Chevron

August 23, 1994

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

Marketing – Northwest Region
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: Chevron Service Station #9-0121
3026 Lakeshore Avenue, Oakland, CA

Dear Ms. Eberle:

Enclosed is the Groundwater Monitoring and Sampling Report dated July 15, 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), total petroleum hydrocarbons as diesel (TPH-D), and BTEX. A sheen was observed in monitor well MW-2. Benzene was detected in monitor wells MW-1, MW-3, and MW-4, at concentrations of 710, 200, and 480 ppb, respectively. Depth to ground water was measured at 3.3 to 11.3 feet below grade and the direction of flow is to the west. the map shows East away fm the Lake'.

An uncategorized compound was observed in the chromatogram for the samples collected from monitor wells MW-1, MW-3, and MW-4. Based on previous analytical results, we suspect this might indicate the presence of MTBE. We will instruct our consultant to collect a sample from these wells for this constituent during subsequent quarterly events. Additionally, an analysis for MTBE will be performed for all wells where an abnormal chromatogram is observed.

During a recent facilities inspection, it was noted that overspill containment was not present around the fill risers of the underground storage tanks. While the source of the MTBE has not been positively identified, the uncontained fill risers present a potential pathway for hydrocarbons to inadvertently enter the subsurface. I have made the recommendation to our maintenance department that overspill containment be installed to eliminate the potential for product overspilling into the soil and ground water from filling the tanks. I will keep you informed of the schedule for installing the overspill containment as it develops.

The Remediation Feasibility Study dated October 4, 1994, prepared by our consultant Pacific Environmental Group, recommended implementing Alternative Points of Compliance (Non-Attainment Area) at this site. Based on the detection of MTBE in ground water we feel it is inappropriate to implement alternative points of compliance at this time.

Chevron will continue to monitor and sample all wells at this site on a quarterly basis to determine what impact the recent detection of MTBE may have on 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

Enclosure

cc: Mr. Kevin Graves, RWQCB - Bay Area
Mr. S.A. Willer

File: 9-0121 QM8

GROUNDWATER TECHNOLOGY, INC.

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

FAX: (415) 685-9148

July 15, 1994

Project No. 020104097

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

SUBJECT: *Groundwater Monitoring and Sampling Report*
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Dear Mr Miller:

Groundwater Technology, Inc. presents the quarterly groundwater monitoring and sampling data collected on June 17, 1994. Seven of the eight monitoring wells at this site were gauged to measure depth to groundwater (DTW) and to check for separate-phase hydrocarbons. Separate-phase hydrocarbons were detected in monitoring well MW-2. A car was parked over MW-6 and was not monitored or sampled. 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 was purged and sampled. Groundwater monitoring and sample collection protocol and field data sheets are presented in Attachment 3. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes, total petroleum hydrocarbons-as-gasoline and for total petroleum hydrocarbons-as-diesel. Results of the chemical analyses are summarized in Attachment 2. Well caps were replaced on monitoring wells MW-5, MW-7 and MW-8. The laboratory reports and chain-of-custody records are included in Attachment 4. Monitoring-well purge water was removed by Groundwater Technology and transported 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

