Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Operations

D. Moller
Manager, Operations
S. L. Patterson
Area Manager, Operations
C. G. Trimbach
Manager, Engineering

July 3, 1990

Mr. Hugh Murphy
Hayward City Fire Department
22300 Foothill Boulevard
Hayward, California 94501

Re: Chevron Service Station #90260
21995 Foothill Blvd.
Hayward, California

Dear Mr. Murphy:

Please find attached the technical report for the groundwater sampling prepared by Weiss Associates (WA), dated April 30, 1990, and conducted at the above referenced site. Chevron currently has six wells on site and four wells off-site. Groundwater flow is southwest and depth to groundwater is approximately 12 to 14 feet. As indicated in the report, all water samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G), and aromatic hydrocarbons (BETX). Groundwater samples from all monitoring wells except MW-10, contained benzene, ethylbenzene, toluene, and xylene above the California Department of Health Services action level for drinking water. MW-8 contained free floating hydrocarbons, therefore, it was not sampled, however, it was bailed and will continue to be bailed on a monthly basis.

Our consultant, WA, has evaluated the monitoring program at this site. Of the ten monitoring wells currently sampled quarterly, WA has recommended that MW-10 should be sampled anually. This recommedation was based on California Water Quality Control Board's groundwater monitoring guidelines and factors such as reliability of the groundwater quality analytic data, trend of the dissolved hydrocarbon concentration in the wells, and location of the well in relation to the hydrocarbon source. In accordance with their recommedation, Chevron is requesting sampling frequency modification for MW-10. If we do not receive word to the contrary we will initiate the program on the next sampling cycle. Chevron will re-evaluate the modification anually, and will continue to monitor the site and report findings on a quarterly basis.

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WA and Solarchem are developing a remediation system for this site, and a report will be submitted to your office for review.

I declare under penalty of perjury that the information contained in the attached report is true and correct, and that any recommended actions are appropriate under the current circumstances, to the best of my knowledge.

If you have any questions regarding this report, please feel free to call Walt Posluszny at (415) 842-9040.

Very Truly Yours,

D. Moller

By: _____
Walter F. Posluszny Jr.
Environmental Engineer
Chevron U.S.A.

cc: Ms. Penny Silzer, RWQCB
Ms. Linda Spencer, ACWD
Mr. Rafat Shahid, Alameda County
Ms. Suzanne Larson, City of Hayward
File(CPVMC-90260R5 LISTING)

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

April 30, 1990

Walter F. Posluszny
Chevron USA
P.O. Box 5004
San Ramon, CA 94583-0804

Re: Chevron Service Station #90260
21995 Foothill Boulevard
Hayward, California
WA Job #4-310-01

Dear Mr. Posluszny:

Weiss Associates (WA) collected ground water samples from nine of ten monitoring wells on April 3, 1990 as part of the quarterly ground water monitoring program at Chevron Service Station #90260 in Hayward, California (Figure 1). Monitoring well MW-8 (Figure 2) was not sampled due to the presence of free-floating hydrocarbons. Ground water samples from all monitoring wells, except well MW-10, contained benzene, ethylbenzene and xylenes above the California Department of Health Services (DHS) maximum contaminant level (MCL) for drinking water and toluene above the DHS recommended action level for drinking water.

GROUND WATER SAMPLING

Personnel: Jim Martin and David Charles
WA Position: Environmental Technicians
Date of sampling: April 3, 1990

Monitoring/other wells sampled: MW-4 through MW-7, and MW-9 through MW-13

- Wells not sampled due to presence of free-floating hydrocarbons: MW-8

Method of purging wells:

- Dedicated PVC bailers

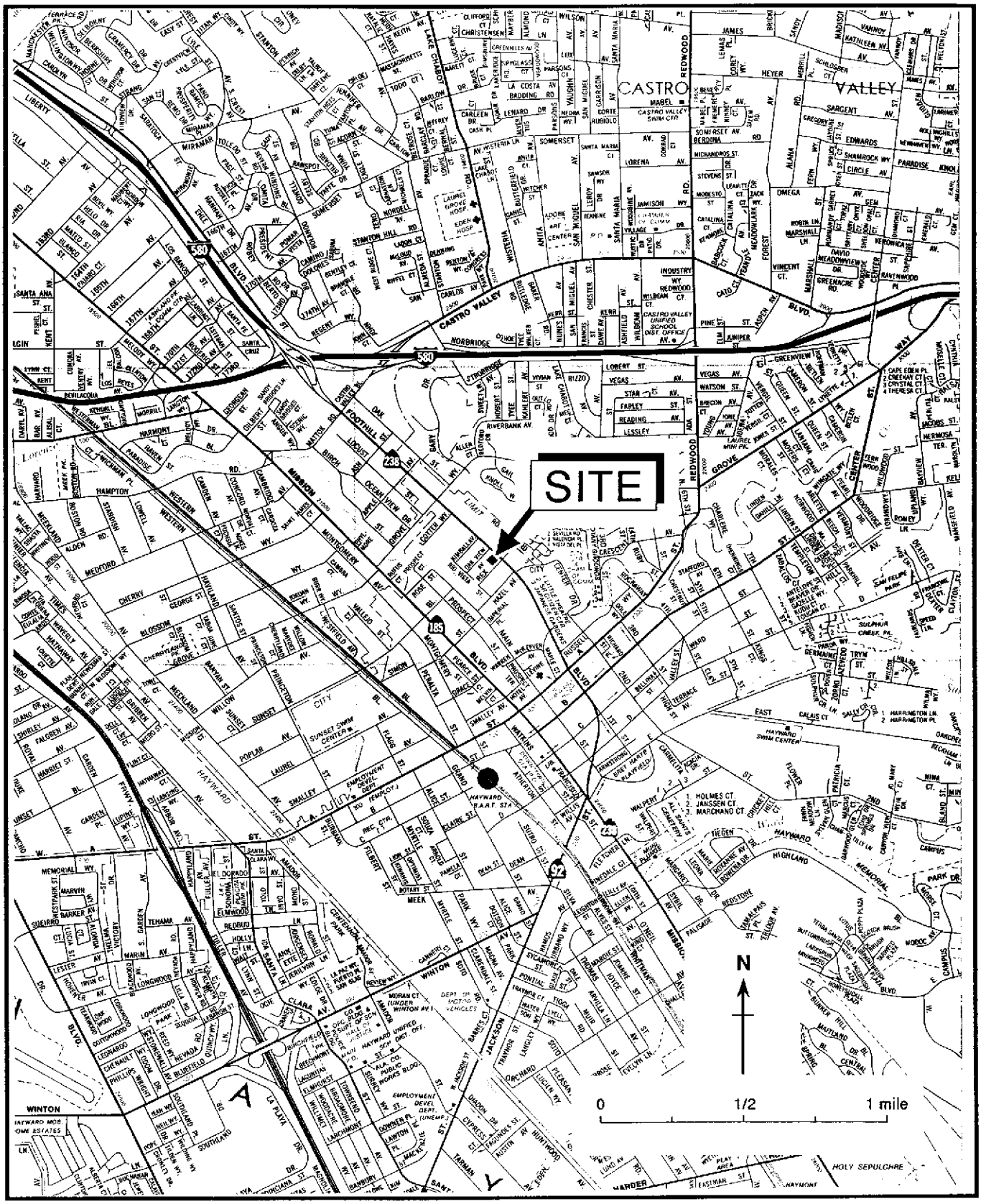


Figure 1. Site Location Map - Chevron Service Station #90260, 21995 Foothill Blvd., Hayward, California

