

TRANSMITTAL LETTER

FROM: Tom Fojut

DATE: July 9, 1991

TO: Lowell Miller
Alameda County Department
of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621-1426

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

SUBJECT: Shell Service Stations

JOB: 81-422-01
81-423-01

WIC #204-6852-1404
1784 150th Avenue
San Leandro, CA 94578

WIC #204-6852-0703
1285 Bancroft Avenue
San Leandro, CA 94577

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 reports for the subject sites

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 4023, Concord, California 94524

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

July 8, 1991

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

Re: Shell Service Station
WIC #204-6852-1404
1784 150th Avenue
San Leandro, California 94578
WA Job #81-422-01

Dear Mr. Miller:

This letter describes Weiss Associates' (WA) second quarter 1991 activities at the Shell service station referenced above (Figure 1.) This status report satisfies the quarterly reporting requirements outlined in our February 23, 1990 workplan, and 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 second quarter 1991, and
- Proposed work for the third quarter 1991.

The proposed ground water sampling frequency modification for this site, which is on hold pending approval of the Alameda County Department of Environmental Health, is presented in Table 1.

SECOND QUARTER 1991 ACTIVITIES

During this quarter, WA:

- Collected ground water samples from the one site well,
- Measured the ground water depth and determined the ground water elevation, and

- Analyzed the ground water samples and tabulated the analytic results.

These activities are described below.

Ground Water Sampling

WA collected ground water samples from monitoring well MW-1 (Figure 2) on June 7, 1991, as part of the quarterly ground water monitoring program at Shell Service Station WIC #204-6852-1404 in San Leandro, California. The samples contained benzene and 1,2-dichloroethane (1,2-DCA) above California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water.

Sampling Personnel: WA Environmental Technician Brian Busch

Method of Purging Well: Dedicated PVC bailer

Volume of Water Purged Prior to Sampling:

- Well MW-1 was purged of four well-casing volumes, about 55 gallons.

Method of Collecting Ground Water Samples:

- Drawn through the sampling port on the side of the dedicated PVC bailer

Methods of Containing Ground Water Samples:

- 40 ml glass volatile organic analysis vials, preserved with hydrochloric acid and packed in protective foam sleeves for total petroleum hydrocarbons as gasoline (TPH-G) and benzene, ethylbenzene, toluene, and xylene (BETX), and halogenated volatile organic compound (HVOC) analyses
- 1000 ml amber glass bottles for total petroleum hydrocarbons as diesel (TPH-D) analysis

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

Water Samples Transported to:

- National Environmental Testing Pacific, Inc. (NET), Santa Rosa, California, and were received on June 11, 1991

Quality Assurance/Quality Control:

- A travel blank was submitted for analysis.
- An equipment blank was not necessary because a bailer is dedicated to well MW-1.

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

Ground Water Elevation

The depth to water was measured in well MW-1 on June 7, 1991. The ground water elevation increased 0.15 ft from the previous quarter. Depth to water measurements and ground water elevations are presented in Table 2.

Chemical Analyses

The Ground Water Samples were Analyzed for:

- TPH-G by modified EPA Method 8015,
- TPH-D by modified EPA Method 8015,
- BETX by EPA Method 602, and
- HVOCs by EPA Method 601.

The laboratory analyzed the samples on June 11, 12 and 13, 1991. The results are presented in Table 3 and the analytic reports are included in Attachment B.

Discussion of Analytic Results of Ground Water for this Quarter:

- Samples contained benzene and 1,2-DCA above the DHS MCLs for drinking water.
- TPH-G and BETX concentrations increased from the previous quarter.

ANTICIPATED WORK FOR THIRD QUARTER 1991

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

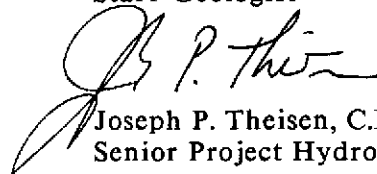
- Continue quarterly monitoring of ground water at this site, and
- Prepare a quarterly status report presenting all data generated during the previous quarter including water sampling results and analysis.