PR 1171

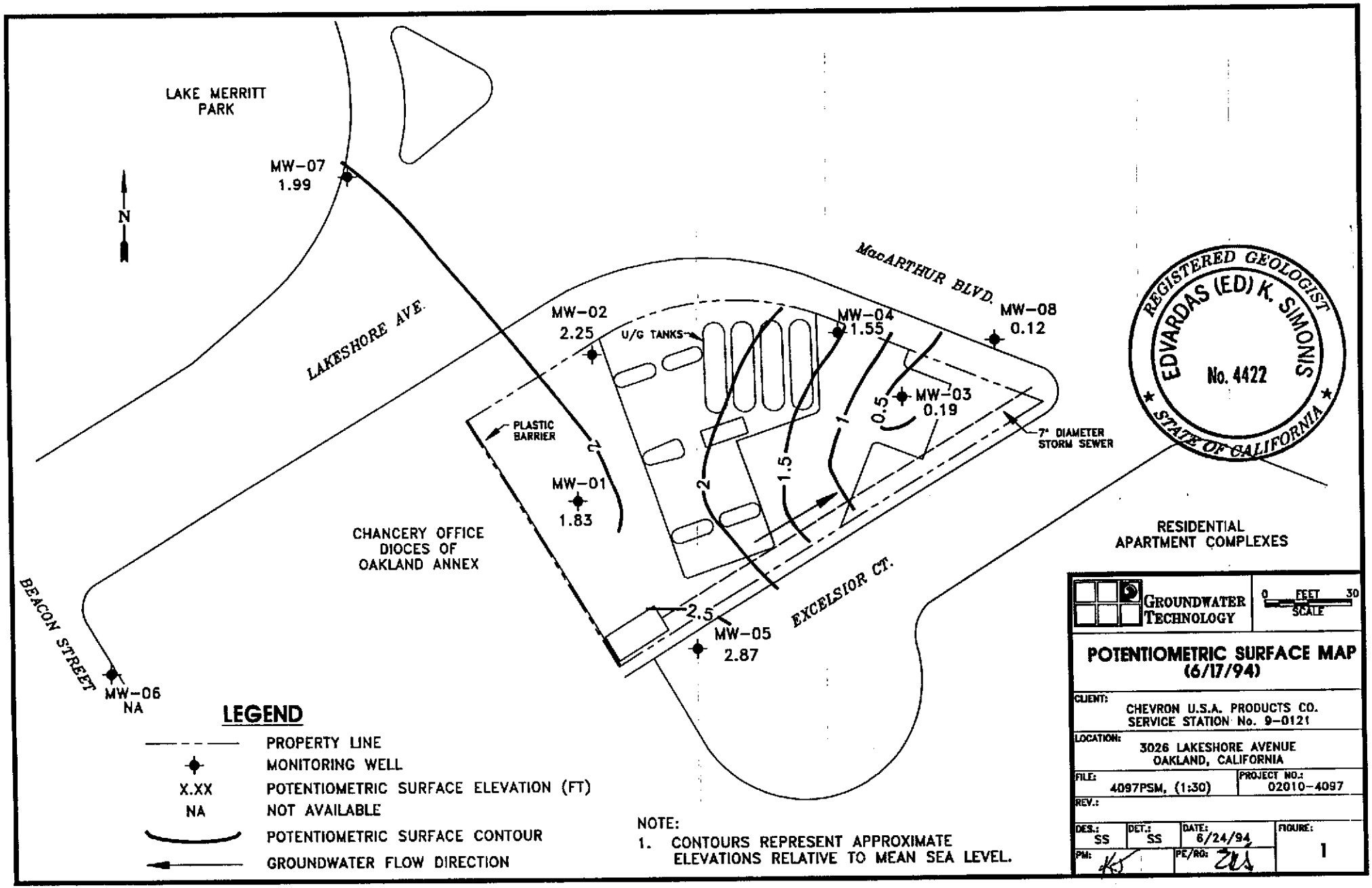
Attachment 1 Figure
Attachment 2 Table
Attachment 3 Protocol and Field Data Sheets
Attachment 4 Laboratory Report

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

4097qmsr.294

ATTACHMENT 1

Figures



LEGEND

———	PROPERTY LINE
✦	MONITORING WELL
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

0 FEET 30 SCALE

POTENTIOMETRIC SURFACE MAP (6/17/94)

CLIENT: CHEVRON U.S.A. PRODUCTS CO.
SERVICE STATION No. 9-0121

LOCATION: 3026 LAKESHORE AVENUE
OAKLAND, CALIFORNIA

FILE: 4097PSM, (1:30) | PROJECT NO.: 02010-4097

REV.:

DES.:	DET.:	DATE:	FIGURE:
SS	SS	6/24/94	1

PM: KS | PE/RG: ZS

ATTACHMENT 2

Table

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-1		08/20/91	5,100	1,700	21	220	34	260	---	---	5.20	0.00	1.62
	6.82	09/30/91	Separate-phase hydrocarbons present						---	---	5.67	Sheen	1.15
		10/28/91									5.30	0.03	1.50
	6.89	01/08/92	5,400	770	13	95	31	---	---	---	5.15	Sheen	1.67
		01/13/92	---	---	---	---	---	*4,400	---	---	---	---	---
		06/23/92	7,700	1,500	40	230	100	*2,000	---	---	5.41	0.00	1.48
		08/24/92	---	---	---	---	---	---	---	---	5.77	0.00	1.12
		09/21/92	3,500	1,700	28	190	78	<50	---	---	5.89	0.00	1.00
		10/26/92	---	---	---	---	---	---	---	---	5.94	0.00	.95
		12/23/92	60,000	7,100	240	2,000	1,300	*5,500	---	---	4.71	0.00	2.18
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	***530	1,100	41	67	79	<10	---	---	4.72	0.00	2.17
		06/11/93	****7,000	1,900	33	120	69	---	840	9,600	5.07	0.00	5.37
		09/29/93	6,600	1,600	28	43	74	<10	---	---	5.76	0.00	1.13
		12/20/93	****6,300	1,900	36	82	65	<10	---	---	5.15	0.00	1.74
		03/07/94	7,700	1,100	55	66	38	*<10	---	12,000	4.68	0.00	2.21
		06/17/94	****4,300	710	12	90	38	2,200	---	---	5.06	0.00	1.83

GROUNDWATER TECHNOLOGY ®

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-2	6.27	08/20/91	9,300	3,700	55	530	75	600	---	---	4.35	0.00	1.92
		09/30/91	3,500	2,600	47	440	68	---	---	---	4.99	0.00	1.28
		10/28/91	4,600	1,800	29	290	53	---	---	---	4.91	0.00	1.36
		01/08/92	14,000	4,300	70	<25	130	---	---	---	4.64	Sheen	1.63
		01/13/92	---	---	---	---	---	*38,000	---	---	---	---	---
		06/23/92	---	---	---	---	---	---	---	---	4.64	0.02	1.63
		08/24/92	Separate-phase hydrocarbons present						---	---	4.94	0.02	1.34
		09/21/92							---	---	5.08	0.01	1.20
		10/26/92	---	---	---	---	---	---	---	---	5.93	0.00	.34
		12/23/92	21,000	5,400	59	1,300	160	160,000	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	3.70	0.00	2.57
		03/25/93	---	---	---	---	---	---	---	---	3.38	Sheen	2.89
		06/11/93	5,900	1,100	23	240	51	---	2,300	---	4.18	0.00	2.09
		09/29/93	---	---	---	---	---	---	---	---	6.20	0.00	0.07
		12/20/93	---	---	---	---	---	---	---	---	4.35	0.02	1.94
		03/07/94	26,000	5,700	170	1000	150	*<10	---	---	3.67	0.00	2.60
		06/17/94	---	---	---	---	---	---	---	---	4.02	Sheen	2.25

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-3	8.71	08/20/91	3,100	200	13	15	12	200	---	---	8.45	0.00	0.26
		09/30/91	1,000	150	8.3	13	6.7	---	---	---	8.74	0.00	-0.03
		10/28/91	1,200	120	6.7	11	7.5	---	---	---	8.76	0.00	-0.05
		01/08/92	410	120	0.9	4.1	3.4	---	---	---	8.77	0.00	-0.06
		01/13/92	---	---	---	---	---	*220	---	---	---	---	---
		06/23/92	630	43	0.8	8.2	3.4	<50	---	---	8.68	0.00	0.03
		08/24/92	---	---	---	---	---	---	---	---	8.85	0.00	-0.14
		09/21/92	1,800	730	1.4	66	39	<50	---	---	8.94	0.00	-0.23
		10/26/92	---	---	---	---	---	---	---	---	9.07	0.00	-0.36
		12/23/92	840	270	3.4	15	4.2	*850	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	7.69	0.00	1.02
		03/25/93	760	270	4	10	5	<10	---	---	7.74	0.00	0.97
		06/11/93	200	32	1	5	2	---	5,600	---	8.52	0.00	0.19
		09/29/93	9,300	2,800	60	270	62	---	---	---	6.05	0.00	2.66
		12/20/93	****460	250	4	8	4	<10	---	---	8.83	0.00	-0.12
		03/07/94	2,400	260	13	35	18	#<10	---	---	8.07	0.00	0.64
		06/17/94	****1,000	200	4.0	6.6	6.7	<50	---	---	8.52	0.00	0.19
MW-4	7.37	08/20/91	1,800	870	4	3	9	160	---	---	5.05	0.00	1.32
		09/30/91	670	830	5.5	2.7	12	---	---	---	5.67	0.00	1.70
		10/28/91	2,800	990	5.8	4.8	19	---	---	---	5.81	0.00	1.56
		01/08/92	2,900	1,200	10	7	18	---	---	---	5.34	0.00	2.03
		01/13/92	---	---	---	---	---	*1,000	---	---	---	---	---
		06/23/92	1,600	380	6.5	3	12	<50	---	---	5.37	0.00	2.00
		08/24/92	---	---	---	---	---	---	---	---	5.75	0.00	1.62
		09/21/92	1,200	480	5.6	3.7	11	<50	---	---	5.95	0.00	1.42
		10/26/92	---	---	---	---	---	---	---	---	5.96	0.00	1.41
		12/23/92	1,500	700	3.6	3.2	11	*1,800	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	4.64	0.00	2.73
		03/25/93	***520	160	3	1	4	<10	---	---	4.42	0.00	2.95
		06/11/93	****1,200	430	5	6	11	---	2,600	---	5.12	0.00	2.25
		09/29/93	1,300	210	8	2	14	---	---	---	5.80	0.00	1.57
		12/20/93	****570	230	5	4	8	3,900	---	---	5.10	0.00	2.27
		03/07/94	****2,200	290	18	2.5	11	2,600	---	22,000	5.01	0.00	2.36
		06/17/94	****2,100	480	11	4.3	9.5	2,800	---	---	5.82	0.00	1.55

