CONESTOGA-ROVERS & ASSOCIATES

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TRANSMITTAL

DATE: 10/12/10

REFERENCE NO.: 611995

PROJECT NAME: Former Chevron 9-0517

TO: Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Please find enclosed:
- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☒ Final
- ☐ Other

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- ☐ Mail
- ☐ Overnight Courier
- ☐ Same Day Courier
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QUANTITY	DESCRIPTION
1	Case Closure Request

- ☐ As Requested
- ☐ For Your Use
- ☐ For Review and Comment
- ☒ Final report
- ☐

COMMENTS:
We appreciate the opportunity to work with you on this project. Please contact James Kiernan at (916) 889-8917 if you have any questions or require additional information.

Copy to: Ms. Stacie Frerichs, Chevron
Mr. Bodh Kunwar

Completed by: James Kiernan [Please Print]

Signed: 

Filing: **Correspondence File**

Stacie H. Frerichs
Team Lead
Marketing Business Unit

Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 842-9655
Fax (925) 842-8370

October 12, 2010
(date)

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Facility #_9-0517_____

Address: 3900 Piedmont Avenue, Oakland, California_____

I have reviewed the attached report titled *Case Closure Request*_ and dated October 12, 2010.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

SH Frerichs

Stacie H. Frerichs
Project Manager

Enclosure: Report

CASE CLOSURE REQUEST

Former Chevron Service Station 9-0517
3900 Piedmont Avenue
Oakland, California
LOP Case No. RO0000138

Prepared for:

Mr. Mark Detterman, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Prepared by:
Conestoga-Rovers & Associates

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OCTOBER 12, 2010
REF. NO. 611995 (8)
This report is printed on recycled paper.

CASE CLOSURE REQUEST

Former Chevron Service Station 9-0517
3900 Piedmont Avenue
Oakland, California
LOP Case No. RO0000138

for

Christopher J. Benedict

James P. Kiernan P.E.

Prepared by:
Conestoga-Rovers & Associates

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OCTOBER 12, 2010
REF. NO. 611995 (8)
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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) has prepared this *Case Closure Request* on behalf of Chevron Environmental Management Company (Chevron) for former Chevron service station 9-0517 located at 3900 Piedmont Avenue in Oakland, California. Based on our review of the site background and conditions, this site meets the State Water Resources Control Board (SWRCB) criteria for closure as a low-risk fuel site; as recommended by the UST Cleanup Program Task Force in their January 13, 2010 report to the SWRCB per Resolution 2009-0042. Presented below are the site description and background, site conditions and discussion of remaining impacts, and our rationale for closure based on the low-risk criteria.

2.0 SITE DESCRIPTION AND BACKGROUND

The site is located on the eastern corner of the intersection of Piedmont Avenue and Montell Street (Figure 1), and is currently developed with a one-story commercial/office structure and associated parking areas occupied by Prudential California Realty (Figure 2). Land use in the site vicinity is mixed commercial and residential. The site is bounded by Piedmont Avenue to the northwest, Montell Street to the southwest, an apartment building to the southeast and a restaurant to the northeast.

The site was occupied by a Chevron service station from at least 1940 until 1978. Based on a facility site plan dated 1940, station facilities at this time consisted of a lubrication building in the eastern corner of the site, two dispenser islands in the western portion of the site along Piedmont Avenue, and a small station building adjacent to the dispensers. A used-oil sump was identified adjacent to the northern corner of the lubrication building. Three underground storage tanks (USTs) were shown on the southwest side of the site along Montell Avenue: a 928-gallon "Supreme" UST, a 440-gallon "Standard" UST, and a 550-gallon "Flight" UST. A facility site plan dated 1955 showed two hydraulic hoists within the lubrication building, and two new dispenser islands along Piedmont Avenue replacing the previous ones. The 1955 site plan also showed three different USTs replacing the previous ones: a 3,000-gallon "Custom" UST, a 5,000-gallon "Chevron" UST, and a 7,500-gallon "Supreme" UST; a 1,000-gallon used-oil UST was also shown to the northwest of the lubrication building. A facility site plan dated 1971 was similar to the 1955 plan with the exception that the three USTs were identified as a 3,000-gallon unleaded gasoline UST, a 5,700-gallon leaded gasoline UST, and a 7,500-gallon supreme gasoline UST. In 1978, the service station and USTs were removed, and the existing commercial building was subsequently constructed. Previous occupants of the building have included Homestead Federal Savings Association, First Nationwide

Bank, PCS Smart Mart, and Cingular Wireless. Former station facilities are shown on Figure 2. An extended site plan showing the surrounding area is presented on Figure 3.

Environmental work has been performed at the site since 1993, and has included the installation of monitoring wells MW-1 through MW-4 and the drilling of exploratory borings FNBO-1 through FNBO-8, and SB-2 both on- and offsite. A summary of the environmental work is presented in Appendix A. The soil and groundwater sample analytical results are presented in Tables 1 and 2, respectively. The approximate well and boring locations are shown on Figure 2.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

This site is located at the western edge of the Piedmont Hills, approximately 2 miles east of San Francisco Bay and 1 mile north of Lake Merritt. Soil at the site generally has consisted of clay and silt with varying amounts of sand and gravel to the maximum depth explored (24 feet below grade [fbg]). Layers of sand and gravel also were observed in some borings. Copies of the historical boring logs are presented in Appendix B.

Groundwater was encountered in the borings at depths of 10 to 18 fbg. The depth to groundwater in the wells has ranged from approximately 4.5 to 13 feet below top of casing (TOC). The groundwater flow direction has varied but is generally to the west-northwest (see rose diagram on Figure 2). The nearest surface water body is Glen Echo Creek located approximately 400 feet east-southeast (up- to crossgradient) of the site.

4.0 RELEASE INFORMATION

- ***Tanks:*** The most recent USTs (7,500-gallon, 5,700-gallon, and 3,000-gallon gasoline, and 1,000-gallon used-oil) were removed in 1978. Removal dates of previous USTs unknown. Soil/tank conditions during removal unknown.
- ***Release Type:*** Gasoline and related constituents.
- ***Release Source:*** Likely previous/most recent UST system.
- ***Release Discover Date:*** During 1993 investigation (Appendix A).
- ***Affected Media:*** Soil and groundwater.
- ***Free Product:*** Not observed in any of the wells.
- ***Corrective Actions:*** UST/dispenser/piping removal.

5.0 PETROLEUM HYDROCARBONS IN SOIL

The primary constituent of concern (COC) remaining in soil is total petroleum hydrocarbons as gasoline (TPHg); however, generally low concentrations (up to 400 milligrams per kilogram [mg/kg]) were detected with the exception of the sample collected at 6 fbg from boring FNBO-5 (3,400 mg/kg) drilled just downgradient of the former gasoline USTs. Benzene, toluene, ethylbenzene, and xylenes (BTEX) are less significant COCs in soil, and were only detected at concentrations up to 19 mg/kg. Table A below presents a comparison of the maximum residual COC concentrations in soil to the corresponding environmental screening levels (ESLs) at commercial/industrial sites where groundwater is a current or potential source of drinking water.

TABLE A
COMPARISON OF MAXIMUM CONCENTRATIONS IN SOIL TO ESLs
(concentrations in mg/kg)

Constituent	*Highest Detected Concentration in Soil (sample ID; depth; date)*	*Shallow Soil ESLs[a]*	*Deep Soil ESLs[b]*
TPHg	3,400 (FNBO-5; 6 fbg; 10-21-93)	83	--
Benzene	2 (MW-4; 11 fbg; 7-21-98)	--	0.044
Toluene	1.7 (MW-4; 11 fbg; 7-21-98)	--	2.9
Ethylbenzene	19 (FNBO-5; 6 fbg; 10-21-93)	3.3	--
Xylenes	13 (FNBO-7; 11 fbg; 10-21-93)	--	2.3

a ESLs from Table A-2, *Shallow Soil Screening Levels, Commercial/Industrial Land Use, (groundwater is a current or potential drinking water resource)*, RWQCB, May 2008.
b ESLs from Table C-2, *Deep Soil Screening Levels, Commercial/Industrial Land Use, (groundwater is a current or potential drinking water resource)*, RWQCB, May 2008.

The soil with elevated concentrations of COCs (TPHg) appears limited to the area of the former gasoline USTs, and is adequately defined. As shown above, the maximum detected concentrations generally exceed the ESLs; however, these final ESL values are associated with groundwater protection (soil leaching) concerns. The declining trends observed in the site wells indicate that residual hydrocarbon mass flux to groundwater is decreasing. Therefore, although the maximum concentrations detected in 1993 or 1998 exceed ESLs, it does not appear that residual hydrocarbon mass is causing a sustainable strength plume. Rather, residual hydrocarbon mass in soil is likely depleting, resulting in decreasing aqueous-phase hydrocarbon mass and concentrations.

6.0 PETROLEUM HYDROCARBONS IN GROUNDWATER

The primary COCs in groundwater are TPHg and benzene. Low concentrations of methyl tertiary butyl ether (MTBE) are present in well MW-4; however, the station was demolished well before the use of MTBE, thus there appears to be an offsite source. Less significant COCs in groundwater are toluene, ethylbenzene, and xylenes. Groundwater has been monitored since 1998 by wells MW-1 through MW-4. Offsite, downgradient wells MW-3 and MW-4 are currently sampled semi-annually; sampling of onsite wells MW-1 and MW-2 was recently discontinued as petroleum hydrocarbons generally were not detected. A copy of the second semi-annual 2010 groundwater monitoring report is presented in Appendix C. The most recent concentrations in groundwater and the associated ESLs are presented in Table B below.

TABLE B
MOST RECENT CONCENTRATIONS IN GROUNDWATER AND COMPARISON TO ESLs
(concentrations in ug/L)

Well ID	*TPHg*	*Benzene*	*Toluene*	*Ethyl-ben zene*	*Xylenes*	*MTBE*
MW-1	<50 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)
MW-2	<50 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)	<0.5 (2/19/09)
MW-3	1,800 (8/11/10)	9 (8/11/10)	2 (8/11/10)	6 (8/11/10)	5 (8/11/10)	<0.5 (8/11/10)
MW-4	5,400 (8/11/10)	110 (8/11/10)	36 (8/11/10)	11 (8/11/10)	36 (8/11/10)	1 (8/11/10)
ESL	100	1.0	40	30	20	5.0

< Not detected at or above stated laboratory reporting limit
ESL Groundwater environmental screening level at sites where groundwater is a current or potential

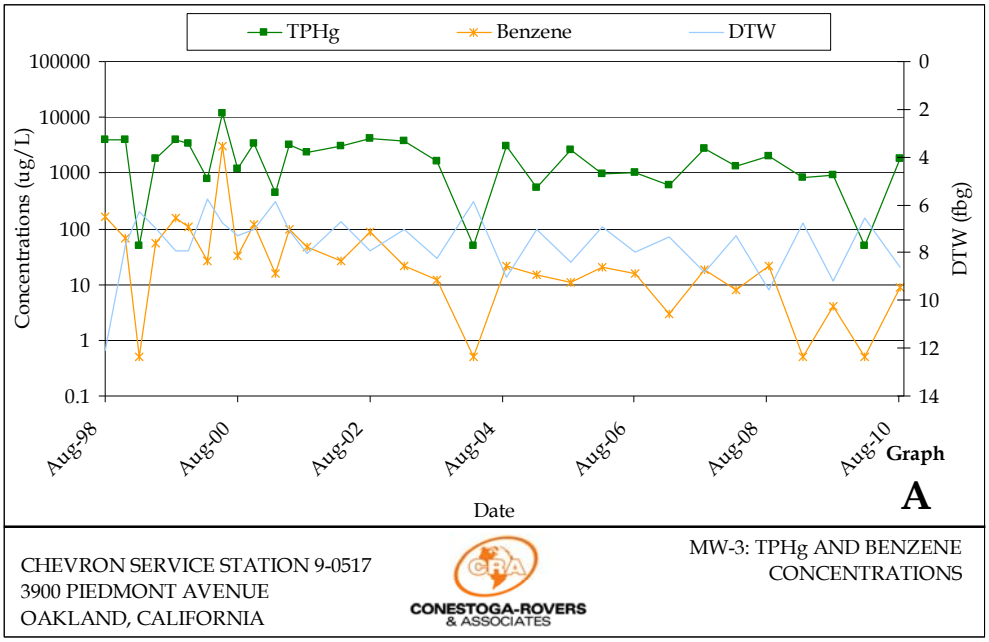
Dissolved Hydrocarbon Distribution

The dissolved hydrocarbon plume is located beneath the western portion of the site in the area of the former USTs and dispensers, and offsite beneath Piedmont Avenue and Montell Street. The groundwater sample collected from downgradient boring SB-2 in 2008 contained TPHg at 540 micrograms per liter (µg/L); no BTEX were detected (Table 2). MTBE was detected at 1 µg/L, but as previously mentioned, is due to an offsite source. As this was a grab sample, the detected TPHg concentration likely is higher than

actual conditions due to the presence of sediment in the sample. Isoconcentration maps of TPHg and benzene in groundwater are presented on Figures 4 and 5, respectively.

Dissolved Hydrocarbon Trends

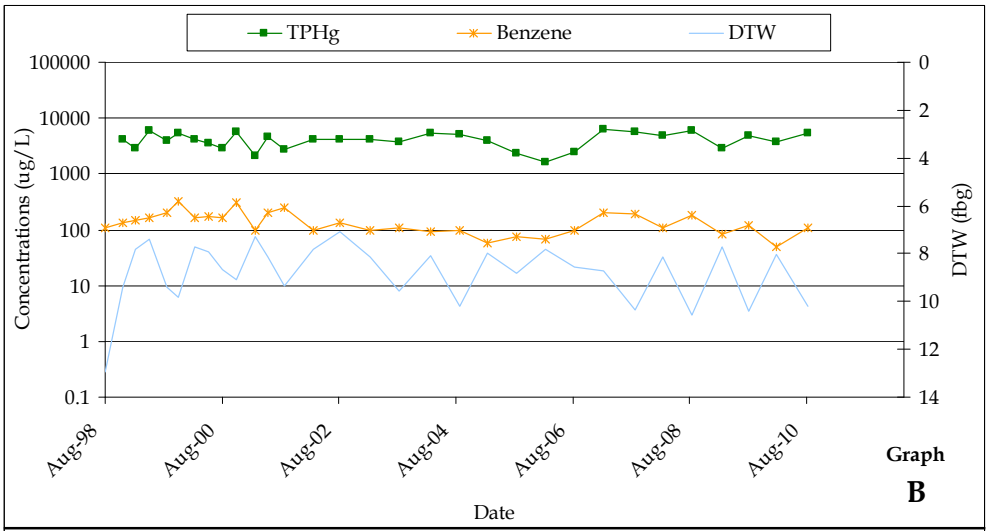
Plots of TPHg and benzene concentrations over time in wells MW-3 and MW-4 are presented below as Graphs A and B, respectively.



CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-3: TPHg AND BENZENE CONCENTRATIONS



CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-4: TPHg AND BENZENE CONCENTRATIONS

As shown in the graphs, although fluctuations occur, the TPHg and benzene concentrations in well MW-3 are declining. The TPHg and benzene concentrations in well MW-4 have remained relatively stable overall, but have been decreasing over the past several years.

The dissolved hydrocarbon plume is adequately defined and concentrations are declining, indicating that the plume has reached its maximum extent and is decreasing in size and mass due to source removal and natural attenuation. Trend analysis was performed to estimate when the TPHg and benzene concentrations in MW-3 and MW-4 would reach the ESLs (Appendix D). As shown in Table C below, TPHg and benzene are expected to reach the ESLs by 2026 (16 years) at the latest, which is a reasonable amount of time.

TABLE C
SUMMARY OF DEGRADATION CALCULATIONS

Well	*COC*	*Peak Concentration (µg/L)*	*ESL*	*Current Concentration (µg/L)*	*Date to Reach ESL*
MW-3	TPHg	12,000	100	1,800	Aug. 2022
	Benzene	3,100	1	9	May 2015
MW-4	TPHg	6,200	100	5,400	Jan. 2026
	Benzene	200	1	110	Mar. 2018

Residual Mass

The mass of TPHg and benzene remaining in groundwater was estimated to be 0.9 and 0.01 pounds, respectively. The mass calculations are presented in Appendix E.

7.0 SWRCB LOW-RISK CRITERIA

Based on the information presented above, the site meets the SWRCB criteria for closure as a low-risk fuel site. Each of these criteria as they pertain to the site is discussed below.

1. ***The site is not located in a managed groundwater recharge area, or impacted groundwater does not discharge to a surface water body***

The local water supply is provided by East Bay Municipal Utility District (EBMUD); the source is the Mokelumne River Basin in the Sierra Nevada range. Shallow groundwater in the site area is not likely to be used as a drinking water source in the foreseeable future. The nearest surface water body (Glen Echo Creek) is located crossgradient of the site. San Francisco Bay is 2 miles from the site.

2. ***The current and reasonably anticipated future land use is not residential***

The site is currently occupied by a commercial building, and this land use is expected to remain for the foreseeable future.

3. ***The plume is not migrating and the closest water well is more than 1,000 feet from the site***

Only a low concentration of TPHg (540 µg/L) was detected in groundwater from downgradient boring SB-2, and as previously mentioned, is likely higher than actual conditions. Based on the declining trends, the plume is shrinking. Only one active well was identified within 2,000 feet of the site during a 2002 well survey, an irrigation well located approximately 750 feet northeast (up- to cross-gradient) of the site (Appendix A). Based on the location, this well is not likely to be impacted by hydrocarbons from the site.

4. ***The maximum concentrations in groundwater are less than 10,000 µg/L for TPHg, 1,000 µg/L for BTEX, and 500 µg/L for oxygenates***

The TPHg concentrations in MW-3 and MW-4 are less than 10,000 µg/L, and the BTEX concentrations are well below 1,000 µg/L. The MTBE concentration in MW-4 is well below 500 µg/L, but again is due to an offsite source.

5. ***Benzene concentrations in soil are less than 12 mg/kg to protect future construction workers***

As shown in the attached Table 1 and in Table A above, the maximum benzene concentration detected in soil was 2 mg/kg.

6. ***The impacted groundwater is at a depth of 50 feet or less***

As described in Section 3.0, groundwater was encountered in the borings at depths of 10 to 18 fbg and the depth to groundwater in the wells has ranged from approximately 4.5 to 13 feet below TOC.

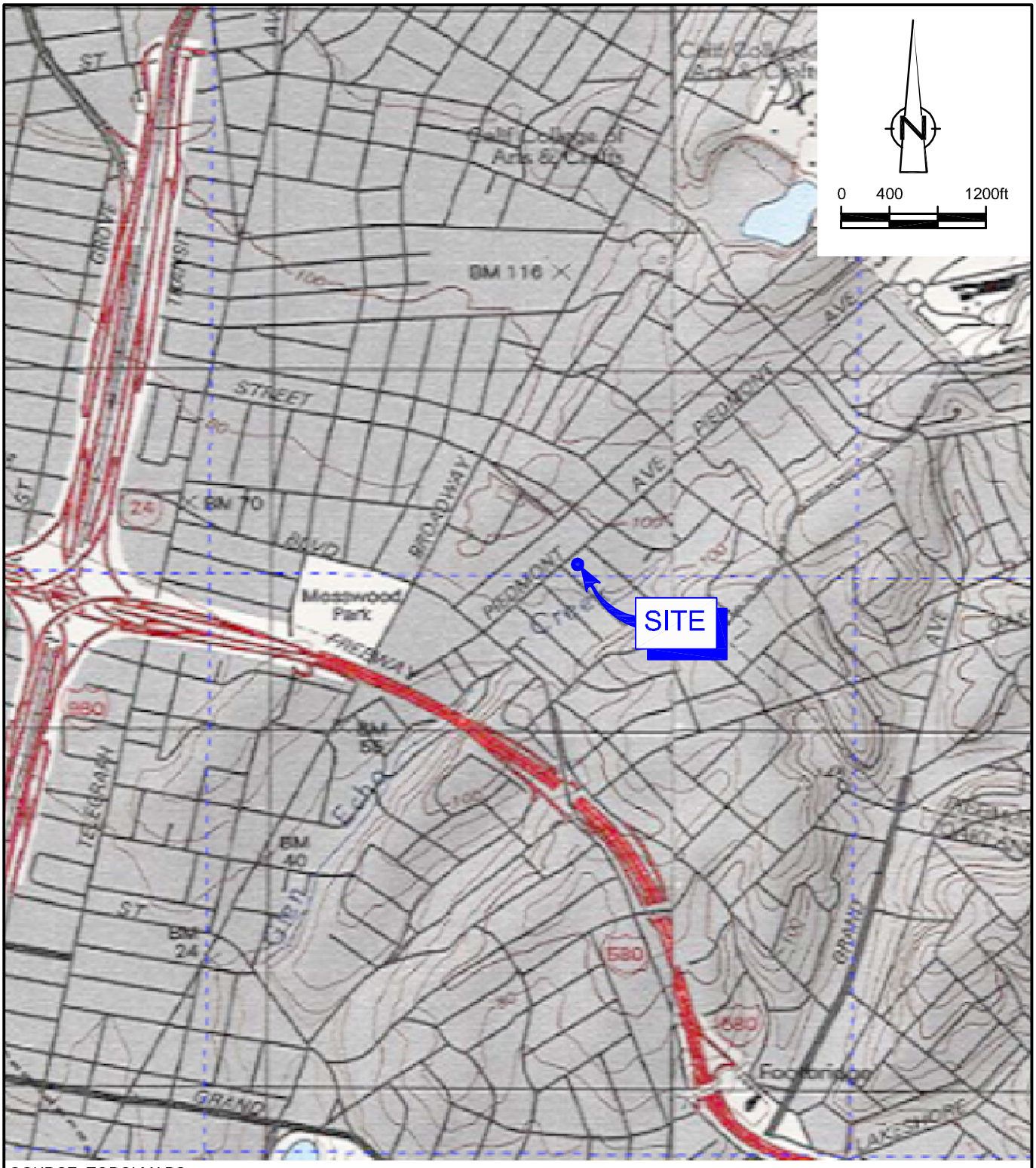
7. ***The release occurred more than 5 years ago***

As the station was demolished and the USTs removed in 1978, and the site has since been used for commercial purposes, the gasoline release occurred more than 5 years ago.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the site conditions and analytical data, the site satisfies the SWRCB criteria for closure as a low-risk groundwater case. The extent of hydrocarbons in soil and groundwater has been adequately defined and no further work appears warranted. The dissolved hydrocarbon plume is decreasing and concentrations are expected to reach ESLs by 2026 at the latest. The residual petroleum hydrocarbons in soil and groundwater at the site do not appear to pose a significant threat to human health or the environment. The site is expected to remain in commercial use for the foreseeable future. If the land use changes, any residual impacted soil can be addressed at that time, if warranted. Therefore, on behalf of Chevron, CRA respectfully requests the site be considered for low-risk case closure.

FIGURES



SOURCE: TOPO! MAPS.

figure 1

VICINITY MAP
FORMER CHEVRON SERVICE 9-0517
3900 PIEDMONT AVENUE
Oakland, California

611995-400(008)GN-WA001 SEP 20/2010

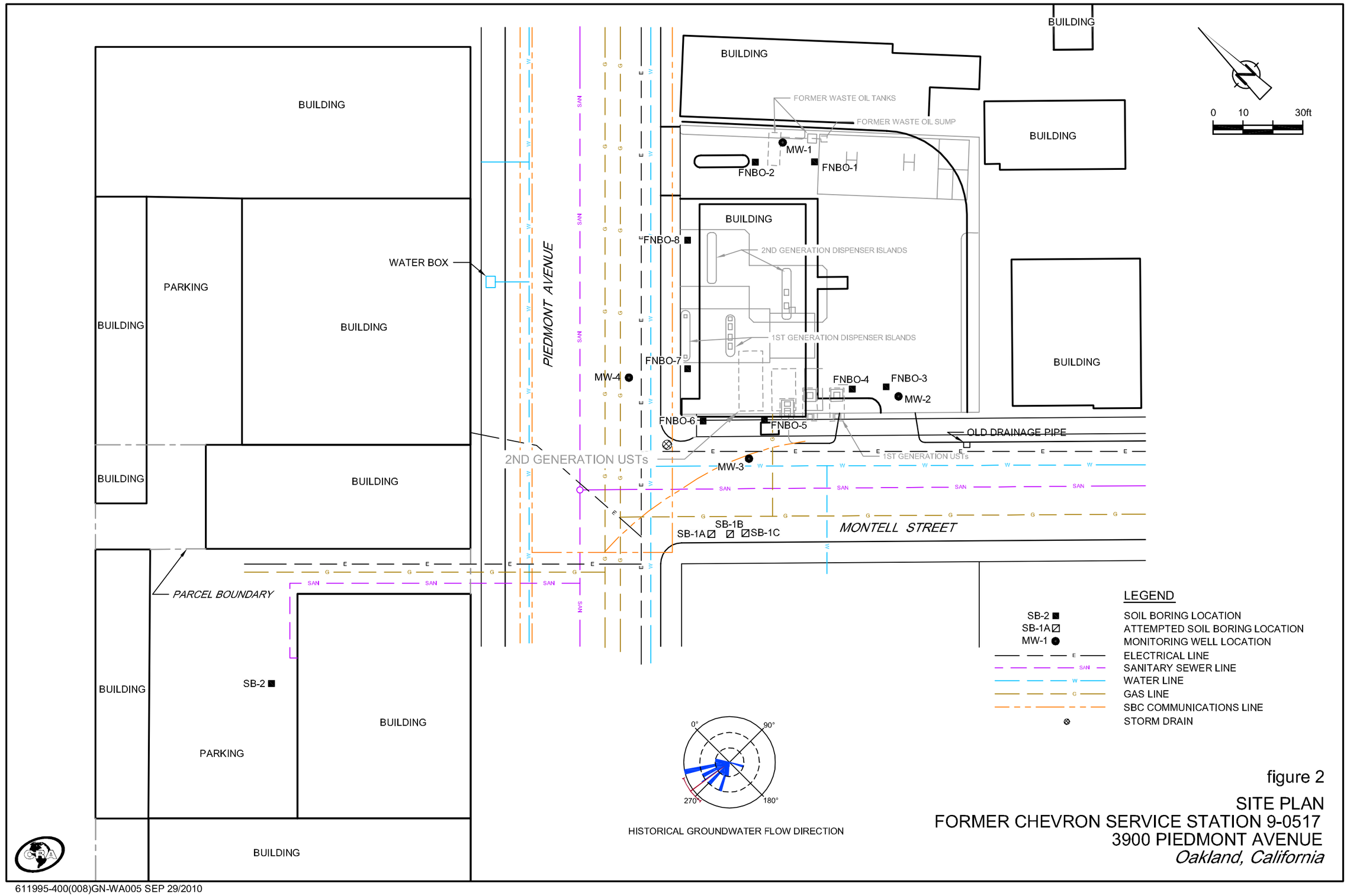


figure 2

SITE PLAN
FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
Oakland, California

611995-400(008)GN-WA005 SEP 29/2010

0 20 40ft

HOWE STREET

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

PARKING

BUILDING

BUILDING

BUILDING

WATER BOX

PIEDMONT AVENUE

2ND GENERATION USTs

PARCEL BOUNDARY

SB-2

BUILDING

PARKING

BUILDING

BUILDING

BUILDING

BUILDING

FORMER WASTE OIL TANKS

FORMER WASTE OIL SUMP

MW-1

FNBO-2

FNBO-1

BUILDING

FNBO-8

2ND GENERATION DISPENSER ISLANDS

SITE

1ST GENERATION DISPENSER ISLANDS

FNBO-7

MW-4

FNBO-4

FNBO-3

MW-2

FNBO-6

FNBO-5

OLD DRAINAGE PIPE

1ST GENERATION USTs

MW-3

SB-1B

SB-1A

SB-1C

MONTELL STREET

BUILDING

BUILDING

0° 90° 180° 270°

HISTORICAL GROUNDWATER FLOW DIRECTION

LEGEND

SB-2 ■	SOIL BORING LOCATION
SB-1A ⊠	ATTEMPTED SOIL BORING LOCATION
MW-1 ●	MONITORING WELL LOCATION
E	ELECTRICAL LINE
SAN	SANITARY SEWER LINE
W	WATER LINE
G	GAS LINE
	SBC COMMUNICATIONS LINE
⊗	STORM DRAIN

figure 3

EXTENDED SITE PLAN
FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
Oakland, California

611995-400(008)GN-WA002 SEP 29/2010

0 20 40ft

HOWE STREET

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

PARKING

BUILDING

BUILDING

BUILDING

BUILDING

WATER BOX

PIEDMONT AVENUE

PARCEL BOUNDARY

SB-2 ■

BUILDING

PARKING

BUILDING

BUILDING

BUILDING

FORMER WASTE OIL TANKS

FORMER WASTE OIL SUMP

FNBO-2

FNBO-1

MW-1 (NS)

BUILDING

FNBO-8

2ND GENERATION DISPENSER ISLANDS

SITE

100

1,000

1ST GENERATION DISPENSER ISLANDS

FNBO-7

MW-4 (5,400)

FNBO-4

FNBO-3

MW-2 (NS)

FNBO-6

FNBO-5

OLD DRAINAGE PIPE

2ND GENERATION USTs

1ST GENERATION USTs

MW-3 (1,800)

SB-1B

SB-1A

SB-1C

MONTELL STREET

BUILDING

BUILDING

0° 90° 180° 270°

HISTORICAL GROUNDWATER FLOW DIRECTION

LEGEND

SB-2 ■	SOIL BORING LOCATION
SB-1A ⊠	ATTEMPTED SOIL BORING LOCATION
MW-4 ●	MONITORING WELL LOCATION
E	ELECTRICAL LINE
SAN	SANITARY SEWER LINE
W	WATER LINE
G	GAS LINE
	SBC COMMUNICATIONS LINE
⊗	STORM DRAIN
(6,100)	TPHg CONCENTRATION (ug/L)
(NS)	NOT SAMPLED
<	NOT DETECTED AT OR ABOVE STATED LABORATORY REPORTING LIMITS
10	TPHg CONCENTRATION CONTOUR DASHED WHERE INFERRED

figure 4

TPHg ISOCONCENTRATION MAP - AUGUST 11, 2010
FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
Oakland, California

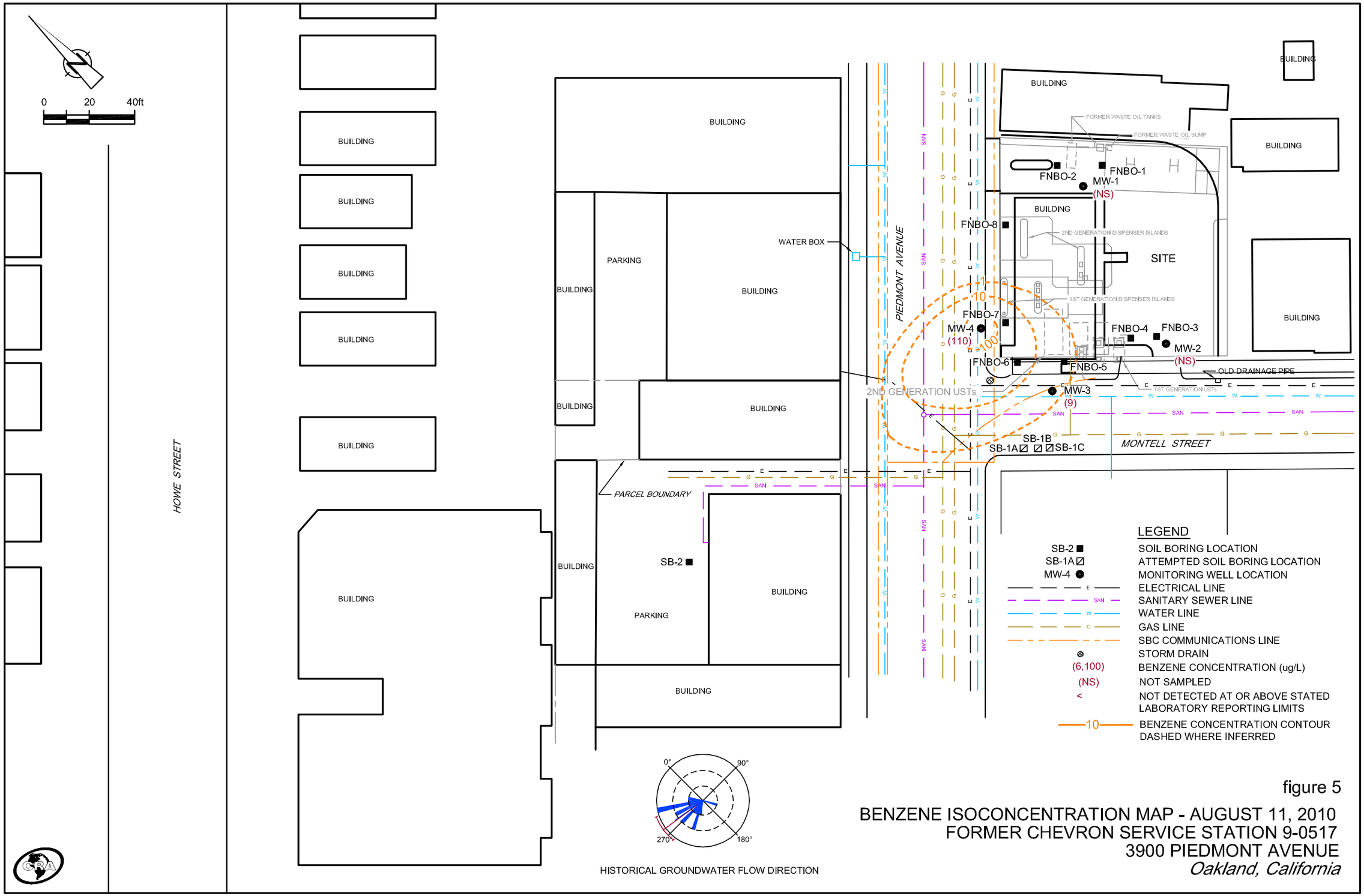


figure 5

BENZENE ISOCONCENTRATION MAP - AUGUST 11, 2010
FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
Oakland, California

611995-400(008)GN-WA004 SEP 29/2010

TABLES

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
FORMER CHEVRON STATION #9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

Boring ID	*Sample Depth (ft)*	*Date*	*TPHd*	*TPHg*	*TRPH*	*Benzene*	*Toluene*	*Ethylbenzene*	*Xylenes*	*MTBE*	*DIPE*	*ETBE*	*TAME*	*TBA*	*1,2-DCA*	*EDB*	*VOCs*
			Concentrations in miligrams per kilogram (mg/kg)														
FNBO-1	10.5	10/20/93	<5.0	**1.9**	**350**	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	ND
FNBO-2	10	10/20/93	<5.0	<1.0	**86**	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	ND
FNBO-3	10.5	10/20/93	<5.0	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
FNBO-4	6	10/20/93	<5.0	**1.4**	**320**	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	ND
FNBO-5	6	10/21/93	<500	**3,400**	NA	<0.5	<0.5	**19**	**7.5**	NA	NA	NA	NA	NA	NA	NA	NA
	10	10/21/93	<5.0	**15**	**160**	**0.03**	<0.005	**0.31**	**0.12**	NA	NA	NA	NA	NA	NA	NA	ND
FNBO-6	5.5	10/21/93	<10	**5**	NA	<0.02	<0.02	<0.02	<0.02	NA	NA	NA	NA	NA	NA	NA	NA
	10	10/21/93	<5.0	**3.6**	**10**	<0.005	<0.005	**0.034**	**0.041**	NA	NA	NA	NA	NA	NA	NA	ND
FNBO-7	6	10/21/93	<400	**350**	NA	<0.4	<0.4	<0.4	<0.4	NA	NA	NA	NA	NA	NA	NA	NA
	11	10/21/93	<500	**400**	NA	**1**	**1.5**	**5**	**13**	NA	NA	NA	NA	NA	NA	NA	NA
FNBO-8	11	10/21/93	<5.0	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	6	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
	11	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
	16	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
MW-2	6	7/21/98	NA	<1.0	NA	**0.007**	<0.0050	**0.01**	**0.009**	<0.025	NA	NA	NA	NA	NA	NA	NA
	11	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
	16	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
MW-3	6	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
	10.5	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
	16	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
MW-4	6	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA
	11	7/21/98	NA	**80**	NA	**2**	**1.7**	**4.7**	**5.8**	<0.25	NA	NA	NA	NA	NA	NA	NA
	16	7/21/98	NA	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	NA	NA	NA	NA	NA	NA

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
FORMER CHEVRON STATION #9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

Boring ID	*Sample Depth (ft)*	*Date*	*TPHd*	*TPHg*	*TRPH*	*Benzene*	*Toluene*	*Ethylbenzene*	*Xylenes*	*MTBE*	*DIPE*	*ETBE*	*TAME*	*TBA*	*1,2-DCA*	*EDB*	*VOCs*
			Concentrations in miligrams per kilogram (mg/kg)														
SB-2	5	7/28/08	NA	<1.0	NA	<0.0005	<0.0009	<0.0009	<0.0009	<0.0005	<0.0009	<0.0009	<0.0009	<0.019	<0.0009	<0.0009	NA
	10	7/28/08	NA	<1.0	NA	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.019	<0.001	<0.001	NA
	15	7/28/08	NA	<1.0	NA	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.019	<0.001	<0.001	NA
	20	7/28/08	NA	<1.0	NA	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	NA

Abbreviations / Notes
TPHd/TPHg = Total petroleum hydrocarbons as diesel and gasoline
TRPH = Total recoverable petroleum hydrocarbons
MTBE = Methyl tertiary butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
TBA = Tertiary butyl alcohol
1,2-DCA = 1,2-dichloroethane
EDB = 1,2-dibromoethane
VOCs = Volatile organic compounds
<x = not detected at or above stated laboratory reporting limit x
NA = Not analyzed
ND = Not detected; reporting limits vary

TABLE 2

GROUNDWATER SAMPLE ANALYTICAL RESULTS
FORMER CHEVRON STATION #9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

Boring ID	*Date Sampled*	*TPHg*	*TRPH*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Xylenes*	*MTBE*	*DIPE*	*ETBE*	*TAME*	*TBA*	*1,2-DCA*	*EDB*	*VOCs*
		Concentrations in micrograms per Liter (µg/L)													
FNBO-6	10/21/93	**7,800**	**2,800**	**7.7**	**21**	**260**	**260**	NA	NA	NA	NA	NA	NA	NA	ND*
SB-2	7/28/08	**540**	NA	<0.5	<0.5	<0.5	<0.5	**1**	<0.5	<0.5	<0.5	<2	<0.5	<0.5	NA

Notes/Abbreviations:
TPHg = Total petroleum hydrocarbons as gasoline
TRPH = Total recoverable petroleum hydrocarbons
MTBE = Methyl tert-butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
TBA = Tertiary butyl alcohol
1,2-DCA= 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
NA = Not analyzed
ND = Not detected; reporting limits vary
<x = not detected at or above above stated laboratory reporting limit x
* = VOCs not detected except for acetone (30 µg/L) and carbon disulfide (33 µg/L)

APPENDIX A

SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION

SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION
FORMER CHEVRON STATION 9-0517

1993 Phase I Environmental Site Assessment

In May 1993, Augeas Corporation (Augeas) conducted a Phase I environmental site assessment of the site. It was determined that Chevron owned the property from at least 1940 through 1979, and the site was utilized as a Chevron service station until approximately 1978. At least four underground storage tanks (USTs) were present at the site based on a site plan dated 1955. These USTs included two used-oil USTs along the northeastern site boundary, a 7,500-gallon fuel UST, and at least one other UST (size and contents unknown) located further to the east (along Montell Street). A copy of an Oakland Fire Prevention Bureau permit (dated October 1978) to remove four USTs (7,500-, 5,000-, and 3,000-gallon gasoline USTs, and a 1,000-gallon waste-oil UST) from the site as the station was to be demolished was found during the investigation. The permit noted that the USTs were located 25 feet east of Piedmont Avenue. No information regarding the condition of the tanks upon removal and the underlying soil quality was available. Details of the assessment were presented in Augeas' *Phase I Assessment Report* dated May 1993.

1993 Phase II Environmental Site Assessment

In October 1993, Environmental and Science Engineering, Inc. (ESE) advanced exploratory borings FNBO-1 through FNBO-8 to evaluate soil and groundwater quality at the site. A total of 11 soil samples were collected from the borings at various depths between 6 and 11 feet below grade (fbg) and analyzed for total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd), and benzene, toluene, ethylbenzene, and xylenes (BTEX). TPHg was detected in eight of the soil samples at concentrations ranging from 1.4 to 3,400 milligrams per kilogram (mg/kg). The maximum TPHg concentration in soil was detected in the sample collected at 6 fbg from boring FNBO-5 located immediately downgradient of the former USTs. Benzene was only detected in two of the samples (0.03 mg/kg and 1 mg/kg). Toluene, ethylbenzene, and xylenes (up to 19 mg/kg) were also detected in several of the samples. Five of the soil samples were additionally analyzed for total recoverable petroleum hydrocarbons (TRPH) and volatile organic compounds (VOCs). TRPH was detected in all five of the samples at concentrations ranging from 10 to 350 mg/kg; VOCs were not detected. A groundwater sample was also collected from boring FNBO-6 located in the southwest corner of the site and analyzed for TPHg, BTEX, TRPH, and VOCs; TPHg (7,800 micrograms per liter [µg/L]), benzene (7.7 µg/L), toluene (21 µg/L), ethylbenzene (260 µg/L), xylenes (260 µg/L), and TRPH (2,800 µg/L) were detected in the sample. VOCs generally were not detected in the groundwater sample with the exception of acetone (30 µg/L) and carbon disulfide (33 µg/L). Details of the investigation were presented in ESE's *Phase II Environmental Site Assessment* dated November 15, 1993.

1998 Monitoring Well Installation

In July 1998, Gettler-Ryan Inc. (G-R) installed onsite wells MW-1 and MW-2 and offsite wells MW-3 and MW-4 to further evaluate soil and groundwater quality at the site. The wells were installed to 20 fbg and groundwater was encountered in the well borings at depths of approximately 10 to 12 fbg. Soil samples were collected at depths of 6, 10.5 or

11, and 16 fbg from the well borings and analyzed for TPHg, BTEX, and methyl tertiary butyl ether (MTBE). TPHg and BTEX generally were not detected in the soil samples with the exception of BTEX (up to 0.01 mg/kg) in the sample collected at 6 fbg from boring MW-2, and TPHg (80 mg/kg) and BTEX (up to 5.8 mg/kg) in the sample collected at 11 fbg from boring MW-4. MTBE was not detected in any of the soil samples. The results of the investigation were presented in G-R's *Monitoring Well Installation Report* dated September 17, 1998.

2002 Well Search, Utility Survey, and Risk-Based Corrective Action (RBCA) Evaluation

In May 2002, Delta Environmental Consultants, Inc. (Delta) performed a well search, utility survey, and RBCA evaluation for the site. The well search consisted of a review of Alameda County Public Works Agency (ACPWA) files to identify any water-supply wells in the vicinity of the plume. No water-supply wells were identified in the vicinity of the plume; the nearest well was an irrigation well located approximately 750 feet northeast (upgradient) of the site. The utility survey determined that the sewer lines adjacent to the site were approximately 12 to 13 fbg. The specific burial depths of water, gas, and electrical lines were not available, but these lines usually were buried less than 5 fbg. Based on this information, and the historic depth to groundwater, it was concluded that the utility trenches in the site vicinity likely were not acting as preferential pathways. The results of the RBCA evaluation indicated that the potential risk to future residential receptors due to residual contamination at the site was within acceptable levels, and no further work was warranted. The results of the investigation were presented in Delta's *Well Search/Utility Survey/Risk-Based Corrective Action Evaluation* dated May 3, 2002.

2008 Subsurface Investigation

In July 2008, CRA advanced offsite exploratory boring SB-2 to further evaluate downgradient soil and groundwater quality. Three attempts were also made to advance a boring in Montell Street; however, drilling refusal was encountered. Boring SB-2 was advanced to 24 fbg and groundwater was encountered at approximately 18 fbg. Soil samples were collected at depths of 5, 10, 15, and 20 fbg and analyzed for TPHg, BTEX, MTBE di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), and 1,2-dibromoethane (EDB). None of the analytes were detected in any of the soil samples. A groundwater sample was also collected from the boring and analyzed for the same constituents as the soil samples; only TPHg (540 µg/L) and MTBE (1 µg/L) were detected. The results of the investigation were presented in CRA's *Site Investigation Report* dated November 24, 2008.

APPENDIX B

HISTORICAL BORING LOGS

Environmental Science & Engineering, Inc.
A GILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

FNBO-1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5146

Location: 3900 Piedmont Avenue
Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 8" Total Depth: 11.5 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 10-20-93
Finish: 10-20-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	ASPHALT						
	SILTY GRAVEL FILL						
1							
	SANDY SILT, light brown, stiff, damp, 10-20% fine to medium grained sands, no odor.	SM					
2							
3							
4							
	CLAYEY GRAVEL, dark brown, very dense, 30-40% clay, coarse sand to 1/2" gravel, damp, no odor.	GC					
5			36				
			40				
6	CLAY, light brown, very stiff, damp, no odor.	CL	38				SAMPLE @ 6.0 FEET
	CLAYEY GRAVEL, dark brown, very dense, 30-40% clay, coarse sand, to 1/2" gravel, damp, no odor.	CL				0	
7							
8							
9							
	CLAYEY SAND, light brown, very dense, moist, 10-20% clay, medium to coarse grained, no odor.	SC					
10			10				
	As above, grey, fine to medium grained sand, strong hydrocarbon odor.	SC	15			25	SAMPLE @ 10.5 FEET
11			20				Water @ 11.0 feet
							TOTAL DEPTH = 11.5 FEET Backfilled with grout.
12							
13							
14							
15							
16							
17							

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BORING LOG AND WELL COMPLETION SUMMARY

FNBO-2

Page 1 of 1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5146

Location: 3900 Piedmont Avenue
Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 6" Total Depth: 11.5 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 10-20-93
Finish: 10-20-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	ASPHALT						
	SILTY GRAVEL FILL						
1							
2	SANDY SILT, light brown, stiff, damp, 10-20% fine to medium grained sands, no odor.	SM					
3							
4							
5							
	SANDY CLAY, dark brown, stiff, damp, 20-30% fine to medium grained sand, no odor.	SC	7 22 30			0	SAMPLE @ 6.0 FEET
7							
8							
	SANDY CLAY, light brown, stiff, moist, 10-20% very fine to fine grained sand, no odor.	SC					
9							
10							SAMPLE @ 10.0 FEET
	SILTY SAND, light brown, dense, moist, 10-20% silts, fine to medium grained sand, no odor.	SM	12 19 22			0	
11							Water @ 11.5 feet
12							TOTAL DEPTH = 11.5 FEET Backfilled with grout
13							
14							
15							
16							
17							

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BORING LOG AND WELL COMPLETION SUMMARY

FNBO-3

Page 1 of 1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5146

Location: 3900 Piedmont Avenue
Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 6" Total Depth: 16.5 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 10-20-93
Finish: 10-20-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	ASPHALT						
	SILTY GRAVEL FILL						
1							
	SANDY SILT, grey, stiff, damp, 10-20% fine to medium grained sand, slight hydrocarbon odor.	SM					
2							
	As above, black.	SM					
3							
4	As above, brown, stiff, damp, 10-20% fine grained sand, no odor.	SM					
5							
	SANDY CLAY, light brown, very stiff, damp, 30-40% medium to coarse grained sand, no odor.	CL	15 25 25			0	SAMPLE @ 8.0 FEET
6							
7							
	SANDY CLAY, light grey, stiff, damp, 5-10% fine grained sand, no odor.	CL					
8							
9							
10							
	SANDY SILT, light grey with brown mottles, stiff, moist, 10-20% very fine grained sand, no odor.	SM	7 14				
11	As above, 20-30% very fine sand, saturated.		20			0	SAMPLE @ 10.5 FEET Water @ 11.0 feet
12							
13							
14							
15	As above, saturated.	SM					
16							SATURATED SAMPLES
17							TOTAL DEPTH = 16.5 FEET Backfilled with grout.

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BORING LOG AND WELL COMPLETION SUMMARY

FNBO-4

Page 1 of 1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5146

Location: 3900 Piedmont Avenue
Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 6" Total Depth: 7.5 Feet
Ref. Elevations:
Logged By: Chris Valchelf

Dates:
Start: 10-20-93
Finish: 10-20-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	ASPHALT						
	SILTY GRAVEL FILL						
1							
	GRAVELLY SILT, dark brown, stiff, damp, 20-30% gravel, no odor.	GM					
2							
3							
4	SANDY SILT, dark brown, stiff, damp, 10-20% medium to coarse grained sand, no odor.	SM					
5	As above, black with brown mottles, slight hydrocarbon odor.		7				
			10				
6			15			6.0	SAMPLE @ 6.0 FEET
7	OBSTRUCTED - Plastic (?)						OBSTRUCTED @ 7.0 FEET
8							TOTAL DEPTH = 7.5 FEET Backfilled with grout.
9							
10							
11							
12							
13							
14							
15							
16							
17							

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BORING LOG AND WELL COMPLETION SUMMARY

FNBO-5

Page 1 of 1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5148

Location: 3900 Piedmont Avenue, Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 6" Total Depth: 11.5 Feet
Ref. Elevations:
Logged By: Chris Valchelf

Dates: Start: 10-21-93 Finish: 10-21-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	TOPSOIL						
1	CONCRETE						
2	BASE FILL						
3	SANDY CLAY, brown, stiff, damp, 20-30% fine to medium grained sand, no odor.	SC					
4	As above, grey, strong hydrocarbon odor.						
5			4				
6			5				SAMPLE @ 6.0 FEET
7			21			1784	
8	SILTY SAND, grey/blue, soft, wet, 10-20% silts, medium to coarse grained sand, strong hydrocarbon odor.	SM				2500	Looks like free product.
9							
10							SAMPLE @ 10.0 FEET
11	SILT, grey, stiff, wet, strong hydrocarbon odor.	ML	1 4 8				Water @ 11.0 feet
12						85	TOTAL DEPTH = 11.5 FEET Backfilled with grout.
13							
14							
15							
16							
17							

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BORING LOG AND WELL COMPLETION SUMMARY

FNBO-6

Page 1 of 1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5146

Location: 3900 Piedmont Avenue, Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 8" Total Depth: 16.5 Feet
Ref. Elevations:
Logged By: Chris Valchelf

Dates: Start: 10-21-93 Finish: 10-21-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	TOPSOIL						
1	CONCRETE						
2	BASE FILL						
3	SANDY CLAY, brown, stiff, damp, 20-30% very fine to fine grained sand, no odor.	SC					
4	As above, grey, strong hydrocarbon odor.	SC					
5	As above, grey/green, "cedar"-like odor.	SC					
6	SANDY CLAY, green/brown, very stiff, damp, 30-40% coarse grained sand, strong hydrocarbon odor.	CL	12, 20, 34			696	SAMPLE @ 6.0 FEET
7							
8							
9	SANDY CLAY, grey/green, stiff, damp, 30-40% fine to medium grained sand, strong hydrocarbon odor.	CL					
10	As above.	CL	17, 20, 50			412	SAMPLE @ 10.0 FEET
11							Water @ 11.0 feet
12							
13							
14							
15			17, 20, 34				
16							NO RECOVERY
17							TOTAL DEPTH = 16.5 FEET Backfilled with grout.

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BORING LOG AND WELL COMPLETION SUMMARY

FNBO-7

Page 1 of 1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5146

Location: 3900 Piedmont Avenue, Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 6" Total Depth: 11.5 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates: Start: 10-21-93 Finish: 10-21-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	CONCRETE						
1	BASE FILL						
2	SANDY SILT, brown, stiff, damp, 10-20% fine to medium grained sands, no odor.	SM					
3							
4	SANDY SILT, grey, damp, soft, 20-30% medium to coarse grained sand, strong hydrocarbon odor.	SM					Water in hole @ 4 feet (broken pipe??)
5			1				
6	As above, very wet sample but not ground water.	SM	2 1			310	SAMPLE @ 6.0 FEET
7							
8							
9							
10							
11	SANDY CLAY, grey, very stiff, moist, 30-40% medium grained sand, strong hydrocarbon odor.	SC	14 42 53			1533	SAMPLE @ 11.0 FEET
12							Water @ 11.5 feet TOTAL DEPTH = 11.5 FEET Backfilled with grout.
13							
14							
15							
16							
17							

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Environmental Science & Engineering, Inc.
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BORING LOG AND WELL COMPLETION SUMMARY

FNBO-8

Page 1 of 1

WELL COMPLETION

Completion Depth: N/A

	Size/Type	From	To
Casing:			
Screen:	N/A		
Filter:			
Seal:			

Well Cap or Box:

Project Name: First Nationwide Bank Project No: 6-93-5148
Location: 3900 Piedmont Avenue
Oakland, CA

Driller: Soils Exploration Services, Inc.
Method: Hollow Stem Auger
Hole Diameter: 6" Total Depth: 11.5 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 10-21-93
Finish: 10-21-93

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	CONCRETE						
1	GRAVEL FILL						
2	SANDY SILT, dark brown, stiff, damp, 10-20% fine to medium grained sands, no odor.	SM					
3							
4	SANDY CLAY, orange/brown, stiff, damp, 10-20% very fine to fine grained sands, no odor.	SC					Water in hole @ 4 feet (broken pipe??)
5			5				
6	As above, 20-30% medium to coarse grained sand, no odor.	SC	10				
	As above, brown with grey mottling.	SC	21				SAMPLE @ 6.0 FEET
7						0	
8							
9	SANDY CLAY, brown, stiff, damp, 20-30% very fine to fine grained sand, no odor.	SC					
10			10				SAMPLE @ 10.0 FEET
11	SILTY SAND, brown, dense, medium to coarse grained sand, 10-20% silts, no odor.	SM	12				Water @ 11.0 feet
12			27			0	TOTAL DEPTH = 11.5 FEET Backfilled with grout.
13							
14							
15							
16							
17							

REGISTERED GEOLOGIST
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#5315
STATE OF CALIFORNIA

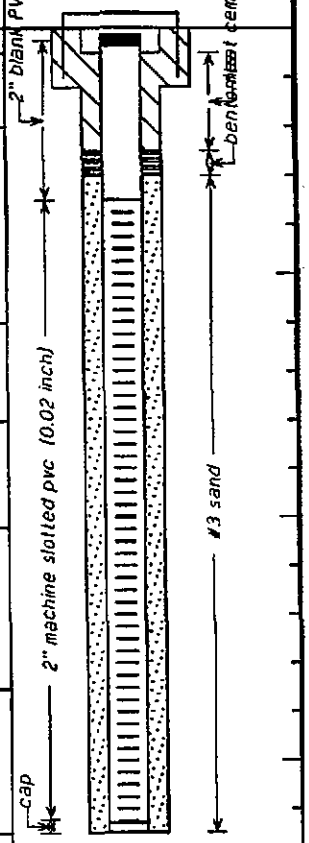
Gettler-Ryan, Inc.

Log of Boring MW-1

PROJECT: *Former Chevron Service Station #9-0517*	LOCATION: *3900 Piedmont Avenue, Oakland, CA*
G-R PROJECT NO.: *346420.02*	SURFACE ELEVATION: *87.89 feet MSL*
DATE STARTED: *07/21/98*	WL (ft. bgs): *10.2* DATE: *07/21/98* TIME: *15:25*
DATE FINISHED: *07/21/98*	WL (ft. bgs): *8.4* DATE: *07/22/98* TIME: *16:00*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *16.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						ML	PAVEMENT - asphalt.
						GC	GRAVELLY SILT (ML) - very dark grayish brown (2.5Y 3/2), damp, medium stiff, low plasticity; 50% silt, 30% fine gravel, 20% fine to coarse sand.
							CLAYEY GRAVEL (GC) - yellowish brown (10YR 5/4), damp, medium dense; 70% fine to coarse gravel, 15% fine to coarse sand, 15% clay.
5	0	14	MW1-6			CL-ML	SILTY CLAY (CL-ML) - light yellowish brown (2.5Y 6/4), moist, stiff, low plasticity; 50% clay, 40% silt, 10% fine sand.
						GC	CLAYEY GRAVEL (GC) - dark yellowish brown (10YR 4/4), moist, medium dense; 50% fine to coarse gravel, 30% clay, 20% fine to coarse sand.
10	0	10	MW1-10 MW1-11			ML	SANDY SILT WITH CLAYEY SILT LENSES (ML) - dark greenish gray (5GY 4/1), saturated, stiff, low plasticity; 45% silt, 30% fine sand, 25% clay; clayey silt lenses up to 2 inches thick. Color changes to light olive brown (2.5Y 5/8) at 11.5 feet.
15	0	13	MW1-16			CL	CLAY (CL) - brown (10YR 5/3), damp to moist, stiff, low plasticity; 90% clay, 10% fine sand.
20							(* = converted to equivalent standard penetration blows/ft.)
25							

WELL DIAGRAM



JOB NUMBER: *346420.02*

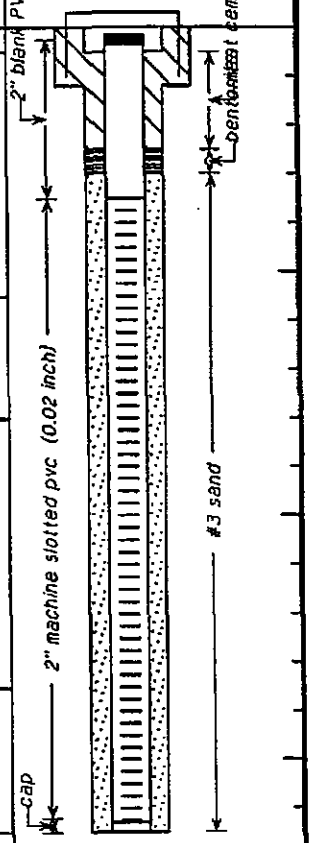
Gettler-Ryan, Inc.

Log of Boring MW-2

PROJECT: *Former Chevron Service Station #9-0517*	LOCATION: *3900 Piedmont Avenue, Oakland, CA*
G-R PROJECT NO.: *346420.02*	SURFACE ELEVATION: *86.09 feet MSL*
DATE STARTED: *07/21/98*	WL (ft. bgs): *12.0* DATE: *07/21/98* TIME: *13:55*
DATE FINISHED: *07/21/98*	WL (ft. bgs): *7.4* DATE: *07/22/98* TIME: *16:00*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *16.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						CL	PAVEMENT – asphalt.
							SANDY CLAY (CL) – dark brown (10YR 3/3), moist, stiff, low plasticity; 60% clay, 30% fine to coarse sand, 10% fine gravel.
							Color changes to yellowish brown (10YR 5/3) at 3 feet.
5	0	14	MW2-6			GC	CLAYEY GRAVEL WITH SAND (GC) – olive (5Y 5/4) mottled light olive brown (2.5Y 5/4), moist, dense; 50% fine to coarse gravel, 30% fine to coarse sand, 20% clay.
						ML	SANDY SILT (ML) – light olive brown (2.5Y 5/6) mottled light gray (2.5 Y 7/2), moist to saturated, stiff, low plasticity; 45% silt, 30% fine sand, 25% clay.
10	0	10	MW2-11				
						CL	CLAY (CL) – ligh olive brown (2.5Y 5/6), moist, stiff, low plasticity; 70% clay, 25% silt, 5% fine sand.
15	10	13	MW2-16				
							(* = converted to equivalent standard penetration blows/ft.)
20							
25							

WELL DIAGRAM



JOB NUMBER: *346420.02*

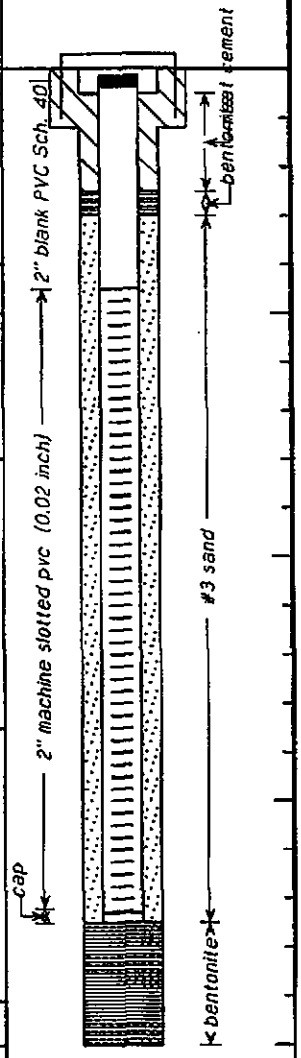
Gettler-Ryan, Inc.

Log of Boring MW-3

PROJECT: *Former Chevron Service Station #9-0517*	LOCATION: *3900 Piedmont Avenue, Oakland, CA*
G-R PROJECT NO. : *346420.02*	SURFACE ELEVATION: *86.28 feet MSL*
DATE STARTED: *07/21/98*	WL (ft. bgs): *11.0* DATE: *07/21/98* TIME: *10:55*
DATE FINISHED: *07/21/98*	WL (ft. bgs): *8.2* DATE: *07/22/98* TIME: *16:00*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *20 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
				GC	PAVEMENT - asphalt.
					CLAYEY GRAVEL WITH SAND (GC) - dark yellowish brown (10YR 4/6), moist, medium dense; 55% fine to coarse gravel, 25% fine to coarse sand, 20% clay.
				SC	CLAYEY SAND (SC) - light yellowish brown (10YR 6/4), moist, medium dense; 60% fine sand, 40% clay.
5			MW3-5		
	32	15	MW3-8	GC	CLAYEY GRAVEL WITH SAND (GC) - light yellowish brown (10YR 6/4), moist , medium dense; 55% fine to coarse gravel, 25% fine to coarse sand, 20 % clay.
				ML	SANDY SILT (ML) - greenish gray (5GY 4/1), moist to saturated, stiff, low plasticity; 55% silt, 30% fine sand, 15% clay.
10			MW3-10		
	15	10	MW3-10.5		Color changes to olive (5Y 5/3) mottled grenish gray (5GY 5/1) at 11 feet.
				CL	CLAY (CL) - brown (10YR 5/3), damp to moist, stiff, low plasticity; 90% clay, 10% fine sand.
15					
	4.5	14	MW3-18		
	0	15	MW3-19.5	CL/SC	SANDY CLAY WITH CLAYEY SAND LENSES (CL/SC) - brown (10YR 5/3), moist, stiff, low plasticity; 70% clay, 30% fine sand; clayey sand lenses up to 1 inch thick.
20					
					(* = converted to equivalent standard penetration blows/ft.)
25					

WELL DIAGRAM



JOB NUMBER: *346420.02*

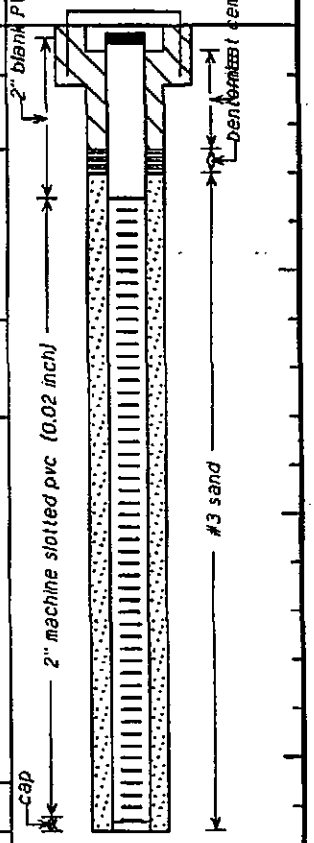
Gettler-Ryan, Inc.

Log of Boring MW-4

PROJECT: *Former Chevron Service Station #9-0517*	LOCATION: *3900 Piedmont Avenue, Oakland, CA*
G-R PROJECT NO.: *346420.02*	SURFACE ELEVATION: *87.22 feet MSL*
DATE STARTED: *07/21/98*	WL (ft. bgs): *12.0* DATE: *07/21/98* TIME: *12:20*
DATE FINISHED: *07/21/98*	WL (ft. bgs): *9.1* DATE: *07/22/98* TIME: *16:00*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *16.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
					PAVEMENT – asphalt.
				CL	SANDY CLAY (CL) – very dark gray (5Y 3/1), moist, medium stiff, low plasticity; 90% clay, 10% fine sand.
				CL	SANDY CLAY (CL) – dark greenish gray (5GY 4/1), moist, medium stiff, low plasticity; 70% clay, 30% fine to coarse sand.
5					Sand increases to 35–40%, trace fine gravel at 5 feet.
	0	14	MW4-6	GC	CLAYEY GRAVEL WITH SAND (GC) – dark gray (5Y 4/1) mottled brown (7.5YR 4/4), moist, medium dense; 50% fine to coarse gravel, 35% fine to coarse sand, 15% clay.
				ML	SANDY SILT (ML) – olive (5Y 5/3), moist to saturated, stiff, low plasticity; 55% silt, 30% fine sand, 15% clay.
10	126	11	MW4-11		
15					Sand increases to 40% at 15 feet.
	2.6	12	MW4-16	CL	CLAY (CL) – brown (10YR 5/3), damp, stiff, low plasticity; 90% clay, 10% fine sand.
20					(* = converted to equivalent standard penetration blows/ft.)
25					

WELL DIAGRAM



Conestoga-Rovers & Associates
2000 Opportunity Drive, Suite 110
Roseville, CA 95678
Telephone: (916) 677-3407
Fax: (916) 677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	SB-2
JOB/SITE NAME	Former Chevron 9-0517	**DRILLING STARTED**	28-Jul-08
LOCATION	3900 Piedmont Avenue, Oakland, CA	**DRILLING COMPLETED**	28-Jul-08
PROJECT NUMBER	611995	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling & Testing, Inc.	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	N/A ft above msl
BORING DIAMETER	3 inches first 8 feet; 2 inches for remainder	**SCREENED INTERVAL**	NA
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	18.0 fbg (28-Jul-08) ▽
REVIEWED BY	J. Kiernan, PE# C68498	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand-augered to 8 fbg		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Asphalt	0.5	Concrete
							Fill	1.0	
					ML		Sandy SILT:Brown; moist; 55% silt, 40% fine to medium grained sand, 5% clay; low plasticity.		
0		SB-2- 5		5					
					ML		Sandy SILT:Dark brown; moist; 55% silt, 35% fine to medium grained sand, 5% clay, 5% gravel; low plasticity.	7.0	
							Silty SAND with gravel:Light brown; moist; 60% fine to medium grained sand; 20% silt, 20% gravel; low plasticity.	9.0	
0		SB-2- 10		10					
					SM		Silty SAND:Light brown; moist; 70% fine, poorly graded sand; 30% silt; low plasticity.		Portland Type I/II
0		SB-2- 15		15					
					ML		Sandy SILT:Light brown; moist; 60% silt, 40% sand; medium plasticity.	16.0	
					SM		Silty SAND:Light brown; moist; 85% poorly graded sand, 15% silt; low plasiticity. ▽	17.0	
					SM		Silty SAND:Light brown; wet; 85% poorly graded sand, 15% silt; low plasiticity.	18.0	
					ML		SILT: Light brown; moist; 85% silt, 10% fine grained sand, 5% clay; low plasticity.	19.0	
0		SB-2- 20		20			Silty SAND:Light brown; wet; 85% sand, 15% silt; low plasticity.	20.0	
					SM				
					SW		SAND: Light brown; moist; 90% sand, 10% silt; low plasticity; dense. Refusal at 24 fbg.	23.8 24.0	Bottom of Boring @ 24 fbg

WELL LOG (PID) \\SAC-S1\SHARED\ROCKLI~1.CHE\611911~1\611995~2\611995~4\611995~2\9-0517 BORING LOGS.GPJ DEFAULT.GDT 11/20/08

APPENDIX C

SECOND SEMI-ANNUAL 2010 GROUNDWATER MONITORING REPORT

GETTLER-RYAN INC.

TRANSMITTAL

September 8, 2010
G-R #386420

TO: Mr. James Kiernan
Conestoga-Rovers & Associates
10969 Trade Center Dr, Suite 107
Rancho Cordova, CA 95670

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: Former Chevron Service Station
#9-0517 (MTI)
3900 Piedmont Avenue
Oakland, California
RO 0000138

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
2	September 2, 2010	Groundwater Monitoring and Sampling Report **Second Semi-Annual Event of August 11, 2010**

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced report for **your use and distribution to the following (including PDF submittal of the entire report to GeoTracker):**

Ms. Stacie H. Frerichs, Chevron Environmental Management Company, 6111 Bollinger Canyon Road, Room 3596, San Ramon, CA 94583 ***(PDF ONLY)***

Please provide any comments/changes and propose any groundwater monitoring modifications for the next event prior to ***September 22, 2010,*** at which time this final report will be distributed to the following:

cc: Mr. Mark Detterman, Alameda County Health Care Services, Dept. of Environmental Health, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577
(No Hard Copy-CRA UPLOAD TO ALAMEDA CO.)
Mr. Neil B. Goodhue and Mrs. Diane C. Goodhue, 300 Hillside Avenue, Piedmont, CA 94611

Enclosures

trans/9-0517-SHF

Chevron

Stacie H. Frerichs
Team Lead
Marketing Business Unit

Chevron Environmental
Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 842-9655
Fax (925) 842-8370

September 2, 2010
(date)

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Facility #9-0517

Address: 3900 Piedmont Avenue, Oakland, California

I have reviewed the attached routine groundwater monitoring report dated September 2, 2010.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Gettler-Ryan, Inc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

SH Frerichs

Stacie H. Frerichs
Project Manager

Enclosure: Report

WELL CONDITION STATUS SHEET

Client/Facility #: Chevron #9-0517
Site Address: 3900 Piedmont Avenue
City: Oakland, CA

Job #: 386420
Event Date: 8-11-10
Sampler: JOC

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M)missing	BOLTS (M) Missing (R) Replaced	Bolt Flanges B= Broken S= Stripped R=Retap	APRON Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y / N	REPLACE CAP Y / N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Yes / No
MW-1	O.K	M	(R) O.K	(R) O.K	O.K	O.K	O.K	N	N	8" Boart L. / 3	NO
MW-2	↓	M	(1) of (3) broken inside flange		↓	↓	TOC extends too far	↓	↓	"	↓
MW-3	↓	M	(R) O.K	(R)	↓	↓	O.K	↓	↓	"	↓
MW-4	↓	O.K	(R) O.K	(R) ↓	↓	↓	O.K	↓	↓	6" Morrison / 2	↓

Comments

GETTLER-RYAN INC.

September 2, 2010
G-R Job #386420

Ms. Stacie H. Frerichs
Chevron Environmental Management Company
6111 Bollinger Canyon Road, Room 3596
San Ramon, CA 94583

RE: Second Semi-Annual Event of August 11, 2010
Groundwater Monitoring & Sampling Report
Former Chevron Service Station #9-0517
3900 Piedmont Avenue
Oakland, California

Dear Ms. Frerichs:

This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

Static groundwater levels were measured and the wells were checked for the presence of separate-phase hydrocarbons. Static water level data, groundwater elevations, and separate-phase hydrocarbon thickness (if any) are presented in the attached Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells and submitted to a state certified laboratory for analyses. The field data sheets for this event are attached. Analytical results are presented in the table(s) listed below. The chain of custody document and laboratory analytical report are also attached. All groundwater and decontamination water generated during sampling activities was removed from the site, per the Standard Operating Procedure.

Please call if you have any questions or comments regarding this report. Thank you.

Sincerely,

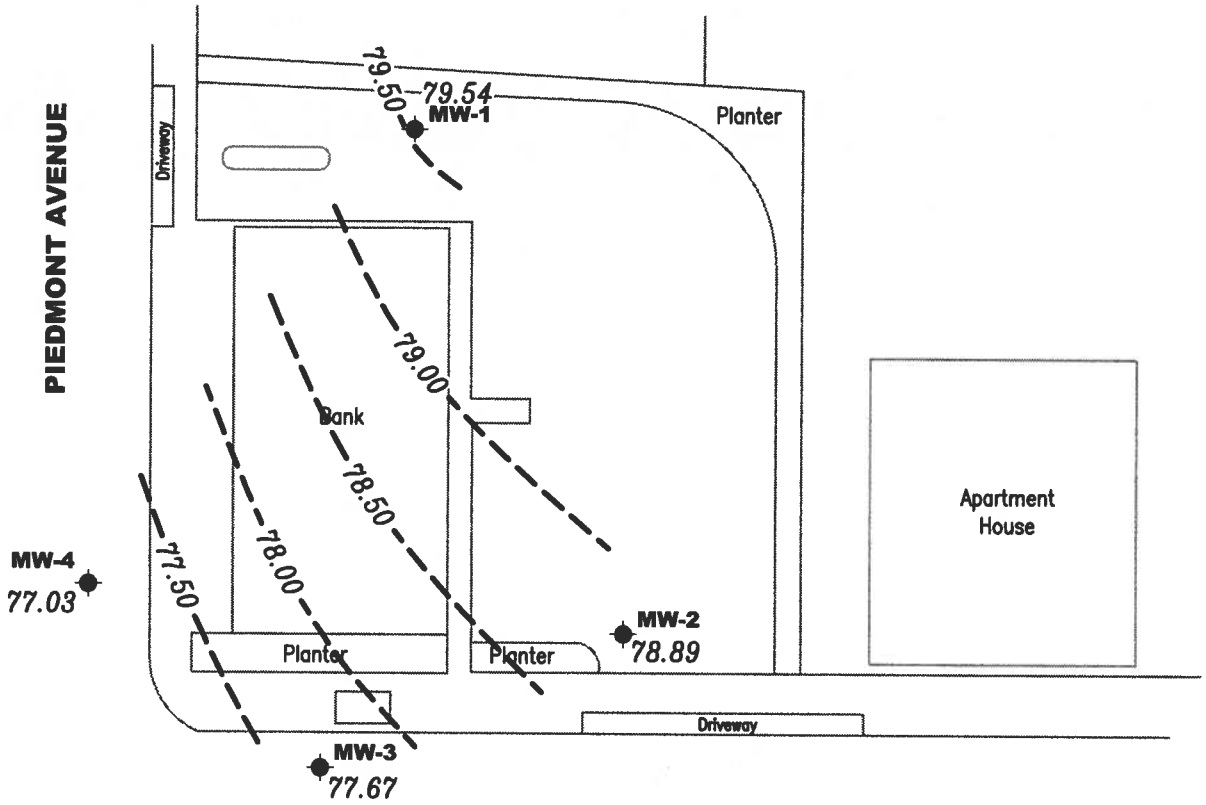
Deanna L. Harding
Project Coordinator

Douglas J. Lee
Senior Geologist, P.G. No. 6882

PROFESSIONAL GEOLOGIST
DOUGLAS J. LEE
No. 6882
STATE OF CALIFORNIA

Figure 1: Potentiometric Map
Table 1: Groundwater Monitoring Data and Analytical Results
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

6747 Sierra Court, Suite J • **Dublin**, CA 94568 • (925) 551-7555 • Fax (925) 551-7888
3140 Gold Camp Drive, Suite 170 • **Rancho Cordova**, CA 95670 • (916) 631-1300 • Fax (916) 631-1317



EXPLANATION

- Groundwater monitoring well
- 99.99 — Groundwater elevation in feet referenced to Mean Sea Level
- 99.99 — Groundwater elevation contour, dashed where inferred

Approximate groundwater flow direction at a gradient of 0.02 to 0.03 Ft./Ft.

N

0 30

Scale in Feet

Source: Figure modified from drawing provided by RRM engineering contracting firm.

GETTLER - RYAN INC.
6747 Sierra Court, Suite J
Dublin, CA 94568 (925) 551-7555

POTENTIOMETRIC MAP
Former Chevron Service Station #9-0517
3900 Piedmont Avenue
Oakland, California

FIGURE 1

PROJECT NUMBER 386420

REVIEWED BY

DATE August 11, 2010

REVISED DATE

FILE NAME: P:\Enviro\Chevron\9-0517\Q10-9-0517.dwg | Layout Tab: Pot3

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-1									
08/03/98	87.89	75.46	12.43	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/23/98	87.89	78.84	9.05	<50	<0.5	<0.5	<0.5	<0.5	<2.0
02/08/99	87.89	81.39	6.50	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	87.89	80.76	7.13	<50	<0.5	<0.5	<0.5	<0.5	<5.0
08/23/99	87.89	78.74	9.15	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/03/99	87.89	78.35	9.54	<50	<0.5	<0.5	<0.5	<0.5	<2.5
02/15/00	87.89	81.99	5.90	<50	<0.5	<0.5	<0.5	<0.5	<5.0
05/12/00[3]	87.89	80.84	7.05	<50	<0.50	<0.50	<0.50	<0.50	<2.5
07/31/00	87.89	79.49	8.40	<50	<0.50	<0.50	<0.50	<0.50	<2.5
10/30/00	87.89	79.24	8.65	<50.0	<0.500	<0.500	<0.500	<1.50	<2.50
02/27/01	87.89	82.06	5.83	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
05/15/01	87.89	80.18	7.71	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
08/23/01	87.89	DRY	--	--	--	--	--	--	--
02/25/02	87.89	81.18	6.71	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/05/02	87.89	79.00	8.89	<50	<0.50	<0.50	<0.50	<1.5	<2.5
02/11/03	87.89	80.53	7.36	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/09/03[5]	87.89	78.42	9.47	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/25/04[5]	87.89	81.59	6.30	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	87.89	77.77	10.12	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/11/05[5]	87.89	81.10	6.79	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/15/05[5]	87.89	79.00	8.89	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/10/06[5]	87.89	81.24	6.65	<50	1	<0.5	<0.5	<0.5	<0.5
08/02/06[5]	87.89	80.16	7.73	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/09/07[5]	87.89	80.12	7.77	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/07[5]	87.89	78.30	9.59	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/18/08[5]	87.89	80.48	7.41	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/12/08[5]	87.89	78.11	9.78	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/19/09[5]	87.89	82.28	5.61	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/07/09	87.89	77.67	10.22	--	--	--	--	--	--
01/29/10	87.89	81.85	6.04	--	--	--	--	--	--
08/11/10	**87.89**	**79.54**	**8.35**	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-2									
08/03/98	86.09	74.75	11.34	<50	<0.5	<0.5	<0.5	<0.5	3.4
11/23/98	86.09	79.19	6.90	<50	<0.5	<0.5	<0.5	<0.5	<2.0
02/08/99	86.09	80.86	5.23	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	86.09	79.97	6.12	<50	<0.5	<0.5	<0.5	<0.5	<5.0
08/23/99	86.09	79.68	6.41	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/03/99	86.09	78.80	7.29	<50	<0.5	<0.5	<0.5	<0.5	<2.5
02/15/00	86.09	81.60	4.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0
05/12/00	86.09	80.19	5.90	4,000[3]	240	26	100	76	<100
07/31/00	86.09	79.51	6.58	<50	<0.50	<0.50	<0.50	<0.50	<2.5
10/30/00	86.09	79.86	6.23	<50.0	<0.500	2.92	<0.500	1.88	4.89
02/27/01	86.09	81.49	4.60	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
05/15/01	86.09	79.79	6.30	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
08/23/01	86.09	78.81	7.28	<50	<0.50	<0.50	<0.50	<0.50	<2.5
02/25/02	86.09	80.48	5.61	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/05/02	86.09	78.99	7.10	<50	<0.50	<0.50	<0.50	<1.5	<2.5
02/11/03	86.09	78.64	7.45	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/09/03[5]	86.09	78.44	7.65	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/25/04[5]	86.09	81.24	4.85	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	86.09	77.86	8.23	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/11/05[5]	86.09	80.16	5.93	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/15/05[5]	86.09	78.50	7.59	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/10/06[5]	86.09	80.36	5.73	<50	0.6	<0.5	<0.5	<0.5	<0.5
08/02/06[5]	86.09	79.14	6.95	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/09/07[5]	86.09	79.80	6.29	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/07[5]	86.09	78.69	7.40	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/18/08[5]	86.09	79.62	6.47	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/12/08[5]	86.09	79.01	7.08	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/19/09[5]	86.09	79.59	6.50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/07/09	86.09	77.58	8.51	--	--	--	--	--	--
01/29/10	86.09	79.80	6.29	--	--	--	--	--	--
08/11/10	**86.09**	**78.89**	**7.20**	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-3									
08/03/98	86.28	74.20	12.08	4000	160	<5.0	<5.0	73	180
11/23/98	86.28	78.59	7.69	4000	67.7	7.56	17.1	24.5	41.2
02/08/99	86.28	80.01	6.27	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	86.28	79.32	6.96	1800	53.6	8.96	33	18.6	21.4
08/23/99	86.28	78.36	7.92	3970	155	24	88.8	39.8	185
11/03/99	86.28	78.36	7.92	3320	108	19.9	98.4	44.8	<25
02/15/00	86.28	80.54	5.74	779	26.7	3.82	15.4	4.24	<12.5
05/12/00	86.28	79.52	6.76	12,000[3]	3,100	120	980	1,400	820
07/31/00	86.28	78.98	7.30	1,200[3]	32	<5.0	11	7.3	39
10/30/00	86.28	79.26	7.02	3,300[4]	119	<5.00	40.0	<15.0	<25.0
02/27/01	86.28	80.39	5.89	432[3]	15.5	1.53	14.9	1.06	15.7
05/15/01	86.28	79.21	7.07	3,220[3]	96.4	12.6	11.5	11.6	128
08/23/01	86.28	78.23	8.05	2,300	48	<10	<10	<10	100
02/25/02	86.28	79.55	6.73	3,100	27	2.1	4.8	6.6	<2.5
08/05/02	86.28	78.33	7.95	4,100	87	21	90	47	21
02/11/03	86.28	79.23	7.05	3,700	21	2.3	4.4	9.0	<20
08/09/03[5]	86.28	78.05	8.23	1,600	12	1	2	4	0.7
02/25/04[5]	86.28	80.43	5.85	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	86.28	77.23	9.05	3,000	21	3	3	9	<0.5
02/11/05[5]	86.28	79.26	7.02	540	15	1	<0.5	0.8	<0.5
08/15/05[5]	86.28	77.87	8.41	2,600	11	1	1	2	<0.5
02/10/06[5]	86.28	79.35	6.93	970	20	2	<0.5	3	<0.5
08/02/06[5]	86.28	78.28	8.00	1,000	16	1	<0.5	3	<0.5
02/09/07[5]	86.28	78.95	7.33	590	3	<0.5	<0.5	0.5	<0.5
08/23/07[5]	86.28	77.45	8.83	2,700	18	4	2	8	<0.5
02/18/08[5]	86.28	79.01	7.27	1,300	8	1	0.6	1	<0.5
08/12/08[5]	86.28	76.70	9.58	2,000	21	3	1	4	<0.5
02/19/09[5]	86.28	79.52	6.76	810	<0.5	<0.5	<0.5	1	<0.5
08/07/09[5]	86.28	77.11	9.17	900	4	0.9	3	3	<0.5
01/29/10[5]	86.28	79.71	6.57	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/11/10[5]	**86.28**	**77.67**	**8.61**	**1,800**	**9**	**2**	**6**	**5**	**<0.5**

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
MW-4									
08/03/98	87.22	74.30	12.92	1900	110	12	<0.5	55	130
11/23/98	87.22	77.82	9.40	4080	136	17.8	37.2	30.1	51.8
02/08/99[1]	87.22	79.40	7.82	2900	150	16	<5.0	15	230/30.7[2]
05/07/99	87.22	79.80	7.42	6050	161	<25	39.8	36.9	<250/30.2[2]
08/23/99	87.22	77.83	9.39	3930	203	37.6	58.6	42.2	255
11/03/99	87.22	77.41	9.81	5350	324	44.7	91.5	56.1	<50
02/15/00	87.22	79.50	7.72	4080	161	27.7	31.1	39.1	73.9
05/12/00	87.22	79.31	7.91	3,600[3]	170	27	49	64	170
07/31/00	87.22	78.57	8.65	2,900[3]	160	20	15	56	170
10/30/00	87.22	78.14	9.08	5,630[4]	301	17.8	11.8	51.5	<25.0
02/27/01	87.22	79.92	7.30	2,140[3]	95.1	12.8	53.4	43.0	235
05/15/01	87.22	79.07	8.15	4,580[3]	200	44.1	46.3	51.7	172
08/23/01	87.22	77.89	9.33	2,700	250	44	21	72	130
02/25/02	87.22	79.42	7.80	4,100	100	18	27	39	<10
08/05/02	87.22	80.12	7.10	4,100	130	18	50	20	<10
02/11/03	87.22	79.10	8.12	4,100	100	23	20	51	<50
08/09/03[5]	87.22	77.67	9.55	3,700	110	24	10	45	8
02/25/04[5]	87.22	79.16	8.06	5,400	94	28	34	49	5
08/23/04[5]	87.22	77.03	10.19	5,100	100	26	7	43	5
02/11/05[5]	87.22	79.25	7.97	3,900	58	16	25	16	2
08/15/05[5]	87.22	78.40	8.82	2,400	76	16	11	26	3
02/10/06[5]	87.22	79.41	7.81	1,600	68	16	8	27	4
08/10/06[5]	87.22	78.64	8.58	2,500	100	19	5	30	3
02/09/07[5]	87.22	78.51	8.71	6,200	200	39	16	52	3
08/23/07[5]	87.22	76.84	10.38	5,800	190	48	20	61	3
02/18/08[5]	87.22	79.11	8.11	4,900	110	24	11	32	2
08/12/08[5]	87.22	76.64	10.58	6,100	180	31	9	52	3
02/19/09[5]	87.22	79.50	7.72	2,900	84	20	5	24	2
08/07/09[5]	87.22	76.80	10.42	4,900	120	34	11	36	2
01/29/10[5]	87.22	79.20	8.02	3,800	49	15	4	17	1
08/11/10[5]	**87.22**	**77.03**	**10.19**	**5,400**	**110**	**36**	**11**	**36**	**1**

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
TRIP BLANK									
08/03/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/23/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0
02/08/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
05/07/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
08/23/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
11/03/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
02/15/00	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
05/12/00	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
07/31/00	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
10/30/00	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.50	<2.50
02/27/01	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
05/15/01	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
08/23/01	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
QA									
02/25/02	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/05/02	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
02/11/03	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
08/09/03[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/25/04[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/04[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/11/05[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/15/05[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/10/06[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/02/06[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/09/07[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/23/07[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/18/08[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/12/08[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
02/19/09[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
08/07/09[5]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
DISCONTINUED									

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0517

3900 Piedmont Avenue

Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to May 12, 2000, were compiled from reports prepared by Blaine Tech Services, Inc.

TOC = Top of Casing
(ft.) = Feet
GWE = Groundwater Elevation
(msl) = Mean sea level
DTW = Depth to Water

TPH = Total Petroleum Hydrocarbons
GRO = Gasoline Range Organics
B = Benzene
T = Toluene
E = Ethylbenzene

X = Xylenes
MTBE = Methyl Tertiary Butyl Ether
(µg/L) = Micrograms per liter
-- = Not Measured/Not Analyzed
QA = Quality Assurance/Trip Blank

* TOC elevations are referenced to msl.

1 Chromatogram pattern indicates gas and an unidentified hydrocarbon.

2 Confirmation run.

3 Laboratory report indicates gasoline C6-C12.

4 Laboratory report indicates hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.

5 BTEX and MTBE by EPA Method 8260.

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by IWM to Chemical Waste Management located in Kettleman Hills, California.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: **Chevron #9-0517** Job Number: **386420**

Site Address: **3900 Piedmont Avenue** Event Date: 8-11-10 (inclusive)

City: **Oakland, CA** Sampler: Joe

Well ID **MW-1** Date Monitored: 8-11-10

Well Diameter 2 in.

Total Depth 16.75 ft.

Depth to Water 8.35 ft.

8.40 xVF ___ = ___ x3 case volume = Estimated Purge Volume: ___ gal.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: ___

Purge Equipment:

Disposable Bailer ___
Stainless Steel Bailer ___
Stack Pump ___
Suction Pump ___
Grundfos ___
Peristaltic Pump ___
QED Bladder Pump ___
Other: ___

Sampling Equipment:

Disposable Bailer ___
Pressure Bailer ___
Discrete Bailer ___
Peristaltic Pump ___
QED Bladder Pump ___
Other: ___

Time Started: ___ (2400 hrs)
Time Completed: ___ (2400 hrs)
Depth to Product: ___ ft
Depth to Water: ___ ft
Hydrocarbon Thickness: ___ ft
Visual Confirmation/Description: ___
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ___ gal
Amt Removed from Well: ___ gal
Water Removed: ___
Product Transferred to: ___

Start Time (purge): ___ Weather Conditions: ___

Sample Time/Date: ___ / ___ Water Color: ___ Odor: Y / N ___

Approx. Flow Rate: ___ gpm. Sediment Description: ___

Did well de-water? ___ If yes, Time: ___ Volume: ___ gal. DTW @ Sampling: ___

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)

COMMENTS: M. only
Retapped flanges.

Add/Replaced Lock: ___ Add/Replaced Plug: ___ Add/Replaced Bolt: ___

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-0517 Job Number: 386420
Site Address: 3900 Piedmont Avenue Event Date: 8-11-10 (inclusive)
City: Oakland, CA Sampler: Joe

Well ID MW-2 Date Monitored: 8-11-10
Well Diameter 2 in.
Total Depth 16.60 ft.
Depth to Water 7.20 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

9.40 xVF ____ = ____ x3 case volume = Estimated Purge Volume: ____ gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: ____

Purge Equipment:
Disposable Bailer ____
Stainless Steel Bailer ____
Stack Pump ____
Suction Pump ____
Grundfos ____
Peristaltic Pump ____
QED Bladder Pump ____
Other: ____

Sampling Equipment:
Disposable Bailer ____
Pressure Bailer ____
Discrete Bailer ____
Peristaltic Pump ____
QED Bladder Pump ____
Other: ____

Time Started: ____ (2400 hrs)
Time Completed: ____ (2400 hrs)
Depth to Product: ____ ft
Depth to Water: ____ ft
Hydrocarbon Thickness: ____ ft
Visual Confirmation/Description: ____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ____ gal
Amt Removed from Well: ____ gal
Water Removed: ____
Product Transferred to: ____

Start Time (purge): ____ Weather Conditions: ____
Sample Time/Date: ____ / ____ Water Color: ____ Odor: Y / N ____
Approx. Flow Rate: ____ gpm. Sediment Description: ____
Did well de-water? ____ If yes, Time: ____ Volume: ____ gal. DTW @ Sampling: ____

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)

COMMENTS: Monthly

Add/Replaced Lock: ____ Add/Replaced Plug: ____ Add/Replaced Bolt: ____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-0517 Job Number: 386420
Site Address: 3900 Piedmont Avenue Event Date: 8-11-10 (inclusive)
City: Oakland, CA Sampler: Joe

Well ID MW-3 Date Monitored: 8-11-10
Well Diameter 2 in.
Total Depth 17.70 ft.
Depth to Water 8.61 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

9.09 xVF 0.17 = 1.55 x3 case volume = Estimated Purge Volume: 5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.42

Purge Equipment:
Disposable Bailer ✓
Stainless Steel Bailer
Stack Pump
Suction Pump
Grundfos
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Discrete Bailer
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0730 Weather Conditions: clear
Sample Time/Date: 0805 / 8-11-10 Water Color: clear Odor: Y / N moderate
Approx. Flow Rate: — gpm. Sediment Description: none
Did well de-water? no If yes, Time: — Volume: — gal. DTW @ Sampling: 9.07

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
0738	1.5	7.73	814	17.7		
0743	3.5	7.69	826	17.4		
0752	5	7.61	819	17.8		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)

COMMENTS: Retapped box flanges.

Add/Replaced Lock: — Add/Replaced Plug: — Add/Replaced Bolt: (3) 3/8"

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #9-0517 Job Number: 386420
Site Address: 3900 Piedmont Avenue Event Date: 8-11-10 (inclusive)
City: Oakland, CA Sampler: Jac

Well ID MW-4 Date Monitored: 8-11-10
Well Diameter 2 in.
Total Depth 16.32 ft.
Depth to Water 10.19 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

6.13 xVF 0.17 = 1.04 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.41

Purge Equipment:
Disposable Bailer ✓
Stainless Steel Bailer
Stack Pump
Suction Pump
Grundfos
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Discrete Bailer
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0818 Weather Conditions: clear
Sample Time/Date: 0845 / 8-11-10 Water Color: clear Odor: Y / N Strong
Approx. Flow Rate: — gpm. Sediment Description: none
Did well de-water? no If yes, Time: — Volume: — gal. DTW @ Sampling: 10.77

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0822	1.5	6.83	697	18.0		
0827	2.5	6.82	712	18.2		
0833	3.5	6.85	715	18.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)

COMMENTS: Retapped box flanges

Add/Replaced Lock: — Add/Replaced Plug: — Add/Replaced Bolt: (2) 3/8"

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories

081110-02

For Lancaster Laboratories use only
Acct. #: 12099 Sample #: 60564467-68 Group #:

CRA MTI Project #: 61H-1995

C# 1207206

Facility #: SS#9-0517 G-R#386420 Global ID#T0600102248
Site Address: 3900 PIEDMONT AVENUE, OAKLAND, CA
Chevron PM: MTI Lead Consultant: CRAKJ Kiernan
Consultant/Office: G-R, Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568
Consultant Prj. Mgr.: Deanna L. Harding (deanna@grinc.com)
Consultant Phone #: 925-551-7555 Fax #: 925-551-7899
Sampler: JOE AJEMIAN

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water	Matrix: Oil	Matrix: Air	Total Number of Containers	Analyses Requested / Preservation Codes: BTEX + MTBE 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates ____ Method ____	Total Lead Method ____	Dissolved Lead Method ____
MW-3	8-11-10	0805	✓			✓			6	✓	✓					
MW-4	"	0845	"			"			6	✓	✓					

Potable ☐ NPDES ☐

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☒ Must meet lowest detection limits possible for 8260 compounds
8021 MTBE Confirmation
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I - Full
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk
EDF/EDD

	Date	Time		Date	Time
Relinquished by:	8-11-10	0940	Received by:	8/11/10	0940
Relinquished by:	8/11/10	1410	Received by:		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	8/11/10	1350
Temperature Upon Receipt 04-25 C°			Custody Seals Intact? Yes No		

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

August 23, 2010

Project: 90517

Submittal Date: 08/12/2010
Group Number: 1207206
PO Number: 90517
Release Number: MTI
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LLI) #
MW-3-W-100811 Grab Water	6056467
MW-4-W-100811 Grab Water	6056468

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Gettler-Ryan, Inc.	Attn: Rachelle Munoz
ELECTRONIC COPY TO	Chevron c/o CRA	Attn: Report Contact

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,

Tracy A. Cole
Senior Specialist

Lancaster Laboratories

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Analysis Report

Sample Description: MW-3-W-100811 Grab Water
Facility# 90517 Job# 386420 MTI# 61H-1995 GRD
3900 Piedmont Ave-Oakland T0600102248 MW-3

LLI Sample # WW 6056467
LLI Group # 1207206
Account # 12099

Project Name: 90517

Collected: 08/11/2010 08:05 by JA

Submitted: 08/12/2010 08:50
Reported: 08/23/2010 13:14
Discard: 09/23/2010

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

PAO03

CAT No.		CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10943	Benzene	71-43-2	9	0.5	1
10943	Ethylbenzene	100-41-4	6	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Toluene	108-88-3	2	0.5	1
10943	Xylene (Total)	1330-20-7	5	0.5	1
GC Volatiles	**SW-846 8015B**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	1,800	50	1

General Sample Comments

State of California Lab Certification No. 2501
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F102262AA	08/14/2010 22:35	Kelly E Keller	1
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	F102262AA	08/14/2010 22:35	Kelly E Keller	1
01146	GC VOA Water Prep	SW-846 5030B	1	10229B20A	08/18/2010 11:29	Tyler O Griffin	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10229B20A	08/18/2010 11:29	Tyler O Griffin	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-4-W-100811 Grab Water
Facility# 90517 Job# 386420 MTI# 61H-1995 GRD
3900 Piedmont Ave-Oakland T0600102248 MW-4

LLI Sample # WW 6056468
LLI Group # 1207206
Account # 12099

Project Name: 90517

Collected: 08/11/2010 08:45 by JA

Submitted: 08/12/2010 08:50
Reported: 08/23/2010 13:14
Discard: 09/23/2010

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

PAO04

CAT No.		CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10943	Benzene	71-43-2	110	0.5	1
10943	Ethylbenzene	100-41-4	11	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	1	0.5	1
10943	Toluene	108-88-3	36	0.5	1
10943	Xylene (Total)	1330-20-7	36	0.5	1
GC Volatiles	**SW-846 8015B**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	5,400	500	10

General Sample Comments

State of California Lab Certification No. 2501
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F102262AA	08/14/2010 22:57	Kelly E Keller	1
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	F102262AA	08/14/2010 22:57	Kelly E Keller	1
01146	GC VOA Water Prep	SW-846 5030B	1	10228B20A	08/17/2010 00:52	Martha L Seidel	10
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10228B20A	08/17/2010 00:52	Martha L Seidel	10

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Analysis Report

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 08/23/10 at 01:14 PM

Group Number: 1207206

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F102262AA	Sample number(s): 6056467-6056468							
Benzene	N.D.	0.5	ug/l	87		79-120		
Ethylbenzene	N.D.	0.5	ug/l	86		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	86		76-120		
Toluene	N.D.	0.5	ug/l	89		79-120		
Xylene (Total)	N.D.	0.5	ug/l	86		80-120		
Batch number: 10228B20A	Sample number(s): 6056468							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	118	118	75-135	0	30
Batch number: 10229B20A	Sample number(s): 6056467							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	118	118	75-135	0	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: F102262AA	Sample number(s): 6056467-6056468 UNSPK: P056470								
Benzene	96	93	80-126	3	30				
Ethylbenzene	95	92	71-134	3	30				
Methyl Tertiary Butyl Ether	94	88	72-126	7	30				
Toluene	97	97	80-125	1	30				
Xylene (Total)	94	92	79-125	2	30				
Batch number: 10228B20A	Sample number(s): 6056468 UNSPK: P056470								
TPH-GRO N. CA water C6-C12	127		63-154						
Batch number: 10229B20A	Sample number(s): 6056467 UNSPK: P059458								
TPH-GRO N. CA water C6-C12	118		63-154						

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST VOCs by 8260B - Water
Batch number: F102262AA

Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 08/23/10 at 01:14 PM

Group Number: 1207206

Surrogate Quality Control

6056467	97	96	104	104
6056468	97	97	105	106
Blank	99	100	102	97
LCS	100	101	101	102
MS	99	101	102	102
MSD	99	98	103	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 10228B20A

	Trifluorotoluene-F
6056468	104
Blank	90
LCS	118
LCSD	123
MS	125
Limits:	63-135

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 10229B20A

	Trifluorotoluene-F
6056467	138*
Blank	91
LCS	123
LCSD	118
MS	118
Limits:	63-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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APPENDIX D

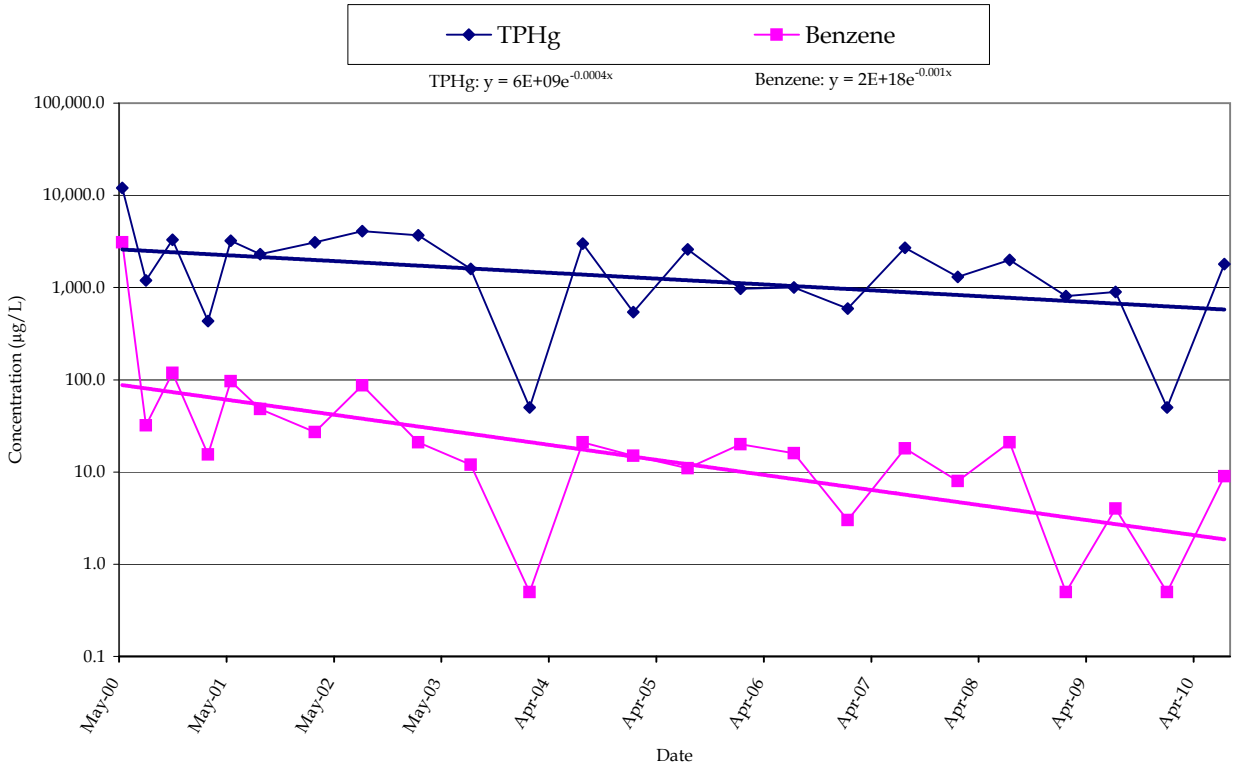
DEGRADATION CALCULATIONS

PREDICTED TIME TO REACH TPHg AND BENZENE ESLs IN MW-3
FORMER CHEVRON STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L; a = decay constant
b = concentration at time (x); x = time in days

	Constituent	Total Petroleum Hydrocarbons as Gasoline (TPHg)	Benzene
Given			
ESL:	y	100	1
Constant:	b	6.00E+09	2.00E+18
Constant:	a	-4.00E-04	-1.00E-03
Starting date for current trend:		5/12/2000	5/12/2000
Calculate			
Attenuation Half Life (years):	(-ln(2)/a)/365.25	4.74	1.90
Estimated Date to Reach ESL:	(x = ln(y/b) / a)	Aug 2022	May 2015



FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

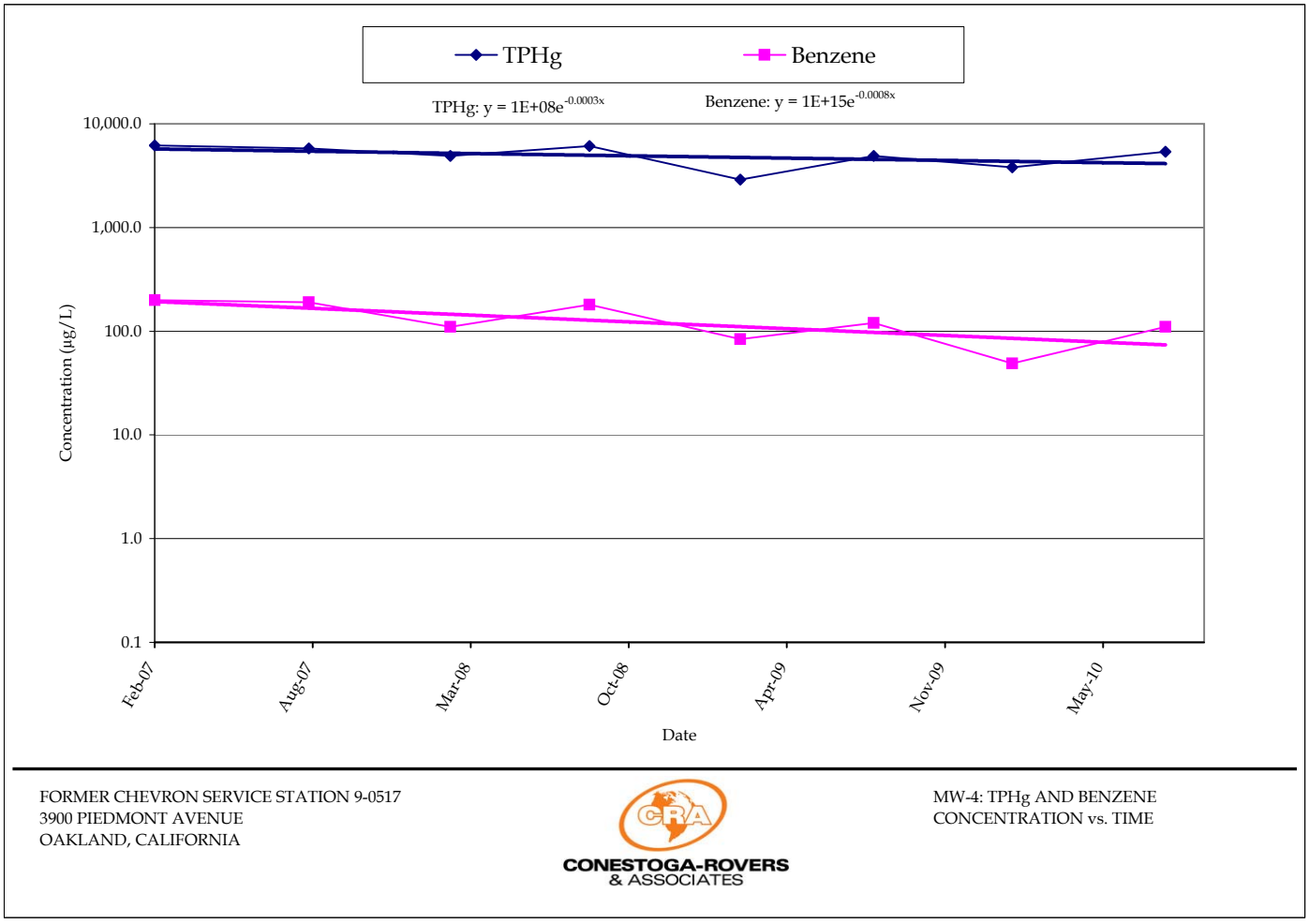
MW-3: TPHg AND BENZENE
CONCENTRATION vs. TIME

PREDICTED TIME TO REACH TPHg AND BENZENE ESLs IN MW-4
FORMER CHEVRON STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L a = decay constant
b = concentration at time (x) x = time in days

	Constituent	Total Petroleum Hydrocarbons as Gasoline (TPHg)	Benzene
Given			
ESL:	y	100	1
Constant:	b	1.00E+08	1.00E+15
Constant:	a	-3.00E-04	-8.00E-04
Starting date for current trend:		2/9/2007	11/3/1999
Calculate			
Attenuation Half Life (years):	(-ln(2)/a)/365.25	6.33	2.37
Estimated Date to Reach ESL:	(x = ln(y/b) / a)	Jan 2026	Mar 2018



FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

CONESTOGA-ROVERS & ASSOCIATES

MW-4: TPHg AND BENZENE CONCENTRATION vs. TIME

APPENDIX E

MASS CALCULATIONS

ESTIMATED TPHg MASS REMAINING IN GROUNDWATER
FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

Impacted GW Thickness (ft)	*Impacted GW Area (sq-ft)*	*Aquifer Volume (cu-ft)*	*Estimated Aquifer Porosity*	*Impacted GW Volume (gallons)*	*Representative TPHg Concentration (ug/l)*	*Total Dissolved TPHg Mass (lb)*	*Total Dissolved TPHg Volume (gallons)*
10.0	3,200	32,000	0.4	95,744	1,000	0.799	0.130
10.0	4,000	40,000	0.4	119,680	100	0.100	0.016
					Total Estimated Residual TPHg:	0.899	0.146

Notes:

Aquifer Volume = Impacted GW thickness x impacted GW area [excludes aquifer volume of greater impact]

Impacted GW Volume = Aquifer volume (cu-ft) x est. porosity (%) x 7.48 (gals/cu-ft)

Total Dissolved TPHg Mass = GW volume (gals) x 3.785 (l/gal) x Concentration (ug/l) x 2.205 lb/kg / 1,000,000,000 (ug/kg)

Total Dissolved TPHg Volume = Mass (lb) / 6.14 (lbs/gal)

Approximate density TPHg (gasoline) = 6.14 lb/gal

Abbreviations:

GW = Groundwater
ft = feet
sq-ft = square feet
cu-ft = cubic feet
gals = gallons
kg = kilograms
lb = pound
ug/l = micrograms per liter

Soil Type:	Porosity
Gravel	25-40
Sand	25-50
Silt	35-50
Clay	40-70

From: Groundwater; Freeze & Cherry, *1979* , Prentice-Hall, Inc., pg. 37. (based on Davis, 1969)

ESTIMATED BENZENE MASS REMAINING IN GROUNDWATER
FORMER CHEVRON SERVICE STATION 9-0517
3900 PIEDMONT AVENUE
OAKLAND, CALIFORNIA

Impacted GW Thickness (ft)	*Impacted GW Area (sq-ft)*	*Aquifer Volume (cu-ft)*	*Estimated Aquifer Porosity*	*Impacted GW Volume (gallons)*	*Representative Benzene Concentration (ug/l)*	*Total Dissolved Benzene Mass (lb)*	*Total Dissolved Benzene Volume (gallons)*
10.0	224	2,240	0.4	6,702	100	0.006	0.001
10.0	2,400	24,000	0.4	71,808	10	0.006	0.001
10.0	3,200	32,000	0.4	95,744	1	0.001	0.000
					Total Estimated Residual Benzene:	0.012	0.002

Notes:

Aquifer Volume = Impacted aquifer thickness x impacted aquifer area [excludes aquifer volume of greater impact]

Impacted GW Volume = Aquifer volume (cu-ft) x est. porosity (%) x 7.48 (gals/cu-ft)

Total Dissolved Benzene Mass = GW volume (gals) x 3.785 (l/gal) x Concentration (ug/l) x 2.205 lb/kg / 1,000,000,000 (ug/kg)

Total Dissolved Benzene Volume = Mass (lb) / 7.29 (lbs/gal)

Approximate density Benzene = 7.29 lb/gal

Abbreviations:

GW = Groundwater
ft = feet
sq-ft = square feet
cu-ft = cubic feet
gals = gallons
kg = kilograms
lb = pound
ug/l = micrograms per liter

Soil Type:	Porosity
Gravel	25-40
Sand	25-50
Silt	35-50
Clay	40-70

From: Groundwater; Freeze & Cherry, *1979* , Prentice-Hall, Inc., pg. 37. (based on Davis, 1969)