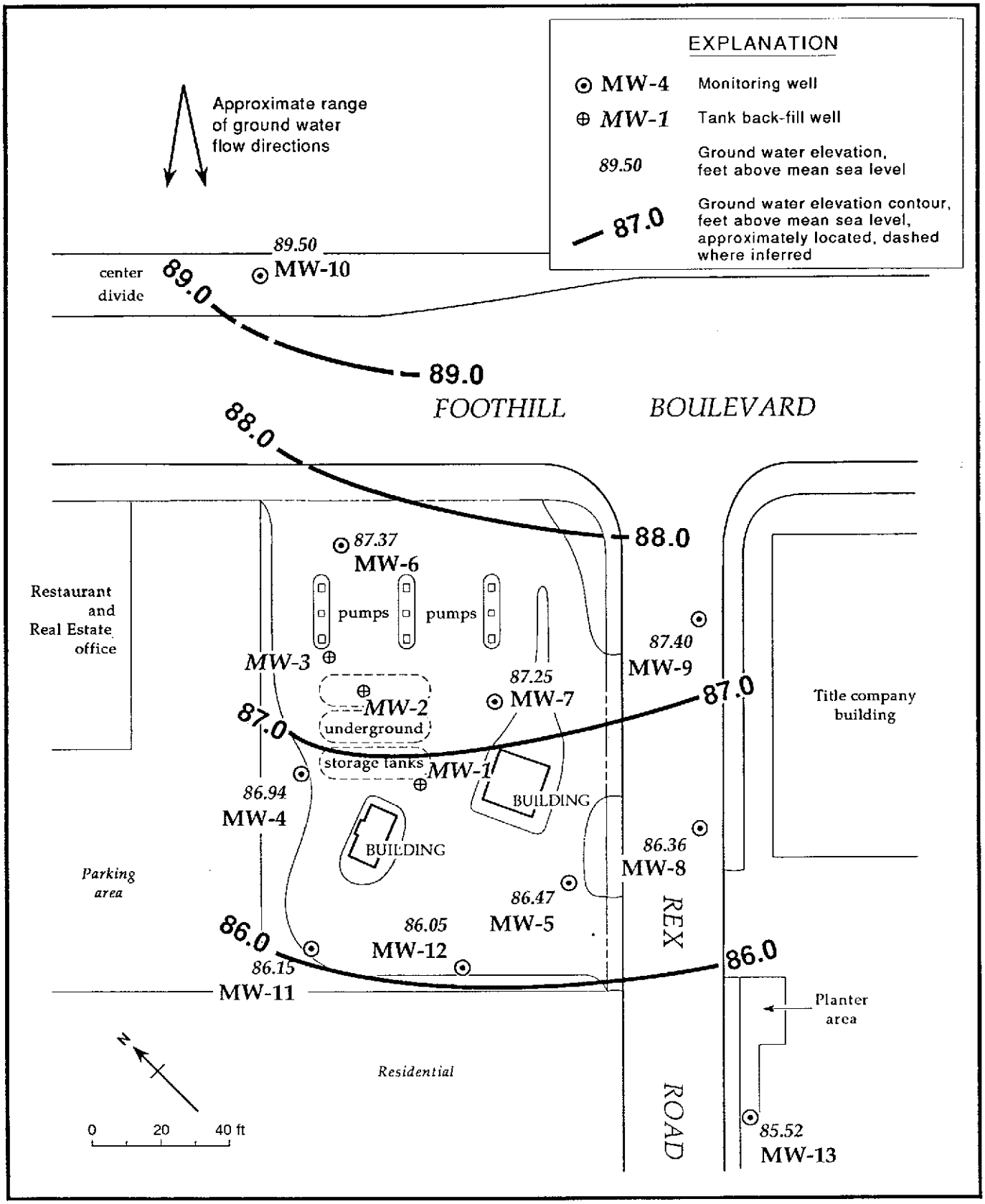


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - April 3, 1990 - Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California

Volume of water purged prior to sampling:

- Wells that were purged of about three well-casing volumes, approximately 9.5 to 28 gallons each: MW-4, MW-10, MW-11, MW-12, MW-13

- Wells that were purged dry; water level was allowed to recover to within 80 percent of static water level or for at least two hours prior to sampling: MW-5, MW-6, MW-7, MW-9

Method of ground water sample collection:

- Drawn through sampling port on side of dedicated PVC bailers

Method of containing ground water samples:

- 40 ml glass, volatile organic analysis (VOA) vials, preserved with hydrochloric acid and sealed in plastic guard bottles containing activated carbon pellets

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

Water samples transported to:

- Superior Analytical Laboratory, Inc., San Francisco, California

Samples were received by the laboratory on April 4, 1990.

Quality assurance/quality control:

- A travel blank was submitted for analysis.
- An equipment blank was not necessary because all bailers are dedicated to specific wells.

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

GROUND WATER ELEVATIONS

Water levels were measured in: all wells

Water levels were measured on April 3, 1990.

Direction of ground water flow: Generally southwestward

Water levels and ground water elevations are presented in Table 1. Ground water elevation contours are plotted on Figure 2. The ground water flow direction between wells MW-10 and MW-6 appears to have shifted westward from the previous quarter. The overall flow direction, however, is consistent with previous flow directions.

- Ground water elevations in monitoring wells MW-11, MW-12 and MW-13 are at historical highs.
- All other water levels are generally consistent with historical results.

CHEMICAL ANALYSES

The ground water samples were analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 8015
- Benzene, ethylbenzene, toluene and xylenes (BETX) by EPA Method 8020

Samples were analyzed by the laboratory on April 9 and 10, 1990. The results are presented in Table 2 and the analytic reports are included as Attachment C.

- Isoconcentration maps of TPH-G and benzene are included as Figures 3 and 4, respectively.

