

Chevron U.S.A. Inc.

2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500 Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Operations

February 23, 1990

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

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

Re: Chevron Service Station #9-5607 5269 Crow Canyon Road Castro Valley, CA

Dear Mr. Shahid:

Enclosed we are forwarding the Quarterly Groundwater Sampling report dated February 20, 1990, conducted by our consultant Pacific Environmental Group Inc., at the above referenced site.

Pacific is currently installing additional wells to further define the extent of contamination at this site. A formal report documenting this additional work along with proposed next actions will be forwarded to your office.

I declare under penalty of perjury that the information contained in the attached report is true and correct, and that any recommended actions are appropriate under the circumstances, to the best of my knowledge.

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

Very truly yours,

C. G. Trimbach

JMR/jmr Enclosure

cc: Mr. Lester Feldman RWQCB-Bay Area 1800 Harrison Street

> Suite # 700 Oakland, CA 94612



February 20, 1990 Project No. 320-18.02

Mr. John Randall Chevron USA, Inc. 2410 Camino Ramon San Ramon, California 94583

RE: Chevron Station No. 5607 5269 Crow Canyon Castro Valley, California

Dear Mr. Randall:

This letter presents the findings of a quarterly groundwater sampling and analytical program being conducted by Pacific Environmental Group, Inc. (PACIFIC) at the above referenced site (see Figures 1 and 2). The site has nine groundwater monitoring wells (C-1 through C-9) and one recovery well (RW) at the locations shown on Figure 3.

The scope of work for this project involved: sampling and analysis of groundwater from all site monitoring wells and the recovery well, and construction of a groundwater elevation contour map and isoconcentration map.

Groundwater Sampling

All site wells were sampled by PACIFIC on December 4 and 5, 1989. The wells range from approximately 30 to 55 feet in depth and are constructed of either two- or four-inch diameter PVC casing. The recovery well is 18-inches in diameter. Depth to groundwater in the wells ranged from approximately 9-1/2 to 32 feet during the recent sampling event. Selected historical groundwater elevation data is presented in Table 1.

PACIFIC's sampling procedure consisted of first measuring the water level in each well, and checking each well for the presence of separate-phase hydrocarbons using a clear Teflon bailer. ** **separate-phase hydrocarbons were detected in any of the wells. The wells were then purged of approximately four

J Jan

casing volumes of water (or until dry) using a centrifugal pump, during which time temperature, pH, and electrical conductivity were monitored to indicate that a representative sample was obtained. After purging, water levels in the wells were allowed to partially restabilize. Water samples were collected using a Teflon bailer. The samples were placed into the appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported on ice to the laboratory. Chain-of-custody documentation is attached.

Laboratory Analysis

The groundwater samples were analyzed for the presence of low-boiling hydrocarbons (calculated as gasoline), including benzene, toluene, ethylbenzene, and xylene (BTEX) compounds. The analyses for gasoline and BTEX compounds were performed according to EPA Method 8015, 8020 and 5030 by a State certified laboratory. A purge and trap technique was utilized with final detection by gas chromatography using a flame-ionization detector and a photo-ionization detector. Laboratory analytical reports are attached.

Findings

Groundwater elevation contours (based on mean sea level datum) were constructed using water level data obtained during the December 1989 sampling event. The contours are presented on Figure 3. Groundwater underlying the site flows towards the southwest at an approximate gradient of 0.21. This flow direction is consistent with previous sampling events.

weept Well C-5, at concentrations ranging from a low of 64 parts per billion (ppb) in Well C-8, to a high of 56,000 ppb in Well C-3. A water sample obtained from Recovery Well (RW) contained gasoline at a concentration of 62,000 ppb. Benzene was detected at concentrations ranging from none detected to 17,000 ppb. Recovery Well RW had a benzene concentration of 29,000 ppb. A summary of groundwater analytical results is presented in Table 2. Dissolved gasoline and benzene concentrations, and gasoline isoconcentration contours, are plotted on Figure 4.

