



Chevron

93 AUG 31 PM 3: 11

August 27, 1993

Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583

Marketing Department
Phone 510 842 9500

Ms. Susan Hugo
Alameda County Health Care Services
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

**Re: Former Chevron Service Station #9-1026
3701 Broadway, Oakland, CA**

Dear Ms. Hugo:

Enclosed is the Groundwater Monitoring and Sampling Activities report dated July 19, 1993, prepared by our consultant Groundwater Technology, Inc. for the above referenced site. As indicated in the report, ground water samples collected were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and BTEX. Benzene was detected in monitor wells A, B-1, B-2, and B-4 at concentrations of 700, 21, 15000, and 14000 ppb, respectively. Depth to ground water was measured at approximately 11.0 feet to 16.1 feet below grade and the direction of flow is to the south-southwest.

Separate phase hydrocarbons were observed in monitor wells B and B-3 at measured thicknesses of 0.03 feet and 0.87 feet, respectively. The appearance of separate phase hydrocarbons in these wells may be associated with rising ground water coming into contact with hydrocarbons trapped in the soil matrix. A weekly bailing program was initiated during the past quarter to remove separate phase hydrocarbons (SPH) from these wells. Approximately 1.91 gallons and 1.58 gallons have been recovered from wells B and B-3, respectively. The results of the bailing program are summarized in Table 2 of the enclosed report.

We are currently re-evaluating remedial options for this site. As mentioned in previous correspondence from Chevron, we feel it would be beneficial to schedule a meeting with the assigned Hazardous Materials Specialist (formerly Gil Wistar) to discuss appropriate site specific corrective actions and establish mutual cleanup goals for the site. At this time we do not feel that ground water remediation is an appropriate corrective action to implement based on known upgradient sources of hydrocarbons in the ground water. Implementing remedial measures to address the contamination present in the ground water beneath the referenced site will not address the impacts from the upgradient sources as it is undetermined what extent has migrated beneath the Chevron site.

Chevron will continue to monitor and sample all wells at this site on a quarterly basis.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-8134.



Page 2
August 27, 1993
Former Chevron SS#9-1026

Sincerely,
CHEVRON U.S.A. PRODUCTS COMPANY

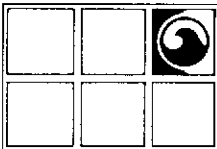

Mark A. Miller
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Rich Hiatt, RWQCB - Bay Area
Ms. B.C. Owen
File (9-1026 QM2)

Mr. W. Bruce Bercovich
Kay & Merkel
100 The Embarcadero, 3rd Floor
San Francisco, CA 94105

JUL 23 '93 J.M.M.



GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387

FAX: (415) 685-9148

July 19, 1993

Project No. 020204090

Mr. Mark Miller
Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583-0804

SUBJECT: Groundwater Monitoring and Sampling Activities
Chevron Service Station No. 9-1026
3701 Broadway, Oakland, California

Dear Mr. Miller:

Groundwater Technology, Inc. presents the attached quarterly groundwater monitoring and sampling data collected on June 10, 1993. The 10 groundwater monitoring wells at this site were gauged to measure depth to groundwater (DTW) and to check for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were detected in monitoring wells B and B-3, with a separate-phase thickness of 0.03 and 0.87, respectively. A potentiometric surface map (Figure 1) and a summary of groundwater monitoring data (Table 1) are presented in Attachments 1 and 2, respectively. Table 2 presents the results of the product recovery program for monitoring wells B and B-3. After the DTW was measured, each monitoring well was purged and sampled, except wells B and B-3. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes and for total petroleum hydrocarbons-as-gasoline. Results of the chemical analyses are summarized in Table 1. The laboratory report and chain-of-custody record are included in Attachment 3. Monitoring-well purge water was transported by Groundwater Technology to the Chevron Terminal in Richmond, California, for recycling.

Groundwater Technology is pleased to assist Chevron on this project. If you have any questions or comments, please contact our Concord office at (510) 671-2387.