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:fer

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

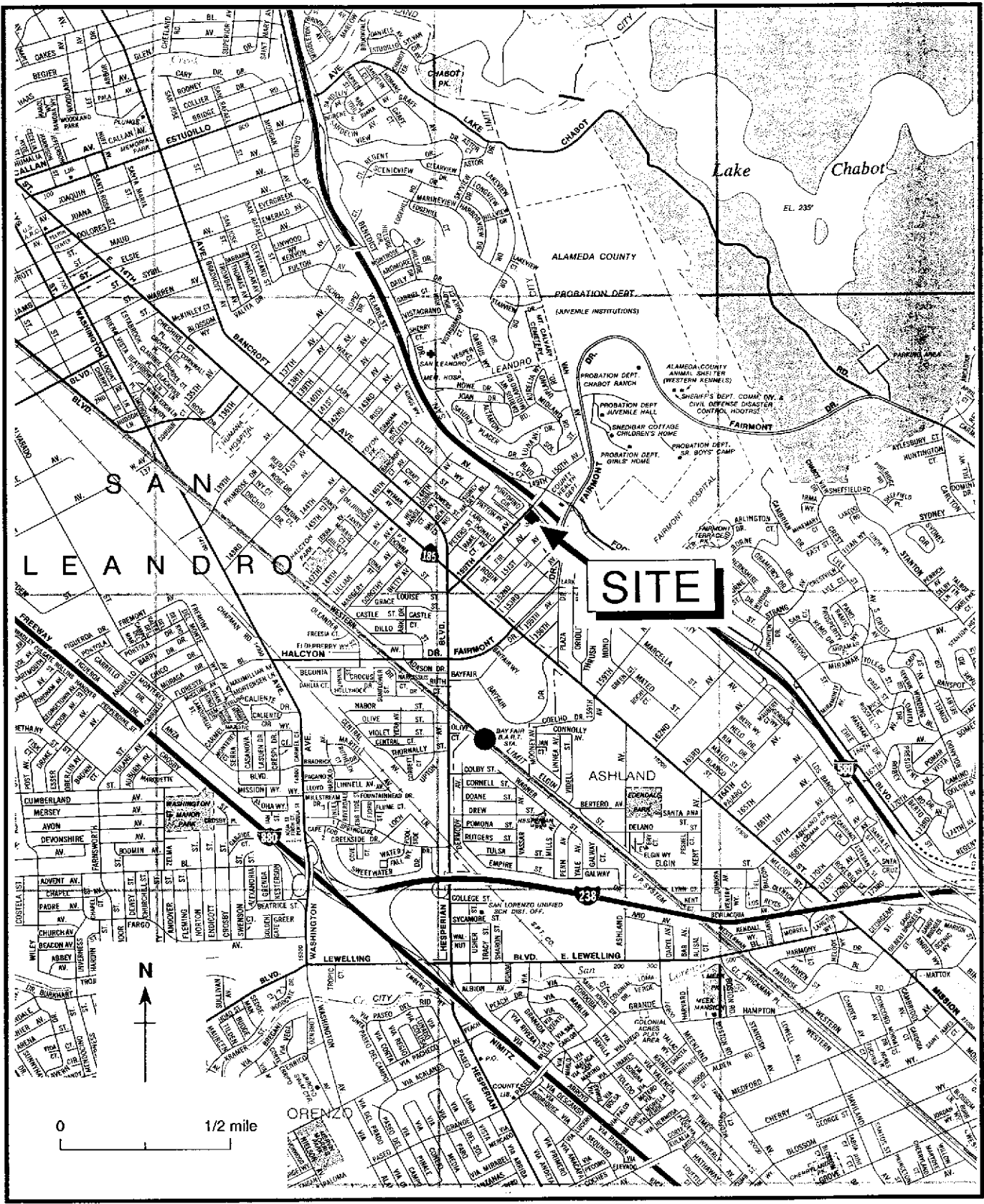


Figure 1. Site Location Map - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

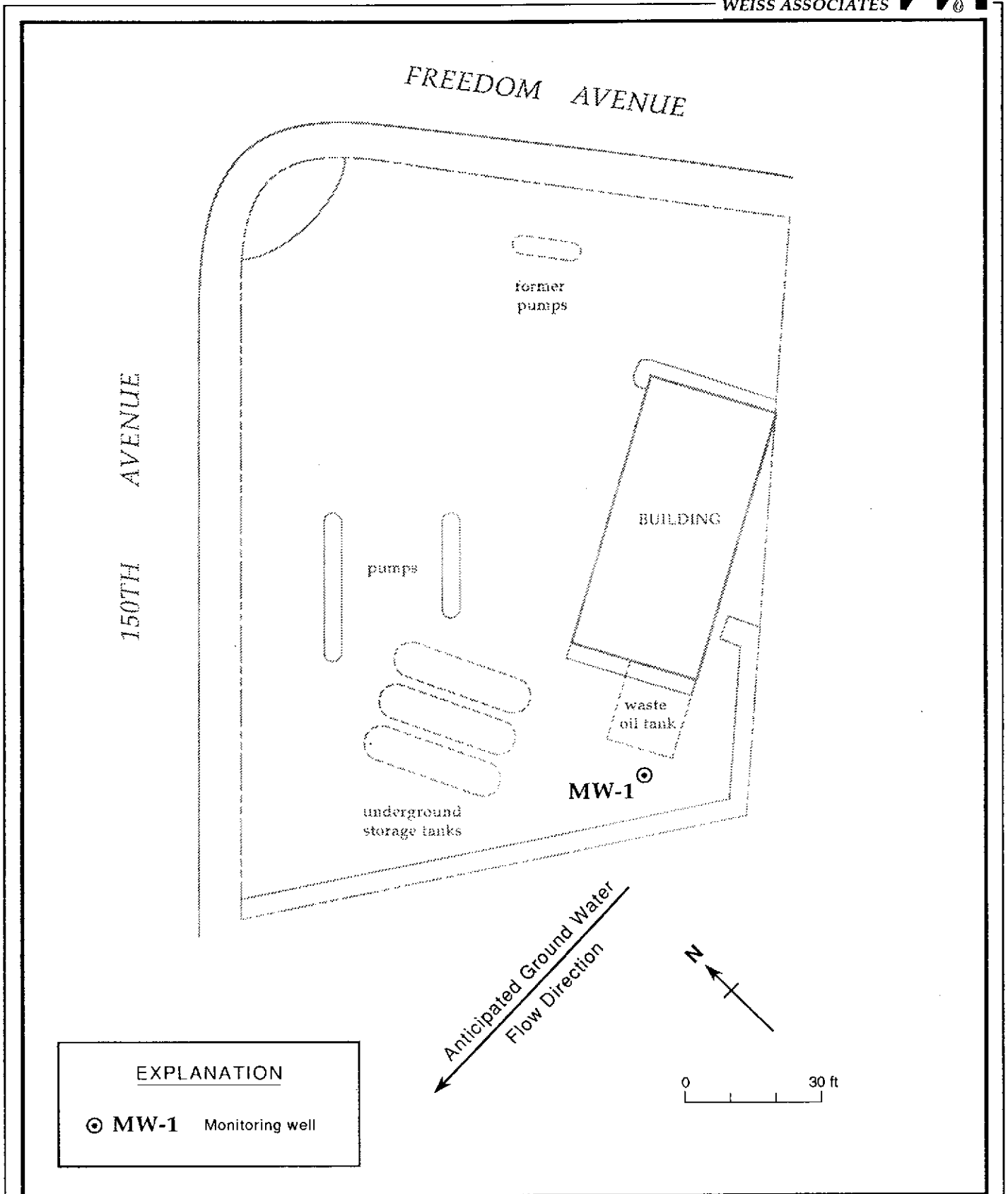


Figure 1. Monitoring Well Location - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

TABLE 1. Proposed Modification to Ground Water Sampling Frequency, Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Well ID	Current Sampling Frequency	Recommended Future Sampling Frequency	Rationale for Recommended Sampling Frequency
MW-1	Quarterly	Semi-Annually	Source area well; stable hydrocarbon concentration for five quarters

TABLE 2. Ground Water Elevations, Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	03/08/90	49.13	25.29	23.84
	06/12/90		25.85	23.28
	09/13/90		27.49	21.64
	12/18/90		27.41	21.72
	03/07/91		25.79	23.34
	06/07/91		25.64	23.49

TABLE 3. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-0703, 1784 150th Avenue, San Leandro, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G ----->	TPH-D ^a ----->	B	E	T mg/l (ppm)	X	TOG	1,2-DCA
MW-1	03/08/90	25.29	0.51	0.12	0.0015	<0.0005	0.0008	0.0054	<10	0.012
	06/12/90	25.85	0.39	0.10	0.086	0.0007	0.0013	0.0062	<10	<0.0004
	09/13/90	27.49	0.10	0.13	0.056	0.0024	0.00075	0.0028	<10	<0.0004 ^b
	12/18/90	27.41	0.48	<0.05	0.054	0.0033	0.0017	0.0037	<10	0.0053
	03/07/91	25.79	0.08	<0.05	0.026	0.0012	<0.0005	<0.0015	---	0.0067
	06/07/91	25.64	0.51	<0.05	0.130	0.0061	0.0038	0.011	---	0.0079
Trip Blank	03/08/90		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	06/12/90		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	12/18/90		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	03/07/91		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	06/07/91		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
Bailer Blank	03/08/90		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
DHS MCLs			NE	NE	0.001	0.680	0.10 ^c	1.750	NE	0.0005