Further groundwater assessment activities are currently scheduled to begin the week of February 26, 1990. The purpose of the additional assessment is to further define the lateral and downgradient extent of hydrocarbons in groundwater.

If you have any questions regarding the contents of this letter, please call.

Sincerely,

PACIFIC ENVIRONMENTAL GROUP, INC.

Erin Garner Senior Geologist

Susan Willhite Senior Geologist

CEG 1272

S. PHINTE OF CALIFORNIA

enclosures

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TABLE 1
SUMMARY OF HISTORICAL GROUNDWATER ELEVATION DATA

Well	Data.	Well Elevation	Depth to	Groundwater Elevation
ID	Date	(ft., MSL)	Water (ft.)	(ft., MSL)
0-1	03/26/85		22.83	
D. W.	07/03/86	96.55	23.58	72.97
	03/26/87	90.55		72.97 76.05
	03/28/88		20.50	70.55
	03/10/89		26.00 15.86	
	04/03/89			80.69 79.70
	05/08/89		16.85	
	06/05/89		22.68	73.87 71.89
	07/12/89		24.66	70.99
	08/10/89		25.56	
	09/13/89		25.89	70.66
	• •		26.55	70.00
	10/04/89		25.24	71.31
	11/03/89		25.03	71.52
	12/04/89		26.37	70.18
12	03/26/85			18.69
\$2.00 m	07/03/86	98.43	19.69	78.74
	03/26/87	30.43	15.45	82.98
	03/28/88		20.92	77.51
	03/10/89		12.80	85.63
	04/03/89		14.26	84.17
	05/08/89		18.42	80.01
	06/05/89		20.09	78.34
	07/12/89		20.79	77.64
	08/10/89		21.40	77.03
	09/13/89		21.86	76.57
	10/04/89		19.89	78.54
	11/03/89		20.76	77.67
	12/04/89		20.82	77.61
	12/04/03		20.02	77.01
C-3	03/26/85			25.68
	07/03/86	98.98	26.04	72.94
	03/26/87		25.64	73.34
	03/28/88		28.82	71.16
	03/10/89		22.78	76.20
	04/03/89		22.71	76.27
	,,			

1 2 1

TABLE 1 (continued)

SUMMARY OF HISTORICAL GROUNDWATER ELEVATION DATA

Well ID	Date	Well Elevation (ft., MSL)	Depth to Water (ft.)	Groundwater Elevation (ft., MSL)
C-3	05/08/89 06/05/89 07/12/89 08/10/89 09/13/89 10/04/89 11/03/89 12/04/89		25.95 27.62 28.29 28.46 29.33 28.97 28.72 29.01	73.03 71.36 70.69 70.52 69.65 70.01 70.26 69.97
C-4	03/26/85 07/03/86 03/26/87 03/28/88 03/10/89 04/03/89 05/08/89 06/05/89 07/12/89 08/10/89 09/13/89 10/04/89 11/03/89	86.65	15.14 15.37 18.04 13.34 15.60 16.51 16.99 17.27 18.16 18.24 18.17	 71.28 68.61 73.31 71.05 70.14 69.66 69.38 68.49 68.41 68.48 68.30
C-5	03/26/85 07/03/86 03/26/87 03/28/88 03/10/89 04/03/89 05/08/89 05/05/89 07/12/89 08/10/89 09/13/89 10/04/89 11/03/89 12/04/89	101.42	25.33 26.41 24.96 29.80 25.89 24.38 27.80 29.42 29.42 29.86 29.77 30.95 31.48 31.32 31.70	75.01 76.46 71.62 75.53 77.04 73.62 72.00 71.56 71.65 70.47 69.94 70.12

TABLE 1 (continued)