Sincerely,
Groundwater Technology, Inc.
Written/Submitted by

Groundwater Technology, Inc.
Reviewed/Approved by

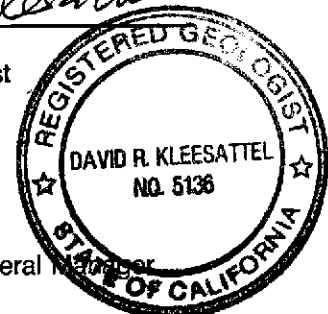
Tim Watchers

Tim Watchers
Project Geologist

PR *SW*

David R. Kleesattel

David R. Kleesattel
Registered Geologist
No. 5136



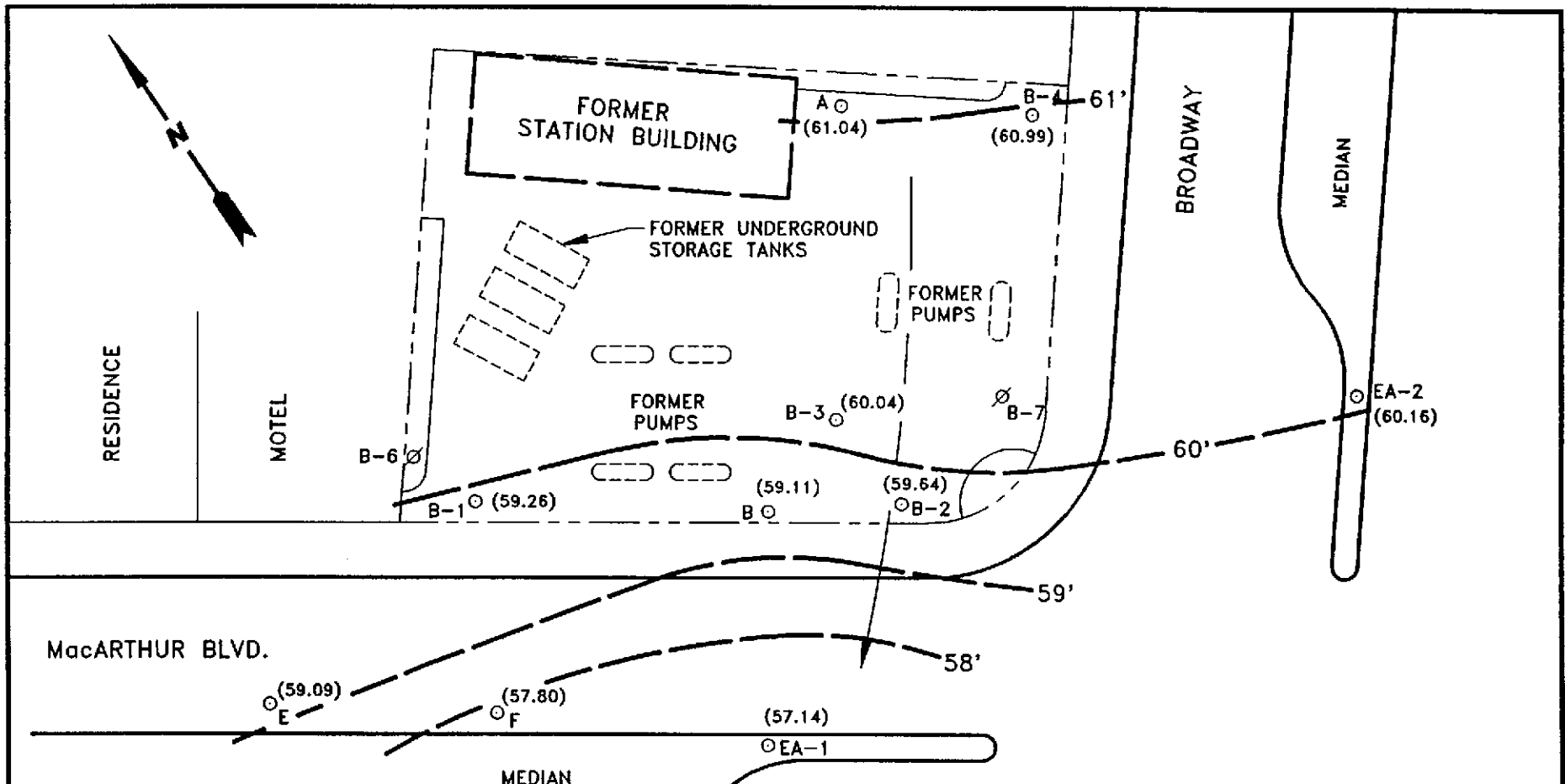
Attachment 1 Figure
Attachment 2 Tables
Attachment 3 Laboratory Report