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-5	14.14	06/23/92	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	12.24	0.00	1.90
		08/24/92	---	---	---	---	---	---	---	---	12.29	0.00	1.85
		09/21/92	<50	<0.5	<0.5	<0.5	<0.5	*60	---	---	12.46	0.00	1.68
		10/26/92	---	---	---	---	---	---	---	---	12.52	0.00	1.62
		12/23/92	---	---	---	---	---	---	---	---	11.12	0.00	3.02
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	0.9	<10	---	---	9.74	0.00	4.40
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	770	---	10.44	0.00	3.70
		09/29/93	<50	<0.5	0.6	<0.5	0.6	<10	---	---	11.92	0.00	2.22
		12/20/93	---	---	---	---	---	---	---	---	---	---	---
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	11.34	0.00	2.80
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	11.27	0.00	2.87
MW-6	4.46	06/23/92	<50	4.3	<0.5	0.8	0.9	120	---	---	5.14	0.00	-0.68
		08/24/92	---	---	---	---	---	---	---	---	4.95	0.00	-0.49
		09/21/92	<250	<2.5	<2.5	<2.5	<2.5	<50	---	---	4.90	0.00	-0.44
		10/26/92	---	---	---	---	---	---	---	---	5.52	0.00	-1.06
		12/23/92	<50	<0.5	<0.5	<0.5	<0.5	81	---	---	5.40	0.00	-0.94
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	0.7	<10	---	---	6.10	0.00	-1.64
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	15,000	---	6.56	0.00	-2.10
		09/29/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	5.17	0.00	-0.71
		12/20/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	5.93	0.00	-1.47
		03/07/94	54	<0.5	<0.5	<0.5	0.6	<10	---	---	5.27	0.00	-0.81
		06/17/94	---	---	---	---	---	---	---	---	---	---	---

GROUNDWATER TECHNOLOGY, INC.

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-7	5.26	06/23/92	<50	4.7	<0.5	<0.5	<0.5	<50	---	---	4.38	0.00	0.88
		08/24/92	---	---	---	---	---	---	---	---	5.55	0.00	-0.29
		09/21/92	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	5.65	0.00	-0.39
		10/26/92	---	---	---	---	---	---	---	---	5.51	0.00	-0.25
		12/23/92	<50	2.9	<0.5	<0.5	<0.5	60	---	---	3.95	0.00	1.31
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	2.50	0.00	2.76
		06/11/93	<50	0.6	<0.5	<0.5	<0.5	---	2,200	---	3.46	0.00	1.80
		09/29/93	<50	2	1	1	7	<10	---	---	5.52	0.00	-0.26
		12/20/93	<50	2	<0.5	<0.5	<0.5	<10	---	---	4.41	0.00	0.85
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	2.62	0.00	2.64
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	3.27	0.00	1.99
MW-8	8.94	06/23/92	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	24.14	0.00	-15.20
		08/24/92	---	---	---	---	---	---	---	---	8.60	0.00	0.34
		09/21/92	**94	<0.5	<0.5	<0.5	<0.5	<50	---	---	8.39	0.00	0.55
		10/26/92	---	---	---	---	---	---	---	---	9.12	0.00	-0.18
		12/23/92	<50	0.7	5.0	0.7	2.9	79	---	---	8.11	0.00	0.83
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	---	---	---	---	---	---	---	---	---	---	---
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	3,500	---	8.39	0.00	0.55
		09/29/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	8.25	0.00	0.69
		12/20/93	<50	<0.5	0.6	<0.5	1	<10	---	---	8.46	0.00	0.48
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	8.66	0.00	0.28
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	8.82	0.00	0.12