SUMMARY OF HISTORICAL GROUNDWATER ELEVATION DATA

Well		Well Elevation	Depth to	Groundwater Elevation
ID	Date	(ft., MSL)	Water (ft.)	(ft., MSL)
	00 106 105		16 74	
C-6	03/26/85		16.74	71.60
	07/03/86	89.06	17.46	70.69
	03/26/87		18.37	69.22
	03/28/88		19.84	
	03/10/89		14.44	74.62
	04/03/89	•	14.44	74.62
	05/08/89		17.16	71.90
	06/05/89		18.51	70.55
	07/12/89		18.71	70.35
	08/10/89		19.32	69.69
	09/13/89		19.95	69.11
	10/04/89		19.87	69.19
	11/03/89		19.35	69.71
	12/04/89		19.59	69.47
C-7	03/26/85		09.61	
	07/03/86	84.74	10.74	74.00
	03/26/87		10.08	74.66
	03/28/88		13.79	70.95
	03/10/89		10.42	74.32
	04/03/89		09.14	75.60
	05/08/89		11.91	72.83
	06/05/89		11.54	73.20
	07/12/89		13.45	71.29
	08/10/89		13.37	71.37
	09/13/89		14.60	70.14
	10/04/89		15.17	69.57
			15.28	69.46
	11/03/89		15.70	69.04
	12/04/89		13.70	03.10.
C-8	03/26/85		08.68	
	07/03/86	101.60	13.89	87.71
	03/26/87		06.01	95.59
	03/28/88		10.66	90.94
	03/10/89		06.61	94.99
	04/03/89		06.46	95.14
	05/08/89		08.97	92.63
	06/05/89		10.88	90.72
	07/12/89		12.15	89.45
	08/10/89		12.46	89.14
	30/ 10/ 09			

TABLE 1 (continued)

SUMMARY OF HISTORICAL GROUNDWATER ELEVATION DATA

Well ID	<u>Date</u>	Well Elevation (ft., MSL)	Depth to Water (ft.)	Groundwater Elevation (ft., MSL)
C-8	09/13/89		12.78	88.82
C-6	• •		12.51	89.09
	10/04/89		14.63	86.97
	11/03/89		09.59	92.01
	12/04/89		09.59	72.01
C-9	07/03/86	82.14	13.89	68.25
	03/26/87		13.74	68.40
	03/28/88		14.99	67.15
	03/10/89		13.39	68.75
	04/03/89		12.84	69.30
	05/08/89		14.38	67.76
	06/05/89		15.36	66.78
	07/12/89		15.65	66.49
	08/10/89		15.80	66.34
	09/13/89		16.53	65.61
			16.52	65.62
	10/04/89		16.52	65.63
	11/03/89			65.35
	12/04/89		16.79	03.33

Note: Data prior to 3/10/89 from Groundwater Technology Inc. (GTI)
Not all GTI data presented
Well Elevations are relative to top of well casing.

