely,
Weiss Associates

Thomas Fojut
Staff Geologist

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

TF/JPT:fcr

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Attachments: Figures
Tables
A - Water Sample Collection Records
B - Analytic Report and Chain-of-Custody Form

cc: Kurt Miller, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998

Lester Feldman, Regional Water Quality Control Board - San Francisco Bay, 2101 Webster Street, Oakland, California 94612

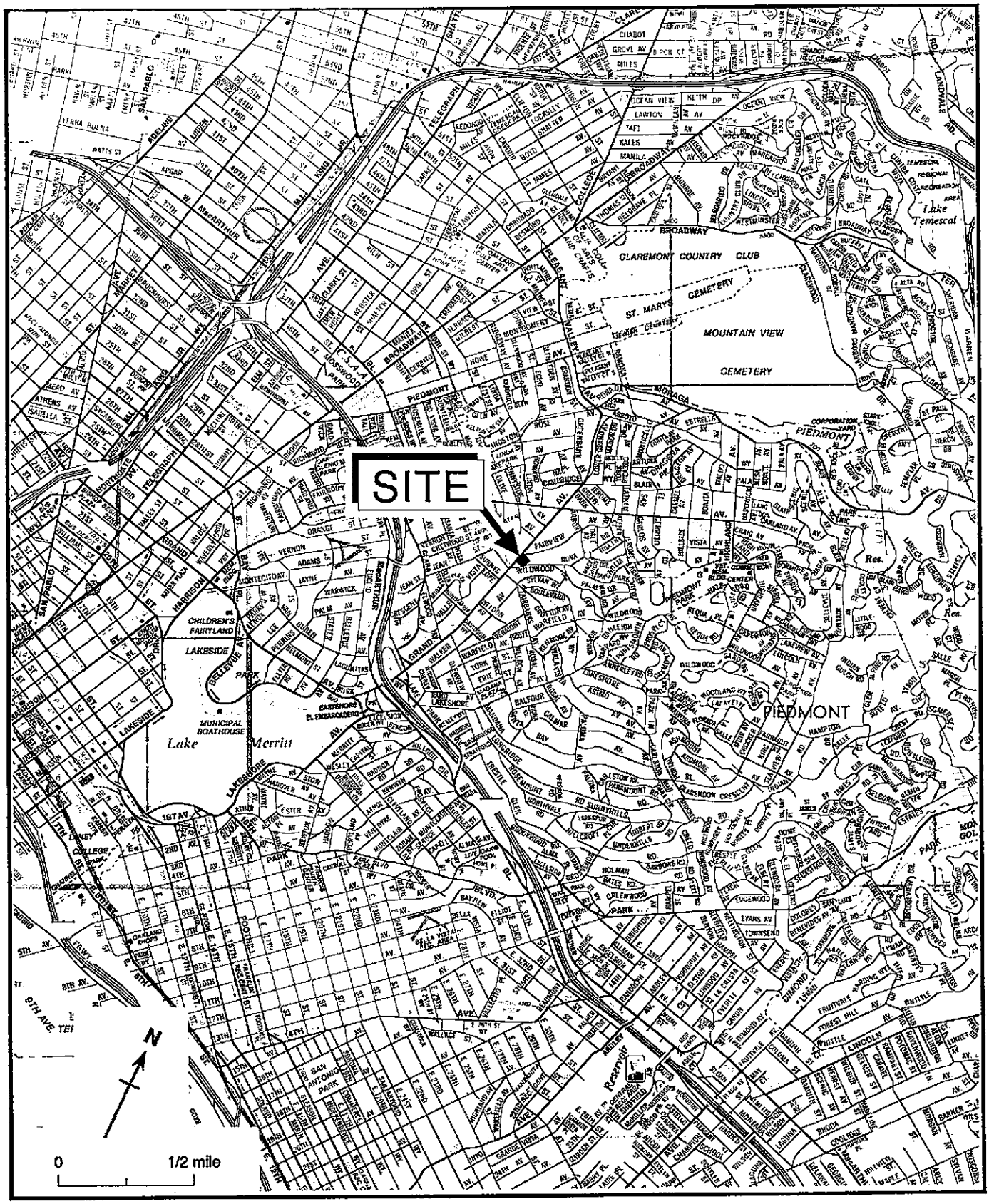

Figure 1. Site Location Map - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California

