



Chevron

January 3, 1995

Chevron U.S.A. Products Company
6001 Bollinger Canyon Rd., Bldg. L
P.O. Box 5004
San Ramon, CA 94583-0804

Site Assessment & Remediation Group
Phone (510) 842-9500

Ms. Jennifer Eberle
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Chevron Service Station #9-4816
301 14th Street, Oakland, CA

Dear Ms. Eberle:

Enclosed is the Groundwater Monitoring and Sampling Activities report dated November 11, 1994, 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. The levels of dissolved hydrocarbon constituents in the ground water samples analyzed were consistent with previous observations at the site. Separate-phase hydrocarbons were detected in monitor well C-3 at a measured thickness of 0.79 feet. Depth to ground water was measured at approximately 20.6 to 22.4 feet below grade and the direction of flow is locally influenced by the remediation system towards the dewatering wells.

Modifications to the remediation system were completed and the system began operations during the first week of August. Influent hydrocarbon concentrations were higher than initially anticipated, therefore the activated vapor carbon was spent by the end of the first week of operation.

As we discussed, Chevron has recently bid out the remediation work at this site to several qualified consulting firms. Our intent is to establish a clear plan to determine when active remediation can be completed, when a Non Attainment Area can be established for ground water beneath the site, and ultimately when monitoring activities will be complete. We believe this approach will significantly reduce the previous estimates of time required for remediation.

During this process, the dewatering system will continue to operate to assist in containing dissolved hydrocarbons in ground water.

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

Sincerely,
CHEVRON U.S.A. PRODUCTS COMPANY

Mark A. Miller
Site Assessment and Remediation Engineer

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January 3, 1995
Former SS#9-4816

Enclosure

cc: Mr. Mike Cooke, Weiss Associates
Mr. J.N. Robbins, CHVPK/V1156
Ms. B.C. Owen

Ms. Beth D. Castleberry
Gray, Cary, Ware & Freidenrich
400 Hamilton Avenue
Palo Alto, CA 94301-1825

File: 9-4816 QM3



GROUNDWATER TECHNOLOGY, INC.

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

FAX: (415) 685-9148

November 11, 1994

Project No. 020104084

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.9-4816
301 14th Street, Oakland, California

Dear Mr. Mark Miller:

Groundwater Technology, Inc. presents the quarterly groundwater monitoring and sampling data collected on September 13 and 26, 1994. Eleven of the thirteen 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 well C-3 at a thickness of 0.79 feet. There was a pump in monitoring well CR-1 and monitoring well MW-12. A potentiometric surface map and a summary of groundwater monitoring data are presented in attachments 1 and 2, respectively. After the DTW was measured each monitoring well, except C-3, CR-1 and MW-12, was purged and sampled. Groundwater monitoring and sample collection protocol and field data sheets are presented in attachment 3. The groundwater samples collected were analyzed for benzene, toluene, ethylbenzene, xylenes and for total petroleum hydrocarbons-as-gasoline. Results of the chemical analyses are summarized in attachment 2. The laboratory report and chain-of-custody record are included in attachment 4. 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



Kenneth P. Johnson
Project Manager

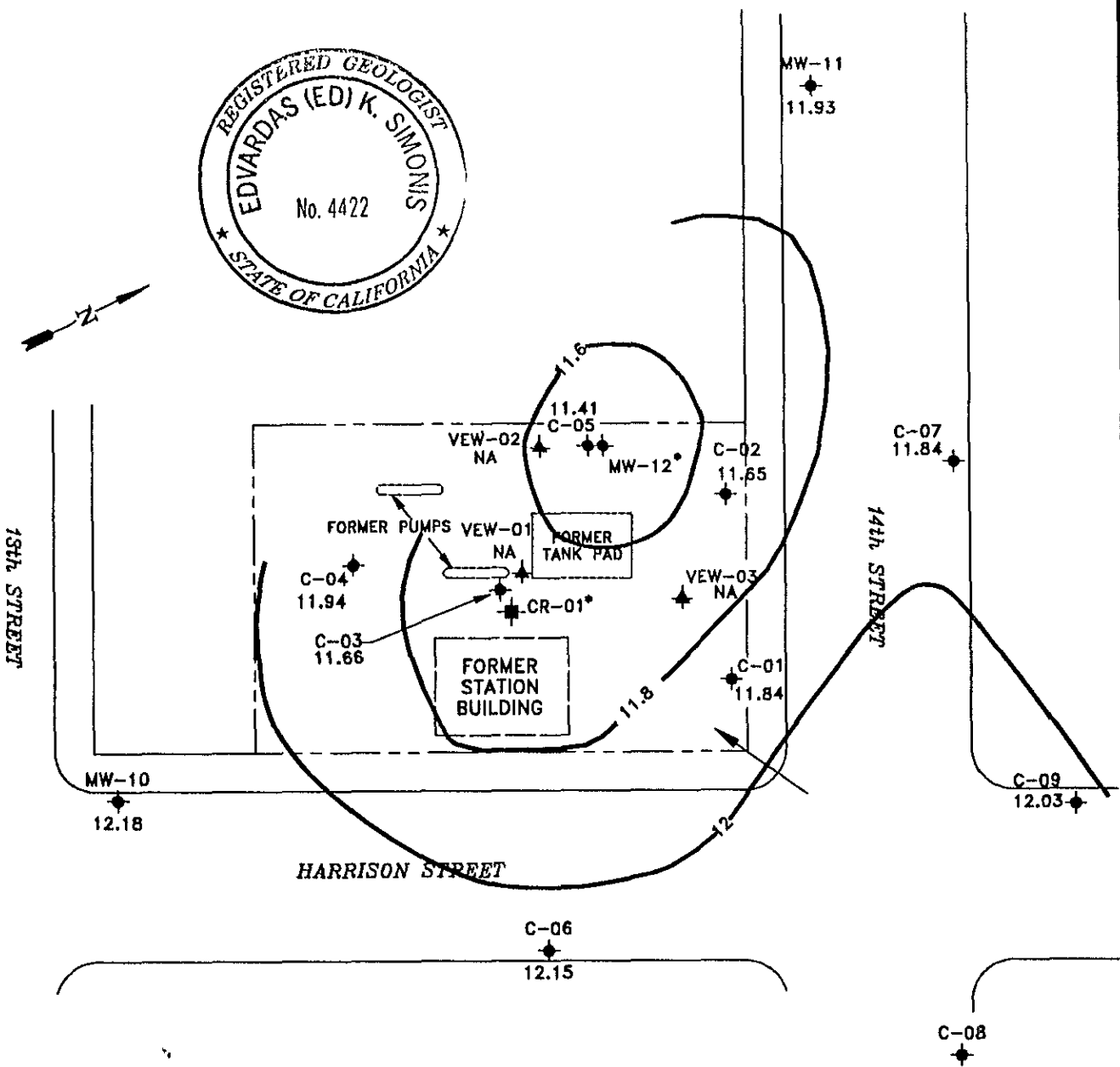
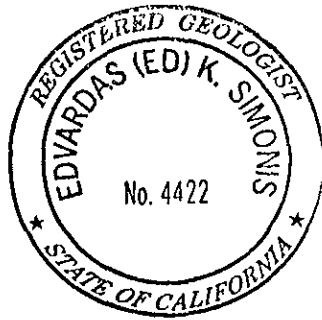
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Attachment 1 Figure
Attachment 2 Table
Attachment 3 Protocol and Field Data Sheets
Attachment 4 Laboratory Report