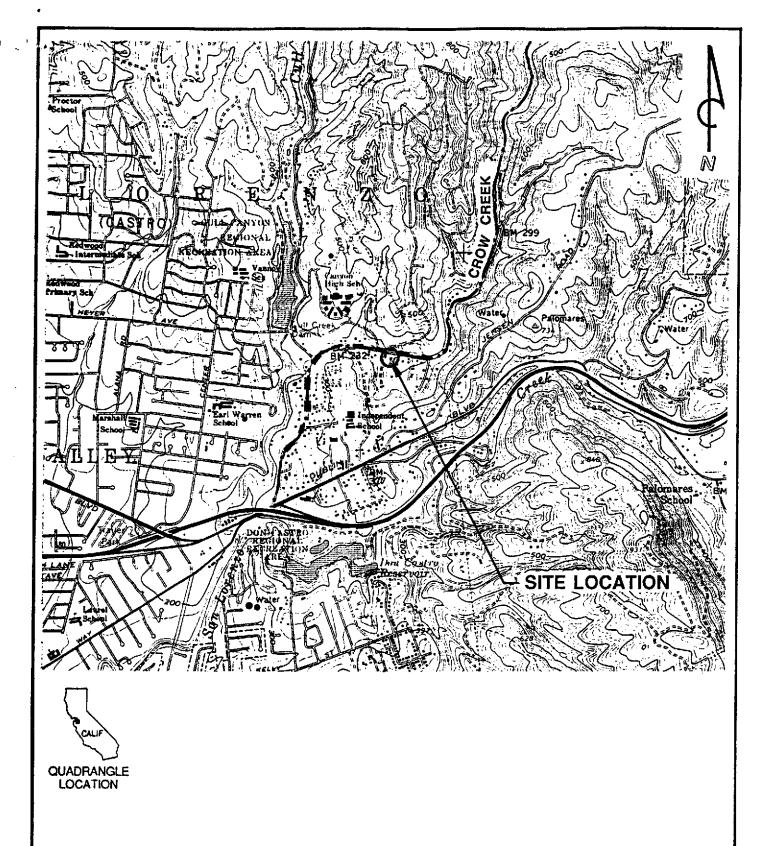
TABLE 2 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- Benzene (ppb)	Xylenes (ppb)
		_			1 000	3,500
C-1	09/13/89	22,000	3,600	1,100	1,000 610	1,600
	12/04/89	13,000	2,000	550	910	1,000
CE2	09/13/89	320	62	4	10	14
V -	12/04/89	1,000	240	37	66	130
C#/3	09/13/89	60,000	1,400	6,800	2,300	10,000
Chira.	12/04/89	56,000	1,300	3,300	1,400	5,700
	12/04/03	50,000		•	•	
e-\$	09/13/89	57,000	21,000	3,100	3,200	11,000
~ ~	12/04/89	48,000	17,000	2,200	2,800	9,800
	,,	•	· ·			
C-5	09/13/89	310	ND	ND	ND	ND
	12/05/89	ND	ND	ND	ND	1
	09/13/89	47	5,600	3,000	2,400	10,000
	12/05/89	40,000	8,100	1,800	1,700	7,500
c- *	09/13/89	410	1.3	ND	10	ND
C-4.	12/04/89	1,000	1	ND	5	ND
	12/04/09	1,000	-			
	09/13/89	ND	ND	ND	ИĎ	ND
Age - April 2	12/04/89	64	0.6	0.6	ND	1
	, ,					
	09/13/89	42,000	14,000	1,100	2,800	4,200
*Maria Fare	12/04/89	36,000	11,000	670	2,500	3,800
DEZ	, ,	62 000	29,000	1,700	1,800	8,800
RW	12/04/89	62,000	29,000	1,,00	2,000	- ,

Notes: ND - none detected

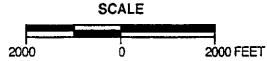
ppb - parts per billion
Detection limits shown on attached certified analytical

reports



REFERENCE:

USGS 7.5 MIN.TOPOGRAPHIC MAP TITLED: HAYWARD, CALIFORNIA DATED: 1959 REVISED: 1980



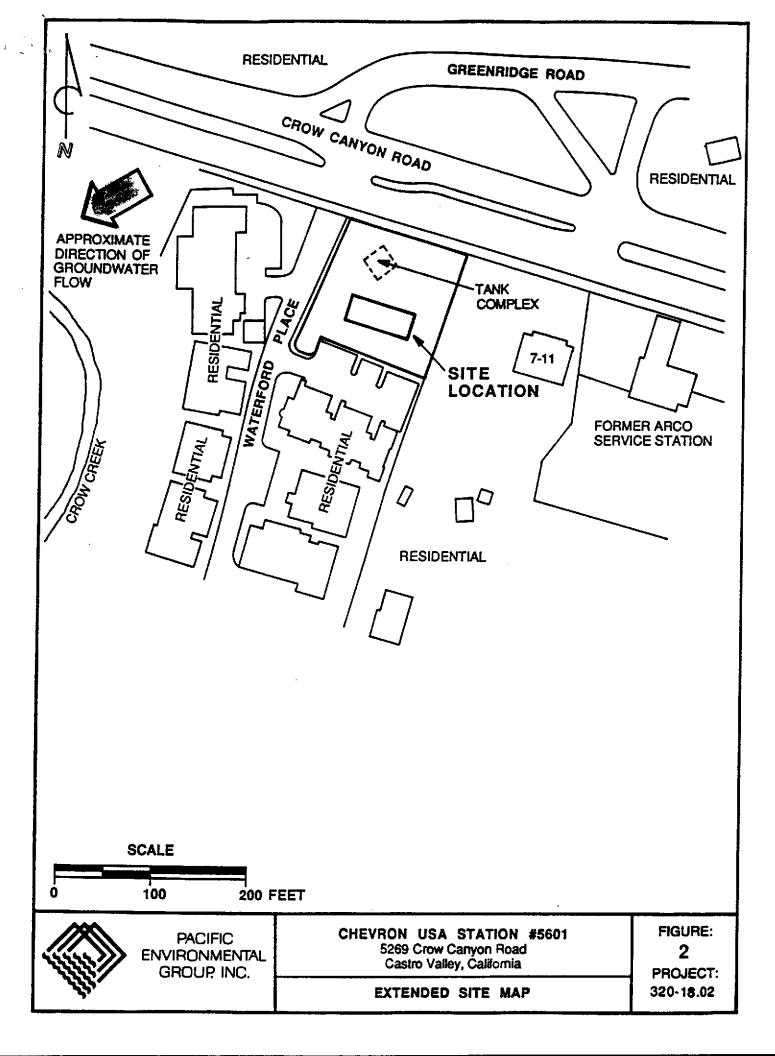


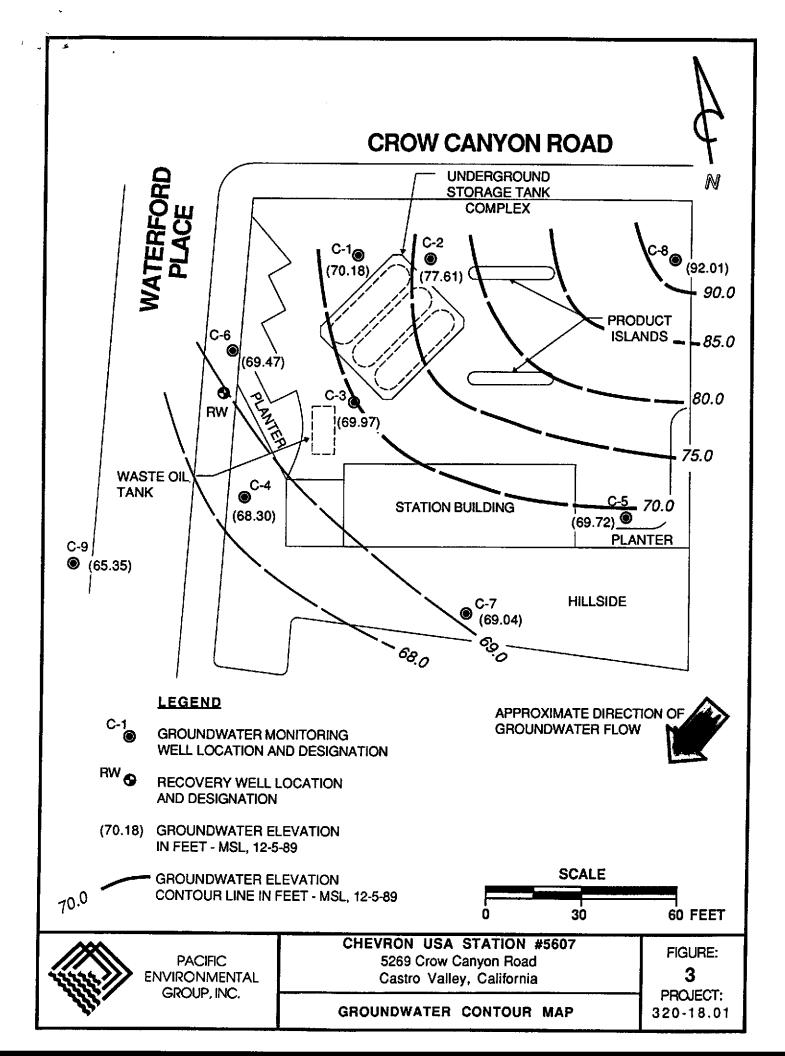
PACIFIC ENVIRONMENTAL GROUP INC.