6/6/90

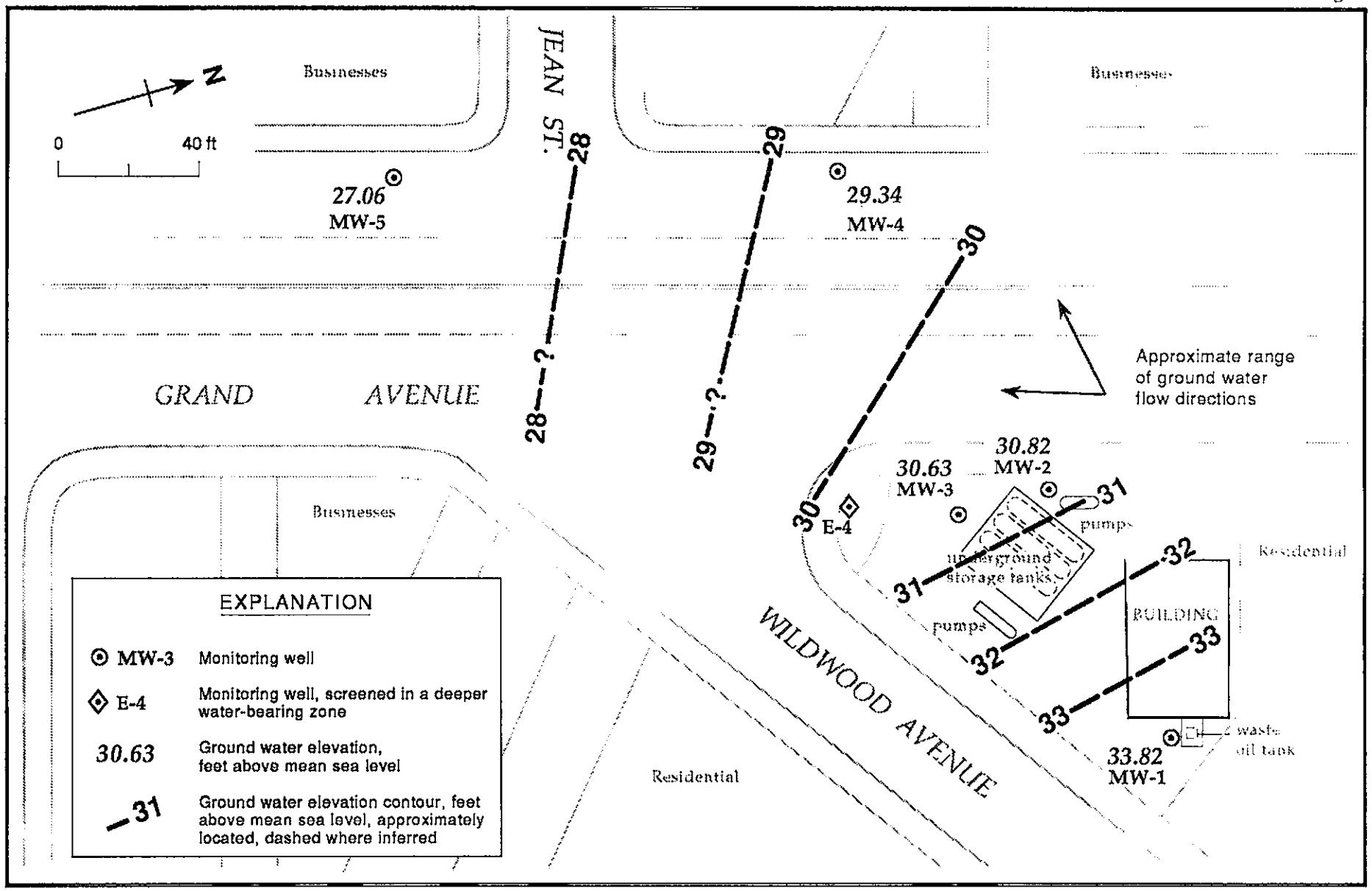

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - July 30, 1991 - Shell Service Station, WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California

8/28/91

TABLE 1. Proposed Modifications to Ground Water Sampling Frequency, Shell Service Station, WIC# 204-6001-0109, 29 Wildwood Avenue, Piedmont, California

Well ID	Current Sampling Frequency	Recommended Future Sampling Frequency	Rationale for Recommended Sampling Frequency
MW-1	Quarterly	Annually	Virtually no hydrocarbons dectected for eight consecutive quarters; up-gradient well
MW-2	Quarterly	Semi-Annually	Stable hydrocarbon concentrations for eight consecutive quarters; source area well
MW-3	Quarterly	Semi-Annually	Stable hydrocarbon concentrations for eight consecutive quarters; source area well
MW-4	Quarterly	Quarterly	Down-gradient well
MW-5	Quarterly	Quarterly	Down-gradient well
E-4	Quarterly	Semi-Annually	No petroleum hydrocarbons detected for eight consecutive quarters; down-gradient well screened in a deeper water-bearing zone