TABLE 1. Ground Water Elevation Data, Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Thickness of Floating Hydrocarbons (ft)	Water Elevation (ft above msl)
MW-4	6/15/88	100.75	12.92	---	87.83
	9/27/88		14.22	---	86.53
	1/05/89		13.20	---	87.55
	4/06/89		12.32	---	88.43
	6/28/89		14.25	---	86.50
	10/03/89		14.75	---	86.00
	1/04/90		14.75	---	86.00
	4/03/90		13.81	---	86.94
MW-5	6/15/88	99.97	12.30	---	87.67
	9/27/88		13.25	---	86.72
	1/05/89		12.70	---	87.27
	4/06/89		12.22	---	87.75
	6/28/89		13.81	---	86.16
	10/03/89		14.27	---	85.70
	1/04/90		14.31	---	85.66
	4/03/90		13.50	---	86.47
MW-6	6/15/88	101.43	13.51	---	87.92
	9/27/88		14.56	---	86.87
	1/05/89		13.48	---	87.95
	4/06/89		12.60	---	88.83
	6/28/89		14.58	---	86.85
	10/03/89		13.03	---	88.40
	1/04/90		15.08	---	86.35
	4/03/90		14.06	---	87.37
MW-7	6/15/88	100.91	12.57	---	88.34
	9/27/88		13.60	---	87.31
	1/05/89		12.98	---	87.93
	4/06/89		12.34	---	88.57
	6/28/89		14.08	---	86.83
	10/03/89		14.53	---	86.38
	1/04/90		14.49	---	86.42
	4/03/90		13.66	---	87.25
MW-8	1/05/89	99.67	12.02	---	87.65
	4/06/89		11.78	---	87.89
	6/28/89		13.40	---	86.27
	10/03/89		13.84	0.11	85.91*
	1/04/90		13.99	0.10	85.77*
	4/03/90		13.07	0.30	86.36*

-- Table 1 continues on next page --

TABLE 1. Ground Water Elevation Data, Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California (continued)

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Thickness of Floating Hydrocarbons (ft)	Water Elevation (ft above msl)
MW-9	1/05/89	101.15	12.63	---	88.52
	4/06/89		12.46	---	88.69
	6/28/89		14.04	---	87.11
	10/03/89		14.61	---	86.54
	1/04/90		14.59	---	86.56
	4/03/90		13.75	---	87.40
MW-10	1/05/89	102.36	12.64	---	89.72
	4/06/89		11.38	---	90.98
	6/28/89		13.64	---	88.72
	10/03/89		13.85	---	88.51
	1/04/90		13.75	---	88.61
	4/03/90		12.86	---	89.50
MW-11	6/28/89	99.97	14.33	---	85.64
	10/03/89		14.61	---	85.36
	1/04/90		14.55	---	85.42
	4/03/90		13.82	---	86.15
MW-12	6/28/89	99.64	14.10	---	85.54
	10/03/89		14.30	---	85.34
	1/04/90		14.35	---	85.29
	4/03/90		13.59	---	86.05
MW-13	6/28/89	98.47	13.22	---	85.25
	10/03/89		13.54	---	84.93
	1/04/90		13.64	---	84.83
	4/03/90		12.95	---	85.52

* = Ground water elevation corrected for free-floating hydrocarbons by the formula: Ground Water Elevation = Top-of-casing elevation - Depth to ground water + (0.8 x hydrocarbon thickness)

TABLE 2. Analytic Results for Ground Water, Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California

Sample ID	Sample Date	Analytic Method	Analytical Lab	TPH-G	B	E	T	X	EDC	EDB	VOCs
				<----------parts per billion (µg/L)---------->							
MW-4	2/05/88	8015/602	B&C	88,000	24,000	1,700	19,000	10,000	---	---	---
	6/15/88	8015/602	B&C	95,000	45,000	2,100	30,000	17,000	---	---	---
	9/27/88	524.2/8240	CCAS	500,000	41,000	<5,000	27,000	16,000	<5,000	<5,000	---
	9/27/88*	524.2/8240	CCAS	88,000	1,200	1,600	4,100	12,000	270	230	---
	1/05/89	8015/8020	SAL	64,000	41,000	2,700	29,000	14,000	---	---	---
	6/28/89	8015/8020	SAL	110,000	34,000	2,400	24,000	13,000	---	---	---
	10/03/89	8015/8020	SAL	240,000	36,000	3,200	31,000	19,000	---	---	---
	1/04/90	8015/8020	SAL	130,000	33,000	2,400	28,000	14,000	---	---	---
	4/03/90	8015/8020	SAL	110,000	41,000	2,900	32,000	17,000	---	---	---
MW-5	2/05/88	8015/602	B&C	80,000	16,000	2,600	15,000	17,000	---	---	---
	6/15/88	8015/602	B&C	77,000	42,000	2,500	38,000	16,000	---	---	---
	9/27/88	524.2/8240	CCAS	470,000	39,000	<5,000	32,000	16,000	<5,000	<5,000	---
	9/27/88*	524.2/8240	CCAS	48,000	1,800	1,600	3,500	10,000	410	420	---
	1/05/89	8015/8020	SAL	82,000	44,000	2,400	37,000	14,000	---	---	---
	6/28/89	8015/8020	SAL	80,000	36,000	2,400	24,000	13,000	---	---	---
	10/03/89	8015/8020	SAL	240,000	40,000	2,600	35,000	15,000	---	---	---
	1/04/90	8015/8020	SAL	130,000	37,000	2,400	31,000	13,000	---	---	---
	4/03/90	8015/8020	SAL	120,000	41,000	2,500	33,000	14,000	---	---	---
MW-6	2/05/88	8015/602	B&C	53,000	5,100	2,100	4,400	14,000	---	---	---
	6/15/88	8015/602	B&C	33,000	9,200	520	5,500	20,000	---	---	---
	9/27/88	524.2/8240	CCAS	17,000	2,200	1,700	2,800	5,100	130	<10	---
	1/05/89	8015/8020	SAL	37,000	5,000	2,200	3.400	10,000	---	---	---
	6/28/89	8015/8020	SAL	80,000	7,000	2,000	4,100	9,700	---	---	---
	10/03/89	8015/8020	SAL	110,000	8,500	2,600	5,100	14,000	---	---	---
	1/04/90	8015/8020	SAL	59,000	5,200	2,000	2,600	11,000	---	---	---
	4/03/90	8015/8020	SAL	31,000	6,600	2,200	2,600	12,000	---	---	---
MW-7	2/05/88	8015/602	B&C	81,000	34,000	2,400	36,000	16,000	---	---	---
	6/15/88	8015/602	B&C	77,000	40,000	1,400	41,000	24,000	---	---	---
	9/27/88	524.2/8240	CCAS	30,000	9,700	400	8,900	4,100	2,600	<10	---
	1/05/89	8015/8020	SAL	96,000	36,000	2,800	38,000	16,000	---	---	---
	6/28/89	8015/8020	SAL	110,000	31,000	2,600	30,000	16,000	---	---	---
	10/03/89	8015/8020	SAL	230,000	34,000	2,400	34,000	15,000	---	---	---
	1/04/90	8015/8020	SAL	150,000	41,000	2,400	40,000	15,000	---	---	---
	4/03/90	8015/8020	SAL	100,000	31,000	2,100	28,000	16,000	---	---	---
MW-8	10/27/88	524.2/8240	CCAS	190,000	27,000	2,200	43,000	15,000	<500	<500	---
	1/05/89	8015/8020	SAL	87,000	24,000	3,000	39,000	15,000	---	---	---
	6/28/89	8015/8020	SAL	120,000	22,000	2,900	35,000	16,000	---	---	---
	10/03/89[b]	---	---	---	---	---	---	---	---	---	---
	1/04/89[b]	---	---	---	---	---	---	---	---	---	---
	4/03/90b	---	---	---	---	---	---	---	---	---	---

--Table 2 continues on next page--

TABLE 2. Analytic Results for Ground Water, Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California (continued)