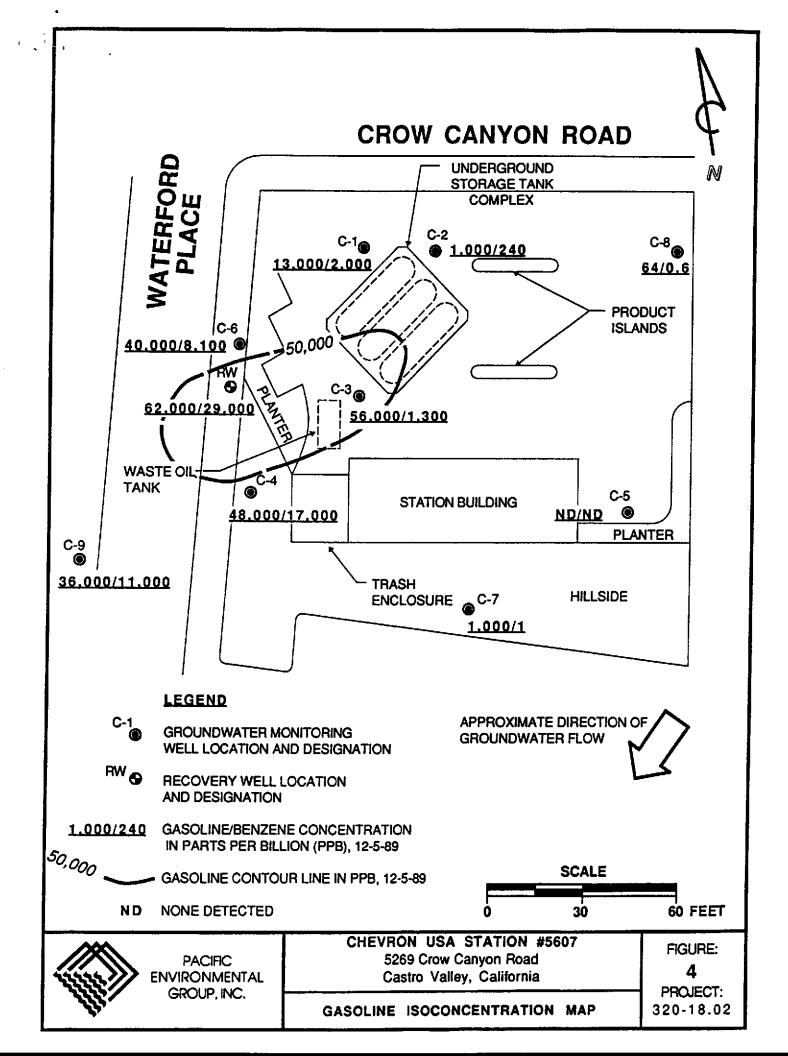
CHEVRON USA STATION #5607 5269 Crow Canyon Road Castro Valley, California

SITE LOCATION MAP

FIGURE: PROJECT: 320-18.02









Northwest Region 4080 Pike Lane Concord, CA 94520 (415) 685-7852 (800) 544-3422 from inside California (800) 423-7143 from autside California Consultant Project Number: 320-18.02 Project Number: SFB-175-0204.72 Contract Number: N46CWC0244-9-X Facility Number: 5601

Work Order Number: C912176 Report Issue Date: December 20, 1989

SANDRA BRUNI
PACIFIC ENVIRONMENTAL GROUP
1601 CIVIC CENTER DR.
SANTA CLARA, CA 95050

Dear Ms. Bruni:

Attached please find the analytical results for the samples received by GTEL on December 6, 1989.