TABLE 2. Ground Water Elevations, Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground water Elevation (ft above msl)
MW-1	07/12/89	37.96	2.76	35.20
	01/30/90		3.10	34.86
	04/27/90		3.24	34.72
	07/31/90		4.26	33.70
	10/30/90		4.25	33.71
	01/31/91		3.66	34.30
	04/30/91		3.46	34.50
	07/30/91		**4.14**	**33.82**
MW-2	07/12/89	34.89	3.66	31.23
	01/30/90		3.49	31.40
	04/27/90		3.79	31.10
	07/31/90		4.03	30.86
	10/30/90		4.21	30.68
	01/31/91		4.09	30.80
	04/30/91		3.95	30.94
	07/30/91		**4.07**	**30.82**
MW-3	07/12/89	35.00	3.83	31.17
	01/30/90		3.24	31.76
	04/27/90		4.02	30.98
	07/31/90		4.31	30.69
	10/30/90		4.52	30.48
	01/31/91		4.33	30.67
	04/30/91		3.79	31.21
	07/30/91		**4.37**	**30.63**
MW-4	01/30/90	33.73	4.50	29.23
	04/27/90		3.62	30.11
	07/31/90		4.19	29.54
	10/30/90		4.19	29.54
	01/31/91		4.49	29.24
	04/30/91		4.02	29.71
	07/30/91		**4.39**	**29.34**
MW-5	01/30/90	31.38	7.12	24.26
	04/27/90		4.19	27.19
	07/31/90		4.09	27.29
	10/30/90		4.39	26.99
	01/31/91		4.49	26.89
	04/30/91		4.27	27.11
	07/30/91		**4.32**	**27.06**

-- Table 2 continues on next page --

TABLE 2. Ground Water Elevations, Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground water Elevation (ft above msl)
E-4	07/12/89	34.63	a	>39.13
	01/30/90		b	>34.63
	04/27/90		b	>34.63
	07/31/90		b	>34.63
	10/30/90		b	>34.63
	01/31/91		b	>34.63
	04/30/91		b	>34.63
	07/30/91		**b**	**>34.63**

a = Well E-4 is a flowing artesian well. The potentiometric surface was greater than 4.5 ft above ground surface.

b = Well E-4 potentiometric surface was higher than the top of well casing.

TABLE 3. Analytic Results for Ground Water, Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	E	T	X	HVOCs
			<----------parts per million (mg/L)---------->					
MW-1	07/12/89[a]	2.76	<0.05	<0.0005	<0.001	<0.001	<0.003	b
	01/30/90	3.10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/27/90	3.24	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/31/90	4.26	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	10/30/90	4.25	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/31/91	3.66	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/30/91	3.46	<0.05	0.0008	0.0006	<0.0005	0.0012	---
	07/30/91	**4.14**	**<0.05**	**<0.0005**	**<0.0005**	**<0.0005**	**<0.0005**	---
MW-2	07/12/89[a]	3.66	0.060	0.0027	<0.001	<0.001	<0.003	b
	01/30/90	3.49	<0.05	0.0066	0.00054	<0.0005	0.00093	---
	04/27/90	3.79	0.060	0.0021	<0.0005	<0.0005	<0.0005	---
	07/31/90	4.03	0.070	0.0015	<0.0005	<0.0005	<0.0005	---
	10/30/90	4.21	0.070	<0.0005	<0.0005	0.0007	0.0016	---
	01/31/91	4.09	0.080	<0.0005	0.0009	<0.0005	0.0019	---
	04/30/91	3.95	0.10	0.0059	0.0007	0.0006	0.0020	---
	07/30/91	**4.07**	**<0.05**	**<0.0005**	**<0.0005**	**0.0007**	**<0.0005**	---
MW-3	07/12/89[a]	3.83	3.9	0.38	0.099	0.041	0.030	c
	01/30/90	3.24	5.5	0.44	0.079	0.035	0.13	---
	04/27/90	4.02	4.5	0.31	0.037	0.026	0.11	---
	07/31/90	4.31	3.5	0.21	0.0084	0.017	0.062	---
	10/30/90	4.52	2.3	0.061	<0.0005	<0.0005	0.028	---
	01/31/91	4.33	4.1	0.30	0.019	0.020	0.081	---
	04/30/91	3.79	3.8	0.370	0.0086	0.019	0.060	---
	07/30/91	**4.37**	**3.3**	**0.160**	**0.015**	**0.013**	**0.087**	---
MW-4	01/31/90	4.50	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/27/90	3.62	0.13[d]	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/31/90	4.19	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	10/30/90	4.19	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/31/91	4.49	0.05[d]	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/30/91	4.02	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	e
	07/30/91	**4.39**	**<0.05**	**<0.0005**	**<0.0005**	**<0.0005**	**<0.0005**	---
MW-5	01/31/90	7.12	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/27/90	4.19	0.21[d]	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/31/90	4.09	0.090	<0.0005	<0.0005	<0.0005	<0.0005	---
	10/30/90	4.39	0.10	0.0008	0.0006	0.0007	0.0014	---
	01/31/91	4.49	0.080[d]	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/30/91	4.27	0.09[d]	<0.0005	<0.0005	<0.0005	<0.0005	f
	07/30/91	**4.32**	**0.09[d]**	**<0.0005**	**<0.0005**	**<0.0005**	**<0.0005**	---