For:
John S. Gaines
Vice President, General Manager
West Region

4090R013.020

ATTACHMENT 1

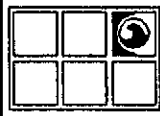
Figure



LEGEND

- MONITORING WELL
- ⊗ ABANDONED WELL
- () POTENTIOMETRIC SURFACE ELEVATION
- - - POTENTIOMETRIC SURFACE CONTOUR
- ← GROUNDWATER FLOW DIRECTION



 GROUNDWATER TECHNOLOGY		4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 671-2387		POTENTIOMETRIC SURFACE MAP (6/10/93)		
CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-1026			LOCATION: 3701 BROADWAY OAKLAND, CALIFORNIA		REV. NO.: 0	DATE: 7/14/93
PM <i>JAW</i>	PE/RG <i>RHA</i>	DESIGNED TW	DETAILED ML	ACAD FILE: PSM61093/SP1192	PROJECT NO.: 020204084	FIGURE: 1

ATTACHMENT 2

Tables

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-1026
3701 Broadway, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
A 75.28	05/09/89	11,000	260	<2	94	230	13.92	0.00	61.36
	08/09/89	12,000	370	<1.5	100	240	15.62	0.00	59.66
	11/09/89	16,000	690	10	180	350	15.95	0.00	59.33
	02/08/90	14,000	600	7	120	270	14.73	0.00	60.55
	05/10/90	16,000	840	4.8	140	340	15.48	0.00	59.80
	08/09/90	17,000	510	40.0	170	280	15.66	0.00	59.62
	11/13/90	9,000	570	3.1	86	170	16.48	0.00	58.80
	03/27/91	8,000	660	<5	110	250	—	—	—
	04/05/91	—	—	—	—	—	13.22	0.00	62.06
	06/19/91	8,900	740	<3	120	280	15.37	0.00	59.91
	08/21/91	6,800	620	23	85	200	15.99	0.00	59.29
	11/08/91	4,000	640	<5	77	160	16.15	0.00	59.13
	02/13/92	8,000	860	<5	120	390	14.58	0.00	60.70
	05/01/92	13,000	870	19	220	780	14.26	0.00	61.02
	11/18/92	12,000	1,500	83	360	530	16.38	0.00	58.91
	03/19/93	14,000	820	6.1	180	420	12.16	0.00	63.13
	06/10/93	9,000	700	13	170	310	14.25	0.00	61.04
	B 73.39	05/09/89	—	—	—	—	—	13.97	0.20
08/09/89		—	—	—	—	—	15.69	0.20	57.86
11/09/89		—	—	—	—	—	15.29	0.08	58.16
02/08/90		—	—	—	—	—	14.46	0.00	58.93
05/10/90		—	—	—	—	—	15.07	0.00	58.32
08/09/90		—	—	—	—	—	15.12	0.00	58.27
11/13/90		—	—	—	—	—	15.76	0.00	57.63
04/05/91		—	—	—	—	—	13.38	0.00	60.01
06/19/91		26,000	7,100	370	430	1,000	15.14	0.00	58.25
08/21/91		16,000	4,900	270	390	640	15.58	0.00	57.81
11/08/91		11,000	2,400	48	280	160	15.71	0.00	57.68
02/13/92		6,800	2,400	60	220	140	14.66	0.00	58.73
05/01/92		16,000	6,000	180	370	460	14.50	Sheen	58.89
11/18/92		28,000	2,200	150	920	4,300	15.60	0.00	57.79
03/19/93	—	—	—	—	—	13.29	0.03	60.12	
06/10/93	—	—	—	—	—	14.30	0.03	59.11	
B-1 71.77	05/09/89	16,000	2,300	260	81	740	12.58	0.00	59.19
	08/09/89	12,000	2,600	340	100	870	14.09	0.00	57.68
	11/09/89	17,000	340	140	110	760	14.06	0.00	57.71
	02/08/90	5,500	70	19	17	150	12.65	0.00	59.12
	05/10/90	18,000	770	110	73	600	13.62	0.00	58.15
	08/09/90	82,000	750	66	95	980	13.87	0.00	57.90
	11/13/90	43,000	1,300	120	74	760	14.38	0.00	57.39
	03/27/91	18,000	580	92	94	770	—	—	—
	04/05/91	—	—	—	—	—	11.73	0.00	60.04
	06/19/91	21,000	910	56	96	810	13.56	0.00	58.21
	08/21/91	50,000	2,400	610	300	1,800	13.90	0.00	57.87
	11/08/91	540,000	3,600	1,500	1,900	5,900	14.05	0.00	57.72
	02/13/92	20,000	500	100	150	920	12.68	0.00	59.09
	05/01/92	27,000	2,800	200	310	1,900	12.92	Sheen	58.85
	11/18/92	300	9.7	3.4	2.3	21	14.30	0.00	58.00
	03/19/93	130	23	0.9	<0.5	5.6	12.28	0.00	60.02
	06/10/93	170	21	1.1	0.8	6.6	13.04	0.00	59.26

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-1026
3701 Broadway, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
B-2 74.51	05/09/89	170,000	30,000	8,400	2,300	12,000	14.58	0.00	59.93
	08/09/89	60,000	29,000	8,700	2,400	12,000	16.06	0.00	58.45
	11/09/89	110,000	32,000	5,500	2,800	12,000	16.95	0.00	57.56
	02/08/90	67,000	28,000	5,900	2,300	11,000	15.56	0.00	58.95
	05/10/90	69,000	24,000	4,800	2,000	11,000	15.94	0.00	58.57
	08/09/90	100,000	33,000	4,000	2,100	12,000	15.97	0.00	58.54
	11/13/90	110,000	33,000	4,300	2,900	13,000	16.70	0.00	57.81
	03/27/91	160,000	26,000	3,200	2,600	15,000	—	—	—
	04/05/91	—	—	—	—	—	14.20	0.00	60.31
	06/19/91	100,000	22,000	2,500	2,000	11,000	15.83	0.00	58.68
	08/21/91	80,000	28,000	2,800	2,400	12,000	16.31	0.00	58.20
	11/08/91	94,000	29,000	1,900	2,200	11,000	16.60	0.00	57.91
	02/13/92	280,000	34,000	2,500	4,600	23,000	15.93	0.00	58.58
	05/01/92	29,000	1,700	300	1,100	4,300	14.94	Sheen	59.57
74.52	11/18/92	26,000	11,000	170	870	950	16.71	0.00	57.81
	03/19/93	110,000	28,000	1,200	2,200	12,000	14.06	0.00	60.46
	06/10/93	140,000	15,000	930	1,900	8,800	14.88	0.00	59.64
B-3 74.12	05/09/89	70,000	12,000	9,500	1,400	8,900	14.02	0.00	60.01
	08/09/89	—	—	—	—	—	15.38	0.00	58.74
	11/09/89	—	—	—	—	—	15.55	0.05	58.61
	02/08/90	—	—	—	—	—	14.68	<0.01	59.44
	05/10/90	—	—	—	—	—	15.15	0.02	58.99
	08/09/90	—	—	—	—	—	15.27	<0.01	58.85
	11/13/90	—	—	—	—	—	16.04	0.06	58.13
	04/05/91	—	—	—	—	—	13.30	<0.01	60.82
	06/19/91	260,000	20,000	9,000	2,200	16,000	15.16	0.00	58.96
	08/21/91	70,000	28,000	11,000	1,800	11,000	15.61	0.00	58.51
	11/08/91	150,000	29,000	9,700	2,200	13,000	15.77	0.00	58.35
	02/13/92	100,000	27,000	9,906	2,000	11,000	14.88	0.00	59.24
	05/01/92	—	—	—	—	—	14.20	0.01	59.93
	74.13	11/18/92	—	—	—	—	—	15.68	0.03
03/19/93		—	—	—	—	—	13.75	1.08	61.24
06/10/93		—	—	—	—	—	14.79	0.87	60.04
B-4 76.43	05/09/89	3,600	840	34	120	200	14.93	0.00	61.50
	08/09/89	<500	4,200	130	370	260	16.65	0.00	59.78
	11/09/89	5,000	4,200	83	400	250	—	—	—
	02/08/90	14,000	6,000	70	530	300	16.99	0.00	59.44
	05/10/90	12,000	5,400	130	460	320	16.05	0.00	60.38
	08/09/90	16,000	7,400	120	530	350	16.49	0.00	59.94
	11/13/90	21,000	7,000	100	550	320	16.64	0.00	59.79
	03/27/91	17,000	8,500	120	500	300	17.42	0.00	59.01
	04/05/91	14,000	7,700	75	610	210	14.66	0.00	61.77
	06/19/91	16,000	7,800	110	550	340	16.48	0.00	59.95
	08/21/91	18,000	11,000	110	450	340	17.00	0.00	59.43
	11/08/91	18,000	6,800	98	500	620	17.38	0.00	59.05
	02/13/92	15,000	9,100	86	570	350	16.42	0.00	60.01
	05/01/92	36,000	16,000	180	990	690	15.50	0.00	60.93
03/19/93	26,000	15,000	150	900	790	14.11	0.00	62.32	
06/10/93	35,000	14,000	180	940	590	15.44	0.00	60.99	

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-1026
3701 Broadway, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
EA-2 75.24	05/09/89	760	<0.5	<0.5	1.1	<0.5	15.95	0.00	59.29
	08/09/89	<500	<0.5	<0.5	<0.5	<0.5	17.45	0.00	57.79
	11/09/89	<500	<0.5	1	<0.5	<0.5	17.41	0.00	57.83
	02/08/90	190	<0.3	<0.3	<0.3	<0.6	16.57	0.00	58.67
	05/10/90	<50	<0.3	<0.3	<0.3	<0.6	17.12	0.00	58.12
	08/09/90	120	<0.3	<0.3	<0.3	<0.6	17.20	0.00	58.04
	11/13/90	160	<0.4	1.0	<0.3	<0.4	17.88	0.00	57.36
	03/27/91	110	<0.5	<0.5	<0.5	<0.5	—	—	—
	04/05/91	—	—	—	—	—	15.54	0.00	59.70
	06/19/91	<50	<0.5	<0.5	<0.5	<0.5	17.07	0.00	58.17
	08/21/91	70	0.8	1.4	<0.3	<0.4	17.46	0.00	57.78
	11/08/91	<50	<0.5	0.7	<0.5	<0.5	17.58	0.00	57.66
	02/13/92	<50	<0.5	<0.5	<0.5	<0.5	16.69	0.00	58.55
	05/01/92	340	<0.5	2.6	0.7	<0.5	16.16	0.00	59.08
76.24	11/18/92	450	<0.5	3.3	<0.5	0.8	17.61	0.00	58.63
	03/19/93	450	<0.5	2.3	0.6	<1.5	15.00	0.00	61.24
	06/10/93	250	<0.5	1.3	<0.5	<1.5	16.08	0.00	60.16
F 72.01	05/09/89	<500	<0.5	<0.5	0.6	1.0	18.70	0.00	53.31
	08/09/89	—	—	—	—	—	19.03	0.00	52.98
	11/09/89	—	—	—	—	—	19.02	0.00	52.99
	02/08/90	<50	0.4	<0.3	0.3	<0.6	18.70	0.00	53.31
	05/10/90	—	—	—	—	—	18.98	0.00	53.03
	08/09/90	—	—	—	—	—	18.95	0.00	53.06
	11/13/90	—	—	—	—	—	19.10	0.00	52.91
	03/27/91	64	<0.5	<0.5	<0.5	1	—	—	—
	06/19/91	—	—	—	—	—	18.95	0.00	53.06
	08/21/91	—	—	—	—	—	> 19.94	0.00	<52.07
	11/08/91	—	—	—	—	—	> 19.94	0.00	<52.07
	02/13/92	<50	<0.5	<0.5	<0.5	<0.5	18.60	0.00	53.41
	05/01/92	—	—	—	—	—	Dry	—	—
	71.72	11/18/92	<50	<0.5	<0.5	<0.5	<0.5	14.85	0.00
03/19/93		<50	<0.5	<0.5	<0.5	<1.5	14.25	0.00	57.47
06/10/93		<50	<0.5	<0.5	<0.5	<1.5	13.92	0.00	57.80

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-1026
3701 Broadway, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
TB-LB	05/09/89	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/09/89	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
	11/09/89	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
	02/08/90	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
	05/10/90	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
	08/09/90	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
	11/13/90	<50	<0.4	<0.3	<0.3	<0.4	--	--	--
	03/27/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	06/19/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/21/91	<50	<0.4	<0.3	<0.3	<0.4	--	--	--
	11/08/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	02/13/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	05/01/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	11/18/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	03/19/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	--	--
	06/10/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	--	--

- = Not applicable, not sampled, not measured
- TPH-G = Total petroleum hydrocarbons-as-gasoline
- DTW = Depth to groundwater
- SPT = Separate-phase hydrocarbon thickness
- WTE = Water-table elevation
- TB-LB = Trip blank, lab blank

Data from May 9, 1989, through February 13, 1992, taken from First Quarter 1992 Groundwater Monitoring Report, dated February 28, 1992 (Weiss Associates).
 All elevations are given as feet above mean sea level.
 Concentrations shown in parts per billion.

TABLE 2
SEPARATE-PHASE HYDROCARBONS BAILED
MONITORING WELLS B AND B-3
Chevron Service Station No. 9-1026
3701 Broadway, Oakland, California

Date	Well ID	Amount Product Bailed (gallons)	Total Product Bailed (gallons)
06/22/93	B	0.66	0.66
06/29/93		0.25	0.91
07/09/93		0.25	1.16
07/15/93		0.25	1.41
07/20/93		0.50	1.91

Date	Well ID	Amount Product Bailed (gallons)	Total Product Bailed (gallons)
06/22/93	B-3	0.33	0.33
06/29/93		0.25	0.58
07/09/93		0.25	0.83
07/15/93		0.25	1.08
07/20/93		0.50	1.58

ATTACHMENT 3

Laboratory Report



Superior Precision Analytical, Inc.

825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

GROUNDWATER TECHNOLOGY, INC.
Attn: Nicole Merchant

Project 020204090
Reported 06/17/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
88896- 1	TB-LB	06/10/93	06/17/93 Water
88896- 3	EA1	06/10/93	06/17/93 Water
88896- 5	F	06/10/93	06/17/93 Water
88896- 7	E	06/10/93	06/17/93 Water
88896- 9	B1	06/10/93	06/17/93 Water
88896-11	EA2	06/10/93	06/17/93 Water
88896-13	A	06/10/93	06/17/93 Water
88896-15	B4	06/10/93	06/17/93 Water
88896-17	B2	06/10/93	06/17/93 Water

RESULTS OF ANALYSIS

Laboratory Number: 88896- 1 88896- 3 88896- 5 88896- 7 88896- 9

Gasoline:	ND<50	ND<50	ND<50	ND<50	170
Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	21
Toluene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.1
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.8
Xylenes:	ND<1.5	ND<1.5	ND<1.5	ND<1.5	6.6
Concentration:	ug/L	ug/L	ug/L	ug/L	ug/L

Laboratory Number: 88896-11 88896-13 88896-15 88896-17

Gasoline:	250	9000	35000	140000
Benzene:	ND<0.5	700	14000	15000
Toluene:	1.3	13	180	930
Ethyl Benzene:	ND<0.5	170	940	1900
Xylenes:	ND<1.5	310	590	8800
Concentration:	ug/L	ug/L	ug/L	ug/L



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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

Page 2 of 2
QA/QC INFORMATION
SET: 88896

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = parts per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	85/91	7%	70-130
Benzene:	90/92	2%	70-130
Toluene:	100/102	2%	70-130
Ethyl Benzene:	102/103	1%	70-130
Xylenes:	93/96	3%	70-130

Richard Sina, Ph.D.

[Handwritten Signature] (for) 7/1/93

Laboratory Director

