

GROUNDWATER TECHNOLOGY, INC.

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

FAX: (415) 685-9148

June 14, 1993

Project No. 020204088

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

SUBJECT: Groundwater Monitoring and Sampling Activities
Chevron Service Station No. 9-3356
19201 Center Street, Castro Valley, California

Dear Mr. Kan:

Groundwater Technology, Inc. presents the attached quarterly groundwater monitoring and sampling data collected on April 29, 1993. Three groundwater monitoring wells at the site were gauged to measure depth to groundwater (DTW) and to check for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not detected in the monitoring wells. A potentiometric surface map (Figure 1) and a summary of groundwater monitoring data (Table 1) are presented in Attachments 1 and 2, respectively. After the DTW was measured, each monitoring well was purged and sampled. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and 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

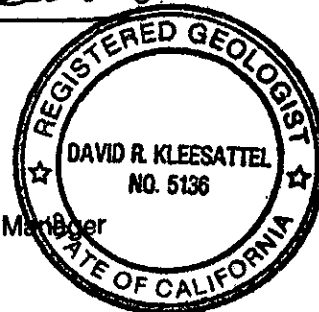
Tim Watchers
Project Geologist

David R. Kleesattel

David R. Kleesattel
Registered Geologist
No. 5136

Attachment 1 Figure
Attachment 2 Table
Attachment 3 Laboratory Report

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

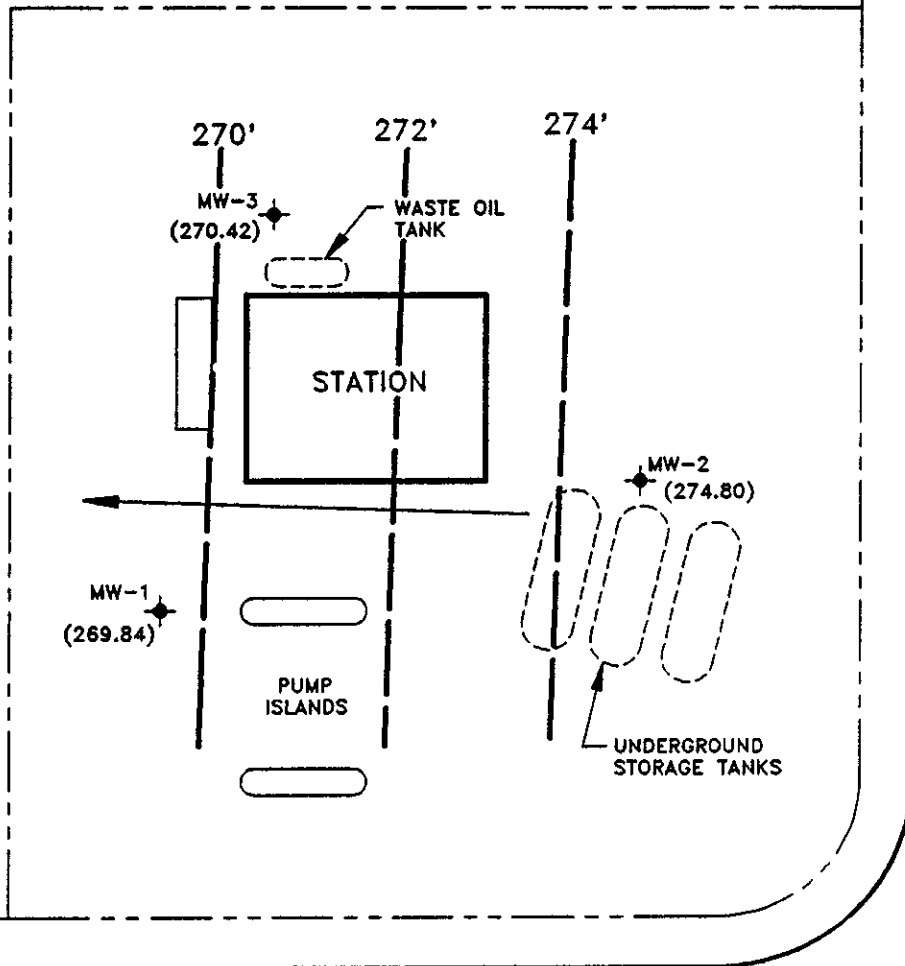
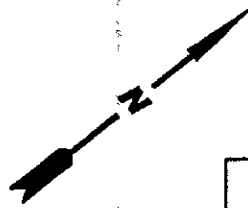


4088R013

ATTACHMENT 1

FIGURE

4068R013



CENTER STREET

HEYER STREET

LEGEND

- ◆ MONITORING 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
(4/29/93)**

CLIENT: CHEVRON U.S.A PRODUCTS CO. SERVICE STATION No. 9-3356		LOCATION: 19201 CENTER STREET CASTRO VALLEY, CALIFORNIA		REV. NO.: 0	DATE: 6/4/93
PM <i>JHW</i>	PE/RG <i>DRK</i>	DESIGNED TW	DETAILED ML	ACAD FILE: PSM42993/SP693	PROJECT NO.: 020204115
					FIGURE: 1

ATTACHMENT 2

TABLE

4088R013

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-3356
19201 Center Street, Castro Valley, California

Well/ID Elev	Date	TPH-as- Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes	TOG	ORG- Pb	DTW (ft)	SPT (ft)	WTE (ft)	
MW-1 285.22	09/06/89	<1.0	<0.5	<0.5	<0.5	<0.5	--	<50	18.25	--	266.97	
	09/12/89	--	--	--	--	--	--	--	18.39	--	266.83	
	11/20/89	<500	<0.3	<0.3	<0.3	<0.6	--	<50	18.06	--	267.16	
	02/22/90	<50	<0.3	<0.3	<0.3	<0.6	--	<50	18.04	--	267.18	
	05/29/90	<50	0.3	<0.3	<0.3	<0.6	--	<50	18.55	--	266.67	
	09/27/90	<50	<0.3	<0.3	<0.3	<0.6	--	--	19.13	--	266.09	
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	19.32	--	265.90	
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	19.36	--	265.86	
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	19.81	--	265.41	
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	19.81	--	265.41	
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	18.04	--	267.18	
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	18.75	--	266.47	
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	19.25	--	265.97	
	01/13/93	<50	<0.5	<0.5	0.8	<0.5	0.8	--	--	17.12	--	268.10
	04/29/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	--	--	15.38	0.00	269.84
MW-2 286.16	09/06/89	23	1	4	1	4	--	<50	13.72	--	272.44	
	09/12/89	--	--	--	--	--	--	--	13.97	--	272.19	
	11/20/89	<500	<0.3	<0.3	<0.3	<0.6	--	<50	13.81	--	272.35	
	02/22/90	<50	<0.3	<0.3	<0.3	<0.6	--	<50	13.68	--	272.48	
	05/29/90	<50	2	<0.3	<0.3	<0.6	--	<50	13.92	--	272.24	
	09/27/90	<50	<0.3	<0.3	<0.3	<0.6	--	--	14.75	--	271.41	
	01/16/91	<50	9	<0.5	<0.5	2	--	--	14.44	--	271.72	
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	14.46	--	271.70	
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	14.46	--	271.70	
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	14.73	--	271.43	
	04/15/92	<50	<0.9	<0.5	<0.5	<0.5	--	--	13.03	--	273.13	
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	13.83	--	272.33	
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	14.35	--	271.81	
	01/13/93	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	12.34	--	273.82	
	04/29/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	--	11.36	0.00	274.80	

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-3356
19201 Center Street, Castro Valley, California

Well/ID Elev	Date	TPH-as-Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TOG	ORG-Pb	DTW (ft)	SPT (ft)	WTE (ft)
MW-3 284.46	09/06/89	<1.0	<0.5	<0.5	<0.5	<0.5	1000	<50	18.73	—	265.73
	09/12/89	—	—	—	—	—	—	—	17.78	—	266.68
	11/20/89	<500	<0.3	<0.3	<0.3	<0.6	<1000	<50	17.65	—	266.81
	02/22/90	<50	<0.3	<0.3	<0.3	<0.6	<1000	<50	16.84	—	267.62
	05/29/90	<50	<0.3	<0.3	<0.3	<0.3	<1000	<50	17.13	—	267.33
	09/27/90	<50	<5	<5	<5	<5	—	—	18.38	—	266.08
	09/27/90	<50	—	—	—	—	<1000	—	18.38	—	266.08
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	18.28	—	266.18
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	18.28	—	266.18
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	17.62	—	266.84
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	17.62	—	266.84
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	15.22	—	269.24
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	16.66	—	267.80
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	17.57	—	266.89
	01/13/93	<50	<0.5	<0.5	<0.5	<0.5	—	—	14.12	—	270.34
04/29/93	<50	<0.5	<0.5	<0.5	<0.5	—	—	14.04	0.00	270.42	
TB-LB	11/20/89	<500	<0.3	<0.3	<0.3	<0.3	—	—	—	—	—
	02/22/90	<50	<0.3	<0.3	<0.3	<0.3	—	—	—	—	—
	05/29/90	<50	<0.3	<0.3	<0.3	<0.3	—	—	—	—	—
	09/27/90	<50	—	—	—	—	—	—	—	—	—
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	01/13/93	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
04/29/93	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—	

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HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-3356
19201 Center Street, Castro Valley, California

Well/ID Elev	Date	TPH-as- Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes	TOG	ORG- Pb	DTW (ft)	SPT (ft)	WTE (ft)
RINSATE	09/27/90	<50	—	—	—	—	—	—	—	—	—
	01/16/91	—	—	—	—	—	—	—	—	—	—
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	—	—	—

TPH = Total petroleum hydrocarbons
 TOG = Total oil and grease
 ORG-Pb = Organic lead
 — = Not applicable/not measured/not sampled
 DTW = Depth to water
 SPT = Separate-phase hydrocarbons
 WTE = Water table elevation measure by mean sea level
 TB-LB = Laboratory trip blank

Data before April 1993 was provided by Alton GeoScience.

ATTACHMENT 3
LABORATORY REPORT

4088RD13



Superior Precision Analytical, Inc.

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

GROUNDWATER TECHNOLOGY, INC.
Attn: SANDRA LINDSEY

Project 020204088.0610
Reported 05/04/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
88459- 1	TB-LB	04/29/93	05/02/93 Water
88459- 3	MW2	04/29/93	05/03/93 Water
88459- 5	MW3	04/29/93	05/02/93 Water
88459- 7	MW1	04/29/93	05/03/93 Water

RESULTS OF ANALYSIS

Laboratory Number: 88459- 1 88459- 3 88459- 5 88459- 7

Gasoline:	ND<50	ND<50	ND<50	ND<50
Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Toluene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Xylenes:	ND<1.5	ND<1.5	ND<1.5	ND<1.5
Concentration:	ug/L	ug/L	ug/L	ug/L



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

A N A L Y S I S F O R T O T A L P E T R O L E U M H Y D R O C A R B O N S

Page 2 of 2
QA/QC INFORMATION
SET: 88459

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:	91/93	2%	70-130
Benzene:	104/98	6%	70-130
Toluene:	105/104	1%	70-130
Ethyl Benzene:	109/109	0%	70-130
Xylenes:	107/107	0%	70-130

Richard Srna, Ph.D.

Delmina Janguila (for)
Laboratory Director