For:
Wendell C. Lattz
Vice President, General Manager
West Region

ATTACHMENT 1

Figure



LEGEND

- PROPERTY LINE
 - ◆ MONITORING WELL
 - ▲ RECOVERY WELL
 - VAPOR EXTRACTION WELL
 - PUMP IN WELL; COULD NOT ACCESS
 - X.XX POTENTIOMETRIC SURFACE ELEVATION (FT)
 - NA NOT AVAILABLE
 - POTENTIOMETRIC SURFACE CONTOUR
 - ← GROUNDWATER FLOW DIRECTION
- NOTE:
1. CONTOURS REPRESENT APPROXIMATE ELEVATIONS RELATIVE TO MEAN SEA LEVEL.



GROUNDWATER TECHNOLOGY



POTENTIOMETRIC SURFACE MAP (9/26/94)

CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-4816	FILE: 4084PSM, (1:50)	PROJECT NO: 02020-4084	PM KS	RG/PE Zos
	REV: 1	DES: SS	DET: SM	DATE: 11/8/94
LOCATION: 301 14th STREET OAKLAND, CALIFORNIA	FIGURE: 1			

ATTACHMENT 2

Table

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-1	06/13/90	26,000	2,800	5,100	400	2,600	21.97	---	8.85
	10/30/90	67,000	6,700	8,700	900	5,000	21.72	---	9.10
30.82	01/04/91	---	---	---	---	---	21.84	---	8.98
	01/07/91	100,000	12,000	20,000	1,600	11,000	21.95	---	8.87
	01/11/91	---	---	---	---	---	21.99	---	8.83
	02/15/91	---	---	---	---	---	22.12	---	8.70
	05/02/91	59,000	5,600	7,700	700	5,200	22.06	---	8.76
	05/30/91	---	---	---	---	---	22.04	---	8.78
	06/13/91	---	---	---	---	---	21.80	---	9.02
	07/12/91	---	---	---	---	---	22.01	---	8.81
	08/07/91	7,900	2,000	150	240	330	---	---	---
	09/24/91	---	---	---	---	---	---	---	---
30.87	10/18/91	---	---	---	---	---	22.42	---	8.45
	11/05/91	8,700	1,500	1,200	150	580	22.36	---	8.51
	01/06/92	---	---	---	---	---	22.34	---	8.53
	01/16/92	---	---	---	---	---	22.28	0.03	8.61
	01/22/92	---	---	---	---	---	22.43	0.09	8.51
	01/28/92	---	---	---	---	---	22.28	0.02	8.61
	02/04/92	---	---	---	---	---	22.24	0.01	8.64
	02/14/92	---	---	---	---	---	22.16	Sheen	8.71
	02/21/92	---	---	---	---	---	22.07	Sheen	8.80
	02/25/92	---	---	---	---	---	21.95	Sheen	8.92
	03/06/92	---	---	---	---	---	21.85	0.00	9.02
	03/19/92	---	---	---	---	---	20.54	0.00	10.33
	05/06/92	---	---	---	---	---	21.39	Sheen	9.48
	08/31/92	---	---	---	---	---	21.51	Sheen	9.36
12/01/92	---	---	---	---	---	21.88	Sheen	8.99	
32.81	03/15/93	130,000	8,900	13,000	1,800	11,000	20.90	0.00	11.91
	06/08/93	23,000	2,300	2,900	540	3,300	19.46	0.00	13.35
	09/07/93	14,000	1,300	2,100	340	2,800	19.83	0.00	12.98
	03/09/94	37,000	2,700	3,400	930	5,900	20.10	0.00	12.71
	06/17/94	24,000	2,200	2,300	520	3,800	20.02	0.00	12.79
	09/13/94	15,000 ↓	710 ↓	550	330	2,000	21.03	0.00	11.78 ↓
	09/26/94	---	---	---	---	---	20.97	0.00	11.84