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

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

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

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma PRojek /RMB

Emma P. Popek Laboratory Director

GTEL Concord, CA C912176.DOC DEC 2 7 1989

PACIFIC ENVIRONMENTAL GROUP CO

Report Issue Date: December 20, 1989

Table 1 ANALYTICAL RESULTS

Purgeable Aromatics and Total Petroleum Hydrocarbons as Gasoline in Water EPA Method 8020/8015¹

	GTEL Sample Number	01	02	03	04
	Client Identification		C-2	C-3	C-4
Date Sampled Date Analyzed		12/4,5/89	12/4,5/89	12/4,5/89	12/4,5/89
		12/12/89	12/12/89	12/12/89	12/12/89
Analyte	Detection Limit, ug/L		Concentratio	n, ug/L	
Benzene	0.3	2000	240	1300	17000
Toluene	0.3	550	37	3300	2200
Ethylbenzene	0.3	610	66	1400	2800
Xylene (total)	0.6	1600	130	5700	9800
TPH as Gasoline	50	13000	1000	56000	48000

	GTEL Sample Number Client Identification		06	07	80
			C-6	C-7	C-8
Date Sampled Date Analyzed		12/4,5/89	12/4,5/89	12/4,5/89	12/4,5/89
		12/12/89	12/12/89	12/12/89	12/12/89
Analyte	Detection Limit, ug/L		Concentratio	n, ug/L	
Benzene	0.3	<0.3	8100	1	0.6
Toluene	0.3	<0.3	1800	<0.3	0.6
Ethylbenzene	0.3	<0.3	1700	5	<0.3
Xylene (total)	0.6	1	7500	<0.6	1
TPH as Gasoline	50	<50	40000	1000	64

= Extraction by EPA Method 5030 Table 1 continued on page 3



1

Consultant Project Number: 320-18.02

Project Number: SFB-175-0204.72 Contract Number: N46CWC0244-9-X Facility Number: 5601 Work Order Number: C912176

Report Issue Date: December 20, 1989

Table 1 con't

ANALYTICAL RESULTS

Purgeable Aromatics and Total Petroleum Hydrocarbons as Gasoline in Water EPA Method 8020/8015¹

	GTEL Sample Number		
	Client Identification	C-9	RW-1
	Date Sampled	12/4,5/89	12/4,5/89
	Date Analyzed	12/12/89	12/12/89
Analyte	Detection Limit, ug/L	Concentration, ug/L	
Benzene	0.3	11000	29000
Toluene	0.3	670	1700
Ethylbenzene	0.3	2500	1800
Xylene (total)	0,6	3800	8800
TPH as Gasoline	50	36000	62000

1 = Extraction by EPA Method 5030



Consultant Project Number: 320-18.02

Project Number: SFB-175-0204.72

Contract Number: N46CWC0244-9-X Facility Number: 5601 Work Order Number: C912176

Report Issue Date: December 20, 1989

QA Conformance Summary

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

1.0 <u>Blanks</u>

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

2.0 Independent QC Check Sample

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

3.0 Surrogate Compound Recoveries

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

4.0 Matrix Spike (MS) Accuracy

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

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

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

- 6.0 Sample Handling
 - 6.1 Sample handling and holding time criteria were met for all samples.
 - 6.2 Dilutions were required due to the high level of gasoline contamination.



Report Issue Date: December 20, 1989

Table 2

REAGENT BLANK DATA

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

Date of Analysis: 12/12/89

Analyte	Concentration, ug/L
Benzene	<0.3
Toluene	<0.3
Ethylbenzene	<0.3
Xylene (total)	<0.6
Gasoline	<50



Report Issue Date: December 20, 1989

Table 3

INDEPENDENT QC CHECK SAMPLE RESULTS

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

Date of Analysis:

12/08/89

Analyte	Expected Result, ug/L	Observed Result, ug/L	Recovery, %	Acceptability Limits, %
Benzene	50	52	104	85 - 115
Toluene	50	52	104	85 - 115
Ethylbenzene	50	54	108	85 - 115
Xylene (total)	150	161	108	85 - 115