Abbreviations:

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Modified EPA Method 8015
 TPH-D = Total Petroleum Hydrocarbons as Diesel by Modified EPA Method 8015
 B = Benzene by EPA Method 602
 E = Ethylbenzene by EPA Method 602
 T = Toluene by EPA Method 602
 X = Xylenes by EPA Method 602
 TOG = Total non-polar oil and grease by American Public Health Association Standard Methods 503A&E
 1,2-DCA = 1,2-Dichloroethane by EPA Method 601
 --- = Not analyzed
 <n = Not detected above detection limit of n ppm
 DHS MCLs = California Department of Health Services maximum contaminant levels
 NE = Not established

Analytical Laboratory:

National Environmental Testing Pacific, Inc., Santa Rosa, California

Notes:

- ^a = Samples analyzed for total petroleum hydrocarbons as motor oil (TPH-M) as part of the TPH-D analysis. No TPH-M has been detected to date above detection limit of 0.5 ppm.
- ^b = Tetrachloroethene (PCE) detected at 0.024 ppm by EPA Method 601; DHS MCL for PCE = 0.005 ppm.
- ^c = DHS recommended action level for drinking water, MCL not established



ATTACHMENT A
WATER SAMPLE COLLECTION RECORDS



WATER SAMPLING DATA

Well Name MW-1 Date 6/7/91 Time of Sampling 14:34
Job Name Shell San Leandro I Job Number 81-422-01 Initials BB
Sample Point Description M (M = Monitoring Well)

Location Back corner of lot, near restroom & dumpster

WELL DATA: Depth to Water 25.64 ft (static, pumping) @ 13:44 Depth to Product ft.
Product Thickness ft Well Depth 45 ft (spec) Well Depth 46.41 ft (sounded) Well Diameter 4 in
Initial Height of Water in Casing 20.77 ft = volume 13.6 gal.
Casing Volumes to be Evacuated. Total to be evacuated 54.4 gal.

EVACUATION METHOD: Pump # and type Hose # and type
Bailer # and type 3"x3' PVC Dedicated YES (Y/N)
Other

Evacuation Time: Stop 14:32
Start 14:00
Total Evacuation Time 32 min
Total Evacuated Prior to Sampling 55 gal.
Evacuation Rate 1.71 gal. per minute

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
V2" casing = 0.163 gal/ft
V3" casing = 0.367 gal/ft
V4" casing = 0.653 gal/ft
V4.5" casing = 0.826 gal/ft
V6" casing = 1.47 gal/ft
V8 casing = 2.61 gal/ft

Depth to Water during Evacuation ft. time
Depth to Water at Sampling 25.59 ft. 14:47 time
Evacuated Dry? NO After gal. Time
80% Recovery =
% Recovery at Sample Time Time

CHEMICAL DATA: Meter Brand/Number

Calibration: 4.0 7.0 10.0

Table with columns: Measured, SC/umhos, pH, T°C, Time, Volume Evacuated (gal). Contains handwritten 'N/A' and a diagonal line through the table.

SAMPLE: Color Clear Odor NONE
Description of matter in sample: minute suspended silt particles
Sampling Method: sampled from port on side of clear PVC bailer
Sample Port: Rate gpm Totalizer gal.
Time

Table with columns: # of Cont., Sample ID, Cont. Type, Vol, Fil, Ref, Preservative, Analytic Method, Turn, LAB. Contains handwritten entries for samples 061-01 and 061-02.

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 TRAVEL BLANKS Date 6/7/91 Time of Sampling 12:30
 Job Name Shell San Leandro 1 Job Number 81-422-01 Initials BB
 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 Evacuation 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. _____ time
 Evacuated Dry? _____ After _____ gal. _____ Time _____
 80% Recovery = _____
 % Recovery at Sample Time _____ Time _____

Formula/Conversions

- r = well radius in ft.
- h = ht of water col in ft.
- vol. in cyl. = $\pi r^2 h$
- 7.48 gal/ft³
- 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
- V_{8"} casing = 2.61 gal/ft

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

Measured:	SC/ μ mhos	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	061-21	W/W	40ml	NO	YES	NONE	EPA8015/602	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

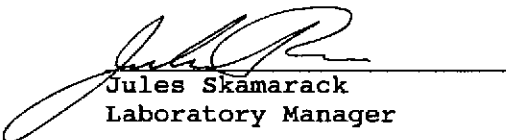
Date: 06-17-91
NET Client Acct. No: 18.09
NET Pacific Log No: 7964
Received: 06-11-91 0800

Client Reference Information

SHELL 1784 150th Ave., San Leandro, Project: 81-422-01

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:

A handwritten signature in black ink, appearing to read "Jules Skamarack", is written over a horizontal line. Below the line, the name and title are printed.
Jules Skamarack
Laboratory Manager

Enclosure(s)



NET Pacific, Inc.

Client Acct: 18.09
Client Name: Weiss Associates
NET Log No: 7964

Date: 06-17-91
Page: 2

Ref: SHELL 1784 150th Ave., San Leandro, Project: 81-422-01

SAMPLE DESCRIPTION: 061-01 06-07-91
LAB Job No: (-87842)

Parameter	Method	Reporting Limit	Results	Units
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METHOD 601

DATE ANALYZED			06-11-91	
DILUTION FACTOR*			1	
Bromodichloromethane		0.4	ND	ug/L
Bromoform		0.4	ND	ug/L
Bromomethane		0.4	ND	ug/L
Carbon tetrachloride		0.4	ND	ug/L
Chlorobenzene		0.4	ND	ug/L
Chloroethane		0.4	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ug/L
Chloroform		0.4	ND	ug/L
Chloromethane		0.4	ND	ug/L
Dibromochloromethane		0.4	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ug/L
1,1-Dichloroethane		0.4	ND	ug/L
1,2-Dichloroethane		0.4	7.9	ug/L
1,1-Dichloroethene		0.4	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ug/L
1,2-Dichloropropane		0.4	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ug/L
Methylene Chloride		10	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ug/L
Tetrachloroethene		0.4	ND	ug/L
1,1,1-Trichloroethane		0.4	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ug/L
Trichloroethene		0.4	ND	ug/L
Trichlorofluoromethane		0.4	ND	ug/L
Vinyl chloride		2.0	ND	ug/L



NET Pacific, Inc.

Client Acct: 18.09
Client Name: Weiss Associates
NET Log No: 7964

Date: 06-17-91
Page: 3

Ref: SHELL 1784 150th Ave., San Leandro, Project: 81-422-01

SAMPLE DESCRIPTION: 061-01 06-07-91
LAB Job No: (-87842)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			06-12-91	
METHOD GC FID/5030			--	
as Gasoline		0.05	0.51	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			06-12-91	
Benzene		0.5	130	ug/L
Ethylbenzene		0.5	6.1	ug/L
Toluene		0.5	3.8	ug/L
Xylenes, total		0.5	11	ug/L
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (WATER)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			06-12-91	
DATE ANALYZED			06-13-91	
METHOD GC FID/3510			--	
as Diesel		0.05	ND	mg/L
as Motor Oil		0.5	ND	mg/L



NET Pacific, Inc.

Client Acct: 18.09
Client Name: Weiss Associates
NET Log No: 7964

Date: 06-17-91
Page: 4

Ref: SHELL 1784 150th Ave., San Leandro, Project: 81-422-01

SAMPLE DESCRIPTION: 061-21 06-07-91
LAB Job No: (-87843)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			06-12-91	
METHOD GC FID/5030			--	
as Gasoline		0.05	ND	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			06-12-91	
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



Client Acct: 18.09
 Client Name: Weiss Associates
 NET Log No: 7964

Date: 06-17-91
 Page: 5

NET Pacific, Inc.

Ref: SHELL 1784 150th Ave., San Leandro, Project: 81-422-01

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	0.05	mg/L	95	ND	69	65	6.0
Motor Oil	0.5	mg/L	83	ND	N/A	N/A	N/A

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	0.05	mg/L	108	ND	111	94	16
Benzene	0.5	ug/L	88	ND	103	91	13
Toluene	0.5	ug/L	93	ND	102	93	8.8

COMMENT: Blank Results were ND on other analytes tested.

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Chlorobenzene	0.4	ug/L	97	ND	94	99	5.7
1,1-DCE	0.4	ug/L	98	ND	97	94	3.1
TCE	0.4	ug/L	98	ND	92	98	5.3

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, wet-weight basis (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference, $100 \{ \text{Value 1} - \text{Value 2} \} / \text{mean value}$.
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

Method References

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

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

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

SM: see "Standard Methods for the Examination of Water & Wastewater", 16th Edition, APHA, 1985.