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-2	06/13/90	15,000	1,100	1,900	260	1,700	22.08	---	8.83
	10/30/90	13,000	2,800	1,900	240	1,000	21.81	---	9.10
30.91	01/04/91	---	---	---	---	---	21.90	---	9.01
	01/07/91	15,000	3,400	2,500	340	1,400	22.03	---	8.88
	01/11/91	---	---	---	---	---	22.13	---	8.78
	02/15/91	---	---	---	---	---	22.36	---	8.55
	05/02/91	19,000	4,500	3,200	660	2,900	22.44	---	8.47
	05/02/91	21,000	3,200	2,200	410	2,000	22.44	---	8.47
	05/30/91	---	---	---	---	---	22.44	---	8.47
	06/13/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	22.57	0.01	8.35
	08/07/91	---	---	---	---	---	---	0.11	---
30.72	09/24/91	---	---	---	---	---	---	---	---
	10/18/91	---	---	---	---	---	22.34	0.07	8.44
	11/05/91	---	---	---	---	---	22.26	0.04	8.49
	01/06/92	---	---	---	---	---	22.25	---	8.47
	01/16/92	---	---	---	---	---	22.16	0.01	8.57
	01/22/92	---	---	---	---	---	22.25	0.02	8.49
	01/28/92	---	---	---	---	---	22.18	0.01	8.55
	02/04/92	---	---	---	---	---	22.15	0.01	8.58
	02/14/92	---	---	---	---	---	22.09	0.00	8.63
	02/21/92	---	---	---	---	---	22.06	Sheen	8.66
	02/25/92	---	---	---	---	---	21.96	0.00	8.76
	03/06/92	---	---	---	---	---	21.80	0.00	8.92
	03/19/92	---	---	---	---	---	21.12	0.00	9.60
	05/06/92	---	---	---	---	---	21.30	Sheen	9.42
08/31/92	---	---	---	---	---	21.43	Sheen	9.29	
12/01/92	---	---	---	---	---	21.74	Sheen	8.98	
33.27	03/15/93	66,000	2,200	3,900	1,300	7,300	20.92	0.00	12.35
	06/08/93	23,000	1,400	2,300	680	4,000	20.05	0.00	13.22
	09/07/93	22,000	1,900	2,000	620	4,000	20.37	0.00	12.90
	03/09/94	25,000	4,100	1,100	670	3,100	20.72	0.00	12.55
	06/17/94	43,000	13,000	2,600	1,300	5,200	20.61	0.00	12.66
	09/13/94	36,000 ↓	7,700 ↓	2,500	1,100	4,800	21.69	0.00	11.58 ↓
	09/26/94	---	---	---	---	---	21.62	0.00	11.65

3-29-95 77,000 12,000

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-3	06/13/90	---	---	---	---	---	24.75	3.00	---
	10/30/90	---	---	---	---	---	23.81	2.50	---
	01/04/91	---	---	---	---	---	24.15	2.70	---
	01/07/91	---	---	---	---	---	24.13	2.50	---
	01/11/91	---	---	---	---	---	24.35	2.66	---
	02/15/91	---	---	---	---	---	24.70	2.93	---
	05/02/91	---	---	---	---	---	---	---	---
	05/30/91	---	---	---	---	---	24.08	2.49	---
	06/13/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	---	---	---
30.79	08/07/91	---	---	---	---	---	---	2.64	---
	09/24/91	---	---	---	---	---	---	---	---
	10/18/91	---	---	---	---	---	24.44	2.50	---#
	11/05/91	---	---	---	---	---	24.31	2.46	---#
	01/06/92	---	---	---	---	---	24.25	2.39	---#
	01/16/92	---	---	---	---	---	24.02	2.29	---#
	01/22/92	---	---	---	---	---	24.10	2.28	---#
	01/28/92	---	---	---	---	---	24.06	2.29	---#
	02/04/92	---	---	---	---	---	24.04	2.31	---#
	02/14/92	---	---	---	---	---	23.93	2.31	---#
	02/21/92	---	---	---	---	---	24.61	3.05	---#
	02/25/92	---	---	---	---	---	23.69	2.23	---#
	03/06/92	---	---	---	---	---	23.69	2.23	---#
	03/19/92	---	---	---	---	---	22.98	2.26	---#
	05/06/92	---	---	---	---	---	22.74	1.93	---#
	08/31/92	---	---	---	---	---	21.77	1.93	---#
	12/01/92	---	---	---	---	---	22.63	1.32	---#
33.28	03/15/93	530,000	69,000	58,000	6,000	32,000	20.76	0.00	12.52
	06/08/93	310,000	56,000	58,000	7,000	41,000	19.97	0.00	13.31
	09/07/93	160,000	48,000	43,000	3,300	24,000	20.28	0.00	13.00
	03/09/94	260,000	56,000	44,000	5,000	30,000	20.56	0.00	12.72
	06/17/94	150,000	50,000	36,000	2,900	23,000	20.30	0.00	12.98
Not Found	09/13/94	---	---	---	---	---	---	---	---
	09/26/94	---	---	---	---	---	22.25	0.79	11.66

3-29-95

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-4	06/13/90	440	47	47	3	61	22.73	---	8.69
	10/30/90	210	72	13	1	11	22.48	---	8.94
31.42	01/04/91	---	---	---	---	---	22.64	---	8.78
	01/07/91	890	100	130	15	88	22.74	---	8.68
	01/11/91	---	---	---	---	---	22.81	---	8.61
	02/15/91	---	---	---	---	---	22.55	---	8.87
	05/02/91	330	140	11	2	9	22.54	---	8.88
	05/30/91	---	---	---	---	---	22.55	---	8.87
	06/13/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	---	---	---
	08/07/91	1,500	400	79	13	61	---	---	---
	09/24/91	---	---	---	---	---	---	---	---
31.20	10/18/91	---	---	---	---	---	22.97	---	8.23
	11/05/91	310	130	11	2.6	6.8	22.90	---	8.30
	01/06/92	---	---	---	---	---	22.84	---	8.36
	01/16/92	---	---	---	---	---	22.75	---	8.45
	01/22/92	---	---	---	---	---	22.81	---	8.39
	01/28/92	---	---	---	---	---	22.77	---	8.43
	02/04/92	300	100	26	2.4	14	22.72	---	8.48
	02/14/92	---	---	---	---	---	22.58	---	8.62
	02/21/92	---	---	---	---	---	22.60	---	8.60
	02/25/92	---	---	---	---	---	22.50	---	8.70
	03/06/92	---	---	---	---	---	---	---	---
	03/19/92	---	---	---	---	---	21.75	---	9.45
	05/06/92	200	26	<0.5	1.2	1.4	21.82	---	9.38
	08/31/92	190	20	1.2	1.7	1.7	21.88	---	9.32
	12/01/92	72	5	0.5	ND<0.5	1.3	22.23	---	8.97
33.85	03/15/93	84	2.1	0.9	<0.5	<1.5	33.85	---	12.47
	06/08/93	74	1	<0.5	<0.5	0.5	20.55	0.00	13.30
	09/07/93	<50	1	<0.5	<0.5	<0.5	20.85	0.00	13.00
	03/09/94	<50	5	4	<0.5	4	21.16	0.00	12.69
	06/17/94	120	4.3	18	2.8	43	21.08	0.00	12.77
	09/13/94	<50 ↓	<0.5 ↓	<0.5	<0.5	<0.5	21.90	0.00	11.95 ↓
	09/26/94	---	---	---	---	---	21.91	0.00	11.94