--Table 3 continues on next page --

TABLE 3. Analytic Results for Ground Water, Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	E	T	X	HVOCs
			<----------parts per million (mg/L)---------->					
E-4	07/12/89[a]	g	<0.05	<0.0005	<0.001	<0.001	<0.003	---
	01/31/90	g	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/27/90	g	0.12[d]	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/31/90	g	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	10/30/90	g	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/31/91	g	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/30/91	g	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	b
	07/30/91	**g**	**<0.05**	**<0.0005**	**<0.0005**	**0.0006**	**<0.0005**	---
Trip Blank	07/12/89[a]		<0.05	<0.0005	<0.001	<0.001	<0.003	---
	01/31/90		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/27/90		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/31/90		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	10/30/90		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/31/91		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/30/91		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/30/91		**<0.05**	**<0.0005**	**<0.0005**	**<0.0005**	**<0.0005**	---
Bailer Blank	04/27/90		0.11[d]	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/31/91		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
DHS MCLs			NE	0.001	0.680	0.10[h]	1.750	i

Abbreviations:

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Modified EPA Method 8015
B = Benzene by EPA Method 602 or 8020
E = Ethylbenzene by EPA Method 602 or 8020
T = Toluene by EPA Method 602 or 8020
X = Xylenes by EPA Method 602 or 8020
HVOCs = Volatile or halogenated volatile organic compounds by EPA Method 601 or 624
--- = Not analyzed
NE = Not established
DHS MCLs = California Department of Health Services maximum contaminant levels for drinking water
<n = Not detected above detection limit of n ppm

Notes:

a = Analyzed by International Technology Analytical Services, Inc., San Jose, California.
b = No HVOCs detected.
c = BETX detected at 0.41, 0.097, 0.036 and 0.30 ppm, respectively, by EPA Method 624.
d = Non-gasoline peak reported as TPH-G by Modified EPA Method 8015.
e = 0.015 ppm tetrachloroethene (PCE), 0.0041 ppm trichloroethene (TCE) and 0.0034 ppm trans-1,2-dichloroethene (DCE) detected
f = 0.220 ppm PCE, 0.022 ppm TCE and 0.017 ppm DCE detected
g = Artesian well; potentiometric elevation above top-of-casing elevation.
h = DHS recommended action level for drinking water; MCL not established.
i = DHS MCLs for PCE = 0.005 ppm; TCE = 0.005 ppm; DCE = 0.01 ppm.

Analytical Laboratory:

National Environmental Testing (NET) Pacific, Inc., Santa Rosa, California

ATTACHMENT A

WATER SAMPLE COLLECTION RECORDS

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-1 Date 7/30/91 Time of Sampling 11:59

Job Name Shell-Piedmont Job Number 81-463-01 Initials PC

Sample Point Description M (M = Monitoring Well)

Location Southeast section of station

WELL DATA: Depth to Water 4.14 ft (static, pumping) Depth to Product — ft.

Product Thickness — Well Depth 15 ft (spec) Well Depth 13.12 ft(sounded) Well Diameter 4 in

Initial Height of Water in Casing 8.98 ft. = volume 5.86 gal.

4 Casing Volumes to be Evacuated. Total to be evacuated 23.44 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —

Bailer# and type 3" x 36" PVC Dedicated Y (Y/N)

Other —

Evacuation Time: Stop 10:57 / 10:37

Start 10:51 / 10:32

Total Evacation Time 11 min

Total Evacuated Prior to Sampling 24 gal.

Evacuation Rate 2.18 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling 5.18 ft. 11:59 time

Evacuated Dry? Yes After 14 gal. Time 10:57

80% Recovery = 5.94

% Recovery at Sample Time 88 Time 11:59

→ 4 casing volumes evacuated after allowing well to recover.