Sample ID	Sample Date	Analytic Method	Analytical Lab	TPH-G	B	E	T	X	EDC	EDB	VOCs
				<----------parts per billion (µg/L)---------->							
MW-9	10/27/88	524.2/8240	CCAS	50,000	2,000	2,000	9,900	14,000	<500	<500	---
	1/05/89	8015/8020	SAL	55,000	670	3,400	8,900	16,000	---	---	---
	6/28/90	8015/8020	SAL	100,000	510	2,600	4,500	13,000	---	---	---
	10/03/89	8015/8020	SAL	130,000	540	3,200	8,000	17,000	---	---	---
	1/04/90	8015/8020	SAL	83,000	600	2,600	4,600	14,000	---	---	---
	4/03/90	8015/8020	SAL	52,000	1,600	3,100	5,400	16,000	---	---	---
MW-10	10/27/88	524.2/8240	CCAS	<500	26	<5	13	<5	<5	<5	---
	1/05/89	8015/8020	SAL	<1,000	<0.3	<0.3	<0.3	<0.3	---	---	---
	6/28/89	8015/8020	SAL	<500	<0.5	<0.5	<0.5	<0.5	---	---	---
	10/03/89	8015/8020	SAL	<500	<0.5	<0.5	<0.5	<0.5	---	---	---
	1/04/90	8015/8020	SAL	<50	0.5	<0.5	1.1	1.7	---	---	---
	4/03/90	8015/8020	SAL	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
MW-11	6/28/89	8015/8240	SAL	60,000	36,000	2,500	13,000	12,000	---	---	ND
	10/03/89	8015/8020	SAL	14,000	4,200	240	1,400	1,300	---	---	---
	1/04/90	8015/8020	SAL	82,000	33,000	2,000	11,000	10,000	---	---	---
	4/03/90	8015/8020	SAL	78,000	35,000	2,300	12,000	12,000	---	---	---
MW-12	6/28/89	8015/8240	SAL	55,000	30,000	2,900	21,000	19,000	---	---	ND
	10/03/89	8015/8020	SAL	170,000	30,000	2,700	23,000	15,000	---	---	---
	1/04/90	8015/8020	SAL	110,000	24,000	2,300	19,000	12,000	---	---	---
	4/03/90	8015/8020	SAL	89,000	41,000	3,300	28,000	17,000	---	---	---
MW-13	6/28/89	8015/8240	SAL	54,000	12,000	1,900	10,000	15,000	---	---	ND
	10/03/89	8015/8020	SAL	120,000	10,000	2,300	10,000	15,000	---	---	---
	1/04/90	8015/8020	SAL	87,000	6,800	2,000	10,000	12,000	---	---	---
	4/03/90	8015/8020	SAL	53,000	12,000	2,900	14,000	17,000	---	---	---
Bailer Blank	1/05/89	8015/8020	SAL	<1,000	<0.3	<0.3	<0.3	<0.3	---	---	---
Trip Blank	1/05/89	8015/8020	SAL	<1,000	<0.3	<0.3	<0.3	<0.3	---	---	---
	10/03/89	8015/8020	SAL	<500	<0.5	<0.5	<0.5	<0.5	---	---	---
	1/04/89	8015/8020	SAL	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	4/03/90	8015/8020	SAL	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
DHS MCLs	-	-	-	NE	1	680	100[a]	1,750	0.5	0.02	V

--Table 2 continues on next page--

TABLE 2. Analytic Results for Ground Water, Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California (continued)

Abbreviations:

TPH-G = Total Petroleum Hydrocarbons as Gasoline
B = Benzene
E = Ethylbenzene
T = Toluene
X = Xylenes
EDC = 1,2-dichloroethane
EDB = Ethylene dibromide
VOCs = Volatile Organic Compounds
--- = Not analyzed
DHS MCLs = Department of Health Services Maximum Contaminant Level
[a] = DHS Recommended Action Level for Drinking Water
NE = DHS action level not established
V = DHS action levels vary, depends on compound
ND = Not detected at detection limits of 500 to 2,000 ppb
* = Samples from MW-4 and MW-5 were analyzed a second time after the holding time expired to confirm the anomalously high TFHC reported in the original analysis. Although the samples were preserved with $NaHSO_4$ and refrigerated, the second analysis was not conducted until 52 days after sample collection.
[b] = Not sampled due to the presence of free-floating product in the well

Analytical Laboratory:

B&C = Brown and Caldwell Laboratories of Emeryville, California
CCAS = Central Coast Analytical Services of San Luis Obispo, California
SAL = Superior Analytical Laboratory of San Francisco and Martinez, California

Analytic Method:

524.2/8240 = Fuel Fingerprint Analysis - EPA Method 524.2/8240, Total Fuel and Aromatic Volatile Hydrocarbons (GC/MS)
602 = EPA Method 602, Aromatic Volatile Hydrocarbons (GC)
8015 = Modified EPA Method 8015, TPH-G
8020 = EPA Method 8020, Volatile Aromatics (GC)