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TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-5	10/30/90	20,000	2,500	3,300	320	2,200	22.11	---	9.14
	01/04/91	---	---	---	---	---	22.55	0.31	---
31 25	01/07/91	---	---	---	---	---	22.36	0.04	9.26
	01/11/91	---	---	---	---	---	23.08	0.73	---
	02/15/91	---	---	---	---	---	24.70	2.74	---
	05/02/91	---	---	---	---	---	22.02	2.00	---
	05/30/91	---	---	---	---	---	24.78	2.70	---
	06/13/91	---	---	---	---	---	24.70	2.77	---
	07/12/91	---	---	---	---	---	25.10	2.72	---
	08/07/91	---	---	---	---	---	---	2.69	---
30 16	09/24/91	---	---	---	---	---	---	---	---
	10/18/91	---	---	---	---	---	24.71	2.51	---#
	11/05/91	---	---	---	---	---	24.47	2.29	---#
	01/06/92	---	---	---	---	---	24.68	---	---#
	01/16/92	---	---	---	---	---	24.03	1.82	---#
	01/22/92	---	---	---	---	---	24.01	1.67	---#
	01/28/92	---	---	---	---	---	23.79	1.46	---#
	02/04/92	---	---	---	---	---	23.81	1.54	---#
	02/14/92	---	---	---	---	---	22.79	1.59	---#
	02/21/92	---	---	---	---	---	24.40	2.22	---#
	02/25/92	---	---	---	---	---	23.25	1.03	---#
	03/06/92	---	---	---	---	---	23.20	1.19	---#
	03/19/92	---	---	---	---	---	---	---	---
	05/06/92	---	---	---	---	---	---	---	---
	08/31/92	---	---	---	---	---	21.86	Sheen	---
	12/01/92	---	---	---	---	---	22.24	Sheen	---
33.85	03/15/93	---	---	---	---	---	20.96	---	20.96
	06/08/93	90,000	26,000	11,000	2,000	16,000	20.65	0.00	13.20
	09/07/93	---	---	---	---	---	---	---	---
	03/09/94	170,000	35,000	11,000	2,400	13,000	21.32	0.00	12.53
	06/17/94	100,000	57,000	13,000	1,800	5,100	21.11	0.00	12.74
	09/13/94	120,000 ↑	1,500 ↓	5,400	1,700	19,000	22.48	0.00	11.37 ↓
	09/26/94	---	---	---	---	---	22.44	0.00	11.41

weird ratios of TPHg to benzene

3-29-95 9,300 730

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-6	05/02/91	<50	<0.5	<0.5	<0.5	<0.5	21.84	---	8.57
	05/30/91	---	---	---	---	---	---	---	---
30.41	07/12/91	---	---	---	---	---	22.86	---	7.55
	08/07/91	---	---	---	---	---	---	---	---
	09/24/91	---	---	---	---	---	21.88	---	8.53
	10/18/91	---	---	---	---	---	22.18	---	8.23
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	22.14	---	8.27
	01/06/92	---	---	---	---	---	22.09	---	8.32
	01/16/92	---	---	---	---	---	22.04	---	8.37
	01/22/92	---	---	---	---	---	22.04	---	8.37
	01/28/92	---	---	---	---	---	21.99	---	8.42
	02/04/92	<50	<0.5	<0.5	<0.5	0.6	21.94	---	8.47
	02/14/92	---	---	---	---	---	21.87	---	8.54
	02/21/92	---	---	---	---	---	21.83	---	8.58
	02/25/92	---	---	---	---	---	21.71	---	8.70
	03/06/92	---	---	---	---	---	21.53	---	8.88
	03/19/92	---	---	---	---	---	20.92	---	9.49
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	21.02	---	9.39
	08/31/92	80	<0.5	<0.5	<0.5	2.4	21.14	---	9.27
33.09	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	20.91	---	9.50
	03/15/93	<50	<0.5	<0.5	<0.5	<1.5	20.00	---	13.09
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	19.72	0.00	13.37
	09/07/93	<50	<0.5	<0.5	<0.5	<0.5	19.75	0.00	13.34
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	20.30	0.00	12.79
	06/17/94	<50	1.1	<0.5	<0.5	0.6	20.21	0.00	12.88
	09/13/94	<50	<0.5	<0.5	<0.5	<0.5	20.89	0.00	12.20 ↓
	09/26/94	---	---	---	---	---	20.94	0.00	12.15