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number /

Calibration: 4.0 7.0 10.0

Measured:	SC/μmhos	pH	T°C	Time	Volume Evacuated (gal.)
		N/A			

SAMPLE: Color Clear Odor None

Description of matter in sample: None

Sampling Method: From sampling port on decticated bailer.

Sample Port: Rate — gpm Totalizer — gal.

Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	071-01	w/cn	40ml	N	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-2 Date 7/30/91 Time of Sampling 12:28

Job Name Shell-Piedmont Job Number 81-463.01 Initials PC

Sample Point Description M (M = Monitoring Well)

Location Northwest section of station

WELL DATA: Depth to Water 4.07 ft (static, pumping) Depth to Product — ft.

Product Thickness — Well Depth 12 ft (spec) Well Depth 11.5 ft(sounded) Well Diameter 4 in

Initial Height of Water in Casing 7.43 ft. = volume 4.85 gal.

4 Casing Volumes to be Evacuated. Total to be evacuated 19.4 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —

Bailer# and type 3"x 36" Dedicated Y (Y/N)

Other —

Evacuation Time: Stop 10:40 11:29 11:50

Start 10:37 11:26 11:46

Total Evacation Time 10 min

Total Evacuated Prior to Sampling 8+6+6=20 gal.

Evacuation Rate 2 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling 6.93 ft. 12:28 time

Evacuated Dry? Yes After 8 gal. Time 10:40

80% Recovery = 5.57

% Recovery at Sample Time 62 Time 12:28

→ 4 casing volumes evacuated after allowing well to recover

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number —

Calibration: — 4.0 — 7.0 — 10.0

Measured:	SC/μmhos	pH	T°C	Time	Volume Evacuated (gal.)

SAMPLE: Color Clear Odor None

Description of matter in sample: None

Sampling Method: Sample port on dedicated bailer

Sample Port: Rate — gpm Totalizer — gal.

Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	071-02	W/Cl	40ml	N	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-3 Date 7/30/91 Time of Sampling 12:15

Job Name Shell - Piedmont Job Number 81463.01 Initials PC

Sample Point Description M (M = Monitoring Well)

Location East section of station

WELL DATA: Depth to Water 4.77 ft (static) pumping) Depth to Product — ft.

Product Thickness — Well Depth 9 ft (spec) Well Depth 9.02 ft(sounded) Well Diameter 4 in

Initial Height of Water in Casing 4.65 ft. = volume 3.04 gal.

4 Casing Volumes to be Evacuated. Total to be evacuated 12.16 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —

Bailer# and type 3"x 36" PVC Dedicated Y (Y/N)

Other —

Evacuation Time: Stop 10:32 11:24 11:45

Start 10:30 11:21 11:43

Total Evacation Time 7 min

Total Evacuated Prior to Sampling 54 gal. = 13 gal.

Evacuation Rate 1.86 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling 5.17 ft. 12:16 time

Evacuated Dry? Yes After 5 gal. Time 10:32

80% Recovery = 5.48

% Recovery at Sample Time 83 Time 12:16

→ 4 casing volumes evacuated after allowing well to recover

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number —

Calibration: — 4.0 — 7.0 — 10.0

Measured:	SC/µmhos	pH	T°C	Time	Volume Evacuated (gal.)
		N/A			

SAMPLE: Color Clear Odor Slight

Description of matter in sample: None

Sampling Method: @ Sampling port or dedicated bailer

Sample Port: Rate — gpm Totalizer — gal.

Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	071-03	W/Cu	40ml	N	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-4 Date 7/30/91 Time of Sampling 14:04

Job Name Shell-Piedmont Job Number 81-463-01 Initials PC

Sample Point Description M (M = Monitoring Well)

Location Across street from station on Grand Ave.

WELL DATA: Depth to Water 4.39 ft (static, pumping) Depth to Product — ft.

Product Thickness — Well Depth 16 ft (spec) Well Depth 12.0 ft(sounded) Well Diameter 4 in

Initial Height of Water in Casing 7.61 ft. = volume 4.97 gal.

4 Casing Volumes to be Evacuated. Total to be evacuated 19.88 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —

Bailer# and type 3"x36" PVC Dedicated Y (Y/N)

Other —

Evacuation Time: Stop 12:59 13:32 13:48

Start 12:56 13:29 13:45

Total Evacation Time 9 min.

Total Evacuated Prior to Sampling 8+7+5 = 20 gal.

Evacuation Rate 2.22 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling 6.27 ft. 14:04 time

Evacuated Dry? Yes After 8 gal. Time 12:59

80% Recovery = 5.91

% Recovery at Sample Time 75 Time 12:59

>4 casing volumes evacuated after allowing well to recover

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number

Calibration: 4.0 7.0 10.0

Measured:	SC/µmhos	pH	T°C	Time	Volume Evacuated (gal.)

SAMPLE: Color Tan Odor None

Description of matter in sample: Fine silt

Sampling Method: From sample port on dedicated bailer

Sample Port: Rate — gpm Totalizer — gal.

Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	071-04	w/cv	40ml	W	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-5 Date 7/30/91 Time of Sampling 13:37
Job Name Shell-Piedmont Job Number 81-463-01 Initials PC
Sample Point Description M (M = Monitoring Well)
Location Southwest and across street in front of bus stop.

WELL DATA: Depth to Water 4.32 ft (static) pumping) Depth to Product — ft.
Product Thickness — Well Depth 16.5 ft (spec) Well Depth 15.96 ft(sounded) Well Diameter 4 in
Initial Height of Water in Casing 11.64 ft. = volume 7.60 gal.
4 Casing Volumes to be Evacuated. Total to be evacuated 30.4 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —
Bailer# and type 3" x 36" PVC Dedicated Y (Y/N)
Other —

Evacuation Time: Stop 13:23
Start 13:09
Total Evacation Time 14min
Total Evacuated Prior to Sampling 31 gal.
Evacuation Rate 2.21 gal. per minute
Depth to Water during Evacuation — ft. — time
Depth to Water at Sampling 5.41 ft. 13:37 time
Evacuated Dry? No After — gal. Time —
80% Recovery = —
% Recovery at Sample Time — Time —

Formulas/Conversions
r = well radius in ft.
h = ht of water col in ft.
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft^3
$V_{2"}$ casing = 0.163 gal/ft
$V_{3"}$ casing = 0.367 gal/ft
$V_{4"}$ casing = 0.653 gal/ft
$V_{4.5"}$ casing = 0.826 gal/ft
$V_{6"}$ casing = 1.47 gal/ft
V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number —
Calibration: — 4.0 — 7.0 — 10.0

Measured:	SC/µmhos	pH	T°C	Time	Volume Evacuated (gal.)

SAMPLE: Color Tan Odor None
Description of matter in sample: Fine silt
Sampling Method: From sampling port on dedicated bailer
Sample Port: Rate — gpm Totalizer — gal.
Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	OM-05	w/cu	40ml	N	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name E-4 Date 7/30/91 Time of Sampling 14:36

Job Name Shell-Piedmont Job Number 87-463.01 Initials PC

Sample Point Description M (M = Monitoring Well)

Location Southwest corner of station

WELL DATA: Depth to Water 6.20 ft (static, pumping) Depth to Product — ft.

Product Thickness — Well Depth 34.26 ft (spec) Well Depth — ft(sounded) Well Diameter 3 in

Initial Height of Water in Casing 34.26 ft. = volume 12.57 gal.

4 Casing Volumes to be Evacuated. Total to be evacuated 50.28 gal.

EVACUATION METHOD: WA Pump # and type — Hose # and type —

Bailer# and type 2½" x 36" PVC "DC Dedicated N (Y/N)

Other Sampled with WA 1½" x 29" Teflon bailer "H"

Evacuation Time: Stop 10:22

Start 10:07

Total Evacation Time 15 min

Total Evacuated Prior to Sampling 20 gal.

Evacuation Rate 1.33 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling 09.04 ft. 14:36 time

Evacuated Dry? Yes After 20 gal. Time 10:22

80% Recovery = 6.85

% Recovery at Sample Time 74 Time 14:36

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number —

Calibration: ____ 4.0 ____ 7.0 ____ 10.0

Measured:	SC/µmhos	pH	T°C	Time	Volume Evacuated (gal.)
		N/A			

SAMPLE: Color Clear Odor None

Description of matter in sample: None

Sampling Method: Decanted from WA Teflon Bailer "H"

Sample Port: Rate — gpm Totalizer — gal.

Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	071-E4	w/cv	40ml	N	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

Travel Blanks

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name — Date 7/30/91 Time of Sampling 0715

Job Name Shell-Piedmont Job Number 81-463-01 Initials PC

Sample Point Description — (M = Monitoring Well)

Location —

WELL DATA: Depth to Water _____ ft (static, pumping) Depth to Product _____ ft.

Product Thickness _____ Well Depth ____ ft (spec) Well Depth _____ ft(sounded) Well Diameter ____in

Initial Height of Water in Casing _____ ft. = volume _____ gal.