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
TBLB		08/24/92	---	---	---	---	---	---	---	---	---	---	---
		09/21/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		10/26/92	---	---	---	---	---	---	---	---	---	---	---
		12/23/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		09/29/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		12/20/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---

TPH-G = Total petroleum hydrocarbons-as-gasolines
TPH-D = Total petroleum hydrocarbons-as-diesel fuel
TDS = Total dissolved solids
MTBE = Methyl-tert-butyl-ether
DTW = Depth to groundwater
SPT = Separate-phase hydrocarbon thickness
WTE = Water-table elevation
TB-LB = Trip blank/Lab blank
* = Diesel fuel range concentration reported. The laboratory reported that the majority of peaks were observed in the gasoline range of the chromatogram, or that the pattern observed in the chromatogram was not typical of diesel fuel.
** = Gasoline range concentration reported. A nonstandard gasoline pattern was observed in the chromatogram.
*** = Miscellaneous peak not included in gasoline total.
**** = Uncategorized compound is not included in gasoline hydrocarbon total.
# = Uncategorized compounds not indicative of diesel.
--- = Not applicable, not analyzed, not measured

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:

(Product thickness) x (0.8) + (Water elevation) = 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 tripled 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.

Project Name: Chevron - Lakeshore

Date: 6/10/94

Site Address: 3026 Lakeshore, Oakland

Page 1 of 8

Project Number: 020104096.0610

Project Manager: Tim Watchers

Well ID: MW-8

Well Diameter: 2"

DTW Measurements:
Initial: 8.82
Recharge:

Calc Well Volume 2.63 gal
Well Volume: 7.89 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

25.00 - 8.82 = 16.18 + .163 = 2.63 + 3 = 7.89

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0907	17.9	1.59	6.73	2		clear
0910	18.3	6.28	6.92	4		cloudy
0914	18.0	4.73	7.13	6		LT. cloudy brown
0918	18.1	7.57	7.02	8		4

Project Name: Chevron - Lakeshore

Date: 6/17/94

Site Address: 3026 Lakeshore, Oakland

Page 2 of 8

Project Number: 020104096.0610

Project Manager: Tim Watchers

Well ID: MW-7

Well Diameter: 2"

DTW Measurements:
Initial: 3.27
Recharge:

Calc Well Volume: 2.72 gal
Well Volume: 8.16 gal

20.00 − 3.27 = 16.73 × .163 = 2.72 × 3 = 8.16

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0929	22.6	1.79	6.34	2		cloudy LT. Brown
0932	20.9	1.86	6.36	4		cloudy brown
0934	21.8	1.82	6.39	6		"
0936	21.7	1.81	6.39	8		"

Project Name: Chevron - Lakeshore

Site Address: 3026 Lakeshore, Oakland

Project Number: 020104096.0610

Date: 6/17/94

Project Manager: Tim Watchers

Well ID: MW-6

Well Diameter: 2"

2000 -

DTW Measurements:
Initial: ______
Recharge: ______

Calc Well Volume: ______ gal
Well Volume: ______ gal

Purge Method
Peristaltic ______
Gear Drive ______
Submersible ______

Pump Depth ______ ft.
Hand Bailed X
Air Lift ______
Other ______

Instruments Used
YSI: X
Hydac: ______
Omega: ______

Other: ______

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments

Car parked on top of well (Red Zone)

Police said would give it a ticket but not tow it away, also night before had to put up orange construction sign so cars can be towed away

Project Name: Chevron - Lakeshore

Site Address: 3026 Lakeshore, Oakland

Project Number: 020104096.0610

Date: 6/17/94

Page 4 of 8

Project Manager: Tim Watchers

Well ID: MW-5

Well Diameter: 2"

DTW Measurements:
Initial: 11.27
Recharge:

Calc Well Volume: 3.86 gal
Well Volume: 11.58 gal

35.00 - 11.27 = 23.73 x .163 = 3.86 x 3 =

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:
Other:

Time	Temp ~~C~~ F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0955	18.7	0.92	6.70	2		cloudy
0957	18.8	0.97	6.79	4		cloudy CT. Brown
1000	18.5	2.81	6.77	6		"
1003	18.7	1.46	6.81	8		cloudy Brown
1009	18.4	1.59	6.95	12		"

ct Name: Chevron - Lakeshore

Address: 3026 Lakeshore, Oakland

roject Number: 020104096.0610

Date: 6/17/04

Page 5 of 8

Project Manager: Tim Watchers

Well ID: MW-4

Well Diameter: 3/4"

DTW Measurements:
Initial: 5.82
Recharge:

Calc Well Volume: .23 gal
Well Volume: .69 gal

16.00 - 5.82 = 10.18 x .023 = .23 x 3 =

Purge Method
Peristaltic X
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI:
Hydac:
Omega:

Other: Slope

Time	Temp X C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
1022	22.8	3.56	6.63	0		cloudy, black ODOR
1026	22.1	3.50	6.78	1 liter		cl ODOR

Project Name: Chevron - Lakeshore

Date: 6/17/94

Site Address: 3026 Lakeshore, Oakland

Page 6 of 8

Project Number: 020104096.0610

Project Manager: Tim Watchers

Well ID: MW-3

Well Diameter: 3/4"

DTW Measurements:
Initial: 8.52
Recharge: _____

Calc Well Volume: 0.195 gal
Well Volume: .585 gal

10.00 - 8.52 = 8.48 x .023 = .195 x 3 =

Purge Method
Peristaltic X
Gear Drive _____
Submersible _____

Pump Depth _____ ft.
Hand Bailed X
Air Lift _____
Other _____

Instruments Used
YSI: _____
Hydac: _____
Omega: _____

Other: slope

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
1038	20.7	5.82	6.65	0		cloudy LT. brown odor
1043	23.3	6.36	7.31	3/4 liter		" odor

Project Name: Chevron - Lakeshore

Date: 6/17/14

Site Address: 3026 Lakeshore, Oakland

Page 7 of 8

Project Number: 020104096.0610

Project Manager: Tim Watchers

Well ID: MW-1

Well Diameter: 4"

DTW Measurements:
Initial: 5.06
Recharge:

Calc Well Volume: 9.25 gal
Well Volume: 29.25 gal

20.00 − 5.06 = 14.94 × .653 = 9.75

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
1059	22.1	1.14	6.45	4		cloudy brown / debris
1101	23.0	1.11	6.55	8		"
1104	21.2	1.24	6.55	16		cloudy LT. Brown
1108	21.4	1.23	6.55	24		"
1110	21.2	1.27	6.56	29		"

ODE

Project Name: Chevron - Lakeshore

Site Address: 3026 Lakeshore, Oakland

Project Number: 020104096.0610

Date: 6/17/94

Page 8 of 8

Project Manager: Tim Watchers

Well ID: MW-2

Well Diameter: 3/4" 11.00 -

DTW Measurements:
Initial: 4.02 Calc Well Volume: _____ gal
Recharge: _____ Well Volume: _____ gal

Purge Method
Peristaltic_____
Gear Drive_____
Submersible_____

Pump Depth_____ ft.
Hand Bailed_____
Air Lift_____
Other_____

Instruments Used
YSI: _____
Hydac: _____
Omega: _____

Other: slope

Time	Temp C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
		4.02 TO	H_2O/HC	/EVEL		
		UNDETERMINED AMOUNT OF HC				
		STRONG	ODER			
			(Sheen)			

GROUNDWATER TECHNOLOGY ®

ATTACHMENT 4

Laboratory Reports

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Western Region
4080 Pike Lane, Suite C
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
FAX (510) 825-0720

Client Number: 020104097
Consultant Project Number: 020104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore, Oakland
Work Order Number: C4-06-0441

July 5, 1994

Tim Watchers
Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 06/24/94.

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 California State Department of Health Services, Laboratory certification number E1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning 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

Client Number: 020104097
Consultant Project Number: 020104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore, Oakland
Work Order Number: C4-06-0441

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Methods 8020 and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		TBLB	MW-8	MW-7	MW-5
Date Sampled		06/17/94	06/17/94	06/17/94	06/17/94
Date Analyzed		06/27/94	06/27/94	06/27/94	06/27/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	0.5	<0.5	<0.5	<0.5	<0.5
Gasoline	50	<50	<50	<50	<50
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		110	110	113	112

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

Client Number: 020104097
Consultant Project Number: 020104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore, Oakland
Work Order Number: C4-06-0441

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Methods 8020 and Modified 8015[a]

GTEL Sample Number		05[b]	06[b]	07[b]	E062794-1
Client Identification		MW-4	MW-3	MW-1	METHOD BLANK
Date Sampled		06/17/94	06/17/94	06/17/94	--
Date Analyzed		06/28/94	06/27/94	06/27/94	06/27/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	480	200	710	<0.5
Toluene	0.5	11	4.0	12	<0.5
Ethylbenzene	0.5	4.3	6.6	90	<0.5
Xylene, total	0.5	9.5	6.7	38	<0.5
Gasoline	50	2100	1000	4300	<50
Detection Limit Multiplier		5	1	5	1
BFB surrogate, % recovery		112	102	100	90.5

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

b. Uncategorized compound is not included in gasoline concentration.

Client Number: 020104097
Consultant Project Number: 020104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore, Oakland
Work Order Number: C4-06-0441
Date Reissued: 07-07-94

ANALYTICAL RESULTS

TPH as Diesel in Water

Method: Modified EPA 8015[a]

GTEL Sample Number		02	03	GCK 062894	04
Client Identification		MW-8	MW-7	METHOD BLANK	MW-5
Date Sampled		06/17/94	06/17/94	--	06/17/94
Date Extracted		06/27/94	06/27/94	06/27/94	06/28/94
Date Analyzed		06/28/94	06/29/94	06/28/94	06/30/94
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
TPH as diesel	50	<50	<50	<50	<50
Reporting Limit Multiplier		1	1	1	1
OTP surrogate, % recovery		109	111	89.2	91.0

GTEL Sample Number		05	06[c]	07	GCK 062994
Client Identification		MW-4	MW-3	MW-1	METHOD BLANK
Date Sampled		06/17/94	06/17/94	06/17/94	--
Date Extracted		06/28/94	06/28/94	06/28/94	06/28/94
Date Analyzed		07/01/94	06/30/94	06/30/94	06/29/94
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
TPH as diesel	50	2800	<50	2200	<50
Reporting Limit Multiplier		1	1	1	1
OTP surrogate, % recovery		176[b]	101	127	105

a. Test Methods for Evaluating Solid Waste, SW-846, 3rd edition, Rev. 0, U.S. EPA, November, 1986. Modification for TPH as diesel as per California State Water Resources Board LUFT Manual procedures. O-Terphenyl surrogate recovery acceptability limits are 50-150%.
b. Surrogate high due to target compound interference.
c. Hydrocarbon pattern not characteristic of diesel.

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: 9-0121
Facility Address: 3026 Lakeshore Oakland
Consultant Project Number: 020104097
Consultant Name: Groundwater Technology, Inc.
Address: 4057 Port Chicago Hwy, Concord, CA. 94520
Project Contact (Name): Tim Watchers
(Phone) 510-671-2387 (Fax Number)

Chevron Contact (Name): Tim Watchers
(Phone) (510) 671-2387
Laboratory Name: GTEL
Laboratory Release Number: 526-6900
Samples Collected by (Name): J. Weber
Collection Date: 6/17/94
Signature:

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	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)					Remarks
TB-LB	01	2	W	G	1130	HCl	Y	X					X							Hold
MW-8	02	6			1135			X	X				X							8240
MW-7	03	6			1145			X	X				X							Samples
MW-5	04	6			1200			X	X				X							
MW-4	05	6			1215			X	X				X							
MW-3	06	6			1245			X	X				X							
MW-1	07	6	W	G	1320	HCl	Y	X	X				X							

NOTE:
Do Not Bill
TB-LB SAMPLES
SEALS INTACT,
ON ICE AT 5°

1/3 MW-8
BTEX VOA w/ benz

C406041

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	GTI	6/17/94			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	GTL	6-24-94 1400	John Weber	GTEL	6-24-94 1400
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		
		1420			

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