3-29-95 ND ND

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-7	05/02/91	<50	<0.5	<0.5	<0.5	<0.5	21.81	---	8.75
	05/30/91	---	---	---	---	---	---	---	---
30.56	07/12/91	---	---	---	---	---	22.15	---	8.41
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/24/91	---	---	---	---	---	21.53	---	9.03
	10/18/91	---	---	---	---	---	22.07	---	8.49
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	22.01	---	8.55
	01/06/92	---	---	---	---	---	22.03	---	8.53
	01/16/92	---	---	---	---	---	21.98	---	8.58
	01/22/92	---	---	---	---	---	22.05	---	8.51
	01/28/92	---	---	---	---	---	22.01	---	8.55
	02/14/92	---	---	---	---	---	21.94	---	8.62
	02/21/92	---	---	---	---	---	21.94	---	8.62
	02/25/92	---	---	---	---	---	21.82	---	8.74
	03/06/92	---	---	---	---	---	21.65	---	8.91
	03/19/92	---	---	---	---	---	20.92	---	9.64
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	21.21	---	9.35
08/31/92	<50	<0.5	0.7	<0.5	0.9	21.39	---	9.17	
12/01/92	<50	<0.5	<0.5	<0.5	0.9	21.79	---	8.77	
33.06	03/15/93	<50	<0.5	<0.5	<0.5	<1.5	20.94	---	12.12
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	19.99	0.00	13.07
	09/07/93	2,800	63	36	41	40	20.00	0.00	13.06
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	20.70	0.00	12.36
	06/17/94	<50	<0.5	<0.5	<0.5	<0.5	20.59	0.00	12.47
	09/13/94	65 ↑	<0.5	<0.5	<0.5	<0.5	21.23	0.00	11.83 ↓
	09/26/94	---	---	---	---	---	21.22	0.00	11.84

3-29-95 ND ND

TABLE 1
 HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-8	05/02/91	5,000	<0.5	17	140	470	21.24	---	8.88
	05/30/91	---	---	---	---	---	---	---	---
30 12	07/12/91	---	---	---	---	---	---	---	---
	08/07/91	6,300	<0.5	28	100	120	---	---	---
	09/24/91	---	---	---	---	---	21.33	---	8.79
	10/18/91	---	---	---	---	---	21.76	---	8.36
	11/05/91	5,100	<0.5	20	92	74	21.70	---	8.42
	01/06/92	---	---	---	---	---	21.73	---	8.39
	01/16/92	---	---	---	---	---	21.63	---	8.49
	01/22/92	---	---	---	---	---	21.70	---	8.42
	01/28/92	---	---	---	---	---	21.65	---	8.47
	02/04/92	5,300	<2.5	2.5	97	61	21.62	---	8.50
	02/14/92	---	---	---	---	---	21.53	---	8.59
	02/21/92	---	---	---	---	---	21.51	---	8.61
	02/25/92	---	---	---	---	---	21.39	---	8.73
	03/06/92	---	---	---	---	---	21.21	---	8.91
	03/19/92	---	---	---	---	---	20.57	---	9.55
	05/06/92	3,700	<0.5	29	110	130	20.77	---	9.35
	08/31/92	1,100	1.3	2.0	31	48	20.91	---	9.21
12/01/92	3,400	<0.5	19	140	290	21.17	---	8.95	
32.77	03/15/93	4,200	<0.5	20	54	33	19.76	---	13.01
	06/08/93	3,700	53	6	74	120	19.38	0.00	13.39
	09/07/93	2,900	70	46	39	55	19.38	0.00	13.39
	03/09/94	3,400	<0.5	6	46	66	20.12	0.00	12.65
	06/17/94	4,200	1.0	39	75	86	20.02	0.00	12.75
	09/13/94	3,800 ✓	<0.5 ↓	10	63	79	20.59	0.00	12.18 ↓
	09/26/94	---	---	---	---	---	20.60	0.00	12.17

3-29-95 7300 ND

TABLE 1
 HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-9	05/02/91	<50	<0.5	<0.5	<0.5	0.8	21.27	---	8.88
	05/30/91	---	---	---	---	---	---	---	---
30.15	07/12/91	---	---	---	---	---	21.57	---	8.58
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/24/91	---	---	---	---	---	21.10	---	9.05
	10/18/91	---	---	---	---	---	21.67	---	8.48
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	21.65	---	8.50
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	21.65	---	8.50
	01/06/92	---	---	---	---	---	21.65	---	8.50
	01/16/92	---	---	---	---	---	21.58	---	8.57
	01/22/92	---	---	---	---	---	21.65	---	8.50
	01/28/92	---	---	---	---	---	21.63	---	8.52
	02/04/92	<50	<0.5	0.7	<0.5	0.7<0.5	21.58	---	8.57
	02/04/92	<50	<0.5	<0.5	<0.5	---	21.58	---	8.57
	02/14/92	---	---	---	---	---	21.54	---	8.61
	02/21/92	---	---	---	---	---	21.52	---	8.63
	02/25/92	---	---	---	---	---	21.39	---	8.76
	03/06/92	---	---	---	---	---	21.21	---	8.94
	03/19/92	---	---	---	---	---	20.47	---	9.68
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	20.81	---	9.34
	08/31/92	<50	<0.5	<0.5	<0.5	<0.5	20.97	---	9.18
12/01/92	<50	<0.5	<0.5	<0.5	<1.5	21.27	---	8.88	
32.70	03/15/93	<50	<0.5	<0.5	<0.5	<0.5	20.42	---	12.28
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	19.43	0.00	13.27
	09/07/93	<50	<0.5	<0.5	<0.5	<0.5	19.40	0.00	13.30
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	20.24	0.00	12.46
	06/17/94	<50	<0.5	<0.5	<0.5	<0.5	20.13	0.00	12.57
	09/13/94	<50	<0.5	<0.5	<0.5	<0.5	20.68	0.00	12.02
	09/26/94	---	---	---	---	---	20.67	0.00	12.03