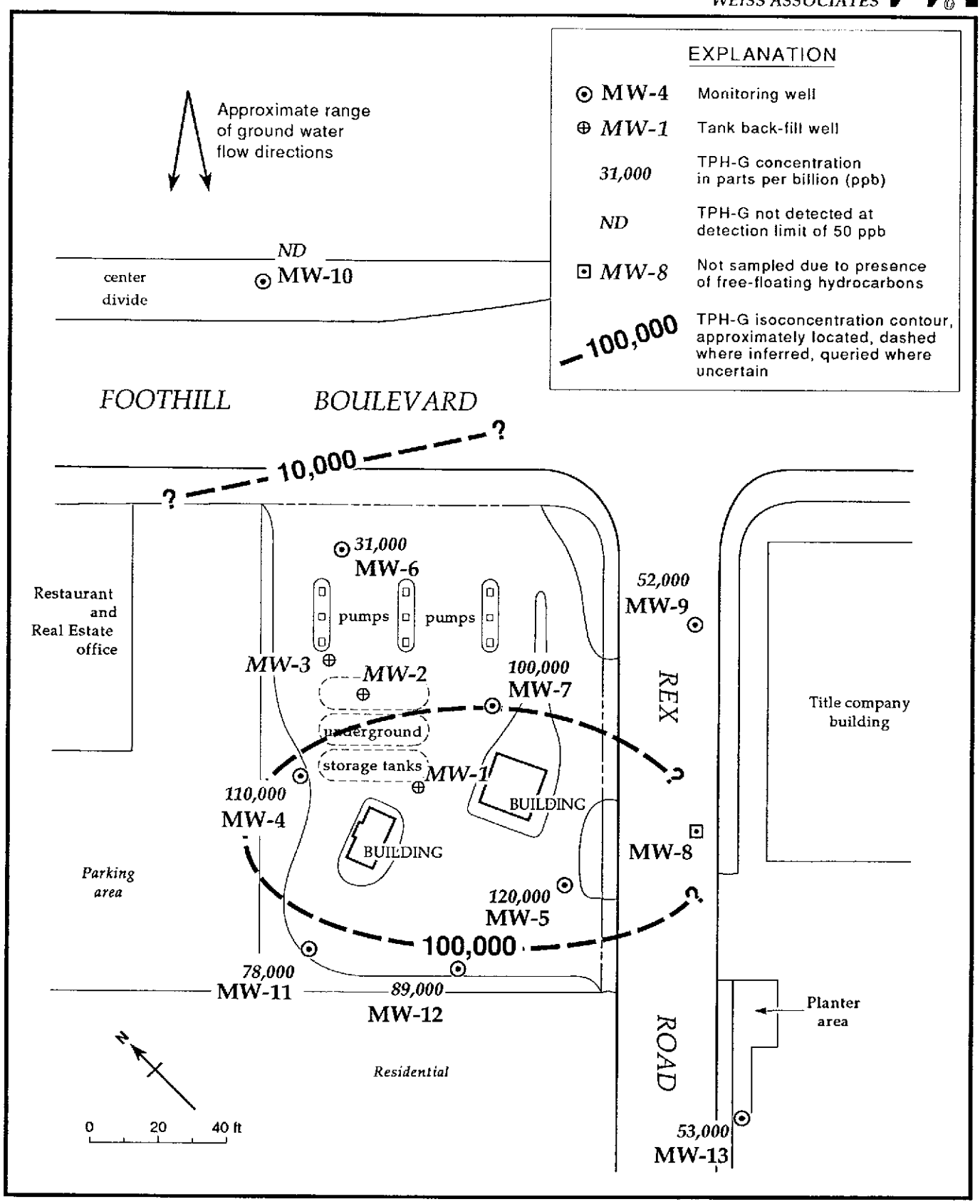


Figure 3. TPH-G Isoconcentration Contours - April 3, 1990 - Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California

5/3/90

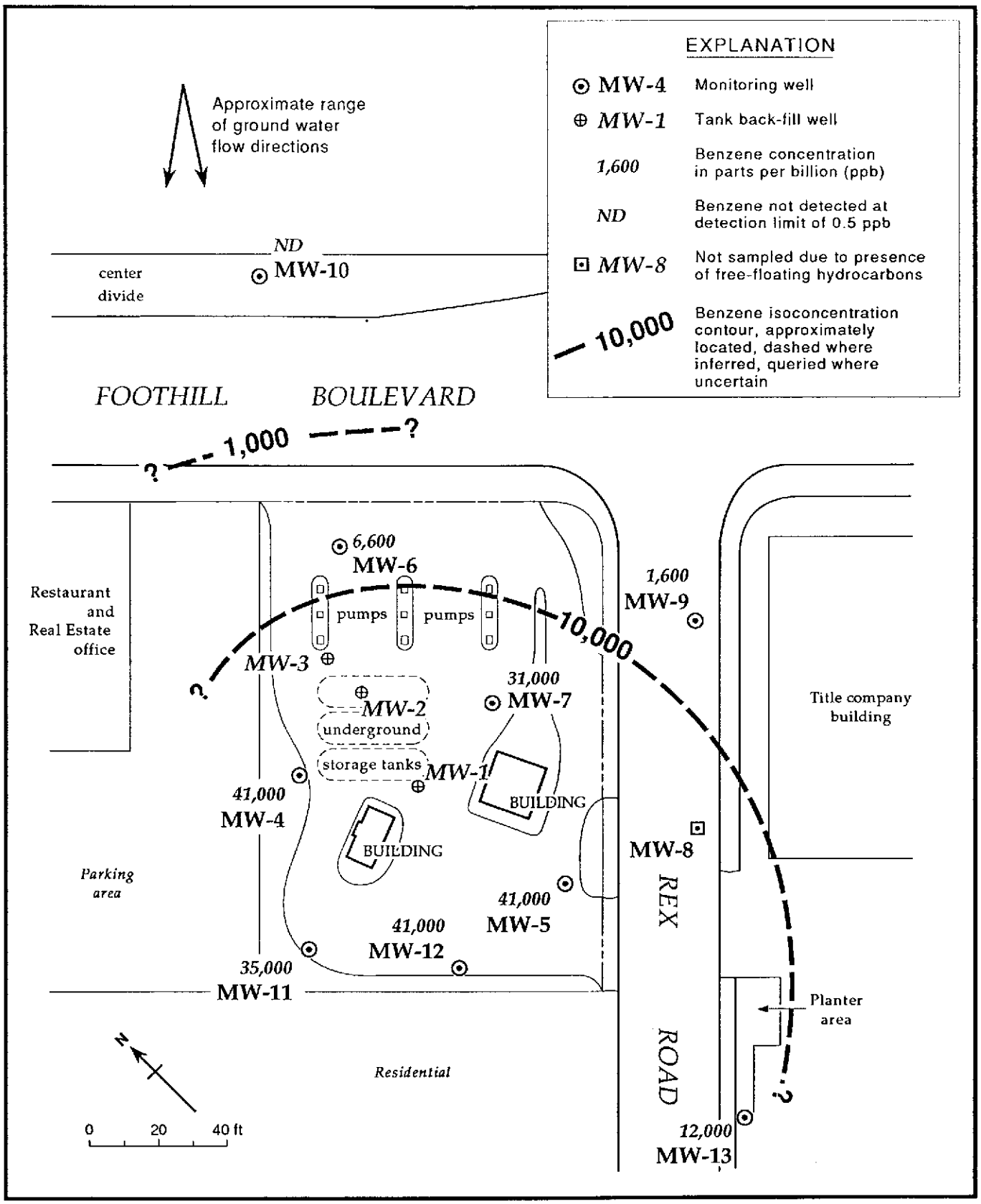


Figure 4. Benzene Isoconcentration Contours - April 3, 1990 - Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California

5/1/90

Discussion of analytic results of ground water for this quarter:

- Benzene, ethylbenzene and xylenes were detected above the DHS MCL for drinking water and toluene above the DHS recommended action level for drinking water in ground water samples from all monitoring wells, except well MW-10.

- TPH-G concentrations in samples from wells MW-6 and MW-9 are at their lowest since September and October 1988, respectively.

- Benzene concentrations in samples from wells MW-9 and MW-12 have increased from previous results.

- Ethylbenzene and toluene in samples from wells MW-12 and MW-13, and xylenes in samples from well MW-13 are at historical highs.

- No hydrocarbons were detected in samples from well MW-10, consistent with historical results.

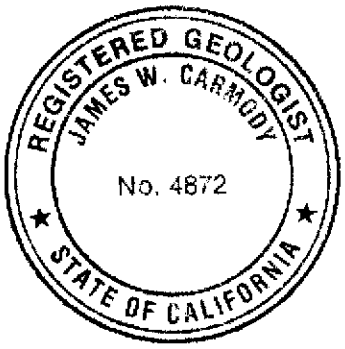
SAMPLING FREQUENCY MODIFICATION

WA has developed criteria to determine when the ground water sampling frequency should be modified for ground water monitoring programs (Attachment D). Based on these criteria, WA recommends modifying the sampling frequency of the site wells as shown in Table 3.

Table 3. Modifications to Ground Water Sampling Schedule, Chevron Service Station #90260, 21995 Foothill Boulevard, Hayward, California

Well ID	Current Sampling Frequency	Recommended Future Sampling Frequency	Rationale for Recommended Sampling Frequency
MW-10	Quarterly	Annually	Hydrocarbons not detected four of past five quarters, upgradient well.

We appreciate the opportunity to provide hydrogeologic consulting services to Chevron and trust that this report meets your needs. If you have any questions, please call Mariette Shin or Jim Carmody.



Sincerely,
Weiss Associates

Mariette Shin by JWC

Mariette Shin
Staff Geologist

James W. Carmody

James W. Carmody
Project Geologist

MMS/JWC:kw

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Attachments:
A - Water Sample Collection Records
B - Chain of Custody
C - Analytic Reports
D - Sampling Frequency Modification Criteria

ATTACHMENT A
WATER SAMPLE COLLECTION RECORDS

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-4 Date 4/2/90 Time of Sampling 1106
Job Name CHEV. - HAYWARD Job Number 4-310-01 Initials DC
Sample Point Description M (M = Monitoring Well)
Location N. EDGE OF LOT - IN REDWOOD BARK

WELL DATA: Depth to Water 13.81 ft (static, pumping) Depth to Product — ft.
Product Thickness — Well Depth 21.6 ft (spec) Well Depth 21.74 ft (sounded) Well Diameter 4 in
Initial Height of Water in Casing 7.93 ft. = volume 5.17 gal.
3 Casing Volumes to be Evacuated. Total to be evacuated 15.53 gal.

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

Evacuation Time: Stop 1050 1058 —
Start 1044 1055 —
Total Evacation Time 9 MIN.
Total Evacuated Prior to Sampling 15.5 gal.
Evacuation Rate 1.72 gal. per minute
Depth to Water during Evacuation — ft. — time
Depth to Water at Sampling 14.10 ft. 1119 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 NONE Odor STRONG ODOR
Description of matter in sample: SMALL AMT. SUSPENDED SILT - LIGHT COLORED
Sampling Method: TAKEN FROM PORT ON SIDE OF DED. BLR.
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
2	040-4	W/CV	40mL	N	Y	HCL	602/8015	N	SAL
1	040-4	W/B	1 LITER	Y	Y	NONE	602/8015	N	SAL

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: NO MEASUREABLE AMT. OF FREE PRODUCT IN WELL, BUT A QUITE VISIBLE SHEEN ON SURFACE OF WATER. VERY HEAVY ODOR

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WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-5 Date 4/3/90 Time of Sampling 1119
Job Name Chev Hayward Job Number 4-310-01 Initials VM
Sample Point Description M (M = Monitoring Well)
Location South Corner of Site

WELL DATA: Depth to Water 13.50 ft (static, pumping) @ 0816 Depth to Product None found ft.
Product Thickness 0.0 Well Depth 18.5 ft (spec) Well Depth 18.58 ft(sounded) Well Diameter 4 in
Initial Height of Water in Casing 5.08 ft. = volume 3.32 gal.
3 Casing Volumes to be Evacuated. Total to be evacuated 9.95 gal.

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

Evacuation Time: Stop 905
Start 0858
Total Evacation Time 7 min
Total Evacuated Prior to Sampling 5.5 gal.
Evacuation Rate .79 gal. per minute
Depth to Water during Evacuation / ft. / time
Depth to Water at Sampling 13.62 ft. 1125 time
Evacuated Dry? yes After 5.5 gal. Time 0905
80% Recovery = /
% Recovery at Sample Time 98% Time 1119

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: Bot 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
2	040-5	W/CV	40ml	N	Y	HCl	GAS/BTEX	N	SAL
1	040-5	W/B	1l	N	Y	None			

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-6 Date 4/3/90 Time of Sampling 1040
Job Name Chevron Hayward Job Number 4-310-01 Initials DM
Sample Point Description M (M = Monitoring Well)
Location N. Corner of Site

WELL DATA: Depth to Water 14.06 ft (static, pumping) @0803 Depth to Product NONE FOUND ft.
Product Thickness 0.0 Well Depth 16.5 ft (spec) Well Depth 16.59 ft(sounded) Well Diameter 4 in
Initial Height of Water in Casing 2.53 ft. = volume 1.65 gal.
3 Casing Volumes to be Evacuated. Total to be evacuated 4.9 gal.

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

Evacuation Time: Stop 0822
Start 0818
Total Evacation Time 4 min
Total Evacuated Prior to Sampling 2.5 gal.
Evacuation Rate .625 gal. per minute
Depth to Water during Evacuation / ft. / time
Depth to Water at Sampling 14.06 ft. 1042 time
Evacuated Dry? yes After 2.5 gal. Time 0822
80% Recovery =
% Recovery at Sample Time 100% Time 1042

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 NONE Odor moderate
Description of matter in sample: NONE
Sampling Method: Bailer 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
2	MW-6	W/V	40ml	N	Y	HCl	GAS/BETX	N	SAL

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-7 Date 4/3/90 Time of Sampling 1057
Job Name Chev Hayward Job Number 4/310/01 Initials JM
Sample Point Description M (M = Monitoring Well)
Location Center most well (Active) near East pumps

WELL DATA: Depth to Water 13.66 ft (static, pumping) @ 0826 Depth to Product None found ft.
Product Thickness 0.0 Well Depth 17.6 ft (spec) Well Depth 18.07 ft(sounded) Well Diameter 4 in
Initial Height of Water in Casing 4.41 ft. = volume 2.88 gal.
3 Casing Volumes to be Evacuated. Total to be evacuated 8.6 gal.

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

Evacuation Time: Stop 842
Start 839
Total Evacuation Time 3 min
Total Evacuated Prior to Sampling 3 gal.
Evacuation Rate 1.0 gal. per minute

Depth to Water during Evacuation / ft. / time
Depth to Water at Sampling 14.10 ft. 1100 time
Evacuated Dry? Yes After 3 gal. Time 0842
80% Recovery = /
% Recovery at Sample Time 90% Time ~~1100~~ JM 1057
Ht in casing = 3.97

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 None Odor moderate
Description of matter in sample: none
Sampling Method: 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
2	040-7	W/CV	40ml	N	Y	HCl	GAS/BETX	N	SAL

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:

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WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-8 Date 4/3/90 Time of Sampling —

Job Name CHEV - HAYWARD Job Number H-310-01 Initials DC

Sample Point Description M (M = Monitoring Well)

Location IN ROADWAY (REX RD.)

WELL DATA: Depth to Water 13.07 ft (static) pumping) Depth to Product 13.04 ft.

Product Thickness .30" Well Depth ___ ft (spec) Well Depth ___ ft(sounded) Well Diameter 4 in

Initial Height of Water in Casing N/A 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 ___

(WELL NOT PURGED / SAMPLED DUE TO FREE PRODUCT.)

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. ___ 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.)

~~SAMPLED~~ Color ___ Odor VERY STRONG FROM WELL

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
	N/A								

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-9 Date 4/3/90 Time of Sampling 1152
Job Name Chevron Hayward Job Number 4-310-01 Initials JM
Sample Point Description M (M = Monitoring Well)
Location In Rex Rd, near corner of Foothill Blvd

WELL DATA: Depth to Water 13.75 ft (static) pumping) 0834 Depth to Product None Found ft.
Product Thickness 0.0 Well Depth 19.21 ft (spec) Well Depth 9.08 ft (sounded) Well Diameter 4 in
Initial Height of Water in Casing 5.33 ft. = volume 3.48 gal.
3.# Casing Volumes to be Evacuated. Total to be evacuated 10.44 gal.

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

Evacuation Time: Stop 936 SANDY MUD kept clogging my bailer ball valve
Start 928
Total Evacation Time 8 min
Total Evacuated Prior to Sampling 5 gal.
Evacuation Rate .625 gal. per minute
Depth to Water during Evacuation / ft. / time
Depth to Water at Sampling 13.68 ft. 1153 time
Evacuated Dry? Yes After 5 gal. Time 0936
80% Recovery = /
% Recovery at Sample Time 101% Time 1152

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 None Odor Moderate
Description of matter in sample: None
Sampling Method: 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
2	040-9	w/cv	40ml	N	Y	HCl	GAS/BETX	N	SAL

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-10 Date 4/3/90 Time of Sampling 1018

Job Name CHEV. HAYWARD Job Number 4-310-01 Initials OC

Sample Point Description M (M = Monitoring Well)

Location MEDIAN STRIP - FOOTHILL BLVD.

WELL DATA: Depth to Water 12.86 ft (static/pumping) Depth to Product — ft.

Product Thickness — Well Depth 27.65 ft (spec) Well Depth 27.52 ft (sounded) Well Diameter 4 in

Initial Height of Water in Casing 14.66 ft. = volume 9.57 gal.

3 Casing Volumes to be Evacuated. — Total to be evacuated 28.72 gal.

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

Bailer# and type 3"X36" PVC Dedicated YES (Y/N)

Other —

Evacuation Time: Stop 0947 0950 1009

Start 0944 0955 1004

Total Evacation Time —

Total Evacuated Prior to Sampling 28 gal.

Evacuation Rate 2.0 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling N/A ft. — 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 NONE Odor NONE

Description of matter in sample: NONE - CLEAN WELL

Sampling Method: TAKEN FROM PORT ON SIDE OF BLR. NO ODOR

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
2	040-10	W/CV	40mL	N	Y	HCL	602/8015	N	SAL

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-11 Date 4/3/90 Time of Sampling 1203
Job Name CHEV. - HAYWARD Job Number 4-310-01 Initials DC
Sample Point Description M (M = Monitoring Well)
Location NW CORNER - BY TRASH ENCLOSURE

WELL DATA: Depth to Water 13.82 ft (static/pumping) Depth to Product — ft.
Product Thickness — Well Depth 19.61 ft (spec) Well Depth 19.62 ft (sounded) Well Diameter 4 in
Initial Height of Water in Casing 5.8 ft. = volume 3.78 gal.
3 Casing Volumes to be Evacuated. Total to be evacuated 11.36 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —
Bailer# and type 3/4X36 PVC Dedicated YES (Y/N)
Other —

Evacuation Time: Stop 1140 1146 ____
Start 1133 1143 ____
Total Evacation Time 10 MIN.
Total Evacuated Prior to Sampling 11.5 gal.
Evacuation Rate 1.1 gal. per minute
Depth to Water during Evacuation — ft. — time
Depth to Water at Sampling 14.82 ft. 1213 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 NONE Odor STRONG ODOR
Description of matter in sample: LIGHT COLORED SUSPENDED SILT - VERY SMALL AMTS.
Sampling Method: TAKEN FROM PORT ON SIDE OF DED. BLR.
Sample Port: Rate — gpm Totalizer — gal.
Time —
NO VISIBLE OR MEASURABLE AMTS. OF PRODUCT

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	040-11	W/OV	40mL	N	Y	HCl	602/8015	N	SAL
1	040-11	W/B	1 LTR.	Y	Y	NONE	602/8015	N	SAL

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-12 Date 4/3/90 Time of Sampling 1243

Job Name CHEV.-HAYWARD Job Number 4-310-01 Initials OC

Sample Point Description M (M = Monitoring Well)

Location WEST SIDE OF LOT

WELL DATA: Depth to Water 13.59 ft (static, pumping) Depth to Product — ft.

Product Thickness — Well Depth 16.67 ft (spec) Well Depth 19.59 ft (sounded) Well Diameter 4 in

Initial Height of Water in Casing 6.00 ft. = volume 3.92 gal.

3 Casing Volumes to be Evacuated. Total to be evacuated 11.75 gal.

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

Bailer# and type 3"X36" PVC Dedicated YES (Y/N)

Other

Evacuation Time: Stop 1230 1275 —

Start 1224 1233 —

Total Evacation Time 8 MIN.

Total Evacuated Prior to Sampling 12 gal.

Evacuation Rate 1.5 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling 14.49 ft. 1251 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 NONE Odor STRONG ODOR

Description of matter in sample: NOTHING

Sampling Method: TAKEN FROM PORT ON SIDE OF DED. BLR. NO FREE PRODUCT SEEN OR MEASURABLE.

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
2	040-12	W/CV	40ml	N	Y	HCL	602/8015	N	SAL
1	040-12	W/B	1 LITER	Y	Y	NONE	602/8015	N	SAL

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-13 Date 9/3/90 Time of Sampling 1217
Job Name Arco Hayward Job Number 4-310-01 Initials VM
Sample Point Description M (M = Monitoring Well)
Location South of site in planter on other side of Rex Rd
WELL DATA: Depth to Water 12.95 ft (static, pumping) 0852 Depth to Product None found ft
Product Thickness 0.0 Well Depth 17.77 ft (spec) Well Depth 17.78 ft (sounded) Well Diameter ___ in
Initial Height of Water in Casing 4.83 ft. = volume 3.15 gal.
3 Casing Volumes to be Evacuated. Total to be evacuated 9.46 gal.

EVACUATION METHOD: Pump # and type ___ Hose # and type ___
Bailer# and type 3" PVC Dedicated yes (Y/N)
Other /

Evacuation Time: Stop 1014
Start 1002
Total Evacation Time 12 min
Total Evacuated Prior to Sampling 9.5 gal.
Evacuation Rate .79 gal. per minute
Depth to Water during Evacuation / ft. / time
Depth to Water at Sampling 13.31 ft. 1220 time
Evacuated Dry? Almost After 6 gal. Time ___
80% Recovery = ___
% Recovery at Sample Time 94% Time 1217

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 None Odor moderate
Description of matter in sample: None
Sampling Method: 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
2	090-13	W/cv	40ml	N	Y	HCl	GAS/BETX	N	SAL

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 4/3/90 Time of Sampling 0758

Job Name Chev Hayward Job Number 4-310-01 Initials VM

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 _____

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 NONE Odor _____

Description of matter in sample: AIR BUBBLES IN BOTH

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
02	OHO-21	W/cv	40ml	N	Y	?	GAS/BETX	N	SAL

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:

Chevron U.S.A. Inc.
P.O. Box 5004
San Ramon, CA 94583
FAX (415) 842-9591

Chevron Facility Number 90260 (Hayward)
~~Consultant~~ LAB Release Number 2564320
Consultant Project Number 4-310-01
Consultant Name Weiss Associates
Address 5500 Shellmound St, Emeryville, CA 94608
Fax Number (415) - 547-5420
Project Contact (Name) Mariette Shin
(Phone) (415) 547-5043

Chevron Contact (Name) Mike Brown
(Phone) (415) - 842-9040
Laboratory Name SUPERIOR Analytical Laboratory
Contract Number N26 CWC 0240-9-X
Samples Collected by (Name) Jim Martin + David Charles
Collection Date 4/3/90
Signature

Sample Number	Lab Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Analyses To Be Performed: Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803				Remarks
040-4		2	W	G	1106	HCl	Yes	✓			✓							
040-5		↓	↓	↓	1119	↓	↓	✓			✓							
040-6					1040			✓			✓							
040-7					1057			✓			✓							
040-9					1152			✓			✓							
040-10					1016			✓			✓							
040-11					1203			✓			✓							
040-12					1243			✓			✓							
040-13					1217	↓		✓			✓							
040-21		↓	↓	↓	0758	?	↓	✓			✓							

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Turn Around Time (Circle Choice)
	Weiss Assoc	4/3/90 1515		Weiss Assoc.	4/3/90 15:15	24 Hrs
	Weiss Assoc	4/3/90 15:55		Express St	4/3/90 15:15	48 Hrs
Edgar Delalla	Exp. IT	4-4-90	Received For Laboratory By (Signature)		4/4/90 8:30	5 Days / 10 Days

Printed in U.S.A.

MS 5136 (8 83)

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 80726
CLIENT: Weiss Associates
CLIENT JOB NO.: 4-310-01

DATE RECEIVED: 04/04/90
DATE REPORTED: 04/11/90

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
80726- 1	040-4	04/03/90	04/10/90
80726- 2	040-5	04/03/90	04/10/90
80726- 3	040-6	04/03/90	04/10/90
80726- 4	040-7	04/03/90	04/10/90
80726- 5	040-9	04/03/90	04/09/90
80726- 6	040-10	04/03/90	04/09/90
80726- 7	040-11	04/03/90	04/10/90
80726- 8	040-12	04/03/90	04/09/90
80726- 9	040-13	04/03/90	04/10/90
80726-10	040-21	04/03/90	04/09/90

Laboratory Number:	80726 1	80726 2	80726 3	80726 4	80726 5
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	110000	120000	31000	100000	52000
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	41000	41000	6600	31000	1600
TOLUENE:	32000	33000	2600	28000	5400
ETHYL BENZENE:	2900	2500	2200	2100	3100
XYLENES:	17000	14000	12000	16000	16000

Laboratory Number:	80726 6	80726 7	80726 8	80726 9	80726 10
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<50	78000	89000	53000	ND<50
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.5	35000	41000	12000	ND<0.5
TOLUENE:	ND<0.5	12000	28000	14000	ND<0.5
ETHYL BENZENE:	ND<0.5	2300	3300	2900	ND<0.5
XYLENES:	ND<0.5	12000	17000	17000	ND<0.5

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
Diesel by Modified EPA SW-846 Method 8015
Gasoline by Purge and Trap: EPA MEthod 8015/5030
ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

QA/QC INFORMATION
SET: 80726

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT

ug/L = part per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Duplicate RPD NA
Minimum Detection Limit in Water: 5000ug/L

Modified EPA Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 1000ug/L
Daily Standard run at 200mg/L; RPD Diesel = NA
MS/MSD Average Recovery = NA: Duplicate RPD = NA

8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50 ug/L
Daily Standard run at 2mg/L; RPD Gasoline = 3%
MS/MSD Average Recovery = 84%: Duplicate RPD = 11%

8020/BTXE
Minimum Quantitation Limit in Water: 0.50ug/L
Daily Standard run at 20ug/L; RPD = <15%
MS/MSD Average Recovery = 95%: Duplicate RPD = <4%

Richard Srna, Ph.D.
Laboratory Manager

ATTACHMENT D
SAMPLING FREQUENCY MODIFICATION CRITERIA

ATTACHMENT D

SAMPLING FREQUENCY MODIFICATION CRITERIA

Chevron typically samples ground water on a quarterly basis at their operating or former service stations. The California Water Quality Control Board's ground water monitoring guidelines state that: "Quarterly (ground water) monitoring is the maximum sampling interval typically allowed when ground water contamination is present unless other arrangements are made with Regional Water Quality Control Board staff"[1]. California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB-SFBR) personnel have indicated that the board will allow reduction of the sampling frequency on a site-specific basis if the frequency modification is justified by site conditions[2]. Therefore, WA has developed generalized criteria for determining when sampling frequency should be modified.

The recommended sampling frequency for specific monitoring wells is based upon the following factors:

- The reliability of the ground water quality analytic data,
- The trend of the dissolved hydrocarbon concentration in the well, and
- The location of the well in relation to the hydrocarbon source.

Each of these factors is discussed below.

Reliability of Ground Water Quality Analytic Data

Since the reproducibility of ground water analytic data is highly sensitive to hydrogeologic conditions as well as field sampling and laboratory analytic procedures, ground water analytic data often shows variability between sampling episodes. Seasonal ground water fluctuation can also affect hydrocarbon concentrations in ground water. Therefore, WA will reduce the sampling frequency only for wells which:

- Have been sampled on a quarterly basis for at least one year, and
- Have consistent historical analytic results allowing a reliable assessment of the representative hydrocarbon concentration in the well. If the variability of the analytic data prevents a reliable assessment of concentration, then we will continue to sample the well(s) quarterly until a reliable assessment can be made.

Trend of Hydrocarbon Concentration

Sampling frequency will be reduced only for wells showing stable or decreasing concentrations. Wells showing increasing trends will be sampled quarterly to monitor the trends and determine whether the hydrocarbon concentration in a particular well is

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1 North Coast, San Francisco Bay, Central Valley Regional Water Quality Control Boards, June 2, 1988 (revised May 18, 1989), "Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks; pg.12.

2 Personal communication between Joseph Theisen, WA Project Geologist and Diane White, RWQCB-SFBR, November 29, 1989.

approaching a threshold concentration such as the saturation concentration, maximum contaminant level (MCL) or a California Department of Health Services action level.

Well Location

Ground water monitoring wells generally fall into one of following classifications relative to the suspected hydrocarbon source:

1) Clean up- and cross-gradient wells,

2) Clean down-gradient wells,

3) High concentration source-area wells, and

4) Low to high concentration intermediate wells.

WA's recommended sampling frequency for each of these classifications as follows:

1) If no offsite source is indicated by the initial sampling of the up-gradient and cross-gradient site wells and the subject wells are clean, WA recommends sampling these wells annually.

2) Since clean down-gradient wells define the "leading edge" of dissolved hydrocarbons in ground water, and hence are used to determine hydrocarbon breakthrough and the need for additional wells and/or remediation, WA recommends sampling these wells quarterly.

3) High concentration source-area wells are used to monitor stable or increasing source-area concentrations and the effectiveness of natural biodegradation. WA recommends sampling these wells semi-annually unless the hydrocarbon concentrations are found to be increasing, in which case, the wells will be sampled quarterly. High concentration source area wells with a history of floating hydrocarbons will be inspected quarterly, and sampled if possible.

4) Intermediate wells, located at a distance from the source area, may contain low to high dissolved hydrocarbon concentrations, depending on their distance from the source and hydrogeologic factors. Although these wells are not used to track the migration of the dissolved-hydrocarbon front, they can be used to track the migration of the dissolved hydrocarbon plume and the rates of natural biodegradation. Therefore, WA recommends sampling these wells semi-annually.