_____ Casing Volumes to be Evacuated. Total to be evacuated _____ gal.

EVACUATION METHOD: Pump # and type _____ Hose # and type _____

Bailer# and type _____ Dedicated _____(Y/N)

Other _____

Evacuation Time: Stop _____ _____ _____

Start _____ _____ _____

Total Evacation Time 10

Total Evacuated Prior to Sampling _____ gal.

Evacuation Rate _____ gal. per minute

Depth to Water during Evacuation _____ ft. _____ time

Depth to Water at Sampling _____ ft. _____ time

Evacuated Dry? _____ After _____ gal. Time _____

80% Recovery = _____

% Recovery at Sample Time _____ Time _____

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number _____

Calibration: _____ 4.0 _____ 7.0 _____ 10.0

Measured:	SC/µmhos	pH	T°C	Time	Volume Evacuated (gal.)

SAMPLE: Color _____ Odor _____

Description of matter in sample: _____

Sampling Method: _____

Sample Port: Rate ____gpm Totalizer _____gal.

Time

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	071-21	W/CV	40ml	N	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

Bailer Blanks

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name E-4 Date 7/30/91 Time of Sampling 14:29

Job Name Shell-Piedmont Job Number 81-463-101 Initials PC

Sample Point Description M (M = Monitoring Well)

Location Southwest corner of station

WELL DATA: Depth to Water _____ ft (static, pumping) Depth to Product _____ ft.

Product Thickness _____ Well Depth ____ ft (spec) Well Depth _____ ft(sounded) Well Diameter ____ in

Initial Height of Water in Casing _____ ft. = volume _____ gal.

_____ Casing Volumes to be Evacuated. Total to be evacuated _____ gal.

EVACUATION METHOD: Pump # and type _____ Hose # and type _____

Bailer# and type _____ Dedicated _____ (Y/N)

Other _____

Evacuation Time: Stop _____ _____ _____

Start _____ _____ _____

Total Evacation Time _____

Total Evacuated Prior to Sampling _____ gal.

Evacuation Rate _____ gal. per minute

Depth to Water during Evacuation _____ ft. / _____ time

Depth to Water at Sampling _____ ft / NA time

Evacuated Dry? _____ After _____ gal. Time _____

80% Recovery = _____

% Recovery at Sample Time _____ Time _____

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number _____

Calibration: _____ 4.0 _____ 7.0 _____ 10.0

Measured:	SC/µmhos	pH	T°C	Time	Volume Evacuated (gal.)

SAMPLE: Color Clear Odor None

Description of matter in sample: None

Sampling Method: Decanted from WA teflon bailer 1½" x 24" SS using Arrowhead distilled water from 1 gal plastic container MIL EXPO 10/1/93 lot 13:46

Sample Port: Rate — gpm Totalizer — gal.

Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	071-22	w/cy	40ml	N	Y	None	EPA 8015/602	N	NET

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

ATTACHMENT B

ANALYTIC REPORT AND CHAIN-OF-CUSTODY FORM

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Tom Fojut
Weiss Associates
5500 Shellmound St.
Emeryville, CA 94608

Date: 08-07-91
NET Client Acct No: 18.09
NET Pacific Log No: 8985
Received: 08-01-91 0800

Client Reference Information

SHELL, 29 Wildwood Ave., Piedmont, Project: 81-463-01

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

NET Pacific, Inc

Client No: 18.09 Date: 08-07-91
©Client Name: Weiss Associates
NET Log No: 8985 Page: 2

Ref: SHELL, 29 Wildwood Ave., Piedmont, Project: 81-463-01

			Descriptor, Lab No. and Results		
			071-01	071-02	
			07-30-91	07-30-91	
Parameter	Method	Reporting Limit	93418	93419	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			08-04-91	08-04-91	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	ND	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			08-04-91	08-04-91	
Benzene		0.5	ND	ND	ug/L
Ethylbenzene		0.5	ND	ND	ug/L
Toluene		0.5	ND	0.7	ug/L
Xylenes, total		0.5	ND	ND	ug/L

NET Pacific, Inc

Client No: 18.09 Date: 08-07-91
Client Name: Weiss Associates
NET Log No: 8985 Page: 3

Ref: SHELL, 29 Wildwood Ave., Piedmont, Project: 81-463-01

			Descriptor, Lab No. and Results		
			071-03 07-30-91	071-04 07-30-91	
Parameter	Method	Reporting Limit	93420	93421	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			5	1	
DATE ANALYZED			08-04-91	08-04-91	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	3.3	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			5	1	
DATE ANALYZED			08-04-91	08-04-91	
Benzene		0.5	160	ND	ug/L
Ethylbenzene		0.5	15	ND	ug/L
Toluene		0.5	13	ND	ug/L
Xylenes, total		0.5	87	ND	ug/L

