

5900 Hollis St., Suite A Emeryville, California 94608 Telephone: (510) 420-0700 www.CRAworld.com

Fax: (510) 420-9170

TRANSMITTAL	
-------------	--

Date	May	1. 2009	<b>R</b> FFFRFNCF NC	).	311959		
			PROJECT NAMI	E:	Former Chevron Station #9 1026		
To: Steven Plunkett		- <b>,</b>		RO #000500			
Alameda County Environmental Health			lealth	_	RECEIVED		
	1131	Harbor Bay Parkway, Suite 25	50				
	Alam	neda, CA 94502		_	1:39 pm, May 04, 2009		
Fax: (510) 337-9335				_	Alameda County Environmental Health		
Please find	Please find enclosed: Draft Final   Originals Other						
Sent via: Mail Same Day Courier Overnight Courier Other FTP Upload							
QUAN	QUANTITY DESCRIPTION						
1 Well Decommissioning Report and			port and Work P	lan f	or Monitoring Well Installation		
As Requested   Image: For Review and Comment     For Your Use   Image: For approval and return							
COMMEN	NTS:						
Please con	tact C	harlotte Evans at: 510-420-335	1 with any questi	ions (	or comments.		
Copy to: <u>M</u>		Mr. Aaron Costa, Chevron		N	Ir. Gary Bankhead, Kaiser Foundation		
		Hertzinger Associates		N	Ir. Greg Hoehn, Stantec		
		Mr. Leroy Griffin, Oakland Fire Department					
Completed	d by:	Charlotte Evans [Please Print]	Signed:		Ctrang		
Filing: C	Corresp	oondence File					



Aaron Costa Project Manager Marketing Business Unit **Chevron Environmental Management Company** 6111 Bollinger Canyon Road San Ramon, CA 94583 Tel (925) 543-2961 Fax (925) 543-2324 acosta@chevron.com

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

Re: Former Chevron Service Station No. 9-1026 3701 Broadway Oakland, CA

I have reviewed the attached work plan dated May 1, 2009.

I agree with the conclusions and recommendations presented in the referenced work plan. This information in this work plan is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This work plan was prepared by Conestoga Rovers Associates, upon who 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 to the best of my knowledge.

Sincerely,

Aaron Costa Project Manager

Attachment: Work Plan



# WELL DECOMMISSIONING REPORT AND WORK PLAN FOR MONITORING WELL INSTALLATION

# FORMER CHEVRON STATION #9-1026 3701 BROADWAY, OAKLAND, CALIFORNIA

**Prepared For:** 

MR. STEVEN PLUNKETT ALAMEDA COUNTY ENVIRONMENTAL HEALTH 1131 HARBOR BAY PARKWAY, SUITE 250 ALAMEDA, CA 94502

> Prepared by: Conestoga-Rovers & Associates

5900 Hollis Street, Suite A Emeryville, California U.S.A. 94608

Office: (510) 420-0700 Fax: (510) 420-9170

web: <a href="http://www.CRAworld.com">http://www.CRAworld.com</a>

APRIL 2009 REF. NO. 311959 (2) This report is printed on recycled paper



# WELL DECOMMISSIONING REPORT AND WORK PLAN FOR MONITORING WELL INSTALLATION

# FORMER CHEVRON STATION #9-1026 3701 BROADWAY OAKLAND, CALIFORNIA

Bran

**Charlotte Evans** 



Bude A With

Brandon Wilken PG #7564

Prepared by: Conestoga-Rovers & Associates

5900 Hollis Street, Suite A Emeryville, California U.S.A. 94608

Office: (510) 420-0700 Fax: (510) 420-9170

web: http://www.CRAworld.com

MAY 1, 2009 REF. NO. 311959 (2) This report is printed on recycled paper

# TABLE OF CONTENTS

1.0	INTRODUCTION	.1
2.0	SITE DESCRIPTION	.2 .2
3.0	WELL DESTRUCTIONS	.3
4.0	HYDROCARBON DISTRIBUTION IN GROUNDWATER	.4
5.0	EVALUATION OF DRAINAGE CULVERT POTENTIAL PATHWAY	.6
6.0	PROPOSED MONITORING WELL INSTALLATION	.8
7.0	PROPOSED SCOPE OF WORK	.9
8.0	SCHEDULE	11

# LIST OF FIGURES (Following Text)

- FIGURE 1 SITE VICINITY MAP
- FIGURE 2 SITE PLAN
- FIGURE 3 TPHg ISOCONCENTRATIONS IN GROUNDWATER
- FIGURE 4 BENZENE ISOCONCENTRATIONS IN GROUNDWATER
- FIGURE 5 SITE PLAN WITH EXCAVATION LIMITS AND BORINGS
- FIGURE 6 SITE PLAN WITH PROPOSED MONITORING WELL LOCATIONS

#### LIST OF TABLES (Following Text)

TABLE 1MONITORING WELL CONSTRUCTION DETAILS

# LIST OF ATTACHMENTS

- ATTACHMENT A ACEH LETTER DATED JANUARY 21, 2009
- ATTACHMENT B SUMMARY OF PREVIOUS ENVIRONMENTAL WORK
- ATTACHMENT C ALAMEDA COUNTY PUBLIC WORKS WELL DESTRUCTION PERMITS
- ATTACHMENT D 2009 ANNUAL GROUNDWATER MONITORING REPORT
- ATTACHMENT E TREND GRAPHS
- ATTACHMENT F STANDARD FIELD PROCEDURES FOR MONITORING WELL INSTALLATION

### 1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) is submitting this *Well Decommissioning Report and Work Plan for Monitoring Well Installation* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. In a letter dated January 21, 2009, Alameda County Environmental Health (ACEH) requested details related to the destruction of onsite monitoring wells that were removed prior to the remedial/redevelopment excavation and the installation of new groundwater monitoring wells onsite and immediately downgradient of the site (Appendix A). A summary of site conditions, details of the well destructions, and the proposed monitoring well installations are presented below.

#### 2.0 SITE DESCRIPTION

The site is a former Chevron gasoline service station located on the northern corner of the intersection of Broadway and MacArthur Boulevard in Oakland, California (Figures 1 and 2). Based on aerial photographs and Sanborn Fire Insurance Maps, the site appears to have been an active gas station prior to 1939. In 1988, the station was closed and all structures removed. The site was used for parking until 2006. In 2007, Kaiser Permanente began construction of a medical office building that occupies part of the site. Surrounding land use is primarily commercial, retail and residential. Mosswood Public Park is located across MacArthur Boulevard from the site. A summary of previous environmental work at the site is presented as Appendix B.

# 2.1 <u>SITE GEOLOGY AND HYDROGEOLOGY</u>

The site is located in the East Bay Plain on the eastern flank of the San Francisco Basin, a broad Franciscan Complex depression. The East Bay Plain is characterized by broad westward slopping alluvial fan deposits of Holocene to Pleistocene age. Franciscan Formation bedrock underlies the alluvial deposits at depth (150 to 180 feet below grade (fbg)). The site is underlain mostly by clay interbedded with silt, clayey and silty sand and occasional gravel to 37 fbg, the total depth explored.

The site is located within the Oakland subarea of the East Bay Plain groundwater basin. The site is approximately 73 feet above mean sea level and surrounding topography is relatively flat. Depth to groundwater at the site has historically ranged between 8 and 19 fbg. Groundwater flow direction is typically to the southwest at a gradient from 0.006 to 0.05. The nearest surface water is Lake Merritt, which is located more than a mile south of the site. A 69-inch reinforced concrete storm drain is located approximately 60 feet west of the site.

### 3.0 WELL DESTRUCTIONS

The January 21, 2009 ACEH letter indicated that there was no report documenting onsite well decommissioning. Cambria Environmental Technology, Inc. (Cambria) previously reported the well decommissioning in the January 22, 2007 *Site Investigation and Remedial Excavation Report*. A summary of the well decommissioning is presented below.

Onsite monitoring wells A, B, B-1 through B-4 were decommissioned on June 26, 2006 under Alameda County Public Works Agency permits W2006-0549 to W2006-0554 (Appendix C) (Figure 2). CRA contracted Gregg Drilling & Testing of Martinez, California, C-57 #485165, to decommission the monitoring wells. All field work was directed by Cambria geologists and supervised by California Professional Geologist Robert Foss (P.G. #7445). The well casings were tremie grouted with Portland Type I/II cement and pressurized with 25 pounds per square inch of pressure for a minimum of five minutes to allow grout to fill the filter pack. All well locations were subsequently excavated to approximately 20 fbg during site redevelopment. Well materials, including conductor casing associated with well B, and groundwater generated during grouting were off-hauled along with material generated during the excavation.

# 4.0 HYDROCARBON DISTRIBUTION IN GROUNDWATER

All onsite wells were last monitored on March 31, 2006 and groundwater analytical data from that quarter is presented below. All eight onsite wells were subsequently destroyed prior to site excavation in 2006. Isoconcentration maps of total petroleum hydrocarbons as gasoline (TPHg) and benzene from the March 31, 2006 sampling event are included on Figures 3 and 4, respectively. No post-remedial excavation groundwater data has been collected. The Annual 2009 Groundwater Monitoring and Sampling Report from Gettler-Ryan is included as Appendix D. Trend graphs for the former onsite wells are included as Appendix E.

On March 31, 2006, 0.02 feet of light non-aqueous phase liquid (LNAPL) was detected in onsite well B. LNAPL thickness in this well had decreased and was stable prior to excavation, but had historically ranged from a sheen to 6.53 feet. LNAPL had also been detected in well B-2, with the last LNAPL detection in June 2002. LNAPL was observed in well B-3, with the last detection in August 2000.

The dissolved hydrocarbon plume prior to the remedial excavation was centered around former wells B, B-2 and B-3, which is consistent with the reported 1977 fuel dispenser leak that is the presumed source of hydrocarbons released to the subsurface. On March 31, 2006, TPHg and benzene were detected at maximum concentrations of 130,000 micrograms per liter ( $\mu$ g/L) and 24,000  $\mu$ g/L in well B-3, respectively. TPHg concentrations in B-3 fluctuated historically but stabilized by 2006. TPHg concentrations in B-2 peaked in 1993 and subsequently decreased by an order of magnitude by 2006. Well B-1 was located downgradient of the former USTs. TPHg and benzene concentrations in B-1 peaked in 1991 and decreased 2-3 orders of magnitude by 2006.

On March 31, 2006, TPHg and benzene were detected in upgradient well B-4 at  $9,200 \mu g/L$  and  $2,100 \mu g/L$ , respectively. Hydrocarbon concentrations in well B-4 increased and peaked in 1996 then decreased until the well was destroyed in 2006. The location of former well B-4 is upgradient and roughly 75 feet from the center of the dissolved hydrocarbon plume. Well B-4 is near the former Rainbow Car Wash fuel USTs (Figure 2), an open environmental case with ACEH (RO No. 0205). No TPHg or benzene was detected in upgradient well A.

The offsite wells E and F had been paved over by 2006 and were not sampled during the last 2006 sampling event. The wells have been repaired and are currently sampled annually. No hydrocarbons were detected in well EA-1.

In 2006, the dissolved hydrocarbon plume was centered over the southern portion of the site, near the former dispenser islands. The plume was defined by downgradient wells E, F, and EA-1, crossgradient wells B-1 and EA-2, and upgradient wells A and B-4.

On March 3, 2009, the annual monitoring and sampling event took place. Due to nearby construction, well EA-1 was inaccessible and was not sampled. No hydrocarbons were detected in wells E, F, and EA-1. The plume is still delineated in the downgradient direction by the remaining wells.

### 5.0 EVALUATION OF DRAINAGE CULVERT POTENTIAL PATHWAY

A 69-inch reinforced concrete culvert is located west of the site. As indicated on City of Oakland utility maps, the culvert runs parallel to Broadway north of the former Chevron site, then bends westward underneath the Westwind Lodge and passes beneath Mosswood Park south of the site (Figure 2). Runoff in the culvert flows from north to south. Based on City of Oakland utility maps and field observations, the top of the culvert is approximately 10 fbg and the bottom of the culvert is approximately 16 fbg. During the last onsite quarterly monitoring and sampling event on March 31, 2006, onsite depth to groundwater was approximately 12 fbg. At that time, groundwater was potentially in contact with the culvert near the site.

There is no indication of the culvert acting as a conduit for offsite migration of hydrocarbons down-gradient of the former Chevron site. TPHg and benzene concentrations in downgradient offsite wells E, F, and EA-1 are consistently near or below laboratory detection limits. Therefore, there is no apparent hydrocarbon mass present to enter the Culvert down-gradient of these wells.

ACEH references soil data from SECOR boring SB-37 advanced approximately 15 feet from the culvert and near the former Chevron used-oil UST (Figure 5). Soil from boring SB-37 contained 1,200 mg/kg total petroleum hydrocarbons as diesel (TPHd) and 7,900 mg/kg TPHg at 10 fbg. CRA believes this boring indicates localized hydrocarbon impact to soil from the former used oil tank, but does not indicate hydrocarbon migration from the site toward the culvert. Cambria soil boring SWW-5, approximately 5 feet from the drainage culvert had no hydrocarbon detections at 10 fbg and 1,700 mg/kg TPHg at 15 fbg. To assess whether these hydrocarbons could migrate to the culvert, CRA recommends installing a temporary well closer to the culvert to collect analytic and potentiometric data. This boring is discussed in the work plan section below.

In March 1984, the United States Environmental Protection Agency (EPA) notified several gasoline retailers that fuel was entering Lake Merritt through the Glen Echo Creek storm drain (the culvert). No LNAPL was present in any Chevron monitoring wells at that time. Chevron conducted gas chromatography fingerprinting of samples from the storm drain, onsite wells, and dispensers from the Chevron site and the Rainbow Carwash located directly upgradient of the Chevron site. The results indicated that the fuel in the storm drain had not originated from the Chevron site. Chevron sent the EPA a letter stating that they were not responsible for the impacts to the Glen Echo Creek storm drain. This information was referenced in the July 1, 1991 *Well Deepening* 

*Work Plan* by Burlington Environmental, Inc. and the December 20, 1994 *Comprehensive Site Evaluation and Proposed Future Action Plan* by Weiss Associates.

The ACEH letter states that hydrocarbon odors were detected emanating from beneath the Westwind Lodge and Mosswood Park in 1977. The lack of aqueous-phase hydrocarbons in Chevron's three down-gradient wells (E, F and EA-1) indicate there is no residual hydrocarbon mass migrating through native soils that would result in impacts sufficient to result in hydrocarbon odors in Mosswood Park further down-gradient. In addition, the soil data from the borings drilled for the remedial excavation are also not consistent with elevations likely to cause hydrocarbon odors at the Westwind Lodge. A simpler solution is that the LNAPL source from the March 1984 LNAPL release to Lake Merritt had a prior gasoline release to the culvert that resulted in hydrocarbon odors at both the Westwind Lodge and Mosswood Park in 1977.

CRA is also currently unaware of any potential preferential pathway between the site and the downgradient wells in MacArthur Boulevard. A utility map in SECOR's June 11, 2008 *Soil Management Implementation Report* identifies four underground utilities in MacArthur Boulevard, downgradient of the site. Typical installation depths of sanitary sewer, electric, water and storm sewer utilities range from 1.5 to 8 fbg in this region. Groundwater beneath the site is approximately 12 fbg and is rarely shallower than 10 fbg. Therefore, utilities in the northern sidewalk and westbound lane of MacArthur Boulevard do not appear to act as potential pathways for offsite migration of hydrocarbons.

#### 6.0 PROPOSED MONITORING WELL INSTALLATION

ACEH has requested installation of monitoring wells to evaluate the dissolved hydrocarbon plume onsite post remediation. All onsite wells were destroyed to facilitate development of the site by Kaiser Permanente. Former downgradient onsite wells B, B-1 and B-2 were located along the southern property boundary, adjacent to MacArthur Boulevard. New monitoring wells will be installed between the medical office building and the sidewalk of westbound MacArthur Boulevard (Figure 6). Finalized placement of the wells cannot be made at this time as the site is still under construction with final grading and landscaping to be completed. According to the developer, McCarthy, the project should be completed by the end of July 2009. We also recommend installing a temporary well near former boring SWW-5 to collect a groundwater sample to assess potential hydrocarbon mass flux to the culvert at this location.

ACEH has also requested additional downgradient plume delineation. There are three monitoring wells already in the median of MacArthur Boulevard (E, F, and EA-1) down-gradient of the former source area, none of which have had any significant hydrocarbon detections for the last 20 years. Based on historic groundwater flow directions, wells E, F and EA-1 are directly downgradient of the center of the hydrocarbon plume (Figures 3 and 4). Wells E and F were originally installed in 1982 with screen intervals of 5 to 20 fbg, the same as the former onsite wells. In 1992, due to insufficient groundwater, offsite wells E and F were deepened to their current screen intervals of 20 to 35 fbg and 15 to 30 fbg, respectively. Onsite well B-1 was also extended at this time for similar reasons. After the wells were deepened, groundwater rose to 12.20 fbg in well E and 14.85 fbg in well F, indicating the shallow water-bearing zone is under confined conditions. Although the screens are submerged, they are screened appropriately for the lithology and hydrogeologic conditions of the area. Well EA-1 was installed with a screen interval from 10 to 35 fbg and has had sufficient water for sampling. The three existing wells are appropriately placed to monitor the plume and therefore, we disagree with the need for additional down-gradient wells.

# 7.0 PROPOSED SCOPE OF WORK

To re-establish the former source area monitoring well network CRA proposes installing onsite monitoring wells B-8 through B-10 between the new medical office building and the sidewalk adjacent to westbound MacArthur Boulevard. We also propose a temporary well near the northern corner of the site (Figure 6). The final placement of the wells will be based on site and utility constraints. CRA will perform the following tasks:

*Site Health and Safety Plan:* CRA will prepare a site specific health and safety plan to protect site workers. The plan will be reviewed and signed by all site workers and visitors and kept onsite during all field activities.

*Permits and Access:* CRA will obtain the appropriate drill permits from Alameda County Public Works Agency prior to beginning field work. Access agreements will be attained with Kaiser Permanente to perform work onsite. CRA will notify ACEH if any significant delays in this process are anticipated.

*Underground Utility Location:* CRA will contact Underground Service Alert (USA) and hire a private utility locator to locate underground utilities near the proposed well locations.

*Well Installation:* Pre-pack wells with a 0.010-inch slotted screen from approximately 10 to 25 fbg will be installed onsite. The pre-packed wells will be installed in 1.5-inch direct push borings and the well casings will be 3/4-inch diameter. Screen depths may be adjusted depending on lithology and groundwater depth. The filter pack will consist of #2/12 sand from the bottom of the boring to approximately 2 feet above the screened interval. The well annulus will have a 2-foot bentonite seal above the screen and sand pack, with the remainder backfilled with neat Portland cement to approximately 1 foot below grade. A well box equipped with a traffic rated lid will be installed to grade. Well construction may be altered based upon field observations. Exact boring locations and final depths will be based on site and utility constraints. Well location and top-of-casing elevation will be surveyed by a licensed land surveyor. Well development will be completed at least two days after installation and groundwater sampling will be initiated on a quarterly basis for at least four quarters. CRA's Standard Field Procedures for Well Installation are presented as Appendix F.

*Soil and Grab Groundwater Sampling:* Soil samples will be collected for laboratory analysis at approximately 5-foot intervals, at obvious changes in soils, and where hydrocarbon staining or odors are observed, to the bottom of the boring. CRA geologists will log collected soils using the modified Unified Soil Classification System.

Soil will be field-screened using a photo-ionization detector (PID) and visual observations. All samples will be sealed, capped, labeled, logged on a chain-of-custody form, placed on ice and transported to a Chevron and State-approved laboratory for analysis.

*Chemical Analysis*: Soil samples will be analyzed for the following:

- TPHg by EPA Method 8015 modified; and
- Benzene, toluene, ethylbenzene, xylenes, fuel oxygenates and lead scavengers 1,2-dichloroethane (1,2-DCA) and 1,2-dibromoethane (EDB) by EPA Method 8260B.

*Soil and Water Disposal:* Soil cuttings generated will be placed in drums and labeled appropriately. These wastes will be transported to an appropriate Chevron approved disposal facility following receipt of analytical profile results.

*Reporting:* Following receipt of analytical results, CRA will prepare a monitoring well installation report that will include:

- A summary of the site background and history.
- Descriptions of the drilling and soil sampling methods.
- A figure illustrating the monitoring well locations.
- Boring logs and well construction details.
- Tabulated soil and groundwater analytical results.
- Analytical reports and chain-of-custody forms.
- Soil and water disposal methods.
- A discussion of the hydrocarbon distribution in soil and groundwater with respect to the former hydrocarbon source areas and the culvert, and
- Conclusions and recommendations.

### 8.0 <u>SCHEDULE</u>

CRA will proceed with the proposed scope of work upon receipt of written approval from ACEH. After approval, CRA will obtain the necessary drilling permits, access agreements, and schedule the subcontractors at their earliest availability. According to the developer, McCarthy, the redevelopment project should be completed by the end of July 2009. We will submit our investigation report approximately eight weeks after completion of field activities.

FIGURES





311959-2009(002)GN-WA001 APR 27/2009



I:\Chevron\3119--\311959 9-1026 Oakland\311959-FIGURES\311959\_EM001-1Q06-TPHG.DWG



I:\Chevron\3119--\311959 9-1026 Oakland\311959-FIGURES\311959\_EM001-1Q06-BENZ.DWG





311959-2009(002)GN-WA002 APR 28/2009

TABLES

#### TABLE 1

#### MONITORING WELL CONSTRUCTION DETAILS FORMER CHEVRON STATION 3701 BROADWAY, OAKLAND, CALIFORNIA

Well ID	Date Installed	Date Destroyed	Well Modifications	Well Casing Diameter (inches)	Screen Interval (fbg)	TOC (ft-msl)	Current Condition/ Condition Prior to Destruction	
Onsite Wells								
А	04/23/82	06/26/06		2	5 - 20	75.29	Good	Screened interval based on cro
В	04/23/82	06/26/06	Reconstructed 6/25/1991: Installed casing within existing steel conductor casing. Previously screened 5 - 20 fbg	4	15 - 35	73.39	Submerged	The first page of the reconstru-
С	04/23/82	NA		2	5 - 20	NA	NA	No boring log available
D	NA	NA		NA	NA	NA	NA	No mention of this well in any
B-1	03/25/82	06/26/06	Originally screened 5 - 20 fbg, deepened in 1992	4	15 - 35	72.3	Good	Well modifications reported ir sampled and logged during w
B-2	03/25/82	06/26/06		2	5 - 20	74.5	Good	Screened interval based on EA
B-3	03/25/82	06/26/06		2	5 - 20	74.13	Good	Screened interval based on EA
B-4	03/25/82	06/26/06		2	5 - 20	76.43	Good	
B-5	1979	NA		8	NA - 20	NA	NA	No boring logs available. 1993 place, no date provided. Cons 20 fbg, according to Chevron r
B-6	1979	06/25/91		8	NA - 20	72.66	NA	No boring logs available. 1993 place, no date provided. Cons 20 fbg, according to Chevron r
B-7	1979	06/25/91		8	NA - 20	75.4	NA	place, no date provided. Cons 20 fbg, according to Chevron r
Offsite Wells								
Е	04/23/82		Deepened in 1992, originally screened from 5 - 20 fbg	2	20 - 35	70.07	Submerged	No soil logged during well de
F	04/23/82		Deepened in 1992, originally screened from 5 - 20 fbg	2	15 - 30	71.72	Submerged	No soil logged during well de
EA-1	04/11/88			4	10 - 35	71.85	Good	
EA-2	04/12/88			4	10 - 30	76.24	Good	

Notes:

TOC = Top of casing Fbg = Feet below grade Ft-msl = Feet above mean sea level -- = Not applicable NA = Not available

#### Notes

# oss-section from EA, report not availa

acted well boring log is missing.

of the reports reviewed

n Jan 19, 1993 GTI report. Soils rell deepening.

cross section.

cross section.

3 GTI reports B-5 was grouted in structed of corrugated steel casing to records.

3 GTI reports B-5 was grouted in structed of corrugated steel casing to records.

3 GTI reports B-5 was grouted in structed of corrugated steel casing to records.

epening according to the report.

epening according to the report.

APPENDIX A

ACEH LETTER DATED JANUARY 21, 2009

#### ALAMEDA COUNTY HEALTH CARE SERVICES



DAVID J KEARS, Agency Director

AGENCY

JAN 29 2009

ENVIRONMENTAL HEALTH SERVICES ENVIRONMENTAL PROTECTION 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6700 FAX (510) 337-9335

January 21, 2009

Mr Aaron Costa Chevron Environmental Management PO Box 6012 6111 Bollinger Canyon Rd, Rm 3660 San Ramon, CA 94583-2324 Mr Gary Bankhead Kaiser Foundation Hospitals 100 San Leandro Blvd San Leandro, CA 94577 Heitzinger Associates PO Box 1613 Pebble Beach, CA 93953 Pasadena, CA 91188

Subject Fuel Leak Case No RO0000500 (Global ID # T0600100334), Chevron #9-1026, 3701 Broadway, Oakland CA 94611

Dear Mr Costa, Mr Havel and Heitzinger Associates

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site and the documents entitled, "Site Investigation and Remedial Excavation Report" dated January 22, 2007 and received January 29, 2007 and prepared by Conestoga Rovers Associates (CRA) Results from the site investigation detected high concentrations of TPHg and benzene in soil at a depth of 20 feet bgs, which is below the maximum depth of excavation, at concentrations of up to 11,000 parts per million (ppm) TPHg, 31 ppm benzene, 320 mg/kg toluene, 100 mg/kg ethylbenzene and 600 mg/kg xylenes Furthermore, ACEH requised the collection of grab groundwater samples from selected soil boring to assess the impact to groundwater beneath the site, however, no grab groundwater samples were collected

Additional soil borings were installed around the perimeter of the site, in-place of excavation confirmation samples, to determine the extent of contamination left in place onsite Results from the soil sampling also detected high levels of residual hydrocarbon contamination up to 1,700 mg/kg TPHg and 4 mg/kg benzene Confirmation soil samples were also collected from the bottom of the excavation, and high levels of petroleum hydrocarbon contamination up to 1,300 mg/kg TPHg and 1.3 mg/kg benzene (reported units of concentration for benzene are incorrect) at 20 feet bgs

Based on ACEH staff review of the case file, we request that you address the following technical comments and send us the reports described below Please provide 72-hour advance written notification to this office (e-mail preferred to mailto steven plunkett@acgov org) prior to the start of field activities

#### **TECHNICAL COMMENT**

1 Soil and Groundwater Investigation CRA installed 19 soil borings to a maximum depth of 23 feet bgs to determine the vertical extent of contamination Results from the investigation detected residual contamination in soil at concentrations of up to 8,600 mg/kg TPHg and 9.5 mg/kg benzene (20' bgs). In place of excavation sidewall samples, 17 soil borings were advanced around the perimeter of the excavations, and soil samples collected from the perimeter "sidewalls" detected high levels of hydrocarbon contamination up to 1,700 mg/kg TPHg and 4.9 mg/kg benzene. Additionally, confirmation soil samples collected from the excavation bottom detected high levels of up to 1,300 mg/kg TPHg and 9.7 mg/kg benzene at 19 feet bgs, which is below the total depth of the excavation. Significantly elevated petroleum hydrocarbon contamination remains in place in the excavations sidewalls and bottom, below the maximum depth of excavation (19 feet bgs). We are concerned

that the residual soil contamination left in place below the limit of excavation (19 feet bgs) does not meet the clean up levels consistent with current land use. Therefore, we request that you evaluate whether additional remediation work may be necessary to achieve case closure. Please present the results of your evaluation in the risk assessment report requested below.

During our review of the "Site Investigation and Remedial Excavation Report" ACEH identified several inconsistencies in the report including

- Site Investigation and Remediation Report Section 3.2 states, "Cambria advanced 22 soil borings (CSB-1 through CSB-22) Table 1 presents analytical data for only 19 soil borings, no data presented for soil borings CSB-2, CSB-15 and CSB-21,
- Boring logs were completed for 18 soil borings, excluding soil borings CSB-1, CSB-2, CSB-15 and CSB-21,
- Figure 4 shows soil analytical data for 18 soil borings, excluding soil borings CSB-1, CSB-2, CSB-15 and CSB-21,
- Figure 5 which shows "sidewall" soil boring locations and contamination concentrations omitted soil analytical data for sample SWW-4,
- Figure 6 list benzene concentrations for bottom soil samples EX-8-20, EX-9-20 and EX-10-20 in units of mg/kg, however, laboratory analytical data for benzene are presented in units of µg/kg and have not been converted correctly

Please review and correct all tables and figures to accurately reflect soil analytical data and submit the updated tables and figures in the addendum to the Site Investigation and Remedial Excavation Report requested below

2 Soil Excavation and Removal The west end of the former Chevron gas station was excavated to a depth of 19 feet bgs and approximately 2,800 yd<sup>3</sup> of soil was removed and disposed at an offsite landfill Soil samples collected during excavation confirmation sampling detected residual contamination above cleanup levels consistent with future land at a depth of 20 feet bgs Table 1 below identifies locations where residual contamination above clean up levels remains in place

Table Tool dample coolion Above coco								
Sample Date	Sample ID/Depth (feet bgs)	TPHg mg/kg	Benzene mg/kg					
6/23/2006	CSB-1-22	37	0 41					
6/23/2006	CSB-4-23	510	0 33					
6/23/2006	CSB-8-20	8,600	95					
6/23/2006	CSB-8-21 5	28	0 61					
6/23/2006	CSB-9-22	420	<0 063					
6/23/2006	CSB-22-15	28	0 61					
6/23/2006	CSB-22-20	290	0 28					
6/21/2006	SWW-1-15	530	<0 063					
6/21/2006	SWW-1-20	140	<0 063					
6/23/2006	SWW-5-15	1700	<0 063					
6/21/2006	SWS-1-15	260	0 28					
6/21/2006	SWS-3-15	91	0 13					
6/24/2006	SWS-4-15	1,400	4 0					
6/24/2006	SWS-5-15	1 100	<0 063					
6/28/2006	SWE-1-20	290	<0 063					
6/28/2006	SWE-2-15	160	<0 062					
6/28/2006	SWE-2-20	1,500	0 075					
6/28/2006	SWE-3-20	790	49					
6/22/2006	SWE-4-16	720	0 58					
6/28/2006	SWE-5-20	940	0 051					
9/5/2006	EX-2-19	1,300	97					
9/6/2006	EX-3-19	160	0 18					
9/7/2006	EX-7-20	250	0 17					
9/8/2006	EX-8-18	900	<0 003					
9/9/2006	EX-8-20	970	1,300*					
9/11/2006	EX-9-20	850	430*					

Table 1 Soul Sample Location Above ESLs

9/11/2006	EX-10-20	140	100*			
ESL for residential/commercial land use where groundwater is a potential drinking water source						
Soil>10 feet	-					
TPHg=83 mg/kg						
Benzene=0 044 mg/kg						
* Units for benzene are re	eported incorrectly					

Moreover, Secor collected 40 excavation confirmation soil samples from the bottom of the excavation at 15 feet bgs, after the removal of approximately 5,000 yd<sup>3</sup> of soil from the east area of the former Chevron site Residual pollution remains in place at elevated concentrations of up to 3,600 mg/kg TPHg, 830 mg/kg TPHd and 6 3 mg/kg benzene

In summary, a total of 71 soil borings were installed during previous investigations by both CRA and Secor In addition, elevated levels of residual contamination remain in soil at concentrations of up to 11,000 ppm TPHg and 31 ppm benzene (below the maximum depth of the excavation at 20 feet bgs) Soil analytical data confirm that 36 soil boring locations did not meet clean up levels consistent with future land use Therefore, we request that you prepare data tables and figures showing pre-excavation and post excavation soil data, using soil analytical data from both CRA and Secor Please submit the tables and figures in the risk assessment report requested below

3 Dissolved Contaminant Plume Monitoring All onsite groundwater monitoring wells were decommissioned prior to soil excavation. Before the well decommissioning, groundwater samples were collected from onsite wells B and B-2. Results from the groundwater sampling detected high concentrations of up to 350,000 µg/L. TPHg and 26,000 µg/L benzene. However, this data was not included in the report text, tables-or figures. In future reports, we request that you present all soil and groundwater analytical data collected from your site. In addition, wells B and B-2 have historically reported the presence of separate phase hydrocarbon contamination, while down gradient wells have not detected dissolved phase contamination above laboratory reporting limits which may indicate that the down gradient wells do not encounter the dissolved plume.

Since site redevelopment is nearly complete, ACEH requires you to submit a work plan for the installation of groundwater monitoring wells to evaluate the dissolved phase hydrocarbon plume(s) onsite and downgradient of the former Chevron service station. The monitoring well network in its current configuration is inadequate to evaluate groundwater conditions immediately downgradient of your site. Please submit the work plan for offsite dissolved plume characterization and well installation according to the schedule below.

- 4 Well Decommissioning In a correspondence from ACEH dated June 13, 2006 we requested that you submit a well decommissioning report and discuss the extent of the dissolved phase contaminant plume. To date, we have not received the previously requested report. As a result, reports for your site are late. This is not an extension of the due date for the submission of the previously requested report. We request that you submit the well decommissioning report, including a detailed discussion of the extent of the dissolved contaminant plume(s) by the date specified below expect.
- 5 Risk Assessment and Site Risk Management Plan High concentrations of residual pollution remain in soil throughout the site above residential ESLs at maximum concentrations of up to 11,000 mg/kg TPHg (SB-26-20 5' bgs) 32 ppm napthalene, 320 mg/kg toluene, 100 mg/kg ethylbenzene and 600 mg/kg xylenes (SB-20-18 5' bgs) Furthermore, some confusion exists regarding the use of ESLs, Chevron is using ESLs for a commercial setting where groundwater is not a potential drinking water source, while Secor is using ESLs for a residential setting Since the proposed site redevelopment includes a medical office, the more conservative residential ESLs, which are appropriate for the groundwater designation consistent with the Basin Plan and as previously required should be used In addition, a risk assessment and site management plan are necessary to assess the potential exposure pathways (including an evaluation of the below grade medical office) and evaluate the potential threat to human health and the environment from the residual pollution that will be left in

place in both soil and groundwater Please prepare a risk assessment (including as built construction drawings, pre and post excavation data tables and figures and residual mass calculations) and a site management plan according to the schedule outlined below

6 **Dissolved Plume Migration and Impacts to Adjacent Motel and Park** It appears that the unauthorized release from the former USTs has impacted groundwater beneath the adjacent hotel and park. In 1977 hydrocarbon odors were detected emanating from beneath the Westwind Lodge located adjacent to the former Chevron and in Mosswood Park located approximately 140 feet west of the former Chevron Soil samples collected from soil boring SB-37 (approximately 15 feet from a 69 inch drainage culvert that traverses beneath Westwind Lodge and Mosswood Park) detected 7,900 mg/kg TPHg and 1,200 mg/kg TPHd Please evaluate if the culvert located adjacent to your site may be acting as a potential conduit for the offsite migration of the dissolved contaminant plume Present the results from your evaluation in the well decommissioning report requested below

#### TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention Mr Steven Plunkett), according to the following schedule

- February 15, 2009 Addendum to Site Investigation
- March 23, 2009 Risk Assessment and Site Management Plan
- May 1, 2009 Well Decommissioning Report and Work Plan for Monitoring Well Installation

These reports are being requested pursuant to California Health and Safety Code Section 25296 10 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request

#### ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions" Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format) Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic\_submittal/report\_rgmts.shtml

#### PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge " This letter must be signed by an officer or legally authorized representative of your company

Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case

#### PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835 1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification Please ensure all that all technical reports submitted for this fuel leak case meet this requirement

#### UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup

#### AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions California Health and Safety Code, Section 25299 76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation

If you have any questions, please call me at (510) 383-1767 or send me an electronic mail message at steven plunkett@acgov.org

Sincerely,

Steven Plunkett Hazardous Materials Specialist

cc Charlotte Evans CRA 5900 Hollis Street, Suite A Emeryville, CA 94608

> Greg Hoehn Stantec 57 Lafayette Cırcle, 2<sup>nd</sup> Floor Lamarette, CA 94549

Leroy Griffin Oakland Fire Department 250 Frank H Ogawa Plaza, Ste 3341 Oakland, CA 94612-2032 (sent via electronic mail to <u>Igriffin@oaklandnet.com</u>)

Donna L Drogos, PE

Donna Drogos, Steven Plunkett, File

1 | APPENDIX B

SUMMARY OF PREVIOUS ENVIRONMENTAL WORK

# SUMMARY OF PREVIOUS ENVIRONMENTAL WORK

A total of 14 groundwater monitoring wells have been installed to date. Currently there are only four active monitoring wells associated with the site (monitoring wells E, F, EA-1 and EA-2). In June 1991, wells B-6 and B-7 were destroyed, and well B was reconstructed. Wells E, F, and B-1 were reconstructed in October 1992. There is no information regarding wells B-5 and C and it is assumed they have been abandoned or destroyed. In order to facilitate excavation activities, all onsite wells were destroyed by pressure grouting in June 2006.

**1977** *Fuel Release:* According to Chevron records, a fuel filter rusted at the eastern pump island resulting in a subsurface release of gasoline.

**1982** *Well Installation:* In March 1982, K.H. Kleinfelder & Associates (Kleinfelder) installed onsite monitoring wells B-1 through B-4 to a total depth of 20 feet below grade (fbg). Groundwater was encountered at depths ranging from 17 to 19 fbg, but rose to within 10 to 12 fbg in the monitoring wells. The report concludes that confined aquifer conditions existed at the site. More information available in Kleinfelder's April 6, 1982 *Groundwater Monitoring Well Installation Report.* 

**1982** Site Evaluation: IT Enviroscience (IT) prepared Progress Report #1 on April 28, 1982 that detailed a site inspection and operator interview conducted to evaluate the major factors relating to groundwater impact at the site. During the evaluation they encountered existing wells which IT designated as monitoring wells B-5 through B-7. According to the station manager, George Bowers, the wells were installed in approximately 1979 (no reports have been located documenting well installation, which is not unusual for this era). According to the April 1982, Progress Report # 1, monitoring wells B-1 through B-4 were installed in March 1982 by Kleinfelder and wells A through F were installed in April 1982 by IT. IT prepared a Progress Report #2 on May 18, 1982 that concluded gasoline impacted groundwater detected in onsite monitoring wells was associated with the Chevron service station. The report documents light non aqueous phase liquids (LNAPL) encountered in the monitoring wells with a thickness of 0.08 to 5.7 feet. No LNAPL was observed in monitoring well B-4. This report concluded that multiple leaks likely occurred onsite, but that offsite migration of hydrocarbons was unlikely due to low soil permeability. The report also concluded that utilities near the site were too shallow to act as potential preferential pathways. Additional information available in IT's April 28, 1982 Progress Report #1 and May 18, 1982 Progress Report #2.

**1984** *Gasoline Fingerprinting:* The United States Environmental Protection Agency notified several gasoline retailers that fuel was entering Lake Merritt through the Glen Echo Creek storm drain. Chevron conducted gas chromatography fingerprinting of samples from the storm drain, from the wells and dispensers on the Chevron site, and from Rainbow Carwash located directly

north (upgradient) of the site. The results indicated that the fuel in the storm drain was of different composition from the hydrocarbons detected beneath the Chevron site, but was consistent with hydrocarbons detected at the Rainbow Carwash site. This information was referenced in the July 1, 1991 *Well Deepening Work Plan* by Burlington Environmental, Inc. No report is available.

**1988** *Tank Removal:* Blaine Tech Services, Inc. (Blaine) removed the second generation underground storage tanks (USTs) from the site in April 1988. Holes were not observed in the fuel or used-oil USTs, but 1/8-inch of LNAPL was observed on groundwater in the gasoline/used-oil UST pit. Approximately 2,800 gallons of LNAPL and groundwater were removed from the excavation prior to collection of compliance soil samples. The excavation was extended to the north and east to remove visibly contaminated soil. A product recovery UST in the northeastern part of the site was damaged during removal causing a release of hydrocarbons into groundwater surface. Approximately 700 gallons of LNAPL and groundwater were removed from the excavation prior to collection of compliance samples. No hydrocarbons were detected in soil samples collected from the sidewalls of this excavation. No information is available regarding the amount of soil removed by overexcavation from the UST pits. Additional information is available in Blaine's June 13, 1988 *Cumulative Report*.

**1988 Well Installation:** In April 1988, E.A. Engineering installed offsite monitoring wells EA-1 and EA-2. This information is mentioned in Groundwater Technology, Inc. (GTI)'s January 19, 1993 *Environmental Assessment Report.* 

**1991** *Well Destructions:* Weiss Associates (Weiss) submitted a well destruction report on June 25, 1991 for monitor wells B-6 and B-7 (named wells 6 and 7 above). The wells were reportedly destroyed utilizing pressure grout technology. Monitoring well B was reconstructed during this time by installing a 4-inch PVC casing within the existing 12-inch corrugated steel pipe and was screened between 15 and 35 fbg. The previous well B was constructed to 20 fbg. Additional information available in a letter from Weiss dated June 25, 1991.

**1992** *Groundwater Assessment:* GTI prepared an Environmental Assessment Report on January 19, 1993 which concluded that groundwater samples from onsite well B-4 had the highest TPHg concentrations. The dissolved hydrocarbon plume appeared defined downgradient by wells F and EA-1, according to the report. Additional information available in GTI's January 19, 1993 *Environmental Assessment Report.* 

**2004** *Phase II Investigation:* Secor International Inc. (Secor) prepared a Phase II Environmental Site Assessment Report (Phase II ESA) for Kaiser Foundation Health Plan (Kaiser). Secor determined that hydrocarbons in soil were primarily located from approximately 10 to 20 fbg in
the vicinity of the former USTs and from approximately 2 to 20 fbg in the vicinity of the former fuel dispensers. Additional information available in SECOR's February 10, 2004 *Phase II Environmental Site Assessment Report*.

**2006** *Site Investigation and Excavation:* Kaiser Permanente (Kaiser) proposed redeveloping the site into a medical office building. In response, Cambria Environmental Technology, Inc. (Cambria) performed a subsurface investigation to profile the site for a remedial excavation. Onsite wells A, B, B-1 through B-4 were destroyed by pressuring grouting prior to the excavation. Cambria advanced 22 borings to a maximum depth of 23 fbg with a direct-push rig. Because the excavations were to be shored to protect adjacent roadways and other structures, additional borings were advanced outside the proposed excavation boundaries as an alternative to sidewall sampling during excavation. Additional information available in Cambria's January 24, 2007 *Site Investigation and Remedial Excavation Report* 

### **REMEDIATION HISTORY**

**1983 – 1995** *Groundwater Extraction:* LNAPL in wells was extracted from 1983 through 1987 by IT Enviroscience and Gettler-Ryan Inc. Over 200 gallons of LNAPL/water mixture were removed from the wells during this period. LNAPL removal resumed between June 1993 and March 1995, and an additional 32 gallons of LNAPL was removed from wells B, B-2 and B-3.

**1988** *Tank Removal:* All station and fueling facilities, including the USTs, were removed by Blaine Tech Services, Inc. Approximately 3,500 gallons of LNAPL and groundwater were removed from the excavation. No information is available regarding the amount of soil removed by overexcavation from the UST pits.

**1992** *SVE Pilot Test:* A soil vapor extraction (SVE) pilot test was performed at the site by Weiss. The data suggested that SVE would not be effective at this site based on a relatively high vacuum required to induce low flow rates. Additional information available in Weiss's April 7, 1992 Soil Vapor Extraction Test Report.

**2001** *LNAPL Removal:* Product skimmers were installed in wells B and B-2, and were maintained monthly by Gettler-Ryan until 2004. No report was issued to document removal of the skimmers or the amount of groundwater and hydrocarbons removed.

**2006** *Remedial Excavation:* Excavations by Chevron and Kaiser occurred at the site from 2006 to 2007, encompassing a 25-foot wide, 147-foot long and 20-foot deep strip along the southern property boundary. Approximately 2,800 cubic yards of hydrocarbon impacted soil were

removed from the excavation. The excavation was limited by proximity to the street and other adjacent structures. Confirmation soil samples were collected from ten locations along the bottom of the excavation from 18 to 20 fbg. As indicted above, the excavation was shored and no sidewall samples could be collected. However, soil borings were drilled proximal to the shoring to collect data on residual hydrocarbon concentrations outside the excavation. Additional information available in Cambria's January 24, 2007 *Site Investigation and Remedial Excavation Report*.

APPENDIX C

### ALAMEDA COUNTY PUBLIC WORKS WELL DESTRUCTION PERMITS

### Alameda County Public Works Agency - Water Resources Well Permit

	Payer Name : Cambria Environmental	Total Due:\$200.00Total Amount Paid:\$200.00Paid By: CHECKPAID IN FULL
Client:	** same as Property Owner **	
Property Owner:	Chevron Gas Station PO Box 6012, San Ramon, CA 94583	Phone:
Applicant:	Cambria Environmental - William DeBoer	Phone: 510-420-3369
Project Start Date:	05/03/2006	Completion Date:05/03/2006
Application Id:	1144957396003 2701 Broadway Avenue, Oakland, CA 94607	City of Project Site:Oakland
Application Approved Permits Issued:	on: 04/14/2006 By jamesy W2006-0281	Receipt Number: WR2006-0174 Permits Valid from 05/03/2006 to 05/03/2006
Public	399 Elmhurst Street Hayward, CA 94544-13 Telephone: (510)670-6633 Fax:(5	95 10)782-1939

#### **Works Requesting Permits:**

Borehole(s) for Investigation-Contamination Study - 10 Boreholes Driller: Vironex - Lic #: 705927 - Method: DP

Work Total: \$200.00

#### Specifications

Permit	Issued Dt	Expire Dt	#	Hole Diam	Max Depth
Number			Boreholes		
W2006-	04/14/2006	08/01/2006	10	3.00 in.	20.00 ft
0281					

#### **Specific Work Permit Conditions**

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact George Cashen for an inspection time at 510-670-6610 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

6. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX D

2009 ANNUAL GROUNDWATER MONITORING REPORT



TRANSMITTAL

March 31, 2009 G-R #385127

TO: Ms. Charlotte Evans Conestoga-Rovers & Associates 5900 Hollis Street, Suite A Emeryville, CA 94608 (VIA PDF)

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

### WE HAVE ENCLOSED THE FOLLOWING:

CC: Mr. Aaron Costa Chevron Environmental Management Company 6111 Bollinger Canyon Road Room 3660 San Ramon, California 94583 (VIA PDF)

RE: Chevron Service Station #9-1026 3701 Broadway Oakland, California RO 0000500

COPIES	DATED	DESCRIPTION
1	March 24, 2009	Groundwater Monitoring and Sampling Report Annual Event of March 3, 2009

### COMMENTS:

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

 Mr. Steven Plunkett, Alameda County Health Care Services, Dept. of Environmental Health, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577 (No Hard Copy-UPLOAD TO ALAMEDA CO.)
 Mr. W. Bruce Bercovich, Kay & Merkel, (address pending)

Enclosures

rans/9-1026-AC



Aaron Costa Project Manager Marketing Business Unit Chevron Environmental Management Company 6111 Bollinger Canyon Road San Ramon, CA 94583

Tel (925) 543-2961 Fax (925) 543-2324 acosta@chevron.com

March 31, 2009

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

Re: Chevron Service Station No. 9-1026 Address 3701 Broadway

I have reviewed the attached routine groundwater monitoring report dated \_\_\_\_\_\_March 31, 2009\_\_\_\_\_.

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 who 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,

Aaron Costa Project Manager

Attachment: Report

### WELL CONDITION STATUS SHEET

Client/Facility #: Site Address: City:	Chevror 3701 Bro Oakland	n #9-1026 Dadway I, CA				Job #         385127           Event Date:         3 - 3 - 3 - 3 - 9 - 9 - 9 - 9 - 9 - 9 -					
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	<b>Grout Seal</b> (Deficient) inches from TOC	<b>Casing</b> (Condition prevents tight cap seal)	REPLACE LOCK Y/N	REPLACE CAP Y / N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Yes / No
E	0.1C						>	N	N	8" Finge al 2	Nla
F	O.K								1	B'EULES/E	
EA-1	0.12	4					$\rightarrow$	2		12" Marcial	
EA-2		- In	ucc ess;	ble. Ba.	riced	1 do	ver.	$\forall$		morrison/2	V
Comments							<u> </u>				

Comments



March 24, 2009 G-R Job #385127

Mr. Aaron Costa Chevron Environmental Management Company 6111 Bollinger Canyon Road, Room 3660 San Ramon, CA 94583

#### RE: Annual Event of March 3, 2009 Groundwater Monitoring & Sampling Report Former Chevron Service Station #9-1026 3701 Broadway Oakland, California

Dear Mr. Costa:

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 Groundwater Elevation 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,

IONAL G Deanna L. Harding **Project Coordinator** No. 6882 Douglas J/Lee Senior Geologist, P.G. No. 6882 CALIF Figure 1: Groundwater Elevation Map Table 1: Groundwater Monitoring Data and Analytical Results Table 2:

Table 1:Groundwater Monitoring Data and Analytical ResultsTable 2:Separate Phase Hydrocarbon Thickness/Removal DataTable 3:Groundwater Analytical Results - Oxygenate CompoundsAttachments:Standard Operating Procedure - Groundwater Sampling<br/>Field Data Sheets



FILE NAME: P:\Enviro\Chevron\9-1026\Q09-9-1026.DWG | Layout Tab: Pot1

	Oakland, California											
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	CRA	R	-Tr			3. <i>60</i> 1176 10	
DATE	(ft.)	(msl)	(ft.)	(ft.)	(eallons)	(ng/L)	(ija/1)	fua/1 \	E (no/I )	A.	WIIBE	
10		ST6			18	· · · · · · · · · · · · · · · · · · ·	(F8 -)	(#5')	····· (#8/#/	(µg/L)	(#8/1-)	
E 11/19/02	70.07	67.07	12.00									
02/10/02	70.07	57.87	12.20			280	2.7	2.4	3.0	12		
05/19/93	70.07	60.10	9.97	1.55		<50	<0.5	<0.5	<0.5	<1.5		
06/10/93	70.07	59.09	10.98			<50	<0.5	<0.5	<0.5	<1.5	1000	
09/08/93	70.07	58.29**	11.80	0.03				10 <del>777</del> 0		2. <b></b> 2		
12/21/93	70.07	58.82	11.25			<50	<0.5	<0.5	<0.5	<0.5		
03/09/94	70.07	59.40	10.67			<50	<0.5	0.7	<0.5	0.7		
09/21/94	70.07	57.78	12.29			<50	2.5	<0.5	1.0	<0.5		
12/20/94	70.07	54.54	15.53			<50	0.5	<0.5	<0.5	<0.5		
03/28/95	70.07	61.62	8.45			<50	<0.5	<0.5	<0.5	<0.5		
06/22/95	70.07	59.50	10.57			<50	<0.5	<0.5	<0.5	<0.5		
09/21/95	70.07	58.48	11.59			<50	<0.5	<0.5	<0.5	<0.5		
03/22/96	70.07	61.05	9.02			<50	<0.5	<0.5	<0.5	<0.5	<5.0	
03/06/97	70.07	57.75	12.32			<50	<0.5	< 0.5	<0.5	<0.5	<5.0	
09/12/97	70.07					( <b>***</b> )						
04/02/98	70.07	61.64	8.43			<50	<0.5	<0.5	<0.5	<0.5	<2.5	
09/15/98	70.07		1									
03/09/99	70.07	60.65	9.42			<50	<0.5	<0.5	<0.5	<0.5	<25	
03/14/00	70.07	61.58	8.49			<50	<0.5	<0.5	<0.5	<0.5	<2.5	
08/28/00	70.07	MONITORED	SAMPLED A	NNUALLY						-0.5	-4.5	
03/22/01	70.07	60.45	9.62	0.00	0.00	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	
09/04/01	70.07	MONITORED	SAMPLED A	NNUALLY					-0.500	~0.500	~2.50	
03/18/02	70.07	60.57	9.50	0.00	0.00	<50	<0.50	<0.50	<0.50	<15	<2 5/~29	
09/23/02	70.07	MONITORED	SAMPLED A	NNUALLY	5.3 MAR				-0.50	-1.5	~2.5/~2	
03/25/03	70.07	60.08	9.99	0.00	0.00	<50	<0.50	<0.50	<0.50	<15	~ ~ 5	
09/23/03	70.07	MONITORED	SAMPLED A	NNUALLY				-0.50	~0.50	~1.5	~2.5	
03/17/04	70.07	INACCESSIB	LE - PAVED O	VER				7 <u>~~</u> 57		10-00		
09/16/04	70.07	MONITORED	SAMPLED A	NUALLY				252762	1555-A		<del></del>	
03/31/05	70.07	INACCESSIB	LE - PAVED O	VER	(260) 	- <b></b>						
09/26/05	70.07	MONITORED	SAMPLED AT	NUALLY							<del>11</del>	
03/31/06	70.07	INACCESSIB	LE - PAVED O	VFR					<b>1</b> . <b>1</b> . <b>1</b> .		<del></del> :	
07/19/06	70.07	MONITORED	SAMPLED AT	NUALIN		-		055233				
03/23/0712	70.07	59.96	10 11	0.00	0.00	<50	~0.5					
03/18/0812	70.07	59.94	10.13	0.00	0.00	<50	<0.5	~0.5	<0.5	<0.5	<0.5	
03/03/0912	70.07	59.52	10.55	0.00	0.00	<50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 < <b>0.5</b>	<0.5 <0.5	

					Oaklan	d, California					
W/FIT ID/	1120-1-1-4		The off the A	CIPTION	SPH	TPH-					
DATE	100"	GWE	DIW	SPH1	REMOVED	GRO	В	<b>.T</b>	E	X	MTBE
PADE	(1)	( <i>I</i> ASI)	(/4)	(JL)	(gations)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
F											
05/09/89	72.01	53.31	18.70			<500	<0.5	<0.5	0.6	1.0	
08/09/89	72.01	52.98	19.03								<u></u>
11/09/89	72.01	52.99	19.02	<del></del>				2 <b>44</b> 0			
02/08/90	72.01	53.31	18.70			<50	0.4	< 0.3	0.3	<0.6	
05/10/90	72.01	53.03	18.98			(					
08/09/90	72.01	53.06	18.95								
11/13/90	72.01	52.91	19.10								
03/27/91	72.01					64	<0.5	<0.5	<0.5	1.0	2042
06/19/91	72.01	53.06	18.95					( <b></b> )			
08/21/91	72.01	<52.07	>19.94								
11/08/91	72.01	<52.07	>19.94			( <b></b> )					
02/13/92	72.01	53.41	18.60			<50	< 0.5	<0.5	<0.5	<0.5	
05/01/92	72.01		Dry								
11/18/92	71.72	56.87	14.85			<50	<0.5	<0.5	<0.5	<0.5	
03/19/93	71.72	57.47	14.25			<50	<0.5	<0.5	<0.5	<15	3-18933 / <b></b>
06/10/93	71.72	57.80	13.92			<50	<0.5	<0.5	<0.5	<1.5	1
09/08/93	71.72	56.95**	14.80	0.04							
12/21/93	71.72	58.41	13.31			<50	<0.5	<0.5	<0.5	<0.5	5480) - <b></b>
03/09/94	71.72	58.73	12.99			<50	<0.5	<0.5	<0.5	<0.5	
09/21/94	71.72	55.42	16.30			<50	<0.5	<0.5	<0.5	<0.5	
12/20/94	71.72	59.15	12.57			<50	<0.5	<0.5	<0.5	<0.5	2015
03/28/95	71.72	62.77	8.95			<50	<0.5	<0.5	<0.5	<0.5	
06/22/95	71.72	57.95	13.77		225	<50	<0.5	<0.5	<0.5	<0.5	
09/21/95	71.72	58.27	13.45			<50	<0.5	<0.5	<0.5	<0.5	
03/22/96	71.72	60.56	11.16		1.000	<50	<0.5	<0.5	<0.5	<0.5	<5.0
03/06/97	71.72	60.34	11.38			<50	<0.5	<0.5	<0.5	<0.5	<5.0
09/12/97	71.72		19 <b>44</b> 1		-						-5:0
04/02/98	71.72	58.60	13.12			<50	<0.5	<0.5	<0.5	<0.5	<25
09/15/98	71.72		20 <del>10-</del> 2							-0.5	-2.0
03/09/99	71.72	58.05	13.67		( <b>144</b> )	<50	<0.5	<0 5	<0.5	<0.5	<25
03/14/00	71.72	58.37	13.35	(* <u>11</u> 1)		<50	<0.5	<0.5	<0.5	<0.5	<2.5
08/28/00	71.72	MONITORED	SAMPLED AN	NUALLY						-0.5	~4.5
03/22/01	71.72	60.25	11.47	0.00	0.00	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
09/04/01	71.72	MONITORED	SAMPLED AN	NUALLY	0.000					~0.500	~2.50
03/18/02	71.72	60.03	11.69	0.00	0.00	<50	<0.50	<0.50	<0.50	<1.5	<2.5/<29

·····					Oaklan	d, California					
					SPH	TPH-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	Т	E	x	MTBE
DATE	(ft.)	(msl)	(ft.)	(fl.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
F (cont)											
09/23/02	71.72	MONITOREI	)/SAMPLED A	NNUALLY			1000	223			
03/25/03	71.72	58.40	13.32	0.00	0.00	<50	<0.50	<0.50	<0.50	~1.5	
09/23/03	71.72	MONITORE	)/SAMPLED A	NNUALLY	0.00		-0.50	~0.50	~0.50	~1.5	<2.5
03/17/04	71.72	INACCESSIB	LE - PAVED	OVER			122	10220		50 <b></b>	
09/16/04	71.72	MONITORE	)/SAMPLED A	NNUALLY				125		80april 10	
03/31/05	71.72	INACCESSIB	LE - PAVED	OVER			Survey.			( <del></del> )	
09/26/05	71.72	MONITORE	SAMPLED A	NNUALLY						2 <b></b> 2	
03/31/06	71.72	INACCESSIB	IE - PAVED	WFR				100010		0.000	
07/19/06	71.72	MONITORE	)/SAMPLED A	NNIIALLY							
03/23/0712	16	16	12 60	0.00	0.00	~50		<0.5			
03/18/0812	16	16	12.00	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/03/0912	16	16	12.02	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
			12.71	0.00	0.00	-30	<0.5	<0.5	<0.5	<0.5	<0.5
EA-1											
05/09/89	73.94	59.38	14.56			<500	<0.5	< 0.5	< 0.5	<0.5	
08/09/89	73.94	57.85	16.09			<500	< 0.5	<0.5	<0.5	<0.5	243
11/09/89	73.94	58.10	15.84			<500	< 0.5	<0.5	<0.5	<0.5	
02/08/90	73.94	58.89	15.05			<50	< 0.3	<0.3	< 0.3	<0.6	
05/10/90	73.94	58.29	15.65			<50	1.0	0.3	<0.3	<0.6	
08/09/90	73.94	58.27	15.67			<50	< 0.3	< 0.3	< 0.3	<0.6	
11/13/90	73.94	57.62	16.32			<50	<0.4	< 0.3	< 0.3	<0.4	
03/27/91	73.94					<50	0.7	0.5	<0.5	<0.5	
04/05/91	73.94	59.91	14.03								
06/19/91	73.94	58.38	15.56			<50	<0.5	< 0.5	< 0.5	< 0.5	
08/21/91	73.94	57.95	15.99	100		<50	<0.4	< 0.3	< 0.3	<0.4	
11/08/91	73.94	57.81	16.13			<50	<0.5	<0.5	<0.5	< 0.5	
02/13/92	73.94	58.84	15.10			<50	<0.5	<0.5	<0.5	<0.5	
05/01/92	73.94	55.14	18.80			<50	2.7	<0.5	< 0.5	< 0.5	
11/18/92	71.85	55.88	15.97			<10	< 0.3	< 0.3	< 0.3	<0.5	
03/19/93	71.85	58.19	13.66			<50	<0.5	<0.5	<0.5	<1.5	
06/10/93	71.85	57.14	14.71			<50	<0.5	<0.5	<0.5	<1.5	
09/08/93	71.85	56.33**	15.58	0.08							
12/21/93	71.85	56.83	15.02			<50	<0.5	<0.5	<0.5	<0.5	
03/09/94	71.85	57.47	14.38			<50	<0.5	1.0	<0.5	<0.5	
09/21/94	71.85	55.73	16.12			<50	<0.5	<0.5	<0.5	<0.5	

					Oaklan	d, California					
					SPH	T <b>P</b> H-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	T	E	X	MTBE
DATE	(ft.)	(msl)	(fl.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
EA-1 (cont)											
12/20/94	71.85	57.80	14.05			<50	<0.5	<0.5	<0.5	<0.5	
03/28/95	71.85	59.80	12.05			<50	<0.5	<0.5	<0.5	<0.5	
06/22/95	71.85	57.50	14.35			<50	2.0	<0.5	<0.5	<0.5	
09/21/95	71.85	56.49	15.36			<50	<0.5	<0.5	<0.5	<0.5	
03/22/96	71.85	59.14	12.71			<50	<0.5	<0.5	<0.5	<0.5	<5.0
03/06/97	71.85	57.97	13.88			<50	2.8	<0.5	<0.5	0.8	<5.0
09/12/97	71.85									0.8	<5.0
04/02/98	71.85	59.16	12.69			<50	<0.5	<0.5	<0.5	<0.5	<25
09/15/98	71.85										-2.5
03/09/99	71.85	58.85	13.00			<50	<0.5	<0.5	<0.5	<0.5	~ 5
03/14/00	71.85	59.76	12.09			<50	<0.5	<0.5	<0.5	<0.5	6.65
08/28/00	71.85	MONITOREI	O/SAMPLED	ANNUALLY							0.05
03/22/01	71.85	58.55	13.30	0.00	0.00	<50.0	<0.500	<0.500	<0.500	<0.500	<2 50
09/04/01	71.85	MONITOREI	O/SAMPLED A	NNUALLY							~2.50
03/18/02	71.85	58.64	13.21	0.00	0.00	<50	<0.50	<0.50	<0.50	<15	<2 5/<29
09/23/02	71.85	MONITOREI	O/SAMPLED A	ANNUALLY			1999 - 1999 -				-2.57 -2
03/25/03	71.85	58.11	13.74	0.00	0.00	<50	<0.50	<0.50	<0.50	<15	<25
09/23/03	71.85	MONITOREI	SAMPLED A	NNUALLY					-0.50	-1.5	~2.5
03/17/0412	71.85	58.67	13.18	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	0.6
09/16/04	71.85	MONITOREI	O/SAMPLED A	NNUALLY						-0.5	0.0
03/31/0512	71.85	59.34	12.51	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/26/05	71.85	MONITOREI	O/SAMPLED A	NNUALLY							-0.5
03/31/0612	71.85	59.55	12.30	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/19/06	71.85	MONITOREI	O/SAMPLED A	NNUALLY							-0.5
03/23/0712	71.85	58.03	13.82	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/18/08 <sup>12</sup>	71.85	57.87	13.98	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/03/09 <sup>12</sup>	71.85	57.72	14.13	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
EA-2											
05/09/89	75.24	59.29	15.95			760	<0.5	<0.5	1.1	<0.5	
08/09/89	75.24	57.79	17.45			<500	<0.5	<0.5	<0.5	<0.5	
11/09/89	75.24	57.83	17.41		<del></del> .	<500	<0.5	1.0	<0.5	<0.5	
02/08/90	75.24	58.67	16.57			190	<0.3	<0.3	<0.3	<0.6	
05/10/90	75.24	58.12	17.12			<50	<0.3	<0.3	<0.3	<0.6	
										510	

					Oaklan	d, California					
					SPH	TPH-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	T	E	x	MTBE
DATE	(ft.)	(msl)	(ft.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
EA-2 (cont)											
08/09/90	75.24	58.04	17.20		<u></u>	120	<0.3	<03	<0.3	<0.6	
11/13/90	75.24	57.36	17.88			160	<0.5	1.0	<0.3	<0.0	
03/27/91	75.24					110	<0.5	<0.5	<0.5	<0.4	
04/05/91	75.24	59.70	15.54				-0.5	-0.5	-0.5	~0.5	
06/19/91	75.24	58.17	17.07			<50	<0.5	<0.5	<0.5	<0.5	1777)
08/21/91	75.24	57.78	17.46			70	0.8	1.4	<0.3	<0.3	
11/08/91	75.24	57.66	17.58			<50	<0.5	0.7	<0.5	<0.4	
02/13/92	75.24	58.55	16.69			<50	<0.5	<0.5	<0.5	<0.5	
05/01/92	75.24	59.08	16.16			340	<0.5	2.6	0.7	<0.5	
11/18/92	76.24	58.63	17.61			450	<0.5	2.0	<0.5	~0.5	
03/19/93	76.24	61.24	15.00		F.12.4	450	<0.5	3.3	<0.5 0.6	U.0	
06/10/93	76.24	60.16	16.08			250	<0.5	1.2	<0.5	<1.5	Cardan.
09/08/93	76.24	59.17	17.07			<50	<0.5	-0.5	<0.5	<1.5	
12/21/93	76.24	59.64	16.60		5560	170	<0.5	<0.5 1 2	<0.5	<1.5	
03/09/94	76.24	60.41	15.83			200	1.8	1.5	<0.5	<0.5	
09/21/94	76.24	58.64	17.60			<50	1.0	1.4	<0.5	<0.5	
12/20/94	76.24	60.71	15.53			950	31	<0.5 15	<0.5	<0.5	
03/28/95	76.24	62.96	13.28			71	20	15	1.7	<0.5	
06/22/95	76.24	60.62	15.62			300	<0.5	2.7	<0.5	<0.5	<del></del>
09/21/95	76.24	59.46	16.78			170	<0.5	5.7	<0.5	0.6	<del></del>
03/22/96	76.24	62.36	13.88	200		90	<0.5	<0.5	<0.5	<0.5	
03/06/97	76.24	61.18	15.06			50 <50	<0.5	<0.5	<0.5	<0.5	<5.0
09/12/97	76.24					~50	<0.5	<0.5	<0.5	<0.5	<5.0
04/02/98	76.24	62 51	13 73			2302	0.00	-0.5			
09/15/98	76.24					230	0.99	<0.5	<0.5	<0.5	<2.5
03/09/99	76.24	62.03	14.21			<50	-0.5				
03/14/00	76.24	62.93	13 31			<50	<0.5	<0.5	<0.5	<0.5	<2.5
08/28/00	76.24	MONITORE	VSAMPLED A			<30	~0.5	<0.5	<0.5	<0.5	<2.5
03/22/01	76.24	61 71	14 53	0.00	0.00		-0 500	<0.500			
09/04/01	76.24	MONITORE	VSAMPLED A	NNIMIN	0.00	<30.0	<0.500	<0.500	<0.500	<0.500	<2.50
03/18/02	76.24	61.84	14 40	0.00	0.00		0.54				9
09/23/02	76 74	MONITORE	SAMPLED A	NNUALLY	0.00	31	0.54	<0.50	<0.50	<1.5	<2.5/<2
03/25/03	76.24	61 18	15 06	0.00	0.00	<50	-0.50			يەر تەرىخى	
09/23/03	76 24	MONITORE	SAMPLED A	NNUALLY	0.00	~30	<0.50	<0.50	<0.50	<1.5	<2.5
03/17/0412	76.24	61.83	14.41	0.00	0.00						
	10.41	01.05	14.41	0.00	0.00	<30	<0.5	<0.5	<0.5	<0.5	0.7

					Oaklan	d, California	ñ				
					SPH	TPH-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	Т	E	X	MTBE
DATE	(JL)	(msl)	(ft.)	(ft.)	(gallons)	(pg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
EA-2 (cont)											
09/16/04	76.24	MONITORED/S/	AMPLED A	NNUALLY							
03/31/0512	76.24	62.53	13.71	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	-0.5
09/26/05	76.24	MONITORED/S/	AMPLED A	NNUALLY			-0.5		-0.5	~0.5	~0.5
03/31/0612	76.24	63.75	12.49	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	
07/19/06	76.24	MONITORED/S/	AMPLED A	NNUALLY			-0.5	-0.5	-0.5	<0.5	<0.5
03/23/0712	76.24	61.16	15.08	0.00	0.00	<50	<0.5	<0.5	-0.5	-0.5	
03/18/0812	76.24	61.08	15.16	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/03/09	76.24	INACCESSIBLE	5	-	-	-50	-0.5	-0.5	-0.5	-0.5	<0.5
	1047-07520		<b>.</b>				1.000	<del></del> .	0 <del>.00</del> 04		
Α											
05/09/89	75.28	61.36	13.92			11,000	260	<2.0	94	230	
08/09/89	75.28	59.66	15.62	1 <b>77</b>	1 <del></del> 1.	12,000	370	<1.5	100	240	
11/09/89	75.28	59.33	15.95			16,000	690	10	180	350	1000
02/08/90	75.28	60.55	14.73		122	14,000	600	7.0	120	270	
05/10/90	75.28	59.80	15.48		2.22	16,000	840	4.8	140	340	/==
08/09/90	75.28	59.62	15.66			17,000	510	40	170	280	
11/13/90	75.28	58.80	16.48			9000	570	3.1	86	170	
03/27/91	75.28			1994	( <del></del>	8000	660	<5.0	110	250	
04/05/91	75.28	62.06	13.22		3 <del>35</del>						
06/19/91	75.28	59.91	15.37	: <del>-:::</del>		8900	740	<3.0	120	280	
08/21/91	75.28	59.29	15.99			6800	620	23	85	200	
11/08/91	75.28	59.13	16.15			4000	640	<5.0	77	160	
02/13/92	75.28	60.70	14.58	2	1 <del></del>	8000	860	<5.0	120	390	
05/01/92	75.28	61.02	14.26			13,000	870	19	220	780	
11/18/92	75.29	58.91	16.38		2 <b>444</b>	12,000	1500	83	360	530	: <del></del>
03/19/93	75.29	63.13	12.16			14,000	820	6.1	180	420	
06/10/93	75.29	61.04	14.25	0.55	( <del></del>	9000	700	13	170	310	
09/08/93	75.29										1954
12/21/93	75.29				-						-
03/09/94	75.29	61.95	13.34		( <del>-11</del>	9600	860	21	200	390	
09/21/94	75.29	INACCESSIBLE		1.55	) <del></del>						
12/20/94	75.29	INACCESSIBLE									
03/28/95	75.29	INACCESSIBLE		17 a qui a q				<del></del>			1777
06/22/95	75.29	INACCESSIBLE			( <del>22)</del>						

				encerentee	Oaklan	id, California					
WELL ID/	TOC*	CWF	<b>NTW</b>	COUT	SPH	IPH-					
DATE	(ft)	(msli	(41)	51111 (#)	(adlone)	GRU (ue/L)	B		Ľ	X	MTBE
Level H	(+)	(744)		U+/	(gations)	(pg/L)	1µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
A (cont)											
09/21/95	75.29	INACCESSIB	LE			(				0 <b></b> 53	
03/22/96	75.29	INACCESSIB	LE								
09/25/96	75.29	INACCESSIB	LE	<del>(191</del> 1)		3		3 <b></b> 3			
03/06/97	75.29	INACCESSIB	LE			3 <b>22</b> 5	<u>- 11</u>		<u></u>		
09/12/97	75.29	60.73	14.56			2600	460	<10	70	11	67
04/02/98	75.29	66.54	8.75			1,700 <sup>2</sup>	130	1.7	44	42	<2.5
09/15/98	75.29					2 <b></b> 1		1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -			
03/09/99	75.29	INACCESSIB	LE								
03/14/00	75.29	INACCESSIB	LE								
08/28/00	75.29	MONITORED	SAMPLED A	NNUALLY		3 <b></b> 3					
03/22/01	75.29	INACCESSIB	LE							1000	0.00
09/04/01	75.29	MONITORED	SAMPLED A	NNUALLY					2555		
03/18/02	75.29	INACCESSIB	LE - DUE TO	TRAILER PA	RKED OVER W	ELL					
09/23/02	75.29	MONITORED	SAMPLED A	NNUALLY							
03/25/03	75.29	INACCESSIB	LE - DUE TO	TRAILER PA	RKED OVER W	FLL	<u>-11-11</u>	102	5		land a
09/23/03	75.29	MONITORED	SAMPLED A	NNUALLY				9 <u>.57</u> .	<del></del>		
03/17/04	75.29	INACCESSIB	LE - DUE TO	TRAILER PA	RKED OVER W	FU		8 <del>400</del>			
09/16/04	75.29	MONITORED	SAMPLED A	NNUALLY				10.05			
03/31/0512	75.29	66.74	8 55	0.00	0.00	<50	-0.5				
09/26/05	75.29	MONITORED	SAMPLED A	NNUALLY	0.00	<b>~50</b>	<0.5	<0.5	<0.5	<0.5	<0.5
03/31/0612	75.29	66.95	8 34	0.00	0.00	<50	-0.5	-0.5			
DESTROYED	- IULY 200	6	0.54	0.00	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	JOE1 200	0									
В											
05/09/89	73.39	59.58**	13.97	0.20			() <b></b>		( <del></del>	17475	
08/09/89	73.39	57.86**	15.69	0.20	5 <b></b> 2		(				
11/09/89	73.39	58.16**	15.29	0.08							
02/08/90	73.39	58.93	14.46		3 <del>55</del> 8		7 <b></b> (				
05/10/90	73.39	58.32	14.07	2 <del>8.0</del> 0		199					
08/09/90	73.39	58.27	15.12						1. <b></b> )a		
11/13/90	73.39	57.63	15.76						3 <b></b> 3		
04/05/91	73.39	60.01	13.38	0 <del></del> 5.	<del></del>				0		
06/19/91	73.39	58.25	15.14			26,000	7100	370	430	1000	
08/21/91	73.39	57.81	15.58	3 <b>44</b> 5		16,000	4900	270	390	640	
11/08/91	73.39	57.68	15.71			11,000	2400	48	280	160	2 <u>11</u> 7
02/13/92	73.39	58.73	14.66		3. <del></del> .9	6800	2400	60	220	140	

WELL ID         OPC*         GW         DY         SPH         RMOVEP         GRO         B         T         E         X         MTBE           DATE         (b)					~	Oakl	and, California					
WELL 10/ DATK         COC* (h)         CWE         DTW         SPHT         REMOVED         GRO         B         T         E         X         MTBE (hg71)         (hg71)         (hg71) <th< th=""><th></th><th></th><th></th><th></th><th></th><th>SPH</th><th>трн-</th><th></th><th></th><th></th><th></th><th></th></th<>						SPH	трн-					
DATE         (ft)         (ft)         (gg/L)	WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	B	Т	E	X	MTBE
Biconty         Same         Id.50         Sheen          Id.000         6000         180         370         460            05/01/92         73.39         57.79         15.60           28,000         200         150         920         4300 <t< th=""><th>DATE</th><th>(ft.)</th><th>(msl)</th><th>(ft.)</th><th>(ft.)</th><th>(gallons)</th><th>(µg/L)</th><th>(µg/L)</th><th>(µg/L)</th><th>(µg/L)</th><th>(µg/L)</th><th>(µg/L)</th></t<>	DATE	(ft.)	(msl)	(ft.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
93.01.92       73.39       58.89       14.50       Sheen        16.000       6000       180       370       460          11/18/92       73.39       60.12**       13.29       0.03         28.000       150       920       4300          06/10/93       73.39       59.11**       14.30       0.03	B (cont)											
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	05/01/92	73.39	58.89	14.50	Sheen		16,000	6000	180	370	460	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	11/18/92	73.39	57.79	15.60			28,000	2200	150	920	4300	
06/10/33       73.39       59.11**       14.30       0.03 <t< td=""><td>03/19/93</td><td>73.39</td><td>60.12**</td><td>13.29</td><td>0.03</td><td></td><td></td><td></td><td></td><td>720</td><td>4500</td><td>545</td></t<>	03/19/93	73.39	60.12**	13.29	0.03					720	4500	545
900893       73.39       58.2**       15.33       0.24   -	06/10/93	73.39	59.11**	14.30	0.03			22			2555 S	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/08/93	73.39	58.25**	15.33	0.24		2000 12 <b></b> 17					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	12/21/93	73.39	58.76**	14.73	0.12							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	03/09/94	73.39	59.35**	14.07	0.04					in the second		<del></del>
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/21/94	73.39	57.91**	15.50	$0.02^{1}$						-	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12/20/94	73.39	59.74**	13.75	0.12							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3/28/952	73.39					3 <b></b> 3		( <u></u> )			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	06/22/95	73.39	58.92**	14.56	0.11	1.000				0.00	8 c. 47 d.	10 10 10 10 10 10 10 10 10 10 10 10 10 1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	09/21/95	73.39	58.41**	15.88	1.12	2.000				2019A		
09/25/96       73.39       58.81**       15.76       1.47       1.500	03/22/96	73.39	61.19**	13.02	1.02	2.000				- 200 P		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	09/25/96	73.39	58.81**	15.76	1.47	1.500						75
09/12/97       73.39       59.32**       14.61       0.68       3.000	03/06/97	73.39	59.95**	14.30	1.08	2.000	···					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	09/12/97	73.39	59.32**	14.61	0.68	3.000			19750			
09/15/98       73.39       59.60**       14.87       1.35       5.000	04/02/98	73.39	61.04**	12.50	0.19	3.000						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/15/98	73.39	59.60**	14.87	1.35	5.000					÷	2250
09/29/99       73.39       58.56**       15.80       1.21       0.130	03/09/99	73.39	60.41**	13.41	0.54	0.132				5000	2000 	
03/14/00       73.39       61.70**       12.80       1.39       0.400	09/29/99	73.39	58.56**	15.80	1.21	0.130						
08/28/00       73.39       58.96**       15.29       1.07       0.26 <sup>5</sup> NOT SAMPLED DUE TO THE PRESENCE OF SPH	03/14/00	73.39	61.70**	12.80	1.39	0.400				<u></u> -		7227
03/22/01       73.39       60.52**       13.26       0.49       0.26 <sup>5</sup> NOT SAMPLED DUE TO THE PRESENCE OF SPH	08/28/00	73.39	58.96**	15.29	1.07	0.265	NOT SAMPLEI	DUE TO THE	PRESENCE OF	F SPH		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	03/22/01	73.39	60.52**	13.26	0.49	0.265	NOT SAMPLEI	DUE TO THE	PRESENCE OF	FSPH		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	06/25/01 <sup>7</sup>	73.39	58.95**	15.30	1.08	0.00			-			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	07/09/018	73.39	59.02**	15.15	0.97	0.265					122	
09/04/01 <sup>8</sup> 73.39       58.58**       15.46       0.81       0.00       NOT SAMPLED DUE TO THE PRESENCE OF SPH	08/06/01 <sup>8</sup>	73.39	58.86**	15.31	0.98	1.045	2 <b></b> 22					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/04/01 <sup>8</sup>	73.39	58.58**	15.46	0.81	0.00	NOT SAMPLEI	DUE TO THE	PRESENCE OF	F SPH		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10/08/018	73.39	58.33**	15.68	0.77	0.065	( <b>==</b> )		-			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	11/12/018	73.39	58.56**	15.45	0.78	1.505						-
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	12/26/01 <sup>8</sup>	73.39	60.87**	12.98	0.58	4.395						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	01/25/028	73.39	60.74**	12.71	0.08	0.135						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	02/05/028	73.39	60.30**	13.16	0.09	2.635						
$04/27/02^8$ 73.39 59.73 13.66 0.00 $0.26^{10}$	03/18/028	73.39	60.63**	12.79	0.04	2.035						
$05/20/02^8$ 73.39 59.61 13.78 0.00 $0.26^{10}$	04/27/02 <sup>8</sup>	73.39	59.73	13.66	0.00	0.26 <sup>10</sup>					77-47	
	05/20/028	73.39	59.61	13.78	0.00	0.26 <sup>10</sup>		1 <b></b>		1. <b></b> .		

P					Oakl	and, California					
					SPH	ТРН-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	T	E	X	MTBE
DATE	(ft.)	(msl)	(ft.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B (cont)											
06/17/02 <sup>8</sup>	73.39	59.28**	14.34	0.29	3.395						
07/01/028	73.39	59.05**	14.78	0.55	2.265						
08/19/02 <sup>8</sup>	73.39	58.75**	15.03	0.49	6.53 <sup>5</sup>						
09/23/02 <sup>8</sup>	73.39	58.61**	15.13	0.44	0.405	NOT SAMPLE	D DUE TO THE	PRESENCE OF	FSPH	54 X	
10/21/028	73.39	58.50**	15.21	0.40	0.335						<del></del>
11/26/028	73.39	58.51**	15.17	0.36	0.265						
12/26/02 <sup>8</sup>	73.39	60.50**	13.06	0.21	0.135				2007		
02/05/03 <sup>8</sup>	73.39	60.24**	13.33	0.22	0.075				2004 		
03/01/0311	73.39	60.18**	13.31	0.13	0.075						10.000
03/25/03	73.39	60.08**	13.41	0.13	0.035	NOT SAMPLE	D DUE TO THE	PRESENCE OF	FSPH		172222
04/21/03	73.39	60.27**	13.20	0.10	0.075						6.00
05/26/03	73.39	59.76**	13.70	0.09	0.075			103			
06/16/03	73.39	59.44**	14.04	0.11	0.075						
07/17/03	73.39	59.25**	14.36	0.27	0.13						
08/11/03	73.39	59.02**	14.61	0.30	0.13 <sup>5</sup>			100	200		
09/23/03	73.39	58.63**	14.96	0.25	0.595	NOT SAMPLE	D DUE TO THE	PRESENCE OF	F SPH		
10/13/03	73.39	58.54**	14.99	0.18	0.39						2 <b></b> - 2
11/24/03	73.39	58.64**	14.85	0.12	0.07			1993 1993 1994 1994 1994 1994 1994 1994	1.00		
12/15/03	73.39	59.10**	14.39	0.12	0.07		22.0	122			1.77
01/12/04	73.39	60.42**	13.06	0.11	0.13						
02/10/04	73.39	60.00**	13.46	0.09	0.01 <sup>5</sup>	500A			1.000		
03/17/0411	73.39	60.60**	12.85	0.08	0.015	NOT SAMPLE	D DUE TO THE	PRESENCE OF	F SPH		
04/09/0411	73.39	59.87**	13.54	0.02	1.51 <sup>5</sup>						
05/11/0411	73.39	59.80**	13.60	0.01	13						
06/21/0411	73.39	58.99**	14.46	0.07	0.03		20 <b></b> -1				
07/09/0411	73.39	58.83**	14.58	0.02	1.025						
08/10/0411	73.39	58.54**	14.87	0.02	0.515		17 <b>44</b> 8	<u></u>	1 <u>21</u> 2		
09/16/0411	73.39	58.56**	14.85	0.03	0.525	NOT SAMPLE	D DUE TO THE	PRESENCE OF	F SPH		1870 F.J.
10/12/0411	73.39	58.21**	15.28	0.13	0.035						
11/12/04	73.39	58.66**	14.75	0.02	0.52 <sup>5</sup>						
12/08/04	73.39	58.73**	14.68	0.02	0.53 <sup>5</sup>						
01/25/05	73.39	59.16**	14.25	0.02	0.535		8 <b></b> 1				2227
02/11/05	73.39	59.11**	14.30	0.02	0.525						
03/31/05	73.39	61.34**	12.07	0.03	1.03 <sup>5</sup>	NOT SAMPLE	D DUE TO THE	PRESENCE OF	<sup>7</sup> SPH	1979-10 1979-1	1
04/26/05	73.39	61.31**	12.10	0.02	1.025				8778	E T	
05/13/05	73.39	60.93**	12.48	0.02	1.025						'

# Table 1 Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-1026

·····				- 22	Oakla	and, California	-				
					SPH	TPH-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	T	E	x	MTBE
DATE	(fi.)	(msl)	(ft.)	(fl.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B (cont)											
06/28/05	73.39	61.04**	12.37	0.03	1.025						
07/15/05	73.39	60.16**	13.25	0.02	1.525					1	
08/19/05	73.39	59.65**	13.76	0.02	1.025					_	
09/26/05	73.39	58.98**	14.43	0.02	1.025	NOT SAMPLE	D DUE TO THE	PRESENCE OF	F SPH		22
10/17/05	73.39	58.94**	14.47	0.02	1.015	1. TO 1. TO 1.				-	
11/18/05	73.39	58.61**	14.80	0.02	1.52 <sup>5</sup>		2700 m				
12/12/05	73.39	59.60**	13.81	0.02	1.015	() <del></del> -1					
01/24/06	73.39	59.70**	13.70	0.01	1.015	33 <b></b> -13					
02/10/06	73.39	59.62**	13.78	0.01	1.015						
03/31/06	73.39	61.40**	12.01	0.02	1.515	NOT SAMPLE	D DUE TO THE	PRESENCE OF	F SPH		
04/14/06	73.39	61.38**	12.02	0.01	1.0014						
05/12/06	73.39	61.03**	12.38	0.02	1.0015					1000	1020
06/12/06	73.39	60.38**	13.03	0.02	1.0015						
07/19/06	73.39	INACCESSIB	LE - WELL G	ROUTED/PL	UGGED						
DESTROYED	- JULY 200	16									
D 1											
D-1 05/00/90	71 77	60.10					12000				
09/09/89	71.77	59.19	14.00			16,000	2300	260	81	740	
11/00/89	/1.//	57.68	14.09			12,000	2600	340	100	870	
11/09/89	/1.//	57.71	14.06		<del></del>	17,000	340	140	110	760	
02/08/90	/1.//	59.12	12.65		0	5500	70	19	17	150	100 B
05/10/90	/1.//	58.15	13.62			18,000	770	110	73	600	
08/09/90	71.77	57.90	13.87		+	82,000	750	66	95	980	
11/13/90	71.77	57.39	14.38			43,000	1300	120	74	760	
03/27/91	71.77	****				18,000	580	92	94	770	
04/05/91	71.77	60.04	11.73							2 <del>000</del>	1.000
06/19/91	71.77	58.21	13.56			21,000	910	56	96	810	0
08/21/91	71.77	57.87	13.90	5. <del>7</del> 4		50,000	2400	610	300	1800	
11/08/91	71.77	57.72	14.05	0	( <del></del> )	540,000	3600	1500	1900	5900	
02/13/92	71.77	59.09	12.68		1.221	20,000	500	100	150	920	
05/01/92	71.77	58.85	12.92	Sheen		27,000	2800	200	310	1900	
11/18/92	72.30	58.00	14.30			300	9.7	3.4	2.3	21	
03/19/93	72.30	60.02	12.28			130	23	0.9	<0.5	5.6	······································
06/10/93	72.30	59.26	13.04			170	21	1.1	0.8	6.6	3 3
09/08/93	72.30	58.46**	13.88	0.05							
12/21/93	72.30	58.77	13.53			<50	6.7	0.5	<0.5	1.2	

					3701 Osklar	Broadway							
	Oakland, California SPH TPH- ELL ID/ TOC* GWE DTW SPHT REMOVED GRO B T F X MTRF												
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	R	т	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•	ATDE		
DATE	(f1.)	(msl)	(ft.)	(f1.)	(gallons)	(ug/L)	(ue/L)	(ug/L)	(µ\$/].)	A. (uo/1)	(no/I)		
B-1 (cont)		2							1-8	(F5)	(PS)		
03/09/94	72 30	50.65	12.65			1200	500						
09/21/94	72.30	57.00	14.40			1300	520	8.8	2.4	53			
12/20/94	72.30	50.05	12.25	100		390	130	2.7	2.4	7.7			
03/28/05	72.30	59.95	12.35			1600	520	9.9	8.9	34			
06/22/05	72.30	50.70	10.76			160	38	2.1	1.4	5.4			
00/21/05	72.30	59.70	12.60	60.75	0.00	340	73	3.1	2.4	7.5			
03/21/95	72.30	38.03	13.65			140	19	1.0	1.2	6.1			
03/22/90	72.30	61.36	10.94			200	<0.5	0.6	2.1	2.2	<5.0		
09/23/90	72.30	58.54	13.76			690	5.4	1.2	1.6	6.8	<5.0		
03/06/97	72.30	60.22	12.08			420	31	1.0	2.5	4.3	5.9		
09/12/97	72.30	58.76	13.54			170	31	1.4	1.6	4.6	11		
04/02/98	72.30	61.57	10.73			670 <sup>2</sup>	91	4.2	8.7	17	<2.5		
09/15/98	72.30	59.49	12.81			<50	1.5	<0.5	<0.5	<0.5	<10		
03/09/99	72.30	60.69	11.61			1200	570	5.3	5.6	48	<25		
09/29/99	72.30	58.67	13.63			<50	<0.5	<0.5	<0.5	<0.5	<2.5		
03/14/00	72.30	61.91	10.39			225	78.5	1.49	1.88	4.17	<5.0		
08/28/00	72.30	59.16	13.14	0.00	0.00	$290^{3}$	42	1.9	4.3	6.3	21		
03/22/01	72.30	60.62	11.68	0.00	0.00	1,690 <sup>6</sup>	181	7.94	20.4	17.4	56.9		
06/25/01	72.30	58.59	13.71	0.00	0.00					1.555 ( )			
07/09/01	72.30	59.11	13.19	0.00	0.00								
09/04/01	72.30	58.73	13.57	0.00	0.00	130	6.4	0.58	0.74	<1.5	<2.5/<29		
03/18/02	72.30	60.81	11.49	0.00	0.00	410	77	3.0	4.9	10	6.6		
09/23/02	72.30	58.72	13.58	0.00	0.00	51	1.9	0.82	<0.50	<1.5	<2.5		
03/25/03	72.30	59.46	12.84	0.00	0.00	58	0.74	<0.50	<0.50	<1.5	<2.5		
09/23/0312	72.30	58.57	13.73	0.00	0.00	<50	<0.5	0.7	<0.5	<0.5	<0.5		
03/17/0412	72.30	60.83	11.47	0.00	0.00	110	3	<0.5	<0.5	<0.5	<0.5		
09/16/0412	72.30	58.23	14.07	0.00	0.00	200	29	<0.5	<0.5	0.7	<0.5		
03/31/0512	72.30	59.45	12.85	0.00	0.00	340	18	<0.5	2	1	<0.5		
09/26/05 <sup>12</sup>	72.30	58.60	13.70	0.00	0.00	570	71	1	<0.5	5	<0.5		
03/31/0612	72.30	59.72	12.58	0.00	0.00	520	23	1	0.8	2	<0.5		
DESTROYED	- JULY 2006				5 3,52 50			₫.	0.0	2	-0.5		
B-2													
05/09/89	74.51	59.93	14.58		5 <b></b>	170,000	30,000	8400	2300	12,000			
08/09/89	74.51	58.45	16.06	( <del></del>	( <del>31</del> )	60,000	29,000	8700	2400	12,000			
12421 2212 2012 201													

74.51

74.51

57.56

58.95

16.95

15.56

--

11/09/89

02/08/90

--

---

--

--

110,000

67,000

32,000

28,000

5500

5900

2800

2300

12,000

11,000

er Chevron Service Station #9-

					Oaki	and, California					
WELT IN	TAL	CINZE	-	ODUT	SPH	трн-					
DATE	100	GWL	DIW	SPHI	REMOVED	GRO	В	T	E	X	MTBE
PAIR	01)	(msi)	()1-)	(ji.)	(gations)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-2 (cont)											
05/10/90	74.51	58.57	15.94			69,000	24,000	4800	2000	11.000	
08/09/90	74.51	58.54	15.97			100,000	33,000	4000	2100	12.000	<u></u>
11/13/90	74.51	57.81	16.70			110,000	33,000	4300	2900	13.000	
03/27/91	74.51					160,000	26,000	3200	2600	15 000	
04/05/91	74.51	60.31	14.20								
06/19/91	74.51	58.68	15.83			100,000	22,000	2500	2000	11.000	
08/21/91	74.51	58.20	16.31			80,000	28,000	2800	2400	12,000	
11/08/91	74.51	57.91	16.60	-		94,000	29,000	1900	2200	11,000	
02/13/92	74.51	58.58	15.93	-		280,000	34,000	2500	4600	23,000	
05/01/92	74.51	59.57	14.94	Sheen		29,000	1700	300	1100	4300	
11/18/92	74.52	57.81	16.71			26,000	11.000	170	870	950	
03/19/93	74.52	60.46	14.06			110.000	28.000	1200	2200	12 000	
06/10/93	74.52	59.64	14.88			140.000	15.000	930	1900	8800	
09/08/93	74.52	58.52**	16.03	0.04							100
12/21/93	74.52	58.91	15.61			980.000	21.000	30,000	9100	71.000	1912 S
03/09/94	74.52	59.99	14.53	Sheen		110.000	23.000	920	1300	7800	
9/21/945	74.52	INACCESSIB	LE				,				1000
12/20/94	74.52	59.86	14.65			70,000	25,000	710	920	5300	6+2+1
03/28/95	74.52	62.22	12.30			76.000	20,000	920	1200	5200	
06/22/95	74.52	60.30	14.22			89.000	21,000	38.000	1500	6800	1221
09/21/95	74.52	58.72	15.80			84,000	24,000	2900	1800	9800	
03/22/96	74.52	61.69**	12.85	0.02	0.250					2800	
09/25/96	74.52	58.56**	15.98	0.03	0.250					1.50	
03/06/97	74.52	60.43**	14.11	0.02	0.000						
09/12/97	74.52	59.19**	15.35	0.03	1.500						
04/02/98	74.52	61.74**	13.07	0.36	2.000						
09/15/98	74.52	59.48**	15.50	0.58	0.500		<u></u>		1		
03/09/99	74.52	61.56**	13.29	0.41	0.079					-	
09/29/99	74.52	58.69**	16.34	0.64	0.080						
03/14/00	74.52	62.02**	12.65	0.19	0.040			122			2. <b>1. 1</b> .
08/28/00	74.52	59.11**	15.80	0.49	0.265	NOT SAMPLE	D DUE TO THE	PRESENCE	F SPH		
03/22/01	74.52	60.99**	13.77	0.30	0.075	NOT SAMPLEI	DUE TO THE	PRESENCE	F SPH		
07/09/017	74.52	58.50**	16.12	0.13	0.215						
08/06/018	74.52	58.31**	16.23	0.02	0.00		1.44				
09/04/01 <sup>8</sup>	74.52	58.26**	16.28	0.03	0.00	NOT SAMPLEI	D DUE TO THE	PRESENCE OF	SPH		

					Oaklan	d, California					
					SPH	TPH-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRÖ	В	Т	E	X	MTBE
DATE	(ft.)	(msl)	(f1.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-2 (cont)											
10/08/018	74.52	57.97**	16.57	0.03	0.015				502 Fd		
11/12/018	74.52	58.07**	16.46	0.01	0.00				1.222		
12/26/018	74.52	61.12	13.40	0.00	0.00				1225		2727
01/25/028	74.52	60.17	14.35	0.00	0.00						
02/05/02 <sup>8</sup>	74.52	60.05	14.47	0.00	0.00					- <del></del> -	
03/18/028	74.52	60.38	14.14	0.00	0.00	110.000	24 000	2 500	2 500	0 200	<20
04/27/028	74.52	59.46	15.06	0.00	0.26 <sup>10</sup>		24,000	2,500	2,500	9,200	<30
05/20/028	74.52	59.06	15.46	0.00	0.26 <sup>10</sup>				-55	Su <del>nta</del> na	
06/17/02 <sup>8</sup>	74.52	58.82	15.70	0.00	0.13 <sup>10</sup>						
07/01/028	74.52	58.75	15.77	0.00	0.00	1414 1414				1000	1
08/19/02 <sup>8</sup>	74.52	58.34	16.18	0.00	0.00						
09/23/02 <sup>8</sup>	74.52	58.22**	16.31	0.01	0.00	90,000	23.000	2 200	2 400	8 600	<500
10/21/028	74.52	58.08**	16.45	0.01	0.00		25,000	2,200	2,400	8,000	<300
11/26/028	74.52	58.04	16.48	0.00	0.00			() <u></u>			
12/26/028	74.52	59.46	15.06	0.00	0.00					E. 444	
02/05/03 <sup>8</sup>	74.52	59.65	14.87	0.00	0.00			5			
03/01/0311	74.52	59.57	14.95	0.00	0.00		12121				
03/25/03	74.52	60.22	14.30	0.00	0.00	130.000	28,000	2 600	3 000	15 000	<500
04/21/03	74.52	60.76	13.76	0.00	0.00			2,000	5,000	15,000	<500
05/26/03	74.52	60.12	14.40	0.00	0.00						
06/16/03	74.52	59.77	14.75	0.00	0.00			1220			
07/17/03	74.52	59.38	15.14	0.00	0.00		1000 C				
08/11/03	74.52	59.16	15.36	0.00	0.00						-
09/23/0312	74.52	58.82	15.70	0.00	0.00	160,000	29.000	2.500	3,300	15 000	220
10/13/03	74.52	58.59	15.93	0.00	0.00						220
11/24/03	74.52	58.62	15.90	0.00	0.00						
12/15/03	74.52	58.97	15.55	0.00	0.00						
01/12/04	74.52	60.48	14.04	0.00	0.00			2 <b></b> -			
02/10/04	74.52	60.50	14.02	0.00	0.00	(1995)		() <del></del>			
03/17/0411,12	74.52	61.08	13.44	0.00	0.00	95,000	18,000	1.400	2.000	9 300	170
04/09/0411	74.52	60.48	14.04	0.00	0.00						
05/11/0411	74.52	60.44	14.08	0.00	0.00			1			
06/21/0411	74.52	59.17	15.35	0.00	0.00				<u></u>	10000-0	2000 Str.
07/09/0411	74.52	59.05	15.47	0.00	0.00	( <del>1</del>				(==)	
08/10/0411	74.52	58.80	15.72	0.00	0.00	( <b>19</b> 7)					

	*****				Oaklan	d, California					
					SPH	TPH-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	<b>B</b>	T	E	x	MTBE
DATE	(fl.)	(msl)	(ft.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-2 (cont)											
09/16/0411,12	74.52	58 52	16.00	0.00	0.00	81.000	21.000	1 000	1.000	0.100	
10/12/0411	74.52	58.35	16.17	0.00	0.00	81,000	21,000	1,000	1,900	8,100	220
11/12/04	74.52	58.91	15.61	0.00	0.00				( <b></b> )		
12/08/04	74.52	59.23	15.29	0.00	0.00						
01/25/05	74.52	59.49	15.03	0.00	0.00				1. <del>11.1</del>		
02/11/05	74.52	59.51	15.01	0.00	0.00				1. <del></del>		
03/31/0512	74.52	61.78	12.74	0.00	0.00	64 000	15 000	010			
04/26/05	74.52	61.76	12.76	0.00	0.00		15,000	910	000	4,900	130
05/13/05	74.52	61.42	13.10	0.00	0.00	1.22		1000			( <b></b> );
06/28/05	74.52	61.56	12.96	0.00	0.00		10 <del>00</del>		(1 <del>77</del> 7)		
07/15/05	74.52	60.82	13.70	0.00	0.00						
08/19/05	74.52	60.24	14.28	0.00	0.00		33 <u>212</u> 4	822			966535
09/26/0512	74.52	58.85	15.67	0.00	0.00	74 000	24.000	1 200	2 000	9 500	170
10/17/05	74.52	58.87	15.65	0.00	0.00		24,000	1,200	2,000	8,500	170
11/18/05	74.52	58.75	15.77	0.00	0.00						
12/12/05	74.52	60.26	14.26	0.00	0.00					2000	1.5
01/24/06	74.52	60.48	14.04	0.00	0.00						2 <b></b>
02/10/06	74.52	60.43	14.09	0.00	0.00				2 <del></del>		2 <b>0</b> 00
03/31/0612	74.52	61.95	12.57	0.00	0.00	72 000	17 000	770	1 500	5 000	120
04/14/06	74.52	62.01	12.51	0.00	0.00			770	1,500	5,000	130
05/12/06	74.52	61.59	12.93	0.00	0.00				6 <del>73</del> 4		
06/12/06	74.52	61.11	13.41	0.00	0.00						
07/19/06	74.52	INACCESSIB	LE - WELL G	ROUTED/PL	UGGED						1.000
DESTROYED	- JULY 2006	5						75.	1000 C		<del></del>
B-3											
05/09/89	74.12	60.01	14.02			70.000	12 000	9500	400	8000	
08/09/89	74.12	58.74	15.38				12,000	7500	400	8900	
11/09/89	74.12	58.61**	15.55	0.05						1997	12.2
02/08/90	74.12	59.44	14.68	< 0.01				8.5/			
05/10/90	74.12	58.99**	15.15	0.02				-		2 <b></b> (	
08/09/90	74.12	58.85	15.27	< 0.01						1000	6-2
11/13/90	74.12	58.13**	16.04	0.06					51 <b>7</b>	2.5.2.5.1	
04/05/91	74.12	60.82	13.30	< 0.01							
06/19/91	74.12	58.96	15.16			260.000	20.000	9000	2200	16 000	5.450
08/21/91	74.12	58.51	15.61			70,000	28,000	11,000	1800	11,000	-

SPH         SPH <th>F</th> <th></th> <th></th> <th></th> <th></th> <th>Oakla</th> <th>nd, California</th> <th></th> <th></th> <th></th> <th></th> <th></th>	F					Oakla	nd, California					
WELL III/ DATE         TOC- (f)         GWE         DTW         SPHT         REMOVED         GRO         B         T         E         X         MTRE (ngr1)         MTRE (ngr1)           B-3 (cont)           110891         74.12         58.35         15.77         -         -         150,000         29,000         9700         2200         13,000         -           05/01/92         74.12         59,33*         14.20         0.01         -						SPH	TPH-					
Date         (h)         (h)         (h)         (gatos)         (gat)         (ga	WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	T	E	X	MTBE
B-3 (cmot)           11/08/91         74.12         58.35         15.77         -         -         150,000         29,000         9700         2200         13,000         -           05/01/92         74.12         59.24         14.88         -         -         100,000         27,000         9906         2200         11,000         -	DATE	(JL)	(msl)	(ft.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
	B-3 (cont)											
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	11/08/91	74.12	58.35	15.77		2.000	150,000	29,000	9700	2200	13,000	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	02/13/92	74.12	59.24	14.88	100		100,000	27,000	9906	2000	11,000	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	05/01/92	74.12	59.93**	14.20	0.01							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	11/18/92	74.13	58.47**	15.68	0.03		1					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	03/19/93	74.13	61.24**	13.75	1.08							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	06/10/93	74.13	60.04**	14.79	0.87							
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/08/93	74.13	58.81**	15.38	0.08							1.4.1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12/21/93	74.13	59.39	14.74			1,100,000	18,000	29.000	8900	59.000	2012 G.
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	03/09/94	74.13	60.60	13.53			130,000	11.000	20,000	1700	15,000	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	09/21/94	74.13	58.45**	15.70	$0.02^{1}$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	12/20/94	74.13	60.67**	13.48	0.03							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	03/28/95	74.13			1.54	2.000		<u>475</u> 6				1.57A
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	06/22/95	74.13	60.86**	14.25	1.23	0.500						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/21/95	74.13	59.12**	15.25	0.30	0.500						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	03/22/96	74.13	62.97**	11.46	0.37	0.250						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/25/96	74.13	60.13**	14.82	1.02	1.000						107-19.5 A
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	03/06/97	74.13	61.23**	13.12	0.28	0.500		13 <b></b> 1				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	09/12/97	74.13	59.56**	14.67	0.13	2.000						70007
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	04/02/98	74.13	62.93	11.20	Sheen		160.000	27.000	26,000	2500	14 000	<500
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	09/15/98	74.13	60.12**	14.05	0.05	0.500			20,000	2500	14,000	<500
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	03/09/99	74.13	62.77**	11.41	0.06	0.053						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	09/29/99	74.13	59.23**	15.00	0.13	0.070						1000
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	03/14/00	74.13	63.15	10.98	V <b>==</b> 0	5 <b></b> -	177.000	15.000	22,000	2910	17.000	<1250
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	08/28/00	74.13	59.74**	14.41	0.02	0.265	NOT SAMPLE	D DUE TO THE	PRESENCE OF	F SPH		~1250
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	03/22/01	74.13	62.06	12.07	0.00	0.00	366,000 <sup>3</sup>	28.200	31.500	5 460	29 600	<2 500
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	09/04/01	74.13	58.66	15.47	0.00	0.00	140.000	34,000	14 000	2 300	11,000	<200/<259
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	03/18/02	74.13	62.07	12.06	0.00	0.00	150,000	33.000	16,000	2,500	12,000	<30
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	09/23/02	74.13	59.17	14.96	0.00	0.00	130.000	31,000	13,000	2,200	11,000	<60
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	03/25/03	74.13	61.16	12.97	0.00	0.00	150.000	36.000	17,000	2,200	13,000	<130
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	09/23/03 <sup>12</sup>	74.13	59.32	14.81	0.00	0.00	160.000	37.000	19,000	3,800	17,000	<500
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	03/17/0412	74.13	62.03	12.10	0.00	0.00	100,000	15.000	9.900	1,500	9 400	<10
$03/31/05^{12}$ 74.13 63.01 11.12 0.00 0.00 120,000 24,000 15.000 1.400 9.500 <13	09/16/0412	74.13	59.04	15.09	0.00	0.00	98,000	21,000	14.000	2,000	9 400	11
	03/31/0512	74.13	63.01	11.12	0.00	0.00	120,000	24,000	15,000	1,400	9,500	<13

					3701	Broadway					
100000000000000000000000000000000000000					Oaklar	id, California					
	<b>TO 04</b>				SPH	трн-					
DATE	100	GWE	DIW	SPHT	REMOVED	GRO	В	Т	E	x	MTBE
DAIL	(JL)	(msl)	(JL)	(11.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-3 (cont)											
09/26/0512	74.13	59.44	14.69	0.00	0.00	110,000	29,000	17,000	2,100	12.000	<25
03/31/0612	74.13	63.05	11.08	0.00	0.00	130,000	24,000	15,000	1,500	8,400	7
DESTROYED -	JULY 2006							14			
DX											
05/00/80	76 43	(1.50	14.02								
08/00/89	76.43	61.50	14.93			3600	840	34	120	200	
11/00/80	76.43	59.78	16.65	100	100 CT	<500	4200	130	370	260	
02/08/00	76.43					5000	4200	83	400	250	
02/08/90	76.43	59.44	16.99			14,000	6000	70	530	300	
03/10/90	76.43	60.38	16.05			12,000	5400	130	460	320	
08/09/90	76.43	59.94	16.49			16,000	7400	120	530	350	
11/13/90	76.43	59.79	16.64			21,000	7000	100	550	320	
03/27/91	76.43	59.01	17.42			17,000	8500	120	500	300	
04/05/91	76.43	61.77	14.66		00.79	14,000	7700	75	610	210	
06/19/91	76.43	59.95	16.48			16,000	7800	110	550	340	
08/21/91	76.43	59.43	17.00			18,000	11,000	110	450	340	
11/08/91	76.43	59.05	17.38	<b>**</b>		18,000	6800	98	500	620	
02/13/92	76.43	60.01	16.42	0.00		15,000	9100	86	570	350	
05/01/92	76.43	60.93	15.50			36,000	16,000	180	990	690	
03/19/93	76.43	62.32	14.11			26,000	15,000	150	900	790	
06/10/93	76.43	60.99	15.44			35,000	14,000	180	940	590	
09/08/93	76.43	59.78	16.65			34,000	15,000	170	1100	870	
12/21/93	76.43	59.98	16.45			30,000	12,000	74	610	340	
03/09/94	76.43	61.55	14.88			37,000	15,000	140	1000	580	
09/21/94	76.43	59.29	17.14			32,000	14,000	110	660	190	
12/20/94	76.43	61.44	14.99			23,000	8400	97	640	530	
03/28/95	76.43	65.10	11.33			27,000	9900	120	880	540	
06/22/95	76.43	61.84	14.59			33,000	12.000	84	650	150	12000
09/21/95	76.43	60.24	16.19			20,000	12.000	72	540	68	20
03/22/96	76.43	64.43	12.00			29,000	10.000	72	560	170	400
09/25/96	76.43	60.15	16.28			53,000	11.000	<50	160	74	<500
03/06/97	76.43	62.87	13.56			<5.000	17.000	<50	<50	<50	<500
09/12/97	76.43	60.41	16.02			7600	8100	65	520	38	300
04/02/98	76.43	64.58	11.85			$28.000^2$	9700	59	760	220	-350 -350
09/15/98	76.43	61.08	15.35			25,000	12.000	200	900	<200	<1000
03/09/99	76.43	64.11	12.32			21.000	11,000	<100	770	200	\$000

·····		·····			Oaklan	d, California	6				
					SPH	TPH-					
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	T	E	X	MTBE
DATE	(ft.)	(msl)	(ft.)	(ft.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-4 (cont)									- 10° - 20° 20° - 1		
09/29/99	76.43	60.31	16.12			8610	9500	32.1	1160	88.2	260
03/14/00	76.43	65.86	10.57			29,100	11,000	223	1010	556	<500
08/28/00 <sup>4</sup>	76.43	60.78	15.65	0.00	0.00	13,000 <sup>3</sup>	8,600	96	920	74	400
03/22/01	76.43	63.57	12.86	0.00	0.00	14,400 <sup>6</sup>	6,770	<50.0	224	112	345
09/04/01	76.43	60.19	16.24	0.00	0.00	23,000	9,900	61	340	71	<50/<3 <sup>9</sup>
03/18/02	76.43	63.57	12.86	0.00	0.00	26,000	8,400	71	550	300	<15
09/23/02	76.43	60.16	16.27	0.00	0.00	21,000	7,600	51	250	43	<10
03/25/03	76.43	62.35	14.08	0.00	0.00	21,000	7,100	42	330	78	<50
09/23/0312	76.43	60.29	16.14	0.00	0.00	21,000	77,000	370	2,500	500	<250
03/17/0412	76.43	63.35	13.08	0.00	0.00	16,000	5,500	30	320	110	4
09/16/04 <sup>12</sup>	76.43	60.17	16.26	0.00	0.00	28,000	5,900	3.800	470	2.800	<5
03/31/0512	76.43	64.55	11.88	0.00	0.00	12,000	3,300	26	350	150	<3
09/26/05 <sup>12</sup>	76.43	60.48	15.95	0.00	0.00	16,000	6,100	28	220	68	<5
03/31/06 <sup>12</sup>	76.43	64.73	11.70	0.00	0.00	9,200	2,100	17	220	120	0.6
DESTROYED	- JULY 2006							2.0			0.0
B-6											
05/09/89	72.66	60.55	12.11			26 000	120	110	250	1200	
08/09/89	72.66	57.94	14.72	1 <u>44</u>		19,000	470	150	250	1400	
11/09/89	72.66	58.81	13.85			13,000	70	36	36	1400	7780
02/08/90	72.66	64.93	7.73			2900	16	50	10	59	
05/10/90	72.66							5.0	10	50	
08/09/90	72.66	58.15	14.51			14,000	55	3.0	130	500	
11/13/90	72.66	57.80	14.86					5.0	150	500	
04/05/91	72.66	62.23	10.43						1993		
ABANDONED									1998		2005
B-7											
05/09/89	75.40	60.67	14.73			210.000	13 000	19.000	2000	20.000	
08/09/89	75.40	59.04	16.36			672,000	87 000	17,000	2000	20,000	
11/09/89	75.40	58.76	16.64			150,000	7000	12,000	1800	16,000	
02/08/90	75.40	59.71	15.69			41.000	2500	6900	1100	11,000	
05/10/90	75.40									11,000	1 <b></b>
08/09/90	75.40	59.09	16.31			50,000	1100	3900	640	7200	

# Table 1 Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-1026

					Oaklan	d, California					
	SPH TPH- CLLID/ TOC* GWE DTW SPHT REMOVED GRO B T F F V ANDE										
WELL ID/	TOC*	GWE	DTW	SPHT	REMOVED	GRO	В	T	E	X	MTBE
DATE	(ft.)	(msl)	(ft.)	(fl.)	(gallons)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-7 (cont)											
11/13/90	75.40	58.31	17.09								
04/05/91 ABANDONED	75.40	61.04	14.36		( <del>**</del>			810-00 0 <b>11-0</b>			
- Martinooned											
TRIP BLANK											
05/09/89						<500	<0 5	<0 5	<0.5	<0.5	
08/09/89						<500	<0.5	<0.5	<0.5	<0.5	
11/09/89						<500	<0.5	<0.5	<0.5	<0.5	0 <del>53</del> 0
02/08/90						<50	<0.3	<0.3	<0.3	<0.5	
05/10/90						<50	<0.3	<0.3	<0.3	<0.0	
08/09/90						<50	<0.3	<0.5	<0.3	<0.0	2.5.5.0
11/13/90	**					<50	<0.4	<0.3	<0.3	<0.0	
03/27/91						<50	<0.5	<0.5	<0.5	<0.4	
06/19/91						<50	<0.5	<0.5	<0.5	<0.5	
08/21/91					3 <del>224</del> 3	<50	<0.4	<0.5	<0.5	<0.5	
11/08/91						<50	<0.5	<0.5	<0.5	<0.4	
02/13/92						<50	<0.5	<0.5	<0.5	<0.5	
05/01/92						<50	<0.5	<0.5	<0.5	<0.5	
11/18/92			3 <b></b>			<50	<0.5	<0.5	<0.5	<0.5	
03/19/93						<50	<0.5	<0.5	<0.5	<0.5	
06/10/93						<50	<0.5	<0.5	<0.5	<1.5	
09/08/93				10 <sup>-10</sup>		<50	<0.5	<0.5 <0.5	<0.5	<1.5	0.000
12/21/93				122		<50	<0.5	<0.5	<0.5	<0.5	
03/09/94						<50	<0.5	<0.5	<0.5	<0.5	
09/21/94			122			<50	<0.5	<0.5	<0.5	<0.5	
12/20/94						<50	<0.5	<0.5	<0.5	<0.5	
03/28/95						<50	<0.5	<0.5	<0.5	<0.5	
06/22/95		322				<50	<0.5	<0.5	<0.5	<0.5	
09/21/95						<50	<0.5	<0.5	<0.5	<0.5	1000
03/22/96				-		<50	<0.5	<0.5	<0.5	<0.5	<5.0
09/25/96				-12		<50	<0.5	<0.5	<0.5	<0.5 <0.5	<5.0
03/06/97						<50	<0.5	<0.5	<0.5	<0.J	<5.0
09/12/97				in ann		<50	<0.5	<0.5	<0.5	<0.5	<2.5
04/02/98						<50	<0.5	<0.5	<0.5	<0.5	<2.5

					Oaklan	d, California					NHAT CARE INC.
WELL ID/ DATE	TOC* (fl.)	GWE (msl)	DTW (fl.)	SPHT (fl.)	SPH REMOVED (gallons)	TPH- GRO (ug/L)	B (ue/L)	Т (це/1.)	E (119/1.)	X (ug/t)	MTBE
TRIP BLANK	(cont)							(P8)	148/14/	(PB/1-)	(µg/1-)
09/15/98		· <b></b> /b		1001		~50	-0.5	-0.5	-0.5	~ ~	
03/09/99		··				<50	<0.5	<0.5	<0.5	<0.5	<10
09/29/99			12.23	55		<50	<0.5	<0.5	<0.5	<0.5	<2.5
03/14/00	154			10000		<50	<0.5	<0.5	<0.5	<0.5	<2.5
09/14/00		3 <b>55</b> 3				<50	<0.5	<0.5	<0.5	<0.5	<2.5
08/28/00						<50	<0.50	<0.50	<0.50	<0.50	<2.5
03/22/01						<50.0	< 0.500	<0.500	< 0.500	<0.500	<2.50
09/04/01			0.00	( <del>191</del> 5)		<50	<0.50	<0.50	<0.50	<1.5	<2.5
QA											
03/18/02					122	<50	<0.50	<0.50	<0.50	<1.5	<2.5
09/23/02			-			<50	< 0.50	< 0.50	<0.50	<1.5	<2.5
03/25/03						<50	< 0.50	<0.50	<0.50	<1.5	<2.5
09/23/03 <sup>12</sup>						<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/17/04 <sup>12</sup>						<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/16/04 <sup>12</sup>						<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/31/05 <sup>12</sup>						<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/26/05 <sup>12</sup>						<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/31/0612						<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/23/0712	(1				5.082	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/18/08 <sup>12</sup>						<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/03/0912						<50	~0.5	<0.5	<0.5	<0.5	<0.5
		-				<50	<0.5	<0.5	<0.5	<0.5	<0.5

#### **EXPLANATIONS:**

Groundwater monitoring data and laboratory analytical results prior to August 28, 2000, were compiled from reports prepared by Blaine Tech Services, Inc.

B = Benzene

T = Toluene

X = Xylenes

E = Ethylbenzene

TPH = Total Petroleum Hydrocarbons

GRO = Gasoline Range Organics

- TOC = Top of Casing (ft.) = Feet GWE = Groundwater Elevation (msl) = Mean sea level DTW = Depth to Water
- SPHT = Separate Phase Hydrocarbon Thickness
- \* TOC elevation referenced to msl.
- \*\* GWE was corrected for the presence of SPH; correction factor: [(TOC DTW) + (SPHT x 0.80)].
- Approximate thickness; equipment not functioning properly.
- <sup>2</sup> Chromatogram pattern indicated an unidentified hydrocarbon.
- <sup>3</sup> Laboratory report indicates gasoline C6-C12.
- <sup>4</sup> Laboratory report indicates sample was analyzed outside of the EPA recommended holding time.
- <sup>5</sup> Product + water removed.
- <sup>6</sup> Laboratory report indicates unidentified hydrocarbons C6-C12.
- <sup>7</sup> Skimmer installed May of 2001.
- <sup>8</sup> Skimmer in well.
- <sup>9</sup> MTBE by EPA Method 8260.
- <sup>10</sup> Water removed from skimmer; no product.
- <sup>11</sup> Skimmer removed for repair.
- <sup>12</sup> BTEX and MTBE by EPA Method 8260.
- <sup>13</sup> 0.5 ounces of product removed from well.
- <sup>14</sup> 1.5 ounces of product removed from well.
- <sup>15</sup> 2 ounces of product removed from well.
- <sup>16</sup> TOC was altered during well repairs; unable to determine an accurate GWE.

9-1026.xls/#385127

20

MTBE = Methyl Tertiary Butyl Ether

 $(\mu g/L) =$  Micrograms per liter

-- = Not Measured/Not Analyzed

QA = Quality Assurance/Trip Blank

ND = Not Detected

# Table 2 Separate Phase Hydrocarbon Thickness/Removal Data Former Chevron Service Station #9-1026 3701 Broadway

Oakland, California

WRTT D	њате	DTW.	SPH This	Amount Bailed
· ▼* IJE/EJ IEF	17A.L Č	13 1 X¥ (A* )	I NICKNESS	(Froduct + Water)
<u>рански странски странски стра</u>	00/20/20	<u></u>	<u></u>	(Bunnus)
B	08/28/00	15.29	1.07	0.26
	03/22/01	13.26	0.49	0.26
	06/25/01	15.30	1.08	0.00
	07/09/01-	15.15	0.97	0.26
	08/06/01-	15.31	0.98	1.04
	09/04/01-	15.46	0.81	0.00
	10/08/012	15.68	0.77	0.06
	11/12/01-	15.45	0.78	1.50
	12/26/012	12.98	0.58	4.39
	01/25/022	12.71	0.08	0.13
	02/05/022	13.16	0.09	2.63
	03/18/022	12.79	0.04	2.03
	04/27/022	13.66	0.00	$0.26^{3}$
	05/20/02 <sup>2</sup>	13.78	0.00	$0.26^{3}$
	06/17/02 <sup>2</sup>	14.34	0.29	3.39
	07/01/02 <sup>2</sup>	14.78	0.55	2.26
	08/19/02 <sup>2</sup>	15.03	0.49	6.53
	09/23/02 <sup>2</sup>	15.13	0.44	0.40
	$10/21/02^2$	15.21	0.40	0.33
	11/26/02 <sup>2</sup>	15.17	0.36	0.26
	$12/26/02^2$	13.06	0.21	0.13
	02/05/03 <sup>2</sup>	13.33	0.22	0.07
	03/01/034	13.31	0.13	0.07
	03/25/03	13.41	0.13	0.03
	04/21/03	13.20	0.10	0.07
	05/26/03	13.70	0.09	0.07
	06/16/03	14.04	0.11	0.07
	07/17/03	14.36	0.27	0.135
	08/11/03	14.61	0.30	0.13
	09/23/03	14.96	0.25	0.59
	10/13/03	14 99	0.18	0.395
	11/24/03	14.85	0.12	0.075
	12/15/03	14 39	0.12	0.07
	01/12/04	13.06	0.12	0.135
	02/10/04	13.00	0.09	0.01
	03/14/04	12.95	0.09	0.01
	04/09/04	13.54	0.08	0.01
	05/11/044	13.54	0.02	6
	05/11/04	13.00	0.01	
	07/00/044	14.40	0.07	0.03
	07/09/04	14.58	0.02	1.02
	08/10/04	14.87	0.02	0.51
	09/16/04	14.85	0.03	0.52
	10/12/04	15.28	0.13	0.03
	11/12/04	14.75	0.02	0.52
	12/08/04	14.68	0.02	0.53
	01/25/05	14.25	0.02	0.53
	02/11/05	14.30	0.02	0.52
	03/31/05	12.07	0.03	1.03
	04/26/05	12.10	0.02	1.02

# Table 2 Separate Phase Hydrocarbon Thickness/Removal Data Former Chevron Service Station #9-1026

3701 Broadway Oakland, California

WELL ID	DATE	DTW	SPH Thickness	Amount Bailed
	and the second	(ft.)	= monuess (fL)	(gallons)
B (cont)	05/12/05	13.40	0.02	1.02
D (cont)	05/15/05	12.48	0.02	1.02
	07/15/05	12.37	0.03	1.02
	09/10/05	13.25	0.02	1.52
	00/19/05	13.70	0.02	1.02
	09/20/05	14.43	0.02	1.02
	10/17/05	14.47	0.02	1.01
	11/18/05	14.80	0.02	1.52
	12/12/05	13.81	0.02	1.01
	01/24/06	13.70	0.01	1.01
	02/10/06	13.78	0.01	1.01
	03/31/06	12.01	0.02	1.51
	04/14/06	12.02	0.01	1.00
	05/12/06	12.38	0.02	1.00°
	06/12/06	13.03	0.02	1.00°
	07/19/06	INACCESSIBLE - WE	ELL GROUTED/PLUGG	ED
	DESTROYED - JUL	Y 2006		
B-2	08/28/00	15.80	0.49	0.26
	03/22/01	13.77	0.30	0.07
	07/09/011	16.12	0.13	0.214
	08/06/01 <sup>2</sup>	16.23	0.02	0.00
	$09/04/01^2$	16.28	0.03	0.00
	10/08/01 <sup>2</sup>	16.57	0.03	0.00
	$11/12/01^2$	16.57	0.01	0.00
	$12/26/01^2$	13.40	0.00	0.00
	$01/25/02^2$	14.35	0.00	0.00
	$02/05/02^2$	14.55	0.00	0.00
	$03/18/02^2$	14.14	0.00	0.00
	$04/27/02^2$	15.06	0.00	0.00
	05/20/022	15.00	0.00	0.263
	06/17/022	15.40	0.00	0.123
	07/01/02	15.70	0.00	0.13
	08/19/02	15.77	0.00	0.00
	08/13/02	16.18	0.00	0.00
	10/21/022	16.31	0.01	0.00
	10/21/02	16.43	0.01	0.00
	11/20/02	10.48	0.00	0.00
	12/20/02 02/05/02 <sup>2</sup>	13.00	0.00	0.00
	02/05/03	14.87	0.00	0.00
	03/01/03	14.95	0.00	0.00
	03/25/03	14.30	0.00	0.00
	04/21/03	13.76	0.00	0.00
	05/26/03	14.40	0.00	0.00
	06/16/03	14.75	0.00	0.00
	07/17/03	15.14	0.00	0.00
	08/11/03	15.36	0.00	0.00
	09/23/03	15.70	0.00	0.00
	10/13/03	15.93	0.00	0.00
	11/24/03	15.90	0.00	0.00
	12/15/03	15.55	0.00	0.00

# Table 2 Separate Phase Hydrocarbon Thickness/Removal Data Former Chevron Service Station #9-1026 3701 Broadway

Oakland, California

			SPH	Amount Bailed
WELL ID	DATE	DTW	Thickness	(Product + Water)
		(ft.)	(j1.)	(gallons)
B-2 (cont)	01/12/04	14.04	0.00	0.00
	02/10/04	14.02	0.00	0.00
	03/17/044	13.44	0.00	0.00
	04/09/044	14.04	0.00	0.00
	05/11/044	14.08	0.00	0.00
	06/21/044	15.35	0.00	0.00
	07/09/044	15.47	0.00	0.00
	08/10/044	15.72	0.00	0.00
	09/16/044	16.00	0.00	0.00
	10/12/044	16.17	0.00	0.00
	11/12/04	15.61	0.00	0.00
	12/08/04	15.29	0.00	0.00
	01/25/05	15.03	0.00	0.00
	02/11/05	15.01	0.00	0.00
	03/31/05	12.74	0.00	0.00
	04/26/05	12.76	0.00	0.00
	05/13/05	13.10	0.00	0.00
	06/28/05	12.96	0.00	0.00
	07/15/05	13.70	0.00	0.00
	08/19/05	14.28	0.00	0.00
	09/26/05	15.67	0.00	0.00
	10/17/05	15.65	0.00	0.00
	11/18/05	15.77	0.00	0.00
	12/12/05	14.26	0.00	0.00
	01/24/06	14.04	0.00	0.00
	02/10/06	14.09	0.00	0.00
	03/31/06	12.57	0.00	0.00
	04/14/06	12.51	0.00	0.00
	05/12/06	12.93	0.00	0.00
	06/12/06	13.41	0.00	0.00
	07/19/06	<b>INACCESSIBLE - WE</b>	ELL GROUTED/PLUGGE	D
	DESTROYED - JUL	Y 2006		
B-3	08/28/00	14.41	0.02	0.26
	03/22/01	12.07	0.00	0.00
	09/04/01	15.47	0.00	0.00
	03/18/02	12.06	0.00	0.00
	09/23/02	14.96	0.00	0.00
	03/25/03	12.97	0.00	0.00
	09/23/03	14.81	0.00	0.00
	03/17/04	12.10	0.00	0.00
	09/16/04	15.09	0.00	0.00
	03/31/05	11.12	0.00	0.00
	09/26/05	14.69	0.00	0.00
	03/31/06	11.08	0.00	0.00

#### **EXPLANATIONS:**

DTW = Depth to Water

(ft.) = Feet

SPH = Separate Phase Hydrocarbons

- <sup>1</sup> Skimmer installed May of 2001.
- <sup>2</sup> Skimmer in well.
- <sup>3</sup> Water removed from skimmer; no product.
- <sup>4</sup> Skimmer removed for repair.
- <sup>5</sup> Pure product; no water.
- <sup>6</sup> 0.5 ounces of product removed from well.
- <sup>7</sup> 1.5 ounces of product removed from well.
- <sup>8</sup> 2 ounces of product removed from well.

### Table 3

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #9-1026

0.1	1	0 1		C	
(Jak	iand	( a)	1	torr	119
Jun	iuiu.	-u		1011	110

WELL ID	DATE	ETHANOL	ТВА	MTBE	DIPE	ETBE	TAME	12-DCA	FDR
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(ug/L)	lue/Li
Е	03/18/02	<500	<100	<2	<2	<2	<2	<2	~
	09/23/03	SAMPLED ANNUAL	LLY			-	-	~2	~2
	03/17/04	INACCESSIBLE - PA	AVED OVER	·		-22			30.000
	03/31/05	INACCESSIBLE - PA	<b>AVED OVER</b>	1. <u></u> .					
	03/23/07			<0.5					
	03/18/08			<0.5					
	03/03/09	-	-	<0.5	-		-	-	-
F	03/18/02	<500	<100	0	~	2		~	
	09/23/03	SAMPLED ANNULA		~2	~2	<2	<2	<2	<2
	03/17/04				2.5.4		2 <del></del>		
	03/31/05		VED OVER				00		5
	03/23/07		AVED OVER	-0.5					
	03/18/08		*-	<0.5		-		<del></del> .	
	03/03/00	**		<0.5				<del></del> ,	
	05/05/07	-		~0.5	-	-		5 <b></b>	
EA-1	03/18/02	<500	<100	<2	<2	<2	<2	<2	<2
	09/23/03	SAMPLED ANNUAI	LLY				19 <b>43</b> -0		
	03/17/04			0.6	() <b>==</b> )				
	03/31/05	<del></del>		<0.5			200		
	03/31/06			<0.5	1.55			) <del></del> 1	
	03/23/07			<0.5					
	03/18/08			<0.5	10 <b>20-</b> 0				
	03/03/09	-	4 <u>7967</u>	<0.5	() <del></del>	-	-	-	-
EA-2	03/18/02	<500	<100	<2	<2	<2	<1	0	0
	09/23/03	SAMPLED ANNUAL	LY	~~			-2	-2	~2
	03/17/04	***		0.7	2000 	7.7x			
	03/31/05			<0.5		and the second sec			
	03/31/06	1. <del></del> .		<0.5	2		1000	82770	
	03/23/07			< 0.5		(1993) 		19 <del>13</del> 2	
	03/18/08			<0.5	2				
	03/03/09	INACCESSIBLE			-				-

### Table 3

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #9-1026

Oakland.	California
ouniture,	Cumorina

WELL ID	DATE	ETHANOL	ТВА	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-1	09/04/01	<500	<100	<2	<2	<2	<2	<2	<2
	09/23/03			<0.5				22	
	03/17/04			<0.5				2023	8500
	09/16/04			<0.5					
	03/31/05			<0.5				28214	
	09/26/05			<0.5					75.50
	03/31/06			<0.5			/ <b>1</b> 10		10771 10774
	DESTROYED - J	ULY 2006		107-0 <b>7</b>				_	
B-2	09/23/03			220			. == 1	-	
	03/17/04	<u>22</u> )		170					
	09/16/04			220					
	03/31/05			130			2,722.4	225-1	1.20
	09/26/05			170			Society -		1990 B
	03/31/06			130		40.000			
	DESTROYED - J	ULY 2006		2					
B-3	09/04/01	<2,500	890	<25	<25	<25	<25	720	<25
	09/23/03			<500					-25
	03/17/04			<10				7.49	
	09/16/04			11					
	03/31/05		<u>122</u>	<13					
	09/26/05			<25					
	03/31/06	3 <del>75</del> 7		7					
	DESTROYED - J	ULY 2006							
B-4	09/04/01	<500	560	<3	<3	<3	<3	200	~3
	09/23/03		<b>A</b>	<250			-	200	-5
	03/17/04			4	11 (1 <b>11</b> )	<u></u>		1996 - 9 C	
	09/16/04			<5		24696			
	03/31/05			<3					
	09/26/05			<5				2779	55510
	03/31/06			0.6		2		1.575.9	
	DESTROYED - J	ULY 2006		0.000,000			- 33	0.77720	
### Table 3

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #9-1026

### 3701 Broadway

### Oakland, California

WELL ID	DATE	ETHANOL	ТВА	MTBE	DIPE	ETBE	ТАМЕ	1,2-DCA	EDB
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Α	09/23/03	SAMPLED ANNUA	LLY						
	03/17/04	INACCESSIBLE - D	UE TO TRAILE	R PARKED OVER	WELL		01423		
	03/31/05			<0.5					
	03/31/06			<0.5					
	DESTROYED -	JULY 2006							
В	09/23/03	NOT SAMPLED DU	JE TO SPH	1 <u>11</u> 1	12-22			-	_
	03/17/04	NOT SAMPLED DU	E TO SPH						
	09/16/04	NOT SAMPLED DU	E TO SPH						
	03/31/05	NOT SAMPLED DU	E TO SPH						
	09/26/05	NOT SAMPLED DU	E TO SPH	( <b>**</b> )	<u></u>			2231/ 	
	03/31/06	NOT SAMPLED DU	E TO SPH	2 <del>57</del> 2					
	DESTROYED -	JULY 2006							15.0

 Table 3

 Groundwater Analytical Results - Oxygenate Compounds

 Former Chevron Service Station #9-1026

 3701 Broadway

 Oakland, California

#### **EXPLANATIONS:**

TBA = t-Butyl alcohol MTBE = Methyl Tertiary Butyl Ether DIPE = di-Isopropyl ether ETBE = Ethyl t-butyl ether TAME = t-Amyl methyl ether 1,2-DCA = 1,2-Dichloroethane EDB = 1,2-Dibromoethane ( $\mu$ g/L) = Micrograms per liter -- = Not Analyzed SPH = Separate Phase Hydrocarbons

### **ANALYTICAL METHOD:**

EPA Method 8260 for Oxygenate Compounds

### STANDARD OPERATING PROCEDURE -GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

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, suction, Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. 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 possible. 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. 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. For sampling sets greater than 20 samples, 5% trip blanks are included. 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.



Client/Facility#: Site Address: City:	Chevron #9-1026 3701 Broadway Oakland, CA		Job Number: Event Date: Sampler:	385127 	(inclusive)
Vell ID Well Diameter Total Depth Depth to Water Depth to Water w Purge Equipment: Disposable Bailer	2 in. 32.93 ft. /0.5 ft. 22.38 xVF / 80% Recharge [(Height	Check if water co Check if water co $2 \cdot 1 = \frac{3}{8}$ of Water Column x 0.2 Sampling Equipme	Date Monitored: olume $3/4"= 0.02$ actor (VF) $4"= 0.66$ olumn is less then 0.50 f 2 x3 case volume = E 20) + DTW]: $15.02ont:$	$\frac{3 - 3 - 99}{1"= 0.04}$ $\frac{1"= 0.04}{5"= 1.02} = \frac{2"= 0.17}{6"= 1.50} = \frac{3"= 0.3}{12"= 5.8}$ ft. Sistimated Purge Volume: <u>11.55</u> Time Started: <u></u> Time Completed: <u></u> Depth to Product: <u></u>	8 0 gal. (2400 hrs) (2400 hrs)
Stainless Steel Bailer Stack Pump Suction Pump Grundfos Peristaltic Pump QED Bladder Pump Other:		Disposable Bailer Pressure Bailer Discrete Bailer Peristaltic Pump QED Bladder Pump Other:		Depth to Water: Hydrocarbon Thickness: Visual Confirmation/Description: Skimmer / Absorbant Sock (circl Amt Removed from Skimmer: Amt Removed from Well: Water Removed: Product Transferred to:	ftftftftgalgalgal
Start Time (purge): Sample Time/Date Approx. Flow Rate: Did well de-water? Time (2400 hr.) 0942 0956	$\frac{101213.3.0^{\circ}}{1.2}$ $\frac{1.2}{9}$ If yes, Time Volume (gal.) pH $\frac{4}{7.37}$ $\frac{7.37}{3}$ $\frac{7.30}{7.4}$	Weather Constraints $V$ Water Constraints $V$ Water Constraints $V$ Water Constraints $V$ Water Conductivity $V$ (pmhos/cm $V$ ) 1266 1266 1251 1258	Conditions: <u>He</u> or: <u>Clean</u> O Description: lume: <u>gal</u> Temperature (O / F) <u><math>15.9</math></u> <u><math>16.0</math></u>	Ddor: Y ICN	9
		LABORATORY	NEORMATION		

E	6 x voa vial	YES	HCL	LANCASTER	ANALYSES
			HCL	LANCASTER	TPH-G(8015)/BTEX+MTBE(8260)
			1		

#### WENIS:

Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_



Client/Facility#:	Chevron #9-1026		Job Number	- 385107	
Site Address:	3701 Broadway		Fvent Data	2 7 0	<u> </u>
City:	Oakland, CA		Sompley	7-3-09	(inclusive)
			Sampler	Joe	-
Well ID	_F		Date Monitored:	22-4	
Well Diameter	<b>2</b> in.				
Total Depth	29.20 ft.	Facto	ne 3/4"= 0.0 pr(VF) 4"= 0.6	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8
Depth to Water	12.91 ft.	Check if water colun	In is less then 0.5	$5 = 1.52$ $6 = 1.50$ $12^{\circ} = 5.80$	2
Depth to Water w	/ 80% Recharge [(Height	$\frac{0.17}{0.17} = \frac{2.77}{0.20}$	x3 case volume =	Estimated Purge Volume: 8.5	_ gal.
Pure Environ	0 - 10 - 0.9.1		+ DIVVJ: _/6./	Time Started:	(2400 hrs)
Dispessive Desite		Sampling Equipment:		Time Completed:	(2400 hrs) (2400 hrs)
Stainless Stool Deller		Disposable Bailer		Depth to Product:	ft
Stack Pump		Pressure Bailer		Depth to Water:	ft
Suction Pump		Discrete Bailer		Visual Confirmation/Description:	ft
Grundfos		Peristaltic Pump			
Peristaltic Pump		QED Bladder Pump		Skimmer / Absorbant Sock (circle	e one)
QED Bladder Pump		Other:		Amt Removed from Skimmer:	gal
Other:				Water Removed:	gal
				Product Transferred to:	
Sample Time/Date Approx. Flow Rate: Did well de-water? Time (2400 hr.) 	$\frac{2930}{7.63}$ $\frac{2.5}{7.63}$ $\frac{7.63}{7.41}$	Weather Con Water Color: Sediment Des Ne: Volum Conductivity ( $\mu$ mhos/cm - $\mu$ S) $11 \leq 4$ $11 \leq 4$ $11 \leq 4$ $11 \leq 4$ $11 \leq 4$	ditions: $\underline{P}$ <u>c</u> constraints $\underline{P}$ scription: $\underline{P}$	Odor: Y /A	44
SAMPLE ID (	#) CONTAINER   REERIG	LABORATORY INF	ORMATION		
- F	x voa vial YES	HCI		ANALYSES	
,			LANCASTER II	PH-G(8015)/BTEX+MTBE(8260)	
		+			
COMMENTS: A/	loved can 1				
COMMENTS: AI	loved some +	ime for we	1 the re	cover 80/0	

Add/Replaced Lock: \_\_\_\_\_

Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_



Client/Facility#: Site Address: City:	Chevron # 3701 Broad Oakland, C	9-1026 Jway A		_ Job Numbe _ Event Date: _ Sampler:	r: <u>385127</u> <u>3-3-</u> <i>Doe</i>	-04	(inclusive)
Well ID Well Diameter Total Depth Depth to Water Depth to Water w Purge Equipment: Disposable Bailer Stainless Steel Bailer Stack Pump Suction Pump Grundfos Peristaltic Pump QED Bladder Pump Other:	EA-1 4 27-68 14,13 13,55 W 80% Rechard	in. ft. xVF 2. ge [(Height of F G	Vo Fai Check if water colu <b>66</b> = <b>8</b> 9 Water Column x 0.20 Sampling Equipmer Disposable Bailer Pressure Bailer Discrete Bailer Discrete Bailer Peristaltic Pump DED Bladder Pump Dther:	Date Monitored         lume       3/4"= (         ctor (VF)       4"= (         umn is less then 0.         4       x3 case volume         0) + DTWJ:	d: 3-3- 0.02 1"= 0.04 0.66 5"= 1.02 50 ft. = Estimated Purg 4 Time Sta Time Cor Depth to Depth to Hydrocarl Visual Co Skimmer Amt Remo Water Rei Product Ti	2"= 0.17 3"= 0.3 6"= 1.50 12"= 5.8 e Volume: rted: Product: Water: bon Thickness: nfirmation/Description / Absorbant Sock (circ oved from Skimmer: oved from Well: moved: ransferred to:	gal. (2400 hrs) (2400 hrs) ft ft ft :: ft :: ft :: gal gal
Start Time (purge): Sample Time/Date Approx. Flow Rate Did well de-water? Time (2400 hr.) 0752 08 00 08 00	$\frac{3}{2} = \frac{3}{1 - 3}$ Volume (gal.) $\frac{8}{1 - 3}$	3-3-09 gpm. fyes, Time: pH <u>7.4</u> 0 <u>7.2</u> 0 7.20	Weather C Water Colo Sediment E Vol Conductivity (µmhos/cm -ws) // 5 /· / 1 2 6 / 1 3 2	onditions: C entropy of entrop	. Odor: Y / (	Sampling: _/ <u>5</u> . ORP (mV)	0
SAMPLE ID EA-	(#) CONTAINER	L REFRIG. YES	ABORATORY I PRESERV. TYPE HCL	NFORMATION LABORATORY LANCASTER	TPH-G(8015)/BT	ANALYSES EX+MTBE(8260)	

Allowed for some time for well to record 80% COMMENTS:

Add/Replaced Lock: \_\_\_\_\_

=

Add/Replaced Bolt: \_\_\_\_



Client/Facility#:	Chevron #9-1026	5	Job Numbe	r 385127	
Site Address:	3701 Broadway		Event Date	7 2 09	- (in also to )
City:	Oakland, CA		Sampler:	See	(inclusive)
Well ID	EA-2		Date Monitorec	4.	-
Well Diameter	<b>4</b> in.				-
Total Depth	ft.	Facto	r (VF) 4"= 0	0.02 1"= 0.04 2"= 0.17 3"= 0.38 0.66 5"= 1.02 6"= 1.50 12"- 5.80	
Depth to Water	ft.	Check if water colum	in is less then 0.	50 ft.	J
Depth to Water	xVF w/ 80% Recharge [(Heig	== ht of Water Column x 0 20) -	x3 case volume	= Estimated Purge Volume:	_gal.
Purge Equipment		-		Time Started:	(2400 hrs)
Disposable Reiler		Sampling Equipment:		Time Completed:	(2400 hrs)
Stainless Steel Bailer	······································	Disposable Bailer		Depth to Water:	ft
Stack Pump		Pressure Bailer		Hydrocarbon Thickness	ft
Stack Fump		Discrete Bailer		Visual Confirmation/Description:	π
Grundfoo		Peristaltic Pump			
Brunulus Resisteltie Duma		QED Bladder Pump		Skimmer / Absorbant Sock (circle	e one)
Peristaltic Pump	<u> </u>	Other:		Amt Removed from Skimmer:	gal
JED Bladder Pump	·			Water-Pamoved from Well:	gal
Other:				Product Transferred to:	
start Time (purge)		Weather Con	ditions:		
sample Time/Dat	e:/	_ Water Color:		Odor: Y / N	
Approx. Flow Rate	e: gpm.	Sediment Des	scription.		
Did well de-water	? If yes, T	ime: Volur	ie:	gal. DTW @ Sampling:	
Time		Conductivity	<b>T</b>		
(2400 hr.)	Volume (gal.) pH	(umbos/cm uS)	remperature	D.O. ORP	
		(primosicili µ3)	(0/F)	(mg/L) (mV)	
	·				
		/			
SAMPLE ID	(#) CONTAINER REFRI	G. PRESERV. TYPE	LABORATORY		
EA-	x voa vial YES	HCL	LANCASTER	TPH-G(8015)/BTEX+MTRE(8260)	
	/			1111 C(0013)/BTEX+MTBE(8280)	
	N11 1				
1. 7	Well was	maccessiste.	Lover	ed with vor A.	
ed. um 5	accicale, de	e to hosp.	tal com	struction whet	ancy_
		/			
dd/Replaced Loc	ck: Ad	ld/Replaced Plug:		Add/Replaced Bolt	
		· · · · · · · · