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

90 MAY -6 AM 10: 44

May 4, 1990

Marketing Operations

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

Mr. Rafat Shahid
Alameda County
Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Re: Chevron Service Station #9-0020
17TH and Harrison
Oakland, CA

Dear Mr. Shahid:

Enclosed we are forwarding the Quarterly Groundwater Sampling report dated April 16, 1990, conducted by our consultant, Western Geologic Resources, Inc., for the above referenced site.

Chevron is still in the process of securing encroachment permits to install additional offsite monitoring wells to complete definition of hydrocarbon contamination below the site. This has been a lengthy process due to the City of Oakland's permit requirements. We do expect approval soon. When recieved, Chevron will proceed with the installation of the wells. A formal report of findings will be forwarded to your office.

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 circumstances, to the best of my knowledge.

If you have any questions or comments please do not hesitate to call me at (415) 842 - 9625.

Very truly yours,
C. G. Trimbach

By John Randall

JMR/jmr
Enclosure

cc: Mr. Lester Feldman ✓
RWQCB-Bay Area
1800 Harrison Street
Suite # 700
Oakland, CA 94612

WESTERN GEOLOGIC RESOURCES, INC.

2169 E. FRANCISCO BOULEVARD, SUITE B
SAN RAFAEL, CALIFORNIA 94901
415/457-7595 FAX: 415/457-8521

16 April 1990

John Randall
Chevron USA
2410 Camino Ramon
San Ramon, CA 94583

KLD APR 19'90

Re: Quarterly Groundwater Monitoring
Sampled July and October 1989
Former Chevron Service Station #90020
Oakland, California
WGR Job #1-012.03

Dear Mr. Randall:

This letter report presents the results of the quarterly groundwater sampling performed in July and October 1989 by Western Geologic Resources, Inc. (WGR) at the former Chevron Service Station #90020, located at the corner of 17th and Harrison Streets in Oakland, California (Figure 1).

GROUNDWATER SAMPLING

28 July 1989

Groundwater samples were collected on 28 July 1989 by WGR environmental technicians in accordance with WGR's standard operating procedure (SOP) included as Attachment A. Monitor wells MW-1 through MW-8 were sampled using dedicated bladder pumps. Wells MW-5 and MW-7 were pumped dry and were sampled when they had recovered to 80% of the pre-pumping static water-level. All purged water was temporarily stored on-site in 55-gallon drums pending analytical results. The groundwater samples and a laboratory-supplied trip blank, consisting of deionized water, were sent under chain-of-custody to Central Coast Analytical Services (CCAS) in San Luis Obispo, California.

30 October 1989

Groundwater samples were collected on 30 October 1989 by WGR environmental technicians in accordance with WGR's standard operating procedure. Monitor wells MW-5 and MW-7 were again pumped dry and sampled after recovery to 80% of static level. All purged water was temporarily stored on-site in 55-gallon drums pending analytical results. The groundwater samples and a laboratory-supplied travel blank consisting of deionized water were sent under chain-of-custody to GTEL

Environmental Laboratories, Inc. (GTEL) of Concord, California for analysis.

GROUNDWATER FLOW

Groundwater elevation data are presented in Table 1. Hydrographs showing groundwater elevations over time are included as Attachment D.

28 July 1989

Figure 4 is the potentiometric surface map of shallow groundwater based on depth-to-water measurements taken by WGR staff on 28 July 1989. Groundwater flow direction was towards the east at a gradient of 0.5%. Sample calculation A shows how the gradient was derived.[1]

30 October 1989

Figure 5 is the potentiometric surface map of shallow groundwater based on depth-to-water measurements taken on 30 October 1989. Groundwater flow direction was again towards the east at a gradient of 0.5%.

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[1]Sample Calculation A: Groundwater Gradient Calculation

From Figure 4; reference line c-c'

$h = 9.5 \text{ ft} - 9.1 \text{ ft} = 0.4 \text{ ft}$
$l = 83.75 \text{ ft}$

$$\text{Gradient} = \frac{h}{l} = \frac{0.4 \text{ ft}}{83.75 \text{ ft}} = 0.48\%$$

or about 0.5%

ANALYTIC RESULTS

Analytic results for groundwater samples are presented in Tables 2 through 4. Chain-of-custody forms, laboratory reports with laboratory quality assurance/quality control (QA/QC) reports are included as Attachments B and C, respectively.

28 July 1989

Total purgeable petroleum hydrocarbons (TPPH) characterized as gasoline were detected only in groundwater samples from monitor well MW-7, the most downgradient well on-site, at 7,000 ppb. BTEX were also detected in MW-7 at 230 ppb benzene, 90 ppb toluene, 70 ppb ethylbenzene and 440 ppb total xylenes. A duplicate analysis of the sample collected from well MW-7 indicated 6,000 ppb TPPH, 280 ppb benzene, 180 ppb toluene, 58 ppb ethylbenzene and 430 ppb total xylenes.

Concentrations of halocarbons including carbon tetrachloride and chloroform were detected in groundwater samples from monitor wells MW-1 through MW-6 and MW-8. The highest concentrations detected were in groundwater samples from well MW-4, which contained 32 ppb carbon tetrachloride and 9.6 ppb chloroform. Tetrachloroethene (PCE) and trichloroethene (TCE) were detected in groundwater samples from monitor wells MW-2, MW-3 and MW-5 at concentrations of 46 ppb, 49 ppb and 5.3 ppb, respectively, for PCE, and at 2.6 ppb, 2.1 ppb and 0.3 ppb, respectively, for TCE. A map showing the distribution of PCE on 28 July 1989 is presented in Figure 6. Trans-1,2-dichloroethene (t-1,2 DCE) was reported in groundwater samples from MW-5 at 0.2 ppb. Cis-1,2-dichloroethene (c-1,2-DCE) was detected in groundwater samples from MW-2, MW-3, MW-5 and MW-7, with the highest concentration detected in MW-3 at 11 ppb.

Low concentrations of chromium were detected in groundwater samples from monitor wells MW-1 through MW-5. Zinc was detected in low concentrations in samples from MW-1 through MW-6 and MW-8. Oil and grease were not detected in groundwater from any of the monitor wells.

30 October 1989

TPH, characterized as gasoline, were detected in groundwater samples collected from monitor well MW-7 at a concentration of 10,000 ppb. This sample also contained 570 ppb benzene, 55 ppb toluene, 160 ppb ethylbenzene, 400 ppb total xylenes and 6.2 ppb 1,2-DCA. No detectable concentrations of TPH, BTEX or 1,2-DCA were found in samples from any of the other monitor wells on-site.

Halocarbons were detected in groundwater samples from all eight monitor wells. Carbon tetrachloride was detected in groundwater samples from wells MW-1 through MW-6 and MW-8 at concentrations ranging from 1.4 ppb to 32 ppb. Chloroform was detected in samples from wells MW-1 through MW-8 at concentrations ranging from 2.0 ppb to 8.5 ppb. PCE was detected in groundwater samples from wells MW-2, MW-3, MW-5 and MW-8 at 53 ppb, 62 ppb, 2.7 ppb and 8.0 ppb, respectively. A map showing the distribution of PCE on 30 October 1989 is presented in Figure 7. Concentrations of TCE were detected in groundwater samples from wells MW-2 and MW-3 at 1.1 ppb and 0.77 ppb, respectively. Trans-1,2-dichloroethane (t-1,2-DCE) was detected in groundwater samples from monitor wells MW-2, MW-3, MW-5 and MW-8 at concentrations of 14.0 ppb, 8.2 ppb, 0.86 ppb and 5.5 ppb, respectively. The highest concentrations of halocarbons; 32 ppb carbon tetrachloride in the sample from MW-4, 53 ppb PCE in the sample from MW-2 and 62 ppb PCE in the sample from MW-3, were found in groundwater collected from the most upgradient wells on-site.

SUMMARY

TPH/TPPH were detected only in samples from well MW-7 at 7,000 ppb in July 1989 and at 10,000 ppb in October 1989. Aromatic hydrocarbons were detected in groundwater samples from MW-7 at concentrations of up to 280 ppb benzene, 180 ppb toluene, 70 ppb ethylbenzene and 440 ppb total xylenes in the July analysis, and up to 570 ppb benzene, 82 ppb toluene, 180 ppb ethylbenzene and 410 ppb total xylenes in the October analysis. No detectable concentrations of TPH/TPPH or BTEX were

found in groundwater samples collected from monitor wells MW-1 through MW-6 or MW-8.

Oil and grease, tested for in July 1989, were not detected in any of the groundwater samples collected from the monitor wells. In general, concentrations of TPH/TPPH and BTEX in groundwater collected from MW-7 in July 1989 and October 1989 are similar to those indicated by the April 1989 analysis.

Low to moderate concentrations of halocarbons continued to be detected in groundwater samples from monitor wells MW-1 through MW-6 and MW-8.

The groundwater flow direction was to the east at a gradient of about 0.5% for both sampling events.

We appreciate the opportunity to provide geologic and environmental consulting service to Chevron and trust that this report meets your needs. If you have any questions, please call us at (415) 457-7595.

Sincerely,
Western Geologic Resources

Kenneth R. Leonard
Staff Geologist

Thomas M. Howard
Project Manager

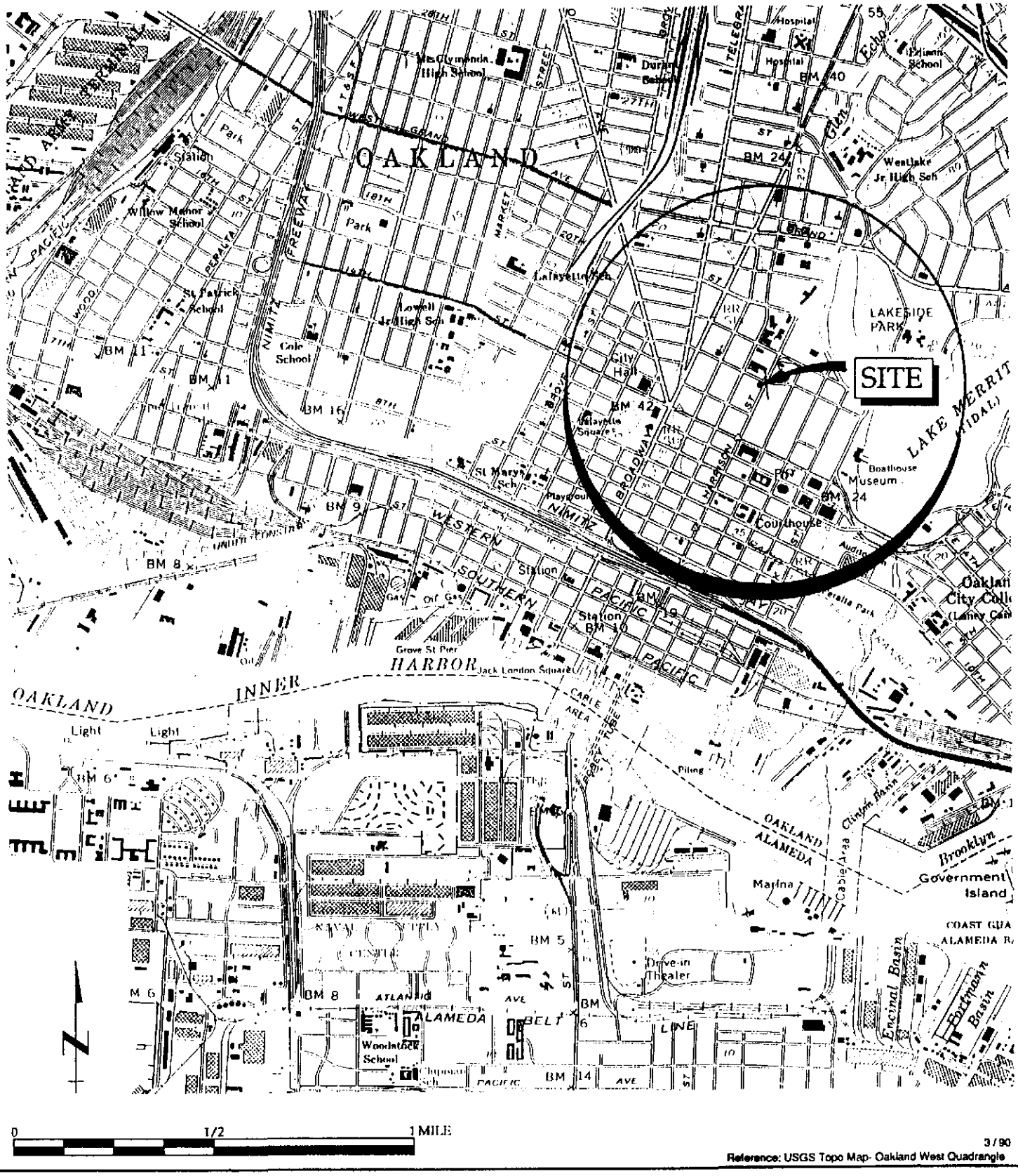
KRL/TMH:rem

012R1JA0.WP

FIGURES

TABLES

ATTACHMENTS

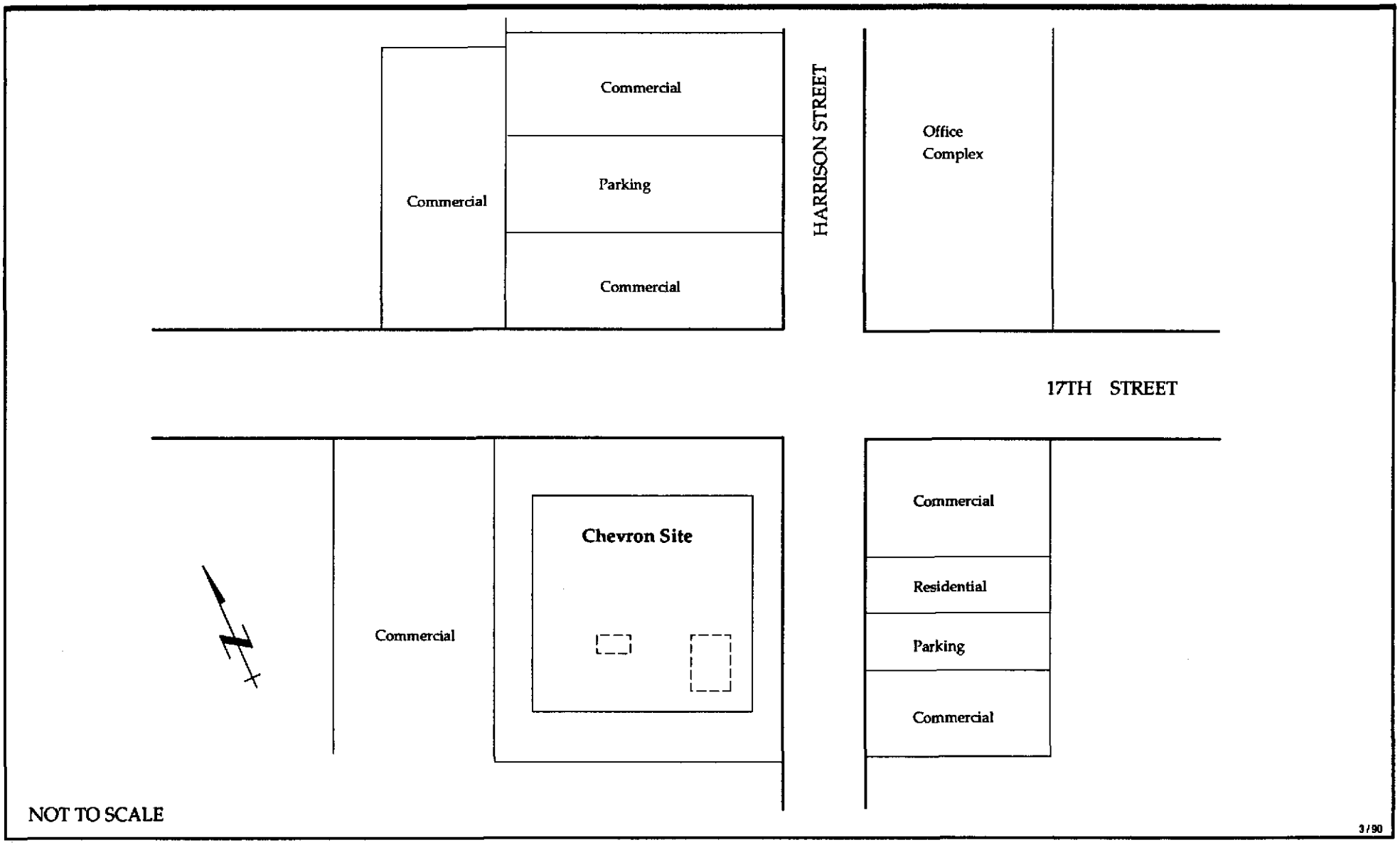


Site Location Map
Chevron Service Station #90020
Oakland, California

FIGURE
1

WESTERN GEOLOGIC RESOURCES, INC.

1-012.03

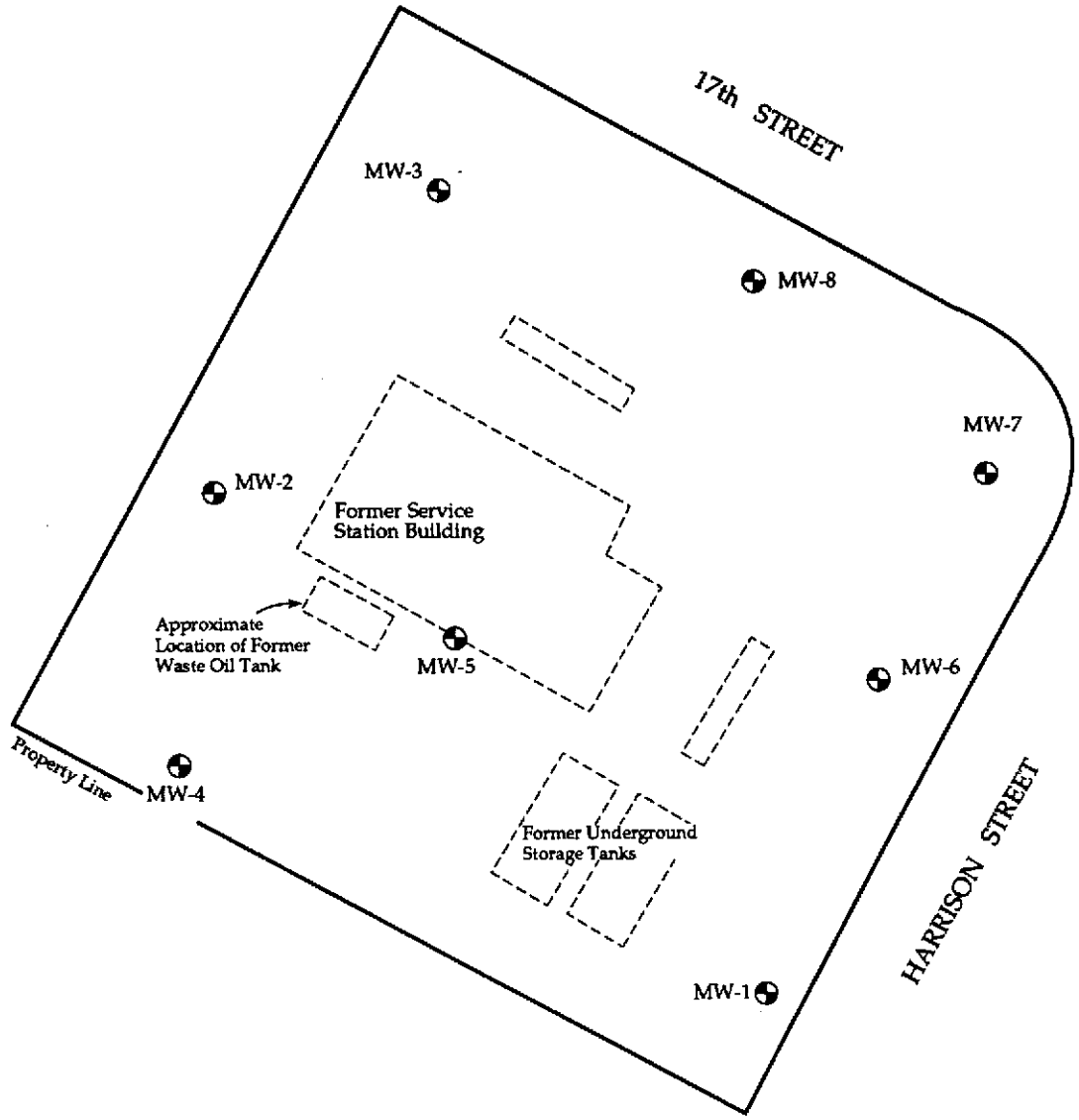


Vicinity Map
Chevron SS# 90020, Oakland, California

FIGURE
2

WESTERN GEOLOGIC RESOURCES, INC.

1-012.03



LEGEND

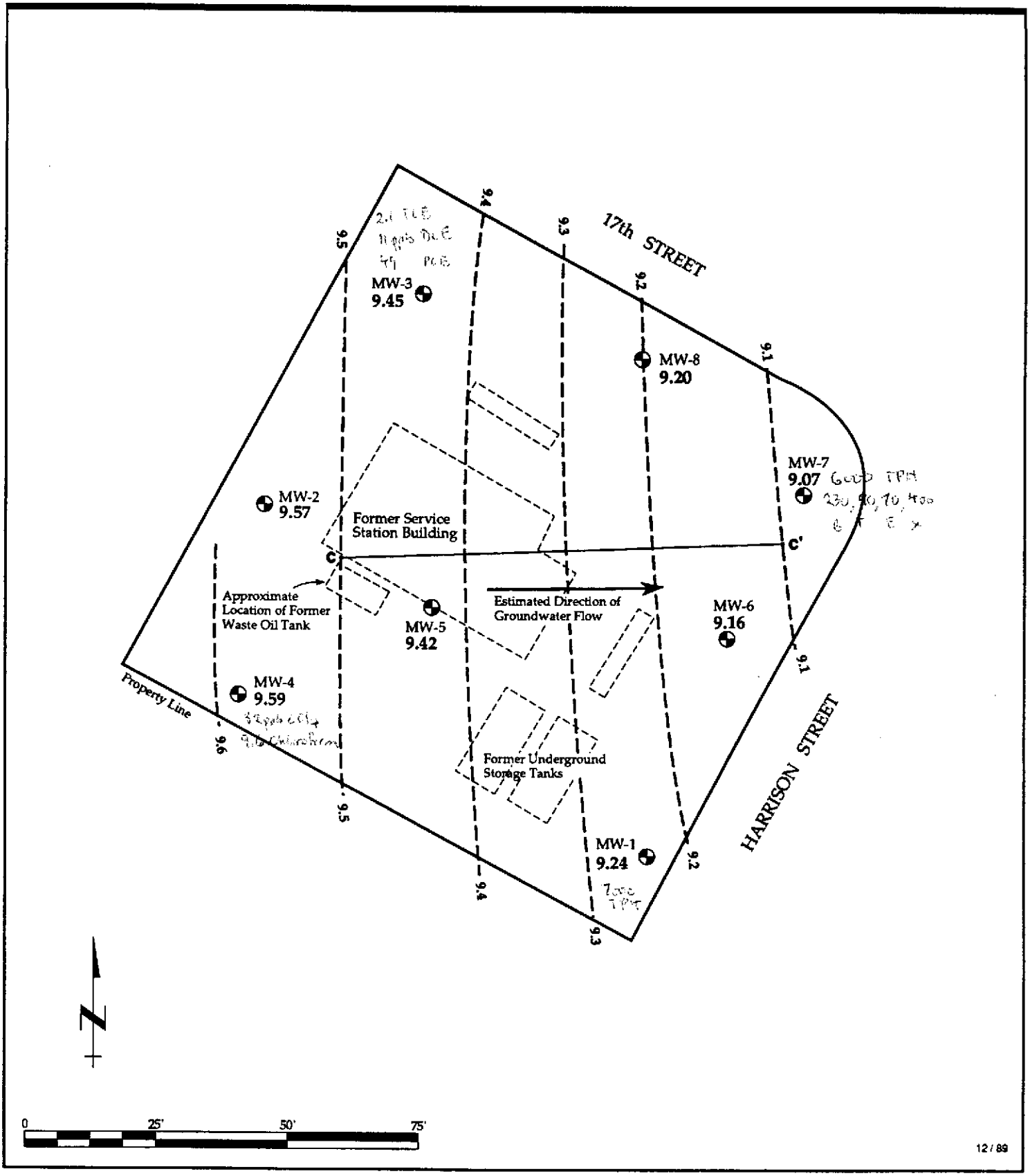
MW-4 Monitor Well Location

Site Map with Monitor Well Locations
Chevron Service Station #90020
Oakland, California

FIGURE
3

WESTERN GEOLOGIC RESOURCES, INC.

1-012.03



LEGEND

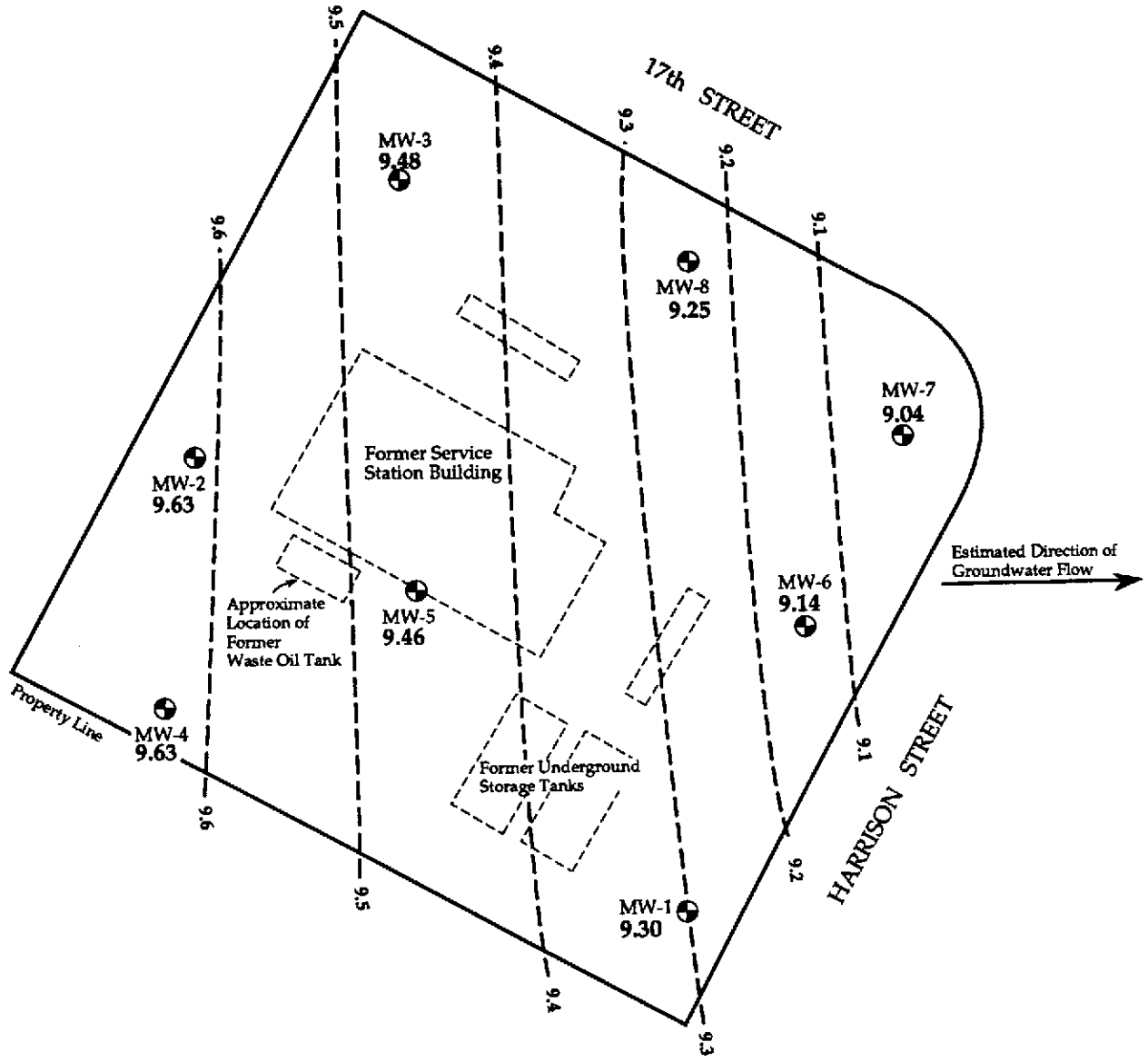
MW-4 9.59	Monitor Well Location and groundwater elevation, feet above mean sea level
9.5 — — ·	Groundwater elevation contour, feet above mean sea level, dashed where inferred
C ⟵⟶ C'	Reference Line for gradient calculation

Potentiometric Surface of Shallow Groundwater
28 July 1989
Former Chevron Service Station #90020
Oakland, California

FIGURE
4

WESTERN GEOLOGIC RESOURCES, INC.

1-012.03



1/90

LEGEND

MW-4 9.63 — Monitor Well Location and groundwater elevation, feet above mean sea level

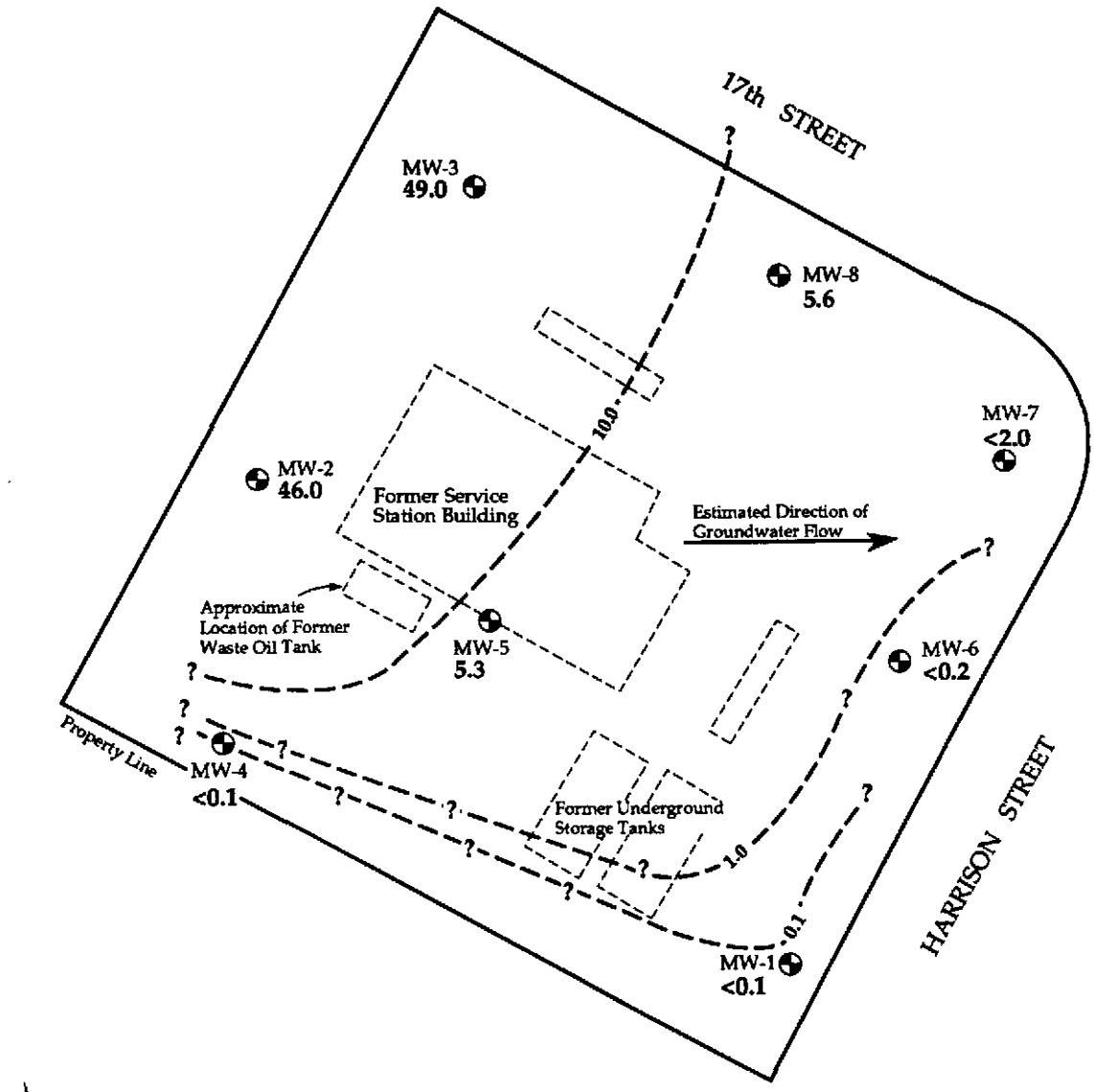
9.6 — — ? — Groundwater elevation contour, feet above mean sea level, dashed where inferred, queried where uncertain

Potentiometric Surface of Shallow Groundwater,
30 October 1989
Former Chevron Service Station #90020
Oakland, California

FIGURE 5

WESTERN GEOLOGIC RESOURCES, INC.

1-012.03



LEGEND

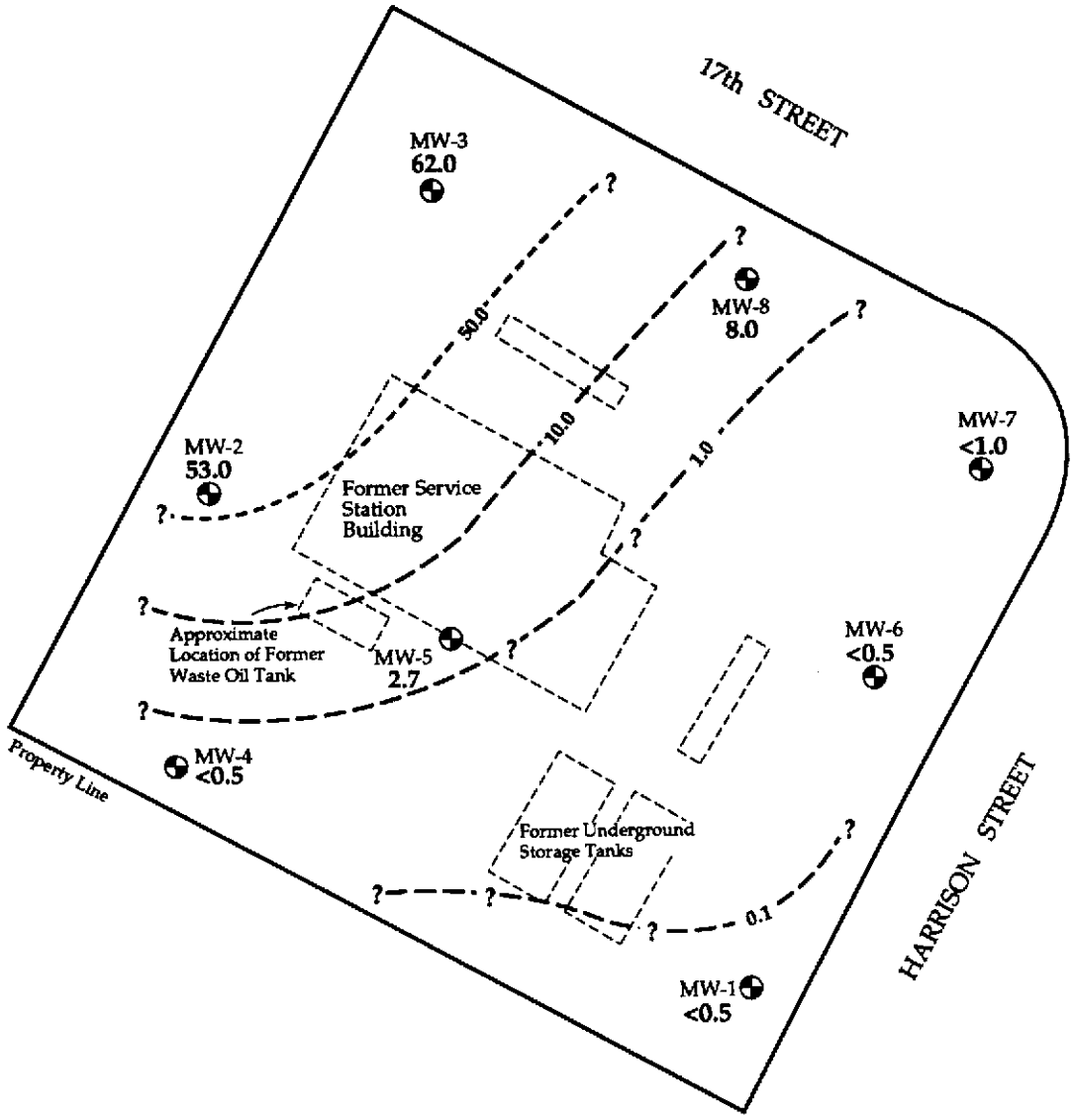
MW-4 <0.1	Monitor Well Location and Tetrachloroethene (PCE) concentration in ppb (parts-per-billion)
10.0— — ?	Isoconcentration contour for PCE in ppb, dashed where inferred, queried where uncertain

Distribution of Tetrachloroethene (PCE) in Shallow Groundwater, 28 July 1989
Former Chevron Service Station #90020
Oakland, California

FIGURE 6

WESTERN GEOLOGIC RESOURCES, INC.

1-012.03



LEGEND

MW-4 <0.5	Monitor Well Location and Tetrachloroethene (PCE) concentration in ppb (parts-per-billion)
1.0 — — ?	Isoconcentration contour of PCE in ppb (parts-per-billion) dashed where inferred, queried where uncertain
50.0 - - - -	Intermediate contour

Distribution of Tetrachloroethene (PCE) in Shallow Groundwater, 30 October 1989
Former Chevron Service Station #90020
Oakland, California

FIGURE 7

WESTERN GEOLOGIC RESOURCES, INC.

1-012.03

Table 1. Groundwater and Top-of-Casing Elevations
Former Chevron Service Station #90020
17th/Harrison, Oakland, California

Monitor Well	Date	TOC	DTW	Elev.-W
MW-1	3 Nov 88	29.82	20.40	9.42
	2 Feb 89	29.82	20.71	9.11
	23 Apr 89	29.82	20.34	9.48
	28 Jul 89	29.82	20.58	9.24
	30 Oct 89	29.82	20.52	9.30
MW-2	3 Nov 88	30.59	20.89	9.70
	2 Feb 89	30.59	21.21	9.38
	23 Apr 89	30.59	20.82	9.77
	28 Jul 89	30.59	21.02	9.57
	30 Oct 89	30.59	20.96	9.63
MW-3	3 Nov 89	30.09	20.54	9.55
	2 Feb 89	30.09	20.85	9.24
	23 Apr 89	30.09	20.43	9.66
	28 Jul 89	30.09	20.64	9.45
	30 Oct 89	30.09	20.61	9.48
MW-4	23 Apr 89	31.17	21.33	9.84
	28 Jul 89	31.17	21.58	9.59
	30 Oct 89	31.17	21.54	9.63
MW-5	23 Apr 89	30.28	20.62	9.66
	28 Jul 89	30.28	20.86	9.42
	30 Oct 89	30.28	20.82	9.46
MW-6	23 Apr 89	29.46	20.05	9.41
	28 Jul 89	29.46	20.30	9.16
	30 Oct 89	29.46	20.32	9.14
MW-7	23 Apr 89	29.01	18.99	10.02
	28 Jul 89	29.01	19.94	9.07
	30 Oct 89	29.01	19.97	9.04
MW-8	23 Apr 89	29.57	20.14	9.43
	28 Jul 89	29.57	20.37	9.20
	30 Oct 89	29.57	20.32	9.25

Notes:

TOC = Top-of-Casing Elevation, feet above mean sea level
DTW = Depth-to-water, feet
Elev.W = Elevation of water, feet above mean sea level

TABLE 2. Analytic Results for Groundwater
TFH, TPH/TPPH and BTEX
Former Chevron Service Station 90020
17th/Harrison, Oakland, California

Monitor Well	Date	EPA Method	Lab	FC	TFH	TPH/TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	O & G
					<--------		ppb				-------->	ppm
MW-1	03 Nov 88	624/8015	BC	---	<1000	---	<1.0	<1.0	<1.0	<1.0	<1.0	---
MW-1	10 Feb 89	524.2/8240	CCAS	---	---	<100	<0.2	<0.2	<0.2	<0.4	<0.2	---
MW-1	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<3
MW-1	28 Jul 89	8260	CCAS	---	---	<50	<0.1	<0.5	<0.2	<0.5	<0.1	<3
MW-1	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---
MW-2	03 Nov 88	624/8015	BC	---	<1000	---	<1.0	<1.0	<1.0	<1.0	<1.0	---
MW-2	10 Feb 89	524.2/8240	CCAS	---	---	<100	<0.2	<0.2	<0.2	<0.4	<0.2	---
MW-2	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<3
MW-2	28 Jul 89	8260	CCAS	---	---	<100	<0.2	<1.0	<0.2	<0.4	<0.2	<3
MW-2	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---
MW-3	03 Nov 88	624/8015	BC	---	<1000	---	<1.0	<1.0	<1.0	<1.0	<1.0	---
MW-3	10 Feb 89	524.2/8240	CCAS	---	---	<100	<0.2	<0.2	<0.2	<0.4	<0.2	---
MW-3	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<3
MW-3	28 Jul 89	8260	CCAS	---	---	<100	<0.2	<1.0	<0.2	<0.4	<0.2	<3
MW-3	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---
MW-4	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<3
MW-4	28 Jul 89	8260	CCAS	---	---	<50	<0.1	<0.5	<0.1	<0.2	<0.1	<3
MW-4	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---
MW-5	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<3
MW-5	28 Jul 89	8260	CCAS	---	---	<100	<0.2	<1.0	<0.2	<0.4	<0.2	<3
MW-5	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---

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TABLE 2. Analytic Results for Groundwater
TFH, TPH/TPPH and BTEX
Former Chevron Service Station 90020
17th/Harrison, Oakland, California

Monitor Well	Date	EPA Method	Lab	FC	TFH	TPH/TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	O & G
					<---	---	---	ppb	---	---	--->	ppm
MW-6	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<3
MW-6	28 Jul 89	8260	CCAS	---	---	<100	<0.2	<1.0	<0.2	<0.4	0.6	<3
MW-6	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---
MW-7	24 Apr 89	524.2/8260	CCAS	GAS	---	8400	100	260	160	1300	<1.0	3**
MW-7	28 Jul 89	8260	CCAS	GAS	---	7000	230	90	70	440	6.0	<3
MW-7D	28 Jul 89	8260	CCAS	GAS	---	6000	280	180	58	430	<5.0	---
MW-7	30 Oct 89	8020/8015	GTEL	GAS	---	10000	570	55	160	400	6.4*	---
MW-7D	30 Oct 89	8020/8015	GTEL	GAS	---	9900	520	82	180	410	6.2*	---
MW-8	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	3
MW-8D	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	---
MW-8	28 Jul 89	8260	CCAS	---	---	<100	<0.2	<1.0	<0.2	<0.4	<0.2	<3
MW-8	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---
TB	03 Nov 88	624/8015	BC	---	---	---	<1.0	<1.0	<1.0	<1.0	<1.0	---
TB	10 Feb 89	524.2/8240	CCAS	---	---	<50	<0.1	<0.1	<0.1	<0.2	<0.1	---
TB	24 Apr 89	524.2/8260	CCAS	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	---
TB	28 Jul 89	8260	CCAS	---	---	<50	<0.1	<0.5	<0.1	<0.2	<0.1	---
TB	30 Oct 89	8020/8015	GTEL	---	---	<500	<0.3	<0.3	<0.3	<0.6	<0.5*	---

012T3AP0.WK1

TABLE 2. Analytic Results for Groundwater
TFH, TPH/TPPH and BTEX
Former Chevron Service Station 90020
17th/Harrison, Oakland, California

Monitor Well	Date	EPA Method	Lab	FC	TFH	TPH/TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	O & G
					<--------		ppb				-------->	ppm

Notes:

ppb - parts-per-billion
ppm - parts-per-million
O & G - Oil and Grease by California Standard Method 503E
* - Analyzed by EPA Method 601
** - Acetone 50 ppb, 2-Butanone 160 ppb
FC - Fuel characterization
GAS - Gasoline
TFH - Total fuel hydrocarbons
TPH/TPPH - Total petroleum hydrocarbons/Total purgeable petroleum hydrocarbons
E-Benzene - Ethyl benzene
1,2-DCA - 1,2-Dichloroethane
TB - Travel blank
D - Duplicate analysis
BC - Brown and Caldwell Laboratories
CCAS - Central Coast Analytical Services
GTEL - Groundwater Technology Environmental Laboratories

TABLE 3.

Analytic Results for Groundwater
Selected Halocarbons
Former Chevron Service Station 90020
17th/Harrison, Oakland, California

Monitor Well	Date	EPA Method	LAB	Carb Tet	Chlor	PCE	TCE	1,2-DCE*	t-1,2-DCE	c-1,2-DCE	TCA
				<------	------	------	ppb	------	------	------	------>
MW-1	03 Nov 88	624/8015	BC	18.0	7.0	<1.0	<1.0	---	<1.0	---	<1.0
MW-1	10 Feb 89	524.2/8240	CCAS	17.0	6.0	<0.2	<0.2	---	<0.2	<0.2	<0.2
MW-1	24 Apr 89	524.2/8260	CCAS	16.0	6.0	<1.0	<1.0	<1.0	---	---	<1.0
MW-1	28 Jul 89	8260	CCAS	20.0	6.4	<0.1	<0.1	---	<0.1	<0.1	0.3
MW-1	30 Oct 89	601	GTEL	11.0	4.9	<0.5	<0.5	---	<0.5	---	<0.5
MW-2	03 Nov 88	624/8015	BC	3.0	2.0	34.0	3.0	---	10.0	---	<1.0
MW-2	10 Feb 89	524.2/8240	CCAS	1.4	1.0	17.2	<0.2	---	<0.2	6.3	<0.2
MW-2	24 Apr 89	524.2/8260	CCAS	2.0	2.0	38.0	3.0	9.0	---	---	<1.0
MW-2	28 Jul 89	8260	CCAS	3.7	2.0	46.0	2.6	---	<0.2	<0.2	<0.2
MW-2	30 Oct 89	601	GTEL	1.4	2.6	53.0	1.1	---	14.0	---	<0.5
MW-3	03 Nov 88	624/8015	BC	8.0	6.0	84.0	3.0	---	5.0	---	<1.0
MW-3	10 Feb 89	524.2/8240	CCAS	5.8	4.0	53.0	1.9	---	<0.2	9.0	<0.2
MW-3	24 Apr 89	524.2/8260	CCAS	7.0	6.0	110.0	3.0	11.0	---	---	<1.0
MW-3	28 Jul 89	8260	CCAS	8.6	5.0	49.0	2.1	---	<0.2	11.0	<0.2
MW-3	30 Oct 89	601	GTEL	5.6	5.3	62.0	0.77	---	8.2	---	<0.5
MW-4	24 Apr 89	524.2/8260	CCAS	35.0	11.0	<1.0	<1.0	<1.0	---	---	<1.0
MW-4	28 Jul 89	8260	CCAS	32.0	9.3	<0.1	<0.1	---	<0.1	<0.1	<0.1
MW-4	30 Oct 89	601	GTEL	32.0	8.5	<0.5	<0.5	---	<0.5	---	<0.5
MW-5	24 Apr 89	524.2/8260	CCAS	4.0	5.0	4.0	<1.0	2.0	---	---	<1.0
MW-5	28 Jul 89	8260	CCAS	5.6	4.0	5.3	0.3	---	0.2	2.3	0.5
MW-5	30 Oct 89	601	GTEL	2.9	2.0	2.7	<0.5	---	0.86	---	<0.5

012T3APO.WK2

WESTERN GEOLOGIC RESOURCES, INC.

TABLE 3. Analytic Results for Groundwater (continued)
Selected Halocarbons
Former Chevron Service Station 90020
17th/Harrison, Oakland, California

Monitor Well	Date	EPA Method	LAB	Carb Tet	Chlor	PCE	TCE	1,2-DCE*	t-1,2-DCE	c-1,2-DCE	TCA
				<-------------------			ppb				------------------->
MW-6	24 Apr 89	524.2/8260	CCAS	13.0	7.0	<1.0	<1.0	<1.0	---	---	<1.0
MW-6	28 Jul 89	8260	CCAS	9.6	4.0	<0.2	<0.2	---	<0.2	<0.2	0.5
MW-6	30 Oct 89	601	GTEL	8.2	3.6	<0.5	<0.5	---	<0.5	---	<0.5
MW-7	24 Apr 89	524.2/8260	CCAS	3.0	9.0	<1.0	<1.0	<1.0	---	---	<1.0
MW-7	28 Jul 89	8260	CCAS	<2.0	<10.0	<2.0	<2.0	---	<2.0	<2.0	<10.0
MW-7D	28 Jul 89	8260	CCAS	<5.0	<20.0	<5.0	<5.0	---	<5.0	<5.0	<5.0
MW-7	30 Oct 89	601	GTEL	<1.0	3.9	<1.0	<1.0	---	<1.0	---	<1.0
MW-7D	30 Oct 89	601	GTEL	<1.0	3.1	<1.0	<1.0	---	<1.0	---	<1.0
MW-8	24 Apr 89	524.2/8260	CCAS	2.0	3.0	6.0	<1.0	4.0	---	---	<1.0
MW-8D	24 Apr 89	524.2/8260	CCAS	2.0	2.0	6.0	<1.0	3.0	---	---	<1.0
MW-8	28 Jul 89	8260	CCAS	2.3	2.0	5.6	<0.2	---	<0.2	3.8	<0.2
MW-8	30 Oct 89	601	GTEL	2.5	2.6	8.0	<0.5	---	5.5	---	<0.5
TB	03 Nov 88	624/8015	BC	<1.0	<1.0	<1.0	<1.0	---	<1.0	---	<1.0
TB	10 Feb 89	524.2/8240	CCAS	<0.1	<0.5	<0.1	<0.1	---	<0.1	<0.1	<0.1
TB	24 Apr 89	524.2/8260	CCAS	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	<1.0
TB	28 Jul 89	8260	CCAS	<0.1	<0.5	<0.1	<0.1	---	<0.1	<0.1	<0.1
TB	30 Oct 89	601	GTEL	<0.5	<0.5	<0.5	<0.5	---	<0.5	---	<0.5

TABLE 3. Analytic Results for Groundwater (continued)
Selected Halocarbons
Former Chevron Service Station 90020
17th/Harrison, Oakland, California

Monitor Well	Date	EPA Method	LAB	Carb Tet	Chlor	PCE	TCE	1,2-DCE*	t-1,2-DCE	c-1,2-DCE	TCA
				ppb							

Notes:

ppb = parts-per-billion
Carb Tet - Carbon tetrachloride
Chlor - Chloroform
PCE - Tetrachloroethene
TCE - Trichloroethene
* = cis and trans isomers
1,2 DCE - 1,2-Dichloroethene
t = trans
c = cis
TCA - 1,1,1-Trichloroethane
D = Duplicate analysis
TB = Travel blank
BC - Brown and Caldwell Laboratories
CCAS - Central Coast Analytical Services
GTEL - Groundwater Technology Environmental Laboratories

TABLE 4. Analytic Results for Groundwater: Metals
Former Chevron Service Station #90020
Oakland, California

Monitor Well	Date	Cadmium	Chromium	Lead	Zinc
		<----------ppm---------->			
		EPA 7131	EPA 7191	EPA 7421	EPA 7950
MW-1	24 Apr 89	<0.001	0.030	0.018	7.5
MW-1	28 Jul 89	<0.001	0.030	<0.005	0.013
MW-2	24 Apr 89	<0.001	0.031	<0.005	1.1
MW-2	28 Jul 89	<0.001	0.031	<0.005	0.024
MW-3	24 Apr 89	<0.001	0.020	<0.005	0.087
MW-3	28 Jul 89	<0.001	0.019	<0.005	<0.005
MW-4	24 Apr 89	<0.001	0.029	<0.005	1.2
MW-4	28 Jul 89	<0.001	0.028	<0.005	0.008
MW-5	24 Apr 89	<0.001	0.022	<0.005	0.4
MW-5	28 Jul 89	<0.001	0.014	<0.005	0.014
MW-6	24 Apr 89	<0.001	0.006	<0.005	1.2
MW-6	28 Jul 89	<0.001	<0.005	<0.005	0.006
MW-7	24 Apr 89	<0.001	0.006	0.18	140
MW-7	28 Jul 89	<0.001	<0.005	<0.005	<0.005
MW-8	24 Apr 89	<0.001	0.005	0.007	0.38
MW-8	28 Jul 89	<0.001	<0.005	<0.005	0.007

ATTACHMENT A

SOP-4: WATER SAMPLING

STANDARD OPERATING PROCEDURES
RE: GROUNDWATER PURGING AND SAMPLING
SOP-4

Prior to water sampling, each well is purged by evacuating a minimum of three well-casing volumes of groundwater or until the discharge water temperature, conductivity, and pH stabilize. The groundwater sample should be taken when the water level in the well recovers to 80% of its static level.

The sampling equipment used consists of either a teflon bailer or a stainless steel bladder pump with a teflon bladder. If the sampling system is dedicated to the well, then the bailer is made of teflon, but the bladder pump is PVC with a polypropylene bladder. Forty milliliter (ml) glass volatile-organic-analysis (VOA) vials, with teflon septa, are used as sample containers.

The groundwater sample is decanted into each VOA vial in such a manner that there is a meniscus at the top of the vial. The cap is quickly placed over the top of the vial and securely tightened. The VOA vial is then inverted and tapped to see if air bubbles are present. If none are present, the sample is labeled and refrigerated for delivery under chain-of-custody to the laboratory. Label information should include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

For quality control purposes, a duplicate water sample is collected from each well. This sample is put on hold at the laboratory. A trip blank is prepared at the laboratory and placed in the transport cooler. It remains with the cooler and is analyzed by the laboratory along with the groundwater samples. A field blank is prepared in the field when sampling equipment is not dedicated. The field blank is prepared after a pump or bailer has been steam-cleaned, prior to use in a second well, and is analyzed along with the other samples. The field blank demonstrates the quality of in-field cleaning procedures to prevent cross-contamination.

To minimize the potential for cross-contamination between wells, all the well-development and water-sampling equipment that is not dedicated to a well is steam-cleaned between each well. As a second precautionary measure, wells will be sampled in order of least to highest concentrations as established by previous analyses.

ATTACHMENT B

CHAIN-OF-CUSTODY FORMS

CHAIN OF CUSTODY

WESTERN GEOLOGIC RESOURCES, INC.
2169 E. Francisco Boulevard, Suite B
San Rafael, California 94901
415/457-7595 Fax: 415/457-8521

General Remarks

Laboratory: Central Coast Analytical | Log #:
Address: 141 Suburban Rd. Suite C-4, San Luis Obispo, CA. 93401
Project #: 1-012.03 | Project Name: 17th & Harrison | Project Mgr/Contact: Ed Buskirk
Sampler(s): Daniel Bockus / Mike Parkinson

Lab Sample Number	Date Sampled	Sample Type See expl 1	Container Type See expl 2	Preservative	Sample Description	Number of Containers	8260 Full Scan + TPPH	Remarks
F-99-9917	7/28/89	GW	V	HCl/H2SO4	1201, A,B	2	X	
9918					1202 A,B			
9919					1203 A,B			
9920					1204 A,B			
9921					1205 A,B			time coll'd 1153
9922					1206 A,B			
9923					1207 A,B			time coll'd 1232
9924					1208 A,B			
9940					TB			

Analyses Requested
Turn Around Required See expl 3

Sample Relinquished By	Date/Time	Received By	Date/Time
Daniel Bockus	7/28/89 1330	[illegible] Iced Intact cold Sealed	7-29-89 0900

Explanation

1 SO--Soil, NA--Nonaqueous, GW--Groundwater, SL--Sludge, PE--Petroleum, VP--Vapor, AQ--Aqueous, OT--Other

2 T--Brass Tube, P--Plastic Bottle, V--VOA Bottle, B--Bag, G--Glass Bottle, OT--Other

3 N--Normal (2wks), W--1 Wk, R--24 hr Rush, H--Hold

CHAIN OF CUSTODY

WESTERN GEOLOGIC RESOURCES, INC.
2169 E. Francisco Boulevard, Suite B
San Rafael, California 94901
415/457-7595 Fax: 415/457-8521

General Remarks

Laboratory: Central Coast Analytical | Log #:

Address: 141 Suburban Rd, Suite C-4, San Luis Obispo, CA. 93401

Project #: 1-012.03 | Project Name: 17th & Harrison | Project Mgr/Contact: Ed Buskirk

Sampler(s): David Bockus / Mike Parkinson

Lab Sample Number	Date Sampled	Sample Type See expl 1	Container Type See expl 2	Preservative	Sample Description	Number of Containers	Oil & Grease by 503E	Soluble Metals by AA (Cd, Cr, Zn, Pb)	Turn Around Required See expl 3	Remarks
	7/28/89	~~GW~~ GW	G	H_2SO_4	9917 9918 9919 9920 1201-C, 1202-C, 1203-C, 1204-C	1 EA.	X			
				↓	9921 9922 9923 9924 1205-C, 1206-C, 1207-C, 1208-C	1 EA.	X			
				None	9917 9918 9919 9920 1201-D, 1202-D, 1203-D, 1204-D,	1 EA.		X		*Please Filter and preserve Metals Samples Upon Arrival
		↓	↓	↓	9921 9922 9923 9924 1205-D, 1206-D, 1207-D, 1208-D	1 EA.		X		

Analyses Requested

Sample Relinquished By	Date/Time	Received By	Date/Time
Daniel Bockus	7/28/89 1330	[illegible] Rec'd Intact Cold Sealed	7-29-89 0900

Explanation

1 SO--Soil, NA--Nonaqueous, GW--Groundwater, SL--Sludge, PE--Petroleum, VP--Vapor, AQ--Aqueous, OT--Other

2 T--Brass Tube, P--Plastic Bottle, V--VOA Bottle, B--Bag, G--Glass Bottle, OT--Other

3 N--Normal (2wks), W--1 Wk, R--24 hr Rush, H--Hold

SFB-175034.72-77 C910739 Project

Chain-of-Custody Record

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

Chevron Facility Number 9002 0
Consultant Release Number
Consultant Project Number 1-012.03
Consultant Name Western Geologic Resources
Address 2169 E. Francisco Blvd., San Rafael
Fax Number
Project Contact (Name) Tom H.
(Phone) 415-457-7595

Chevron Contact (Name)
(Phone)
Laboratory Name G-Tel
Contract Number
Samples Collected by (Name) RANDALL SMITH / Mark Frye
Collection Date 10-30-89
Signature R. J. Smith

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	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	EPA 601			Remarks
10309-01ABCD	910739-01	4	W		10:52	NaHSO4	X	X			X				X			
10309-02ABCD	-02	4			10:46													
10309-03ABCD	-03	4			11:44													
10309-04ABCD	-04	4			10:03													
10309-05ABCD	-05	4			11:39													
10309-06-ABCD	-06	4			9:26													
10309-07AB	-07	2			12:15													
" " CD		2			12:30													
10309-08-ABCD	-08	4			10:19													
10309-TB	-09	2				NONE												

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
R. J. Smith	WGR	10-30-89	David Gorderstrom		10/30 3:41PM
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time 10/31 8:45	Received For Laboratory By (Signature) T. Sowek		Date/Time

Turn Around Time (Circle Choice)
24 Hrs
48 Hrs
5 Days
(10 Days)
Normal

ATTACHMENT C

LABORATORY REPORTS AND
QUALITY CONTROL/QUALITY ASSURANCE DOCUMENTS

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: As Listed
Collected: 07/28/89
Received: 07/29/89
Tested: As Listed
Collected by: D. Bockus/M. Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

Sample Description:
Project #1-012.03
Filtered Groundwater, Samples As Listed

DIGESTED BY EPA METHOD 3005
ON 08/01/89 BY SH.

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	DISSOLVED LEVEL FOUND -mg/L CADMIUM	CHROMIUM	LEAD	ZINC
EPA METHOD----------		7131	7191	7421	7950
DETECTION LIMIT(PQL)**-----		0.001	0.005	0.005	0.005
DATE/ANALYST----------		08/14/89/KM	08/10/89/RJ	08/15/89/KM	08/04/89/EPM
***STLC----------		1.0	560.	5.0	250.
F-9917	#1201 D	<0.001	0.030	<0.005	0.013
F-9918	#1202 D	<0.001	0.031	<0.005	0.024
F-9919	#1203 D	<0.001	0.019	<0.005	<0.005
	DUPLICATE	<0.001	0.016	<0.005	<0.005
	SPIKED AT	0.020	0.10	0.10	0.20
	FOUND W/SPIKE	0.021	0.55	90.	0.20
	PERCENT RECOVERY	104.	118.	90.	100.
F-9920	#1204 D	<0.001	0.028	<0.005	0.008
F-9921	#1205 D	<0.001	0.014	<0.005	0.014
F-9922	#1206 D	<0.001	<0.005	<0.005	0.006
F-9923	#1207 D	<0.001	<0.005	<0.005	<0.005
F-9924	#1208 D	<0.001	<0.005	<0.005	0.007

**Practical Quantitation Limit

***SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11 Sec. 66699 as persistent & bioaccumulative toxic substance.

08/22/89
F9917WG.WR1/#95
MH/ke

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: As Listed
Collected: 07/28/89
Received: 07/29/89 @ 1330
Tested: As Listed
Collected by: D. Bockus/M. Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd, Suite B
San Rafael, CA 94901

Sample Description:
Project #1-012.03
Water, Samples As Listed

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND
		OIL & GREASE mg/l
METHOD----------		503E
DETECTION LIMIT(PQL)**-----		3.
DATE/ANALYST----------		08/07/89/RPB
F-9917	#1201 C	<3.
F-9918	#1202 C	<3.
F-9919	#1203 C	<3.
F-9920	#1204 C	<3.
F-9921	#1205 C	<3.
F-9922	#1206 C	<3.
F-9923	#1207 C	<3.
F-9924	#1208 C	<3.
F-9926	#7708 C	8.
F-9927	#7709 C	<3.
F-9928	#7710 C	<3.
F-9929	#7711 C	<3.
F-9930	#7712 C	<3.
F-9931	#7713 C	<3.
F-9932	#7714 C	<3.

**Practical Quantitation Limit

Respectfully submitted,
CENTRAL COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

08/14/89
F9917WGR.WR1/#84
MH/ke

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09917
Collected : 07/28/89
Received : 07/29/89
Tested : 08/07/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1201 A/B
Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	20.
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	6.4
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.5	not found
1,1,1-Trichloroethane (TCA)	0.1	0.3
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.5	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	50.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 112/88.

MSD#7/08-21-89
F09917v.wr1/103
MH/tz/jc/rh

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09918
Collected : 07/28/89
Received : 07/29/89
Tested : 08/07/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1202 A/B
Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	3.7
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	2.
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	46.
Toluene	1.	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	2.6
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recovery of Sample-Specific Quality Assurance Spike is: 95.

MSD#7/08-21-89
F09918v.wr1/103
MH/tz/jc/rh

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

IR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09919
Collected : 07/28/89
Received : 07/29/89
Tested : 08/07/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1203 A/B
Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	8.6
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	5.
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	11.
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	49.
Toluene	1.	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	2.1
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recovery of Sample-Specific Quality Assurance Spike is: 96.

MSD#7/08-21-89
F09919v.wr1/103
MH/tz/jc/rh

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09920
Collected : 07/28/89
Received : 07/29/89
Tested : 08/07/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1204 A/B
Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	32.
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	9.3
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.5	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	50.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 106/103.

MSD#7/08-21-89
F09920v.wr1/103
MH/tz/jc/rh

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09921
Collected : 07/28/89
Received : 07/29/89
Tested : 08/01/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1205 A,B, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	5.6
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	4.
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	2.3
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	5.3
Toluene	1.	not found
1,1,1-Trichloroethane (TCA)	0.2	0.5
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	0.3
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recovery of Sample-Specific Quality Assurance Spike is: 92.

08/07/89/MSD#6
F09921v.wr1/95
MH/jl/jc/tl

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09922
Collected : 07/28/89
Received : 07/29/89
Tested : 08/01/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1206 A,B, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	9.6
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	4.
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	0.6
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	1.	not found
1,1,1-Trichloroethane (TCA)	0.2	0.5
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recovery of Sample-Specific Quality Assurance Spike is: 96.

08/07/89/MSD#6
F09922v.wr1/95
MH/jl/jc/tl

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09923
Collected : 07/28/89
Received : 07/29/89
Tested : 08/01/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1207 A,B, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	2.	230.
Bromodichloromethane	2.	not found
Bromoform	4.	not found
Carbon Tetrachloride	2.	not found
Chlorobenzene	2.	not found
2-Chloroethyl Vinyl Ether	20.	not found
Chloroform	10.	not found
Dibromochloromethane	2.	not found
1,2-Dichlorobenzene	2.	not found
1,3-Dichlorobenzene	2.	not found
1,4-Dichlorobenzene	2.	not found
1,1-Dichloroethane	2.	not found
1,2-Dichloroethane (EDC)	2.	6.
1,1-Dichloroethene	2.	not found
c-1,2-Dichloroethene	2.	not found
t-1,2-Dichloroethene	2.	not found
1,2-Dichloropropane	2.	not found
c-1,3-Dichloropropene	2.	not found
t-1,3-Dichloropropene	2.	not found
Ethylbenzene	2.	70.
Ethyl Chloride	2.	not found
Ethylene Dibromide	2.	not found
Methyl Bromide	2.	not found
Methyl Chloride	2.	not found
Methylene Chloride	20.	not found
1,1,2,2-Tetrachloroethane	10.	not found
Tetrachloroethylene (PCE)	2.	not found
Toluene	10.	90.
1,1,1-Trichloroethane (TCA)	10.	not found
1,1,2-Trichloroethane	2.	not found
Trichloroethene (TCE)	2.	not found
Trichlorotrifluoroethane (f113)	10.	not found
Trichlorofluoromethane(F-11)	10.	not found
Vinyl Chloride	2.	not found
Xylenes	4.	440.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	1000.	7000.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 113/102.

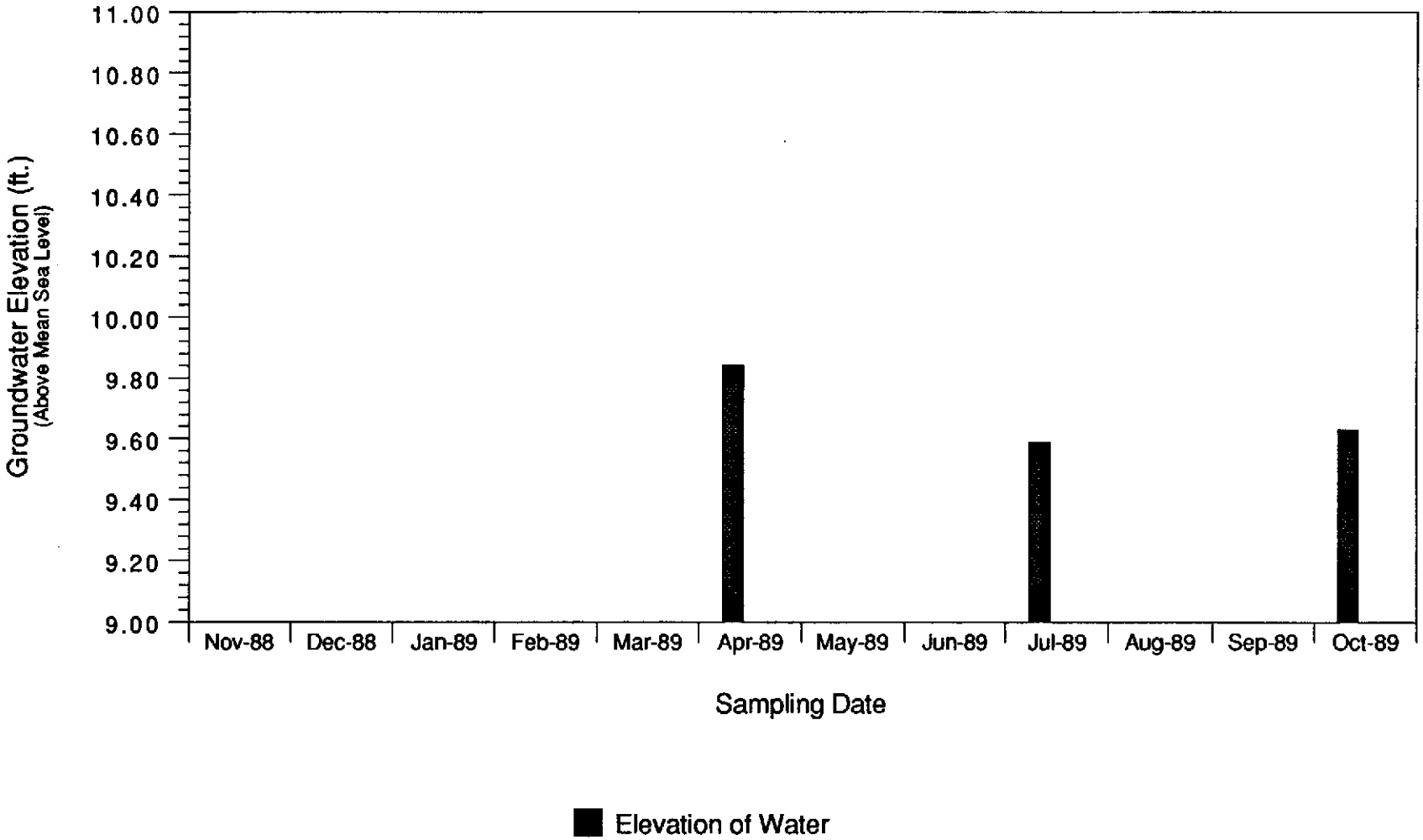
08/07/89/MSD#6
F09923v.wr1/95
MH/jg/jc/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

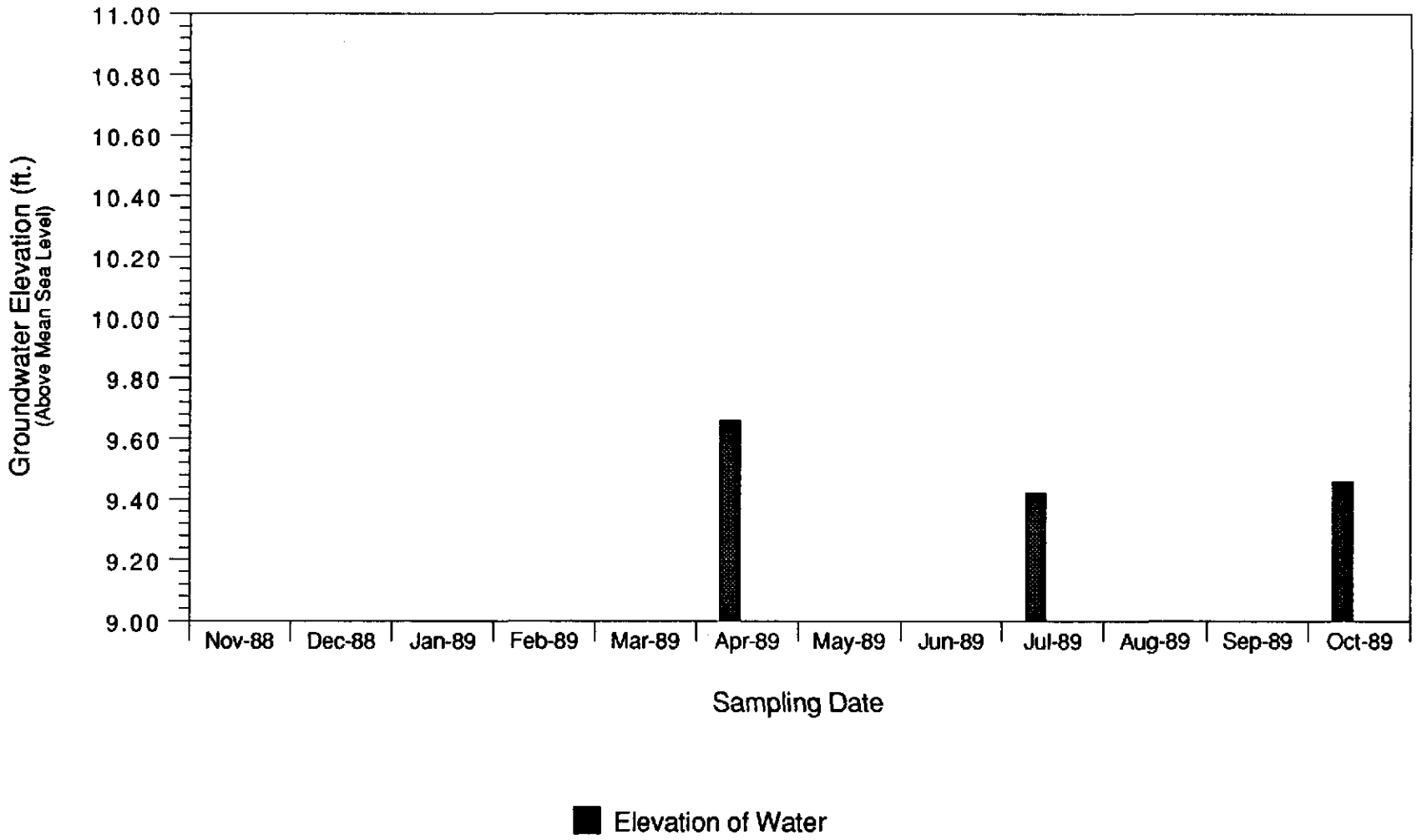
GROUNDWATER MONITOR WELL MW-4

Former Chevron Service Station #90020 Oakland, California



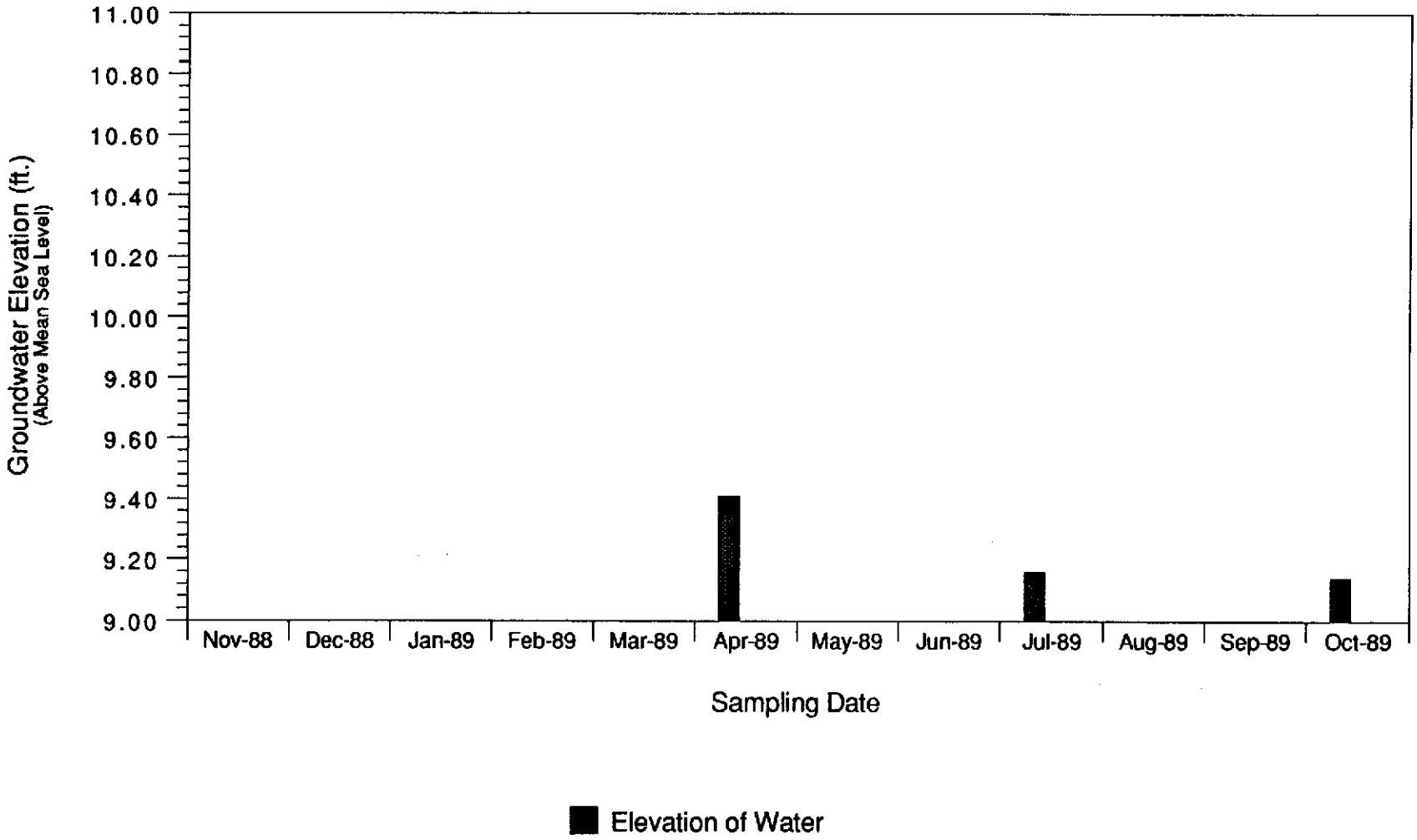
GROUNDWATER MONITOR WELL MW-5

Former Chevron Service Station #90020 Oakland, California



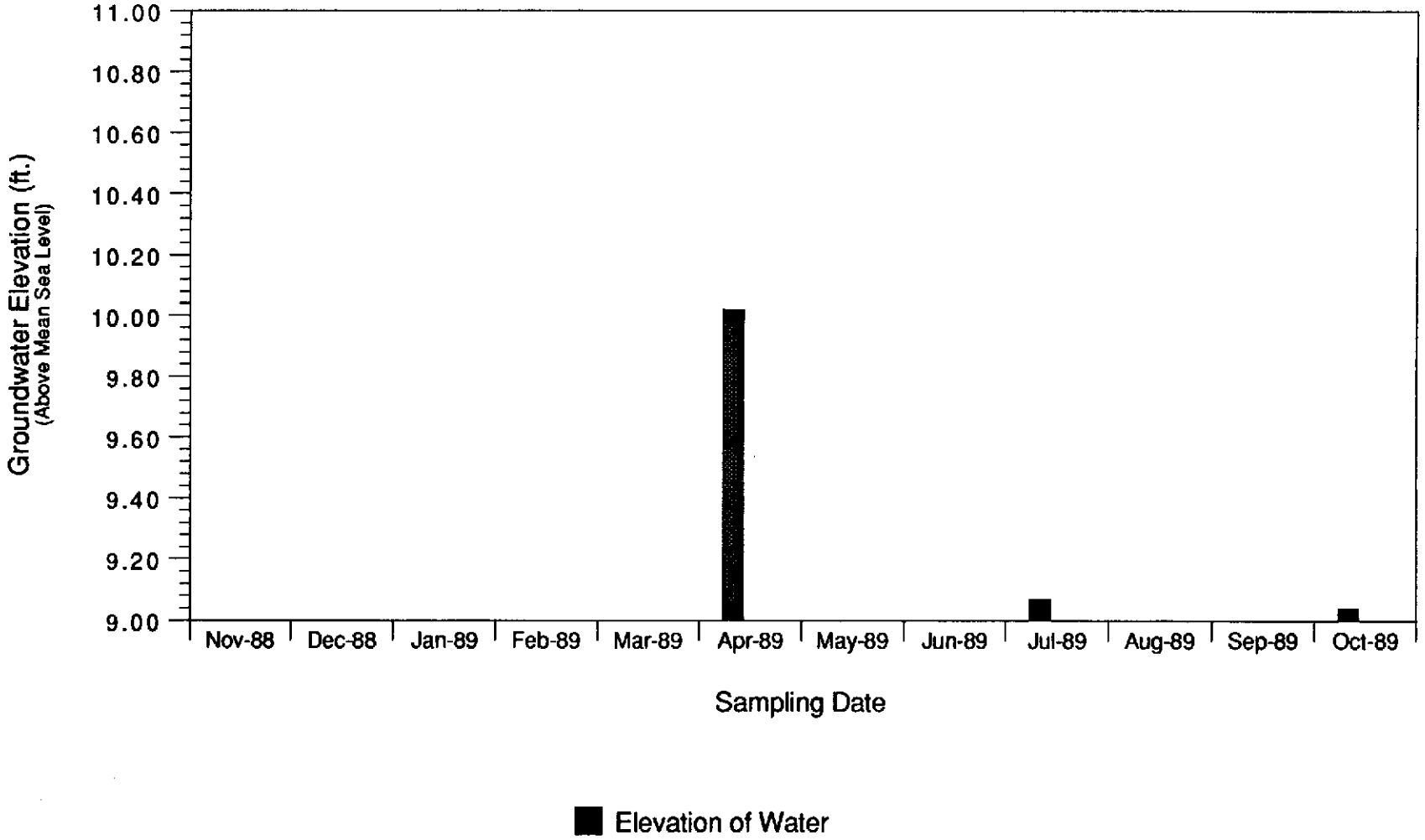
GROUNDWATER MONITOR WELL MW-6

Former Chevron Service Station #90020 Oakland, California



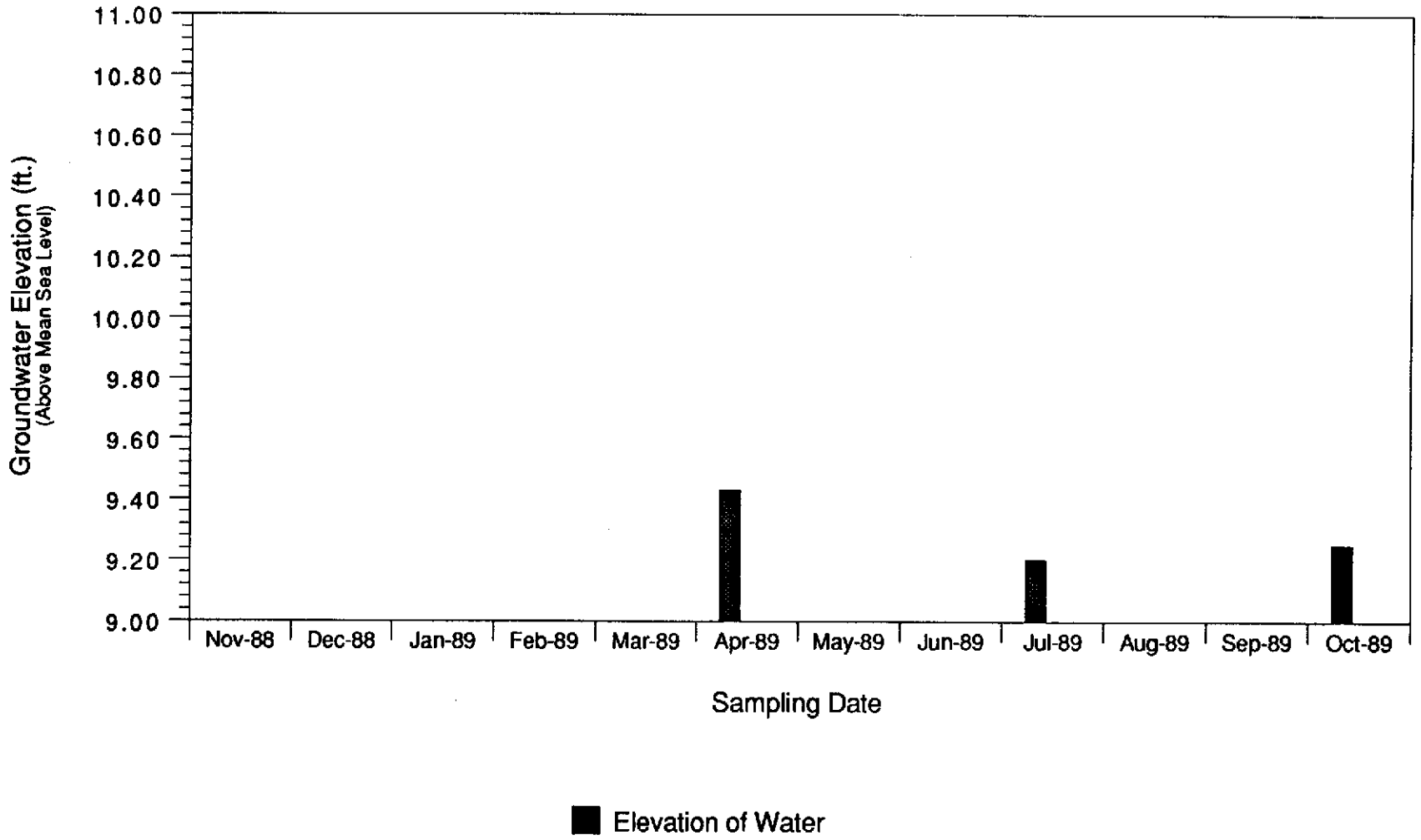
GROUNDWATER MONITOR WELL MW-7

Former Chevron Service Station #90020 Oakland, California



GROUNDWATER MONITOR WELL MW-8

Former Chevron Service Station #90020 Oakland, California



Central Coast Analytical Services

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 934Ø1
(8Ø5) 543-2553

Lab Number : F-Ø9923dup
Collected : Ø7/28/89
Received : Ø7/29/89
Tested : Ø8/Ø1/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94Ø1

EXTRACTED BY EPA METHOD 5Ø3Ø (purge-and-trap)
EPA METHOD 826Ø
Sample Description:
Project #1-Ø12.Ø3, 12Ø7 A,B, Water,
Duplicate Analysis

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	5.	28Ø.
Bromodichloromethane	5.	not found
Bromoform	1Ø.	not found
Carbon Tetrachloride	5.	not found
Chlorobenzene	5.	not found
2-Chloroethyl Vinyl Ether	5Ø.	not found
Chloroform	2Ø.	not found
Dibromochloromethane	5.	not found
1,2-Dichlorobenzene	5.	not found
1,3-Dichlorobenzene	5.	not found
1,4-Dichlorobenzene	5.	not found
1,1-Dichloroethane	5.	not found
1,2-Dichloroethane (EDC)	5.	not found
1,1-Dichloroethene	5.	not found
c-1,2-Dichloroethene	5.	not found
t-1,2-Dichloroethene	5.	not found
1,2-Dichloropropane	5.	not found
c-1,3-Dichloropropene	5.	not found
t-1,3-Dichloropropene	5.	not found
Ethylbenzene	5.	58.
Ethyl Chloride	5.	not found
Ethylene Dibromide	5.	not found
Methyl Bromide	5.	not found
Methyl Chloride	5.	not found
Methylene Chloride	5Ø.	not found
1,1,2,2-Tetrachloroethane	2Ø.	not found
Tetrachloroethylene (PCE)	5.	not found
Toluene	2Ø.	18Ø.
1,1,1-Trichloroethane (TCA)	5.	not found
1,1,2-Trichloroethane	5.	not found
Trichloroethene (TCE)	5.	not found
Trichlorotrifluoroethane (f113)	2Ø.	not found
Trichlorofluoromethane(F-11)	2Ø.	not found
Vinyl Chloride	5.	not found
Xylenes	1Ø.	43Ø.
Total Purgeable Petroleum Hydrocarbons (Gasoline)	2ØØØ.	6ØØØ.

Percent Recovery of Sample-Specific Quality Assurance Spike is: 83.

Ø8/Ø7/89/MSD#6
FØ9923vd.wr1/95
MH/jm/jc/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : F-09924
Collected : 07/28/89
Received : 07/29/89
Tested : 08/01/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
Project #1-012.03, 1208 A,B, Water,

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	2.3
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	2.
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	3.8
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	5.6
Toluene	1.	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recovery of Sample-Specific Quality Assurance Spike is: 101.

08/07/89/MSD#6
F09924v.wr1/95
MH/jg/jc/tl

Respectfully submitted,
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.9Ø&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 934Ø1
(8Ø5) 543-2553

Lab Number : F-Ø994Ø
Collected : Ø7/28/89
Received : Ø7/29/89
Tested : Ø7/3Ø/89
Collected by: Bockus/Parkinson

ATTN: Ed Buskirk
Western Geologic Resources
2169 E. Francisco Blvd.
Suite B
San Rafael, CA 949Ø1

EXTRACTED BY EPA METHOD 5Ø3Ø (purge-and-trap)
EPA METHOD 826Ø
Sample Description:
Project #1-Ø12.Ø3, 12TB
TBØ71989DMØ2, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	Ø.1	not found
Bromodichloromethane	Ø.1	not found
Bromoform	Ø.2	not found
Carbon Tetrachloride	Ø.1	not found
Chlorobenzene	Ø.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	Ø.5	not found
Dibromochloromethane	Ø.1	not found
1,2-Dichlorobenzene	Ø.1	not found
1,3-Dichlorobenzene	Ø.1	not found
1,4-Dichlorobenzene	Ø.1	not found
1,1-Dichloroethane	Ø.1	not found
1,2-Dichloroethane (EDC)	Ø.1	not found
1,1-Dichloroethene	Ø.1	not found
c-1,2-Dichloroethene	Ø.1	not found
t-1,2-Dichloroethene	Ø.1	not found
1,2-Dichloropropane	Ø.1	not found
c-1,3-Dichloropropene	Ø.1	not found
t-1,3-Dichloropropene	Ø.1	not found
Ethylbenzene	Ø.1	not found
Ethyl Chloride	Ø.1	not found
Ethylene Dibromide	Ø.1	not found
Methyl Bromide	Ø.1	not found
Methyl Chloride	Ø.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	Ø.5	not found
Tetrachloroethylene (PCE)	Ø.1	not found
Toluene	Ø.5	not found
1,1,1-Trichloroethane (TCA)	Ø.1	not found
1,1,2-Trichloroethane	Ø.1	not found
Trichloroethene (TCE)	Ø.1	not found
Trichlorotrifluoroethane (f113)	Ø.5	not found
Trichlorofluoromethane(F-11)	Ø.5	not found
Vinyl Chloride	Ø.1	not found
Xylenes	Ø.2	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	5Ø.	not found

Percent Recovery of Sample-Specific Quality Assurance Spike is: 97.

MSD#7/Ø8-Ø9-89
FØ994Øv.wr1/97
MH/jl/jc/rh

Respectfully submitted,
Mary Havlicek
Mary Havlicek, Ph.D., President

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Central Coast
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141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : B-080019
Collected :
Received :
Tested : 08/01/89
Collected by:

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
INSTRUMENT BLANK

CCAS

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.5	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 113/105.

08/07/89/MSD#6
B080019v.wr1/95
MH/jg/jc/tl

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast Analytical Services

Central Coast Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number : QS-080819
Collected :
Received :
Tested : 08/01/89
Collected by:

CCAS

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
BOILED WATER SPIKE
Spiked with 100 ug/L VOA Stock

Compound Analyzed	Detection Limit (ug/L)(PQL)*	Concentration w/spike (ug/L)	Percent Recovery
Benzene	0.5	110.	109.
Bromodichloromethane	0.5	110.	111.
Bromoform	1.	130.	130.
Carbon Tetrachloride	0.5	110.	109.
Chlorobenzene	0.5	100.	103.
2-Chloroethyl Vinyl Ether	5.	110.	108.
Chloroform	2.	110.	106.
Dibromochloromethane	0.5	130.	130.
1,2-Dichlorobenzene	0.5	100.	102.
1,3-Dichlorobenzene	0.5	92.	92.
1,4-Dichlorobenzene	0.5	98.	98.
1,1-Dichloroethane	0.5	110.	108.
1,2-Dichloroethane (EDC)	0.5	130.	130.
1,1-Dichloroethene	0.5	100.	104.
c-1,2-Dichloroethene	0.5	100.	101.
t-1,2-Dichloroethene	0.5	100.	102.
1,2-Dichloropropane	0.5	110.	110.
c-1,3-Dichloropropene	0.5	not spiked	----
t-1,3-Dichloropropene	0.5	120.	120.
Ethylbenzene	0.5	94.	94.
Ethyl Chloride	0.5	100.	104.
Ethylene Dibromide	0.5	130.	126.
Methyl Bromide	0.5	not spiked	----
Methyl Chloride	0.5	not spiked	----
Methylene Chloride	5.	120.	119.
1,1,2,2-Tetrachloroethane	2.	110.	109.
Tetrachloroethylene (PCE)	0.5	100.	103.
Toluene	2.	100.	100.
1,1,1-Trichloroethane (TCA)	0.5	not spiked	----
1,1,2-Trichloroethane	0.5	not spiked	----
Trichloroethene (TCE)	0.5	110.	113.
Trichlorotrifluoroethane	2.	100.	102.
Trichlorofluoromethane	2.	100.	104.
Vinyl Chloride	0.5	not spiked	----
Xylenes	1.	280.	93.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 126/96.

MSD#6/08-08-89
QS0801v2.wr1/96
MH/jm/jc/rh

Respectfully submitted,

Mary Havlicek, Ph.D., President

Central Coast
Analytical Services, Inc.
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Central Coast Analytical Services

Lab Number : B-080079
Collected :
Received :
Tested : 08/07/89
Collected by:

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)
EPA METHOD 8260
Sample Description:
INSTRUMENT BLANK

CCAS

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.5	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 110/101.

MSD#7/08-21-89
B080079v.wr1/103
MH/ec/jc/rh

Respectfully submitted,

Mary Havlicek, Ph.D., President

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
Contract Number: N46CWC0244-9-X
Work Order Number: C910738
Report Issue Date: November 15, 1989

Tom Howard
Western Geologic Resources
2169 E. Francisco Blvd.
San Rafael, CA 94901

Dear Mr. Howard:

Attached please find the analytical results for the samples received by GTEL on October 31, 1989.

GTEL maintains a formal quality assurance program to ensure the integrity of the analytical results. All quality assurance criteria were achieved during the analysis unless otherwise noted in the footnotes to the analytical report.

The specific analytical methods used and cited in this report are approved by state and federal regulatory agencies. GTEL is certified for the analysis reported herein by the California State Department of Health Services under certificate number 194.

If you have any questions regarding this analysis, or if we may service any additional analytical needs, please give us a call.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
Contract Number: N46CWC0244-9-X
Work Order Number: C910738
Report Issue Date: November 15, 1989

Table 1

ANALYTICAL RESULTS

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015[1]

GTEL Sample Number		01	02	03	04	05
Client Identification		10309-01ABC D	10309-02ABC D	10309-03ABC D	10309-04ABC D	10309-05ABC D
Date Sampled		10/30/89	10/30/89	10/30/89	10/30/89	10/30/89
Date Extracted		11/01/89	11/01/89	11/01/89	11/01/89	11/01/89
Date Analyzed		11/01/89	11/01/89	11/01/89	11/01/89	11/01/89
Analyte	Detection Limit, ug/L	Concentration, ug/L				
Benzene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Toluene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Ethylbenzene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Xylene (total)	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
TPH as Gasoline	500	<500	<500	<500	<500	<500

GTEL Sample Number		06	07	08	09	10
Client Identification		10309-06ABC D	10309-07AB	10309-07CD	10309-08ABC D	10309-TB
Date Sampled		10/30/89	10/30/89	10/30/89	10/30/89	10/30/89
Date Extracted		11/01/89	11/01/89	11/01/89	11/01/89	11/01/89
Date Analyzed		11/01/89	11/01/89	11/01/89	11/01/89	11/01/89
Analyte	Detection Limit, ug/L	Concentration, ug/L				
Benzene	0.3	<0.3	570	520	<0.3	<0.3
Toluene	0.3	<0.3	55	82	<0.3	<0.3
Ethylbenzene	0.3	<0.3	160	180	<0.3	<0.3
Xylene (total)	0.6	<0.6	400	410	<0.6	<0.6
TPH as Gasoline	500	<500	10000	9900	<500	<500

C
1 = Extraction by EPA Method 5030

GTEL ENVIRONMENTAL LABORATORIES, INC.

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
Contract Number: N46CWC0244-9-X
Work Order Number: C910738
Report Issue Date: November 15, 1989

QA Conformance Summary

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015

1.0 Blanks

Five of 5 target compounds were below detection limits in the reagent blank as shown in Table 2.

2.0 Independent QC Check Sample

The control limits were met for 4 out of 4 QC check compounds as shown in Table 3.

3.0 Surrogate Compound Recoveries

Percent recovery limits were met for the surrogate compound (naphthalene) for all samples as shown in Table 4.

4.0 Matrix Spike (MS) Accuracy

Percent recovery limits were met for 4 of 4 compounds in the MS as shown in Table 5.

5.0 Reagent Water Spike (WS) and Reagent Water Spike (WSD) Duplicate Precision

Relative percent difference (RPD) criteria was met for 4 of 4 analytes in the WS and WSD as shown in Table 6.

6.0 Sample Handling

6.1 Sample handling and holding time criteria were met for all samples.

6.2 Samples 07 and 08 had to be diluted due to high levels of contaminants.

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
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Work Order Number: C910738
Report Issue Date: November 15, 1989

Table 2

REAGENT BLANK DATA

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015

Date of Analysis: 11/01/89

Analyte	Concentration, ug/L
Benzene	<0.3
Toluene	<0.3
Ethylbenzene	<0.3
Xylene (total)	<0.6
Gasoline	<500

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
Contract Number: N46CWC0244-9-X
Work Order Number: C910738
Report Issue Date: November 15, 1989

Table 3

INDEPENDENT QC CHECK SAMPLE RESULTS

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015

Date of Analysis: 10/30/89

Analyte	Expected Result, ug/L	Observed Result, ug/L	Recovery, %	Acceptability Limits, %
Benzene	50	56	112	85 - 115
Toluene	50	55	110	85 - 115
Ethylbenzene	50	56	112	85 - 115
Xylene (total)	150	172	114	85 - 115

Table 3a

INDEPENDENT QC CHECK SAMPLE SOURCE

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015

Analyte	Lot Number	Source
Benzene	LA18042	SUPELCO
Toluene	LA18042	SUPELCO
Ethylbenzene	LA18042	SUPELCO
Xylene (total)	LA18042	SUPELCO

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
Contract Number: N46CWC0244-9-X
Work Order Number: C910738
Report Issue Date: November 15, 1989

Table 4

SURROGATE COMPOUND RECOVERY

Naphthalene

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015

Acceptability Limits: 80 - 120 %

GTEL No.	Expected Result, ug/L	Surrogate Result, ug/L	Surrogate Recovery, %
Blank	200	191	96
01	200	202	101
02	200	205	102
03	200	172	86
04	200	212	106
05	200	187	94
06	200	209	104
07	200	186	93
08	200	201	100
09	200	209	104
10	200	211	106
MS	200	232	116
WS	200	188	94
WSD	200	212	106

MS = Matrix Spike
WS = Reagent Water Spike
WSD = Reagent Water Spike Duplicate

GTEL ENVIRONMENTAL LABORATORIES, INC

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
Contract Number: N46CWC0244-9-X
Work Order Number: C910738
Report Issue Date: November 15, 1989

Table 5

MATRIX SPIKE (MS) RECOVERY REPORT

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015

Date of Analysis: 11/01/89
Sample Spiked: 06
Client ID: 10309-06ABCD
Units: ug/L

Analyte	Sample Result	Concentration Added	Concentration Recovered	MS Result	MS, % Recovery	Acceptability Limits, %
Benzene	<0.3	25	22	22	88	80 - 120
Toluene	<0.3	25	22	22	88	80 - 120
Ethylbenzene	<0.3	25	23	23	92	80 - 120
Xylene (total)	<0.6	75	76	76	101	80 - 120

<# = Not detected at the indicated detection limit.

GTEL ENVIRONMENTAL LABORATORIES, INC

Project Number: SFB-175-0204.72-76
Consultant Project Number: 1-012.03
Laboratory Release Number: 2584790
Facility Number: 90020
Contract Number: N46CWC0244-9-X
Work Order Number: C910738
Report Issue Date: November 15, 1989

Table 6

REAGENT WATER SPIKE AND REAGENT WATER SPIKE DUPLICATE
RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD) REPORT

Purgeable Aromatics and Total Petroleum Hydrocarbons
as Gasoline in Water
EPA Method 8020/8015

Date of Analysis: 11/01/89 Units: ug/L

Analyte	Concentration Added	WS Result	WS, % Recovery	WSD Result	WSD, % Recovery
Benzene	25	22	88	22	88
Toluene	25	22	88	22	88
Ethylbenzene	25	23	92	23	92
Xylene (total)	75	74	99	73	97

Analyte	RPD, %	Acceptability Limits	
		Maximum RPD, %	% Recovery
Benzene	0	30	80-120
Toluene	0	30	80-120
Ethylbenzene	0	30	80-120
Xylene (total)	2	30	80-120

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL
ENVIRONMENTAL
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Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Project Number: SFB-175-0204.72-77
Consultant Project Number 1-012.03
Contract Number: N46CWC0244-9-X
Facility Number: 90020
Work Order Number: C910739
Report Issue Date: November 14, 1989

Tom Howard
Western Geologic Resources
2169 E. Francisco Blvd.
San Rafael, CA 94901

Dear Mr. Howard,

Attached please find the analytical results for the samples received by GTEL on October 31, 1989

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The specific analytical methods used and cited in this report are approved by state and federal regulatory agencies. GTEL is certified for the analysis reported herein by the California State Department of Health Services under certificate number 194.

If you have any questions regarding this analysis, or if we may service any additional analytical needs, please give us a call.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Project Number: SFB-175-0204.72-77
Consultant Project Number 1-012.03
Contract Number: N46CWC0244-9-X
Facility Number: 90020
Work Order Number: C910739
Report Issue Date: November 14, 1989

Table 1

ANALYTICAL RESULTS

Purgeable Halocarbons in Water
EPA Method 601[1]

Date Sampled		10/30/89	10/30/89	10/30/89	10/30/89
Date Analyzed		11/04/89	11/04/89	11/04/89	11/04/89
Client Identification		10309-01ABCD	10309-02ABCD	10309-03ABCD	10309-04ABCD
GTEL Sample Number		01	02	03	04
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Chloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	0.5	<0.5	14	8.2	<0.5
Chloroform	0.5	4.9	2.6	5.3	8.5
1,2-Dichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	0.5	11	1.4	5.6	32
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	0.5	<0.5	1.1	0.77	<0.5
Dibromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	0.5	<0.5	53	62	<0.5
Chlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5

1 = Extraction by EPA Method 5030

GTEL ENVIRONMENTAL LABORATORIES, INC

Table 1 con't

ANALYTICAL RESULTS

Purgeable Halocarbons in Water
EPA Method 601[1]

	Date Sampled	10/30/89	10/30/89	10/30/89	10/30/89
	Date Analyzed	11/04/89	11/04/89	11/04/89	11/04/89
	Client Identification	10309-05ABCD	10309-06ABCD	10309-07AB	10309-07CD
	GTEL Sample Number	05	06	07	08
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Chloromethane	0.5	<0.5	<0.5	<1.0	<1.0
Bromomethane	0.5	<0.5	<0.5	<1.0	<1.0
Dichlorodifluoromethane	0.5	<0.5	<0.5	<1.0	<1.0
Vinyl chloride	1.0	<1.0	<1.0	<2.0	<2.0
Chloroethane	0.5	<0.5	<0.5	<1.0	<1.0
Methylene chloride	0.5	<0.5	<0.5	3.0	1.6
Trichlorofluoromethane	0.5	<0.5	<0.5	<1.0	<1.0
1,1-Dichloroethene	0.2	<0.2	<0.2	1.6	1.7
1,1-Dichloroethane	0.5	<0.5	<0.5	<1.0	<1.0
trans-1,2-Dichloroethene	0.5	0.86	<0.5	<1.0	<1.0
Chloroform	0.5	2.0	3.6	3.9	3.1
1,2-Dichloroethane	0.5	<0.5	<0.5	6.4	6.2
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<1.0	<1.0
Carbon tetrachloride	0.5	2.9	8.2	<1.0	<1.0
Bromodichloromethane	0.5	<0.5	<0.5	<1.0	<1.0
1,2-Dichloropropane	0.5	<0.5	<0.5	<1.0	<1.0
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<1.0	<1.0
Trichloroethene	0.5	<0.5	<0.5	<1.0	<1.0
Dibromochloromethane	0.5	<0.5	<0.5	<1.0	<1.0
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<1.0	<1.0
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<1.0	<1.0
2-Chloroethylvinyl ether	1.0	<1.0	<1.0	<2.0	<2.0
Bromoform	0.5	<0.5	<0.5	<1.0	<1.0
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<1.0	<1.0
Tetrachloroethene	0.5	2.7	<0.5	<1.0	<1.0
Chlorobenzene	0.5	<0.5	<0.5	<1.0	<1.0
1,3-Dichlorobenzene	0.5	<0.5	<0.5	<1.0	<1.0
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<1.0	<1.0
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<1.0	<1.0

1 = Extraction by EPA Method 5030

GTEL ENVIRONMENTAL LABORATORIES, INC

Project Number: SF8-175-0204.72-77
Consultant Project Number 1-012.03
Contract Number: N46CWC0244-9-X
Facility Number: 90020
Work Order Number: C910739
Report Issue Date: March 22, 1990

Table 1 Con't

ANALYTICAL RESULTS

Purgeable Halocarbons in Water
EPA Method 601[1]

	Date Sampled	10/30/89	10/30/89
	Date Analyzed	11/04/89	11/04/89
	Client Identification	10309-08ABCD	10309-TB
	GTEL Sample Number	09	10
Analyte	Detection Limit, ug/L	Concentration, ug/L	
Chloromethane	0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5
Dichlorodifluoromethane	0.5	<0.5	<0.5
Vinyl chloride	1.0	<1.0	<1.0
Chloroethane	0.5	<0.5	<0.5
Methylene chloride	0.5	<0.5	<0.5
Trichlorofluoromethane	0.5	<0.5	<0.5
1,1-Dichloroethene	0.2	<0.2	<0.2
1,1-Dichloroethane	0.5	<0.5	<0.5
trans-1,2-Dichloroethene	0.5	5.5	<0.5
Chloroform	0.5	2.6	<0.5
1,2-Dichloroethane	0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	<0.5	<0.5
Carbon tetrachloride	0.5	2.5	<0.5
Bromodichloromethane	0.5	<0.5	<0.5
1,2-Dichloropropane	0.5	<0.5	<0.5
trans-1,3-Dichloropropene	0.5	<0.5	<0.5
Trichloroethene	0.5	<0.5	<0.5
Dibromochloromethane	0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5
cis-1,3-Dichloropropene	0.5	<0.5	<0.5
2-Chloroethylvinyl ether	1.0	<1.0	<1.0
Bromoform	0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5
Tetrachloroethene	0.5	8.0	<0.5
Chlorobenzene	0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5	<0.5	<0.5
1,2-Dichlorobenzene	0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<0.5

1 = Extraction by EPA Method 5030

Project Number: SFB-175-0204.72-77
Consultant Project Number 1-012.03
Contract Number: N46CWC0244-9-X
Facility Number: 90020
Work Order Number: C910739
Report Issue Date: March 22, 1990

QA Conformance Summary

Purgeable Halocarbons in Water
EPA Method 601

1.0 Blanks

Zero of 29 target compounds found in Reagent blank as shown in Table 2.

2.0 Independent QC Check Sample

The control limits were met for 8 out of 8 QC check compounds as shown in Table 3.

3.0 Surrogate Compound Recoveries

Percent recovery limits were met for the surrogate compound (Bromofluorobenzene) for all samples as shown in Table 4.

4.0 Matrix Spike (MS) Accuracy

Percent recovery limits were met for 3 of 3 compounds in the MS as shown in Table 5.

5.0 Reagent Water Spike (WS) and Reagent Water Spike Duplicate (WSD) Precision

Relative percent difference (RPD) criteria was met for 3 of 3 compounds in the WS and WSD as shown in Table 6.

6.0 Sample Handling

6.1 Sample handling and holding time criteria were met for all samples.

6.2 Samples 07 and 08 were diluted by a factor of 2 due to high levels of gasoline contamination, resulting in elevated detection limits.

Table 2

REAGENT BLANK DATA

Purgeable Halocarbons in Water
EPA Method 601

Date of Analysis: 11/04/89

Analyte	Observed Result, ug/L
Chloromethane	ND
Bromomethane	ND
Dichlorodifluoromethane	ND
Vinyl chloride	ND
Chloroethane	ND
Methylene chloride	ND
Trichlorofluoromethane	ND
1,1-Dichloroethene	ND
1,1-Dichloroethane	ND
trans-1,2-Dichloroethene	ND
Chloroform	ND
1,2-Dichloroethane	ND
1,1,1-Trichloroethane	ND
Carbon tetrachloride	ND
Bromodichloromethane	ND
1,2-Dichloropropane	ND
trans-1,3-Dichloropropene	ND
Trichloroethene	ND
Dibromochloromethane	ND
1,1,2-Trichloroethane	ND
cis-1,3-Dichloropropene	ND
2-Chloroethylvinyl ether	ND
Bromoform	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethene	ND
Chlorobenzene	ND
1,3-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND

ND = Not Detected above the Statistical Detection Limit

Table 3

INDEPENDENT QC CHECK SAMPLE RESULTS

Purgeable Halocarbons in Water
EPA Method 601

Date of Analysis: 11/06/89

Analyte	Expected Result, ug/L	Observed Result, ug/L	Recovery, %	Acceptability Limits, %[1]
Vinyl Chloride	50	53.3	107	85 - 115
Methylene Chloride	50	44.3	89	85 - 115
1,1Dichloroethylene	50	52.4	105	85 - 115
Chloroform	50	45.4	91	85 - 115
Carbon Tetrachloride	50	43.5	87	85 - 115
Trichloroethylene	50	44.6	89	85 - 115
1,1Dichloroethene	50	46.2	92	85 - 115
1,2Dichloroethane	50	43.0	86	85 - 115

1 = Acceptability limits are derived from the 99% confidence interval of all samples during the previous quarter.

Table 3a

INDEPENDENT QC CHECK SAMPLE SOURCE

Purgeable Halocarbons in Water
EPA Method 601

Analyte	Lot Number	Source
Vinyl Chloride	LA 21062	PURGEABLE C SUPELCO
Methylene Chloride	LA 20674	PURGEABLE C SUPELCO
1,1Dichloroethylene	LA 20674	PURGEABLE C SUPELCO
Chloroform	LA 20674	PURGEALBE A SUPELCO
Carbon Tetrachloride	LA 20674	PURGEABLE A SUPELCO
Trichloroethylene	LA 20674	PURGEABLE A SUPELCO
1,1Dichloroethene	LA 20674	PURGEABLE A SUPELCO
1,2Dichloroethane	LA 21062	PURGEABLE B SUPELCO

Table 4

SURROGATE COMPOUND RECOVERY

Bromofluorobenzene

Purgeable Halocarbons in Water
EPA Method 601

Acceptability Limits[1]: 70-120%

GTEL No.	Expected Result, ug/L	Surrogate Result, ug/L	Surrogate Recovery, %
Blank	100	80	80
01	100	79	79
02	100	102	102
03	100	114	114
04	100	101	101
05	100	113	113
06	100	104	104
07	100	103	103
08	100	106	106
09	100	103	103
10	100	100	100
MS	100	100	100
WS	100	97	97
WSD	100	92	92

MS = Matrix Spike
WS = Reagent Water Spike
WSD = Reagent Water Spike Duplicate
1 = Acceptability limits are derived from the 99% confidence interval of all samples during the previous quarter.

Table 5

MATRIX SPIKE (MS) RECOVERY REPORT

Purgeable Halocarbons in Water
EPA Method 601

Date of Analysis: 11/04/89
Sample Spiked: 10
Client ID: 10309TB
Units: ug/L

Analyte	Sample Result	MS Result	Concentration Added	MS, % Recovery	Acceptability Limits, %[1]
1,1-Dichloroethene	ND	59	50	118	60 - 120
Chlorobenzene	ND	52	50	104	60 - 120
Trichloroethene	ND	53	50	106	60 - 120

ND = Not Detected above the statistical detection limit
1 = Acceptability limits are derived from the 99% confidence interval of all samples during the previous quarter.

Project Number: SFB-175-0204.72-77
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Table 6

REAGENT WATER SPIKE (WS) AND REAGENT WATER SPIKE DUPLICATE (WSD) RESULTS
AND RELATIVE PERCENT DIFFERENCE (RPD) REPORT

Purgeable Halocarbons in Water
EPA Method 601

Date of Analysis: 11/04/89 Units: ug/L

Analyte	Concentration Added	WS Result	WSD Result	WS, % Recovery	WSD, % Recovery
1,1 Dichloroethene	50	45.7	45.6	91	91
Chlorobenzene	50	40.9	39.0	82	78
Trichloroethene	50	39.9	37.0	80	74

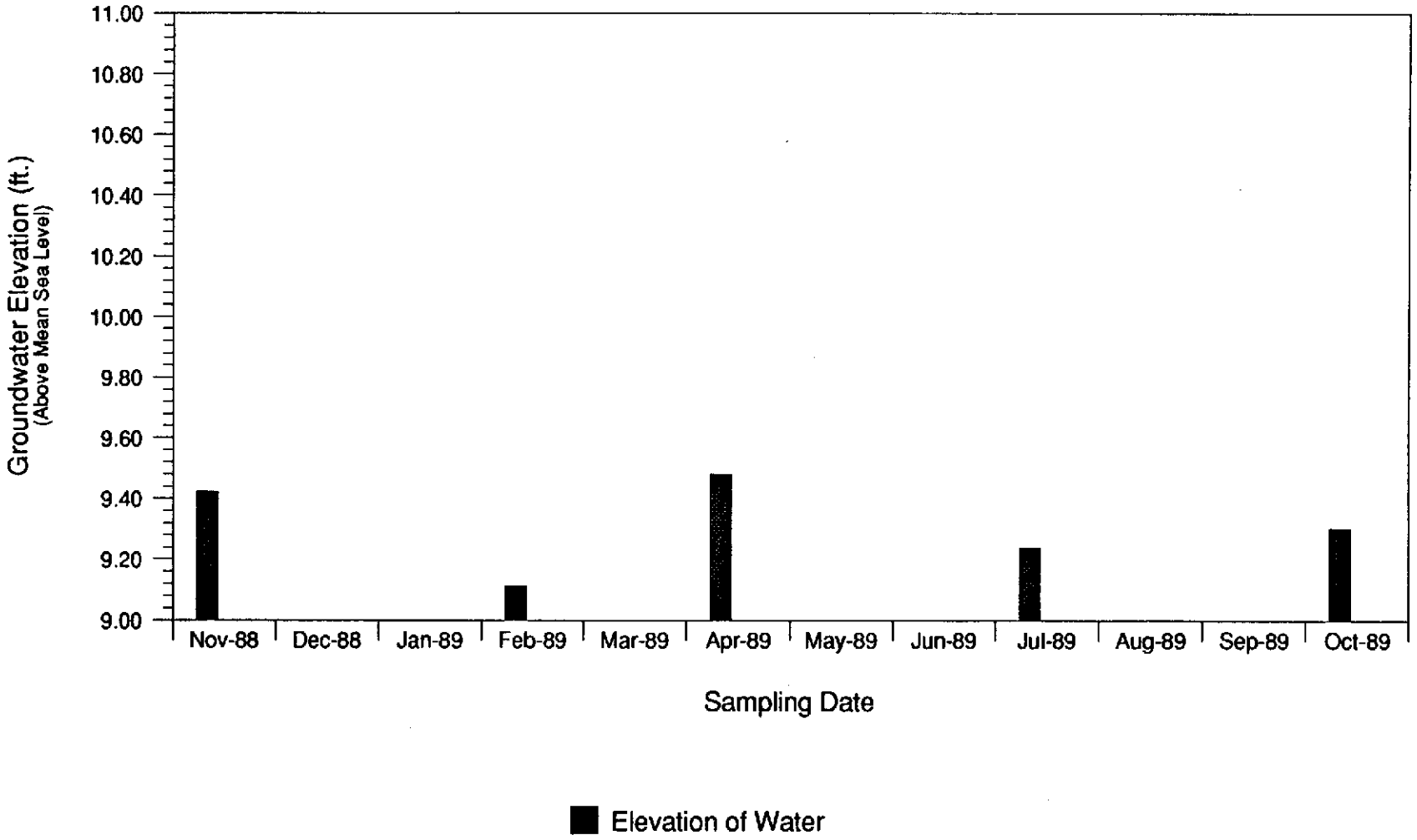
Analyte	RPD, %	Maximum RPD, %	Acceptability Limits % Recovery
1,1 Dichloroethene	0.2	30	60-120
Chlorobenzene	4.8	30	60-120
Trichloroethene	7.5	30	60-100

ATTACHMENT D

HYDROGRAPHS

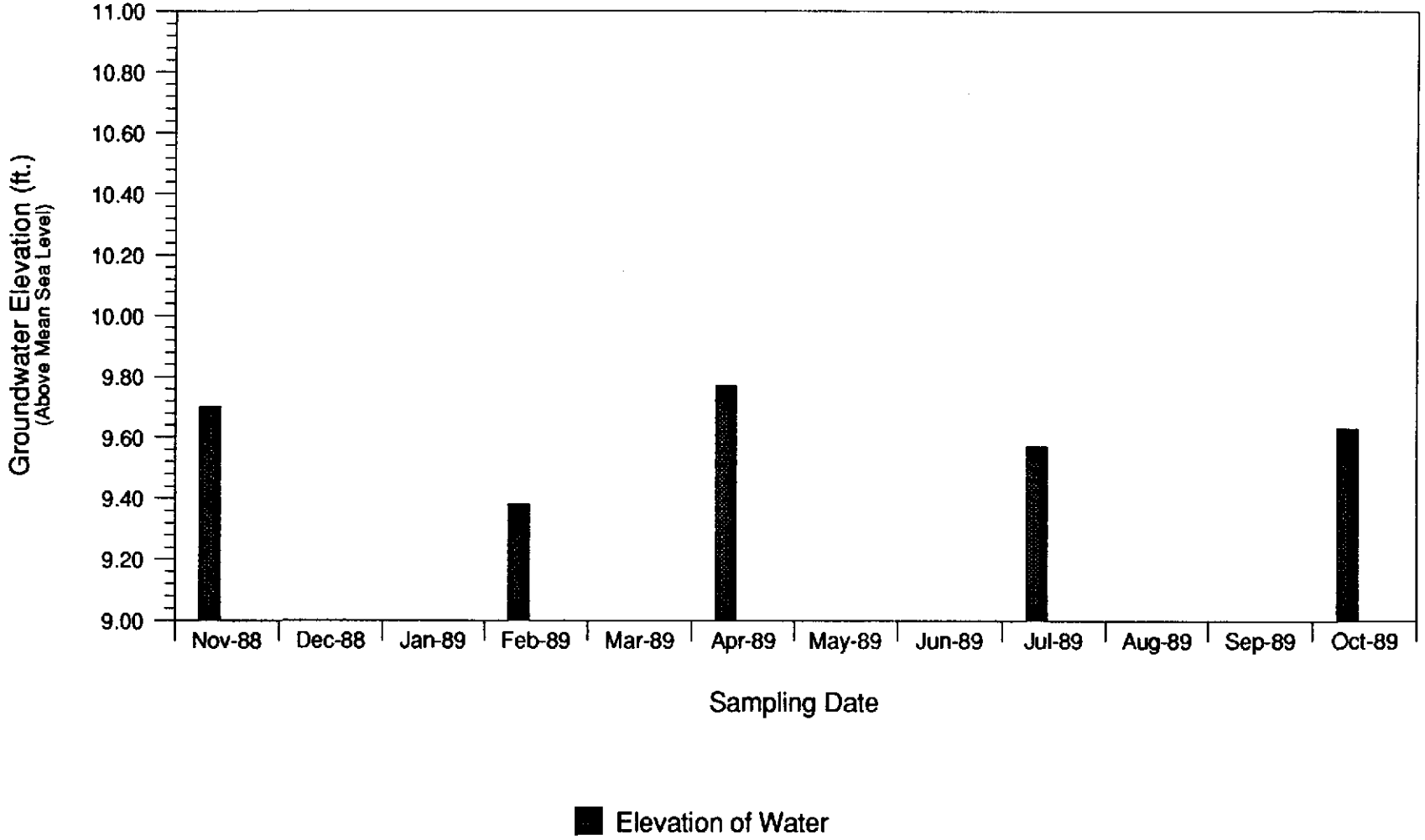
GROUNDWATER MONITOR WELL MW-1

Former Chevron Service Station #90020 Oakland, California



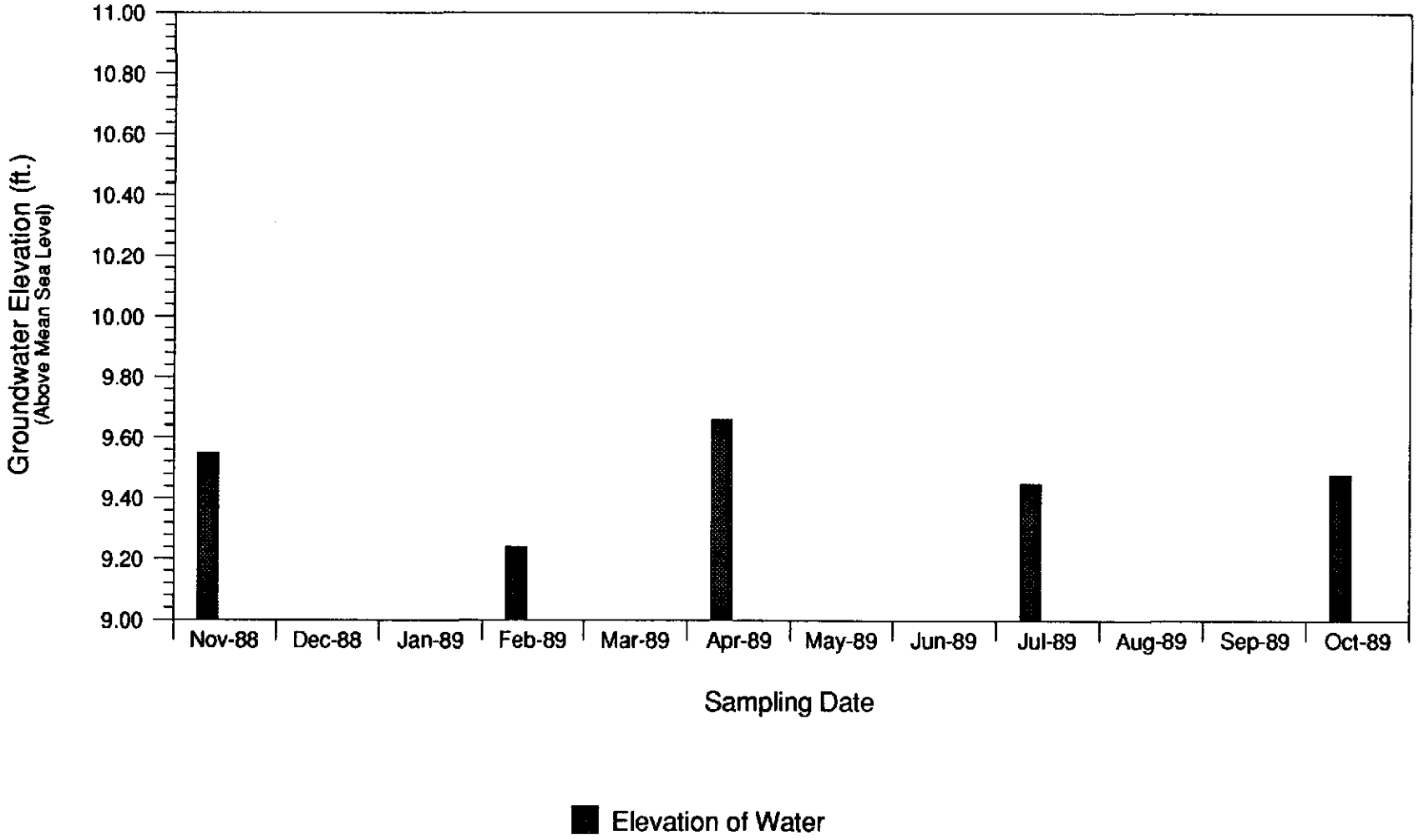
GROUNDWATER MONITOR WELL MW-2

Former Chevron Service Station #90020 Oakland, California



GROUNDWATER MONITOR WELL MW-3

Former Chevron Service Station #90020 Oakland, California



1-012.03

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