Table 3a

INDEPENDENT QC CHECK SAMPLE SOURCE

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

Analyte	Lot Number	Source
Benzene	LA18104	SUPELCO
Toluene	LA18104	SUPELCO
Ethylbenzene	LA18104	SUPELCO
Xylene (total)	LA18104	SUPELCO



Report Issue Date: December 20, 1989

Table 4

SURROGATE COMPOUND RECOVERY

Naphthalene

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

Acceptability Limits 1: 73 - 129 %

GTEL No.	Expected Result, ug/L	Surrogate Result, ug/L	Surrogate Recovery, %
Blank	200	200	100
01	200	250	125
02	200	228	114
03	200	260	130
04	200	167	84
05	200	181	91
06	200	220	110
07	200	235	118
08	200	172	86
09	200	248	124
10	200	179	90
MS	200	189	95
WS	200	192	96
WSD	200	184	92

MS Matrix Spike

WS

WSD =

Reagent Water Spike
Reagent Water Spike Duplicate
Acceptability limits are derived from the 99% confidence interval

of all samples during the previous quarter.



Report Issue Date: December 20, 1989

Table 5

MATRIX SPIKE (MS) RECOVERY REPORT

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

Date of Analysis: Sample Spiked:

<#

11/11/89

C912172-01

Units:

ug/L

Analyte	Sample Result	Concentration Added	Concentration Recovered	MS Result	MS, % Recovery	Acceptability Limits ¹ , %
Benzene	<0.3	25	25.4	25.4	102	73 - 119
Toluene	<0.3	25	24.9	24.9	100	72 - 118
Ethylbenzene	<0.3	25	26.0	26.0	104	78 - 115
Xylene (total)	<0.6	75	81.4	81.4	109	84 - 116

Not detected at the indicated detection limit. Acceptability limits are derived from the 99% confidence interval of all samples during the previous quarter.



Report Issue Date: December 20, 1989

Table 6

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

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

Date of Analysis:

12/11/89

Units:

ug/L

Analyte	Concentration Added	WS Result	WS, % Recovery	WSD Result	WSD, % Recovery
Benzene	25	26.1	104	24.5	98
Toluene	25	25.4	102	23.3	93
Ethylbenzene	25	26.6	106	24.5	98
Xylene (total)	75	83.0	110	77.5	103

		Acceptab	Acceptability Limits ¹					
Analyte	RPD, %	Maximum RPD,	% Recovery					
Benzene	6	30	76 - 120					
Toluene	8	30	72 - 117					
Ethylbenzene	8	30	73 - 123					
Xylene (total)	8	30	81 - 125					

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



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Chevron Facility Number 5601								O HONTY O WILL											
, w							100	· ^	140 040 000										
Consultant Name Pacific Envivou wental Ground								(Phone) <u>915 - 89 (75 C)</u> Laboratory Name <u>(9 T E L</u>											
									Contract Number										
Chevron U.S P.O. Box 500x San Ramon, (FAX (415) 84;		oress Ix Num	11000 2117 - 7011								Samples Collected by (Name) 50011 500								
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9.0.5 Sar & &	''	ojeci C		hone)		08-984					Signatu			Inti	7	ins	6		
			oa,								Analyses To Be Performed								
Sample Number		Number of Containers	Matrix S = Soil A = Air W = Water > C = Charcoal	اق م ا	Ттме	Sample Preservation	lced	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	OR OHS-AB 1803				Remarks	
C-1 0		3	W		12-4	ACI	1/e S	 	=' "		1	ασ			20	 			
c-2 6	7	3	1		12-4	1		1-1-		,	 					 	<u> </u>	· ·	
(-3	22	3			12-4		11				 			2		{ 			 -
C-4 C	4	3			2-4		11								1	[3]	-		-
C-5 C	5	ζ.			12-5		11								13				
C-6	16	3			(2-5			17											
<i>C</i> -7	52	3			12-4	_	 -				 			_					
C-8	28	3			12-4		11				 		 -						
C-9 C	20	٦			12-4		1		 		1			_					
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