NET Pacific, Inc

Client No: 18.09 Date: 08-07-91
Client Name: Weiss Associates
NET Log No: 8985 Page: 4

Ref: SHELL, 29 Wildwood Ave., Piedmont, Project: 81-463-01

			Descriptor, Lab No. and Results		
			071-05 07-30-91	071-E4 07-30-91	
Parameter	Method	Reporting Limit	93422	93423	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (WATER)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			08-04-91	08-04-91	
METHOD GC FID/5030			--	--	
as Gasoline		0.05	0.09	ND	mg/L
METHOD 602			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			08-04-91	08-04-91	
Benzene		0.5	ND	ND	ug/L
Ethylbenzene		0.5	ND	ND	ug/L
Toluene		0.5	ND	0.6	ug/L
Xylenes, total		0.5	ND	ND	ug/L

NET Pacific, Inc

Client No: 18.09 Date: 08-07-91
Client Name: Weiss Associates
NET Log No: 8985 Page: 5

Ref: SHELL, 29 Wildwood Ave., Piedmont, Project: 81-463-01

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results 071-21 07-30-91 93424	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-04-91	
METHOD GC FID/5030			--	
as Gasoline		0.05	ND	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			08-04-91	
Benzene		0.5	ND	ug/L
Ethylbenzene		0.5	ND	ug/L
Toluene		0.5	ND	ug/L
Xylenes, total		0.5	ND	ug/L

Ref: SHELL, 29 Wildwood Ave., Piedmont, Project: 81-463-01

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	0.05	mg/L	120	ND	112	118	5.2
Benzene	0.5	ug/L	83	ND	94	107	13
Toluene	0.5	ug/L	89	ND	99	108	8.7

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

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

Method References

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

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

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

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

WEISS ASSOCIATES
5500 Shellmound St., Emeryville, CA 94608
Phone: 415-547-5420 FAX: 415-547-5043

Shell Service Station Address:
29 WILDWOOD AVENUE
PIEDMONT CA

Shell Contact: KURT MILLER
WIC #: 204-6001-0109
~~AFE #:~~ 5461

Please send analytic results
and a copy of the signed chain of custody form to:

TOM FOJUT

8985

Project ID: 81-463-01

CHAIN-OF-CUSTODY RECORD AND ANALYTIC INSTRUCTIONS

Lab Personnel: 1) Specify analytic method and detection limit in report.
2) Notify us if there are any anomalous peaks on GC or other scans.
3) ANY QUESTIONS/CLARIFICATIONS: CALL US.

Sampled by: Paul Cardoza

Laboratory Name: NET - Santa Rosa

No. of Containers	Sample ID	Container Type	Sample Date	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analyze for	Analytic Method	Turn[5]	COMMENTS
3	071-01	W/CH	7/30/91	40ml	N	Y	None	TPH-G/BETX	EPA 8015/602	N	
	071-02										
	071-03										
	071-04										
	071-05 (60)								EPA 8015/~~602~~ (PC)		
	071-~~06~~ E4										
	071-21										
	071-22							HOLD (PD)	HOLD, PENDING		ANALYTICAL RESULTS--

CUSTODY SEALED @ by Weiss

1 Paul Cardoza 7/30/91 15:45
Released by (Signature), Date

1 Weiss Assoc. 7/31/91
Affiliation

2 Ronald C. Jensen
Received by (Signature), Date

2 Weiss assoc.
Affiliation

3 Ronald C. Jensen 7/31/91
Released by (Signature), Date

3 Weiss assoc. 1545
Affiliation

4 Jeff Nicholas 7/31/91
Shipping Carrier, Method, Date

4 NET 15:45
Affiliation

5 Jeff Nicholas 7/31/91
Released by (Signature), Date

5 NET 19:00
Affiliation

6 [signature] 8/1/91
Received by Lab Personnel, Date

6 NET Pacific
Affiliation, Telephone

x yes
Seal intact?

1 Sample Type Codes: W = Water, S = Soil, Describe Other; Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B - Clear/Brown Glass, Describe Other;
Cap Codes: PT = Plastic, Teflon Lined 2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 Week, R = 24 Hour, HOLD (write out)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

Samples stored 7/30/91 → 7/31/91 in locked, secure area

F:\ALL\ADMIN\FORMS\COCSHELL.WP2

RECEIVED FROM SECURE AREA