3-29-95 ND ND

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
CR-1	10/30/90	---	---	---	---	---	23.81	2.50	---
	01/04/91	---	---	---	---	---	24.08	2.70	---
30.17	01/07/91	---	---	---	---	---	23.30	3.00	---
	01/11/91	---	---	---	---	---	24.24	2.64	---
	02/15/91	---	---	---	---	---	24.72	2.92	---
	05/02/91	---	---	---	---	---	---	---	---
	05/30/91	---	---	---	---	---	23.07	2.42	---
	06/13/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	---	---	---
	08/07/91	---	---	---	---	---	---	2.69	---
	09/24/91	---	---	---	---	---	---	---	---
	10/18/91	---	---	---	---	---	23.75	2.50	---
	11/05/91	---	---	---	---	---	23.64	2.43	---
	01/06/92	---	---	---	---	---	23.57	---	---
	01/16/92	---	---	---	---	---	23.41	2.30	---
	01/22/92	---	---	---	---	---	23.44	2.24	---
	01/28/92	---	---	---	---	---	23.40	2.29	---
	02/14/92	---	---	---	---	---	23.31	2.34	---
	02/21/92	---	---	---	---	---	24.10	3.19	---
	02/25/92	---	---	---	---	---	23.15	1.03	---
	03/06/92	---	---	---	---	---	---	---	---
	03/19/92	---	---	---	---	---	---	---	---
05/06/92	---	---	---	---	---	---	---	---	
08/31/92	---	---	---	---	---	21.84	0.41	---	
12/01/92	---	---	---	---	---	22.06	0.21	---	
33.40	03/15/93	410,000	28,000	42,000	5,200	37,000	20.34	---	---
	06/08/93	85,000	10,000	21,000	3,200	20,000	20.07	0.00	13.33
	09/07/93	180,000	50,000	48,000	5,100	33,000	20.07	0.00	13.33
	03/09/94	94,000	18,000	20,000	2,500	19,000	20.67	0.00	12.73
**	06/17/94	26,000	2,400	3,600	480	6,100	19.65	0.00	13.75
Pump	09/13/94	---	---	---	---	---	---	---	---
	09/26/94	---	---	---	---	---	---	---	---

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
MW-10 31.59 33.28	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	21.27	---	10.32
	03/15/93	<50	<0.5	<0.5	<0.5	<1.5	21.10	---	12.18
	06/08/93	<50	<0.5	<0.5	<0.5	1	19.95	0.00	13.33
	09/07/93	<250	<2.5	<2.5	<2.5	<2.5	19.93	0.00	13.35
	03/09/94	<50	1	0.5	<0.5	0.9	20.51	0.00	12.77
	*06/17/94	<50	<0.5	<0.5	<0.5	<0.5	20.42	0.00	12.86
	09/13/94	<50	2.1	0.7	<0.5	1.1	21.09	0.00	12.19
	09/26/94	---	---	---	---	---	21.10	0.00	12.18
MW-11 33.02	05/06/94	<50	1.4	<0.5	<0.5	0.6	---	---	---
	05/16/94	---	---	---	---	---	20.58	---	12.44
	09/13/94	---	---	---	---	---	---	---	---
	09/26/94	<50	<0.5	<0.5	<0.5	<0.5	21.09	0.00	11.93
MW-12 33.90 Pump	05/06/94	160,000	69,000	16,000	1,900	7,600	---	---	---
	05/16/94	---	---	---	---	---	21.27	---	12.63
	09/13/94	---	---	---	---	---	---	---	---
	09/26/94	---	---	---	---	---	---	---	---
TBLB	05/02/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	02/04/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	08/31/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	12/01/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	03/15/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/07/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	06/17/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/13/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/26/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---

MW10 3-29-95 ND ND

4084qmsr.294

MW11

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"

"

MW12

"

16,000

4,000



TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
RINSATE	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	02/04/92	<50	<0.5	1.1	<0.5	<0.5	NA	NA	NA
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	08/31/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	12/01/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA

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
* = Monitoring well MW-10 was inadvertently marked and reported as C-10
** = Vapor extraction affecting water level.

Groundwater elevation not computed for wells containing greater than 0.20 feet of separate-phase hydrocarbons
Groundwater elevations not compiled for wells containing greater than 0.20 feet of separate-phase hydrocarbons
Concentrations in parts per billion
Data from June 13, 1990 to March 15, 1993 are from Alton GeoSciences report dated April 27, 1993.

Data from May 6 and May 16, 1994 for MW-11 and MW-12 are from Sierra Environmental Services.

ATTACHMENT 3

**Groundwater Monitoring and Sample Collection Protocol
and
Field Data Sheets**

GROUNDWATER TECHNOLOGY GROUNDWATER MONITORING AND SAMPLE COLLECTION PROTOCOL

Groundwater Monitoring

Groundwater monitoring is accomplished using a INTERFACE PROBE™ Well Monitoring System. The INTERFACE PROBE™ Well Monitoring System is a hand held, battery operated device for measuring the depth to separate-phase hydrocarbons and depth to water. The INTERFACE PROBE™ Well Monitoring System consists of a dual-sensing probe which utilizes an optical liquid sensor and electrical conductivity to distinguish between water and petroleum products.

Monitoring is accomplished by measuring from the surveyed top of well casing or grade to groundwater and separate-phase hydrocarbons if present. The static water elevation is then calculated for each well and a potentiometric surface map is constructed. If separate-phase hydrocarbons are detected the water elevation is adjusted by the following calculation:

$$\text{(Product thickness)} \times (0.8) + \text{(Water elevation)} = \text{Corrected water elevation}$$

Groundwater monitoring wells are monitored in order of wells with lowest concentrations of volatile organic compounds to wells with the highest concentrations, based upon historical concentrations. If separate-phase hydrocarbons are encountered in a well, the product is visually inspected to confirm and note color, amount, and viscosity. Monitoring equipment is washed with laboratory grade detergent and rinsed with distilled or deionized water before monitoring each well.

Groundwater Sampling

Before groundwater samples are collected, sufficient water is purged from each well to ensure representative formation water is entering the well. Wells are purged and sampled in the same order as monitoring, from wells with the lowest concentrations of volatile organic compounds to wells with the highest concentrations. Wells are purged using either a polyvinyl chloride (PVC) bailer fitted with a check valve or with a stainless steel submersible Grundfos pump. The purge equipment is decontaminated before use in each well by washing with laboratory grade detergent and triple rinsing with deionized or distilled water. A minimum of 3 well-casing volumes of water are removed from each well while pH, electrical conductivity, and temperature are recorded to verify that "fresh" formation water is being sampled and the parameters have stabilized. If the well is low yielding, it may be purged dry and sampled before 3 casing volumes are purged. The wells are then allowed to recharge to approximately 80 percent of the initial water level before a sample is collected.

Groundwater samples are collected from each well using a new, prepackaged disposable bailer and string. The water sample is decanted from the bailer into laboratory-provided containers (appropriate for the analyses required) so that there is no headspace in the containers. Samples collected for benzene, toluene, ethylbenzene, xylene, and total petroleum hydrocarbons (TPH)-as-gasoline analyses are collected in 40-milliliter vials fitted with Teflon® septum lids. Samples are preserved with hydrochloric acid (HCL) to a pH of less than 2. Dissolved metals samples are filtered through a 0.45-micron paper filter in the field and preserved as required before submitting to the laboratory for analyses. All samples are labeled immediately upon collection and logged on the chain-of-custody record. Sample label and chain-of-custody recorded information includes the project name and number, sample identification, date and time of collection, analyses requested, and the sampler's name. Sample bottles are placed in plastic bags (to protect the bottles and labels) and on ice (frozen water) in an insulated cooler and are shipped under chain-of-custody protocol to the laboratory.

The chain-of-custody record documents who has possession of the samples until the analyses is performed. Other pertinent information is also noted for the laboratory use on the chain-of-custody record.

Trip blanks (TBLBs) are used for each project as a quality assurance/quality control measure. The TBLBs are prepared by the laboratory and are placed in the insulated cooler and accompany the field samples throughout the sampling event.

ATTACHMENT 4
Laboratory Report



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

4080 Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
(800) 423-7143 Outside CA
(510) 825-0720 FAX

September 21, 1994

Ken Johnson
Groundwater Technology, Inc.
4057 Port Chicago Hwy
Concord, CA 94520

RE: GTEL Client ID: 020104084
Login Number: C4090190
Project ID (number): 020104084
Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

Dear Ken Johnson:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 09/14/94.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes.

GTEL is certified by the Department of Health Service under Certification Number E1075.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Rashmi Shah
Laboratory Director

GTEL Client ID: 020104084
 Login Number: C4090190
 Project ID (number): 020104084
 Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

ANALYTICAL RESULTS

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

GTEL Sample Number	C4090190-01	C4090190-02	C4090190-03	C4090190-04
Client ID	TBLB	MW-10	C-6	C-9
Date Sampled	09/13/94	09/13/94	09/13/94	09/13/94
Date Analyzed	09/16/94	09/17/94	09/16/94	09/16/94
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.5	ug/L	< 0.5	2.1	< 0.5	< 0.5
Toluene	0.5	ug/L	< 0.5	0.7	< 0.5	< 0.5
Ethylbenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	0.5	ug/L	< 0.5	1.1	< 0.5	< 0.5
TPH as GAS	50.	ug/L	< 50.	< 50.	< 50.	< 50.
BFB (Surrogate)	--	%	96.8	98.7	96.9	98.9

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, SW-846", Third Edition, Revision 1. US EPA November 1986. Bromofluorobenzene surrogate recovery acceptability limits are 62-129%. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual protocols, May 1988 revision.

GTEL Concord, CA
 C4090190:1



GTEL Client ID: 020104084 ANALYTICAL RESULTS
 Login Number: C4090190
 Project ID (number): 020104084
 Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

GTEL Sample Number	C4090190-05	C4090190-06	C4090190-07	C4090190-08
Client ID	C-7	C-4	C-8	C-2
Date Sampled	09/13/94	09/13/94	09/13/94	09/13/94
Date Analyzed	09/17/94	09/18/94	09/17/94	09/17/94
Dilution Factor	1.00	1.00	1.00	50.0

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	7700
Toluene	0.5	ug/L	< 0.5	< 0.5	10.	2500
Ethylbenzene	0.5	ug/L	< 0.5	< 0.5	63.	1100
Xylenes (total)	0.5	ug/L	< 0.5	< 0.5	79.	4800
TPH as GAS	50.	ug/L	65.	< 50.	3800	36000
BFB (Surrogate)	--	%	98.3	98.8	107.	101.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, SW-846". Third Edition, Revision 1, US EPA November 1986. Bromofluorobenzene surrogate recovery acceptability limits are 62-129%. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual protocols, May 1988 revision.

GTEL Concord, CA
 C4090190:2



GTEL Client ID: 020104084 ANALYTICAL RESULTS
 Login Number: C4090190
 Project ID (number): 020104084
 Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

GTEL Sample Number	C4090190-09	C4090190-10
Client ID	C-1	C-5
Date Sampled	09/13/94	09/13/94
Date Analyzed	09/17/94	09/18/94
Dilution Factor	50.0	200.

Analyte	Reporting		Concentration:		--	--
	Limit	Units				
Benzene	0.5	ug/L	710	1500	--	--
Toluene	0.5	ug/L	550	5400	--	--
Ethylbenzene	0.5	ug/L	330	1700	--	--
Xylenes (total)	0.5	ug/L	2000	19000	--	--
TPH as GAS	50.	ug/L	15000	120000	--	--
BFB (Surrogate)	--	%	98.6	102.	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, SW-846". Third Edition, Revision 1. US EPA November 1986. Bromofluorobenzene surrogate recovery acceptability limits are 62-129%. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual protocols, May 1988 revision.

GTEL Concord, CA
 C4090190:3



GTEL Client ID: 020104084
Login Number: C4090190
Project ID (number): 020104084
Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

QUALITY CONTROL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Aqueous

Method Blank Results

QC Batch No: G091794-1
Date Analyzed: 17-SEP-94

Analyte	Method: EPA 8020	Concentration: ug/L
Benzene	< 0.30	
Toluene	< 0.30	
Ethylbenzene	< 0.30	
Xylenes (Total)	< 0.50	
TPH as Gasoline	< 10.0	

Notes:

GTEL Client ID: 020104084
 Login Number: C4090190
 Project ID (number): 020104084
 Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

QUALITY CONTROL RESULTS

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

Matrix Spike and Matrix Spike Duplicate Results

Analyte	Original Concentration	Spike Amount	Matrix Spike	Matrix Spike	Matrix Spike Duplicate	Matrix Spike Duplicate	RPD, %	Acceptability Limits	
			Concentration	Recovery, %	Concentration	Recovery, %		RPD, %	Recovery, %
EPA 8020	GTEL Sample ID:C4090142-02		Spike ID:G091794-3		Dup. ID:G091794-4				
Units: ug/L	Analysis Date:16-SEP-94		17-SEP-94		18-SEP-94			Client ID:Batch QC	
Benzene	< 0.30	20.0	18.4	92.0	18.1	90.5	1.6	34	57.3-138%
Toluene	< 0.30	20.0	17.4	87.0	17.0	85.0	2.3	31	63-134%
Ethylbenzene	< 0.30	20.0	17.1	85.5	16.5	82.5	3.5	38	59.3-137%
Xylenes (Total)	< 0.60	60.0	53.4	89.0	52.1	86.8	2.5	31	59.3-144%

Notes:



4080 Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
(800) 423-7143 Outside CA
(510) 825-0720 FAX

October 11, 1994

Ken Johnson
Groundwater Technology, Inc.
4057 Port Chicago Hwy
Concord, CA 94520

RE: GTEL Client ID: 020104084
Login Number: C4090502
Project ID (number): 020104084
Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

Dear Ken Johnson:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 09/30/94.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes.

GTEL is certified by the Department of Health Service under Certification Number 1845.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Rashmi Shah
Laboratory Director

GTEL Client ID: 020104084 ANALYTICAL RESULTS
 Login Number: C4090502
 Project ID (number): 020104084
 Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

GTEL Sample Number	C4090502-01	C4090502-02
Client ID	TB-LB	MW-11
Date Sampled	09/26/94	09/26/94
Date Analyzed	10/09/94	10/07/94
Dilution Factor	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.5	ug/L	< 0.5	< 0.5	--	--
Toluene	0.5	ug/L	< 0.5	< 0.5	--	--
Ethylbenzene	0.5	ug/L	< 0.5	< 0.5	--	--
Xylenes (total)	0.5	ug/L	< 0.5	< 0.5	--	--
TPH as GAS	50.	ug/L	< 50.	< 50.	--	--
BFB (Surrogate)	--	%	92.1	98.9	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, SW-846", Third Edition, Revision 1, US EPA November 1986. Acceptability limits for recovery in the Bromofluorobenzene (BFB) surrogate is 62-129%. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual protocols, May 1988 revision.

GTEL Concord, CA
 C4090502:1



GTEL Client ID: 020104084
Login Number: C4090502
Project ID (number): 020104084
Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

QUALITY CONTROL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Aqueous

Method Blank Results

QC Batch No: G100794-5
Date Analyzed: 07-OCT-94

Analyte	Method: EPA 8020	Concentration: ug/L
Benzene	< 0.30	
Toluene	< 0.30	
Ethylbenzene	< 0.30	
Xylenes (Total)	< 0.50	
TPH as Gasoline	< 10.0	

Notes:

GTEL Client ID: 020104084
 Login Number: C4090502
 Project ID (number): 020104084
 Project ID (name): Chevron/#9-4816/301 14th St., Oakland, CA

QUALITY CONTROL RESULTS

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

Matrix Spike and Matrix Spike Duplicate Results

Analyte	Original Concentration	Spike Amount	Matrix Spike	Matrix Spike	Matrix Spike Duplicate	Matrix Spike Duplicate	RPD. %	Acceptability Limits	
			Concentration	Recovery. %	Concentration	Recovery. %		RPD. %	RPD. %
EPA 8020	GTEL Sample ID:C4090454-06		Spike ID:G100794-1		Dup. ID:G100794-2				
Units: ug/L	Analysis Date:07-OCT-94		07-OCT-94		08-OCT-94			Client ID:Batch QC	
Benzene	< 0.30	20.0	18.6	93.0	17.3	86.5	7.2	34	57.3-138%
Toluene	< 0.30	20.0	17.5	87.2	16.9	84.2	3.5	31	63-134%
Ethylbenzene	< 0.30	20.0	17.0	85.0	17.2	86.0	1.1	38	59.3-137%
Xylenes (Total)	< 0.50	60.0	54.8	91.3	56.5	94.1	3	31	59.3-144%

Notes:

Fax copy of Lab Report and COC to Chevron Contact: Yes No

Chain-of-Custody-Record

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

Chevron Facility Number 9-4816
Facility Address 301 14th ST OAKLAND
Consultant Project Number 020104084 0610
Consultant Name GROUNDWATER TECHNOLOGY
Address 4057 PORT CHICAGO HWY CONCORD, CA
Project Contact (Name) KEN JOHNSON
(Phone) 671-2387 (Fax Number)

Chevron Contact (Name) Mark Miller
(Phone) 842-8134
Laboratory Name GTEL CONCORD
Laboratory Release Number 913-6850
Samples Collected by (Name) Greg MASON
Collection Date 9/26/94
Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water C = Chemical	Type C = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed										Remarks			
								BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)						
TBLB	C1	1	W			HCl	Y	X													
MW-11	C2	3	W		11:39	HCl	Y	X													

NOTE:
Do NOT Bill
TB-LB SAMPLES
g.k.
Remarks

CA090502

Relinquished By (Signature): [Signature]
Relinquished By (Signature): [Signature]
Relinquished By (Signature): [Signature]

Organization: GTE
Date/Time: 9/26/94
Organization: GTE
Date/Time: 9/30/94
Organization: GTEL
Date/Time: 9/30/94

Received By (Signature): [Signature]
Received By (Signature): [Signature]
Received For Laboratory By (Signature): [Signature]

Organization: GTE
Date/Time: 9/26/94
Organization: GTEL
Date/Time: 9/30/94
Date/Time: 9/30/94

Turn Around Time (Circle Choice)
24 hrs.
48 hrs.
5 Days
10 Days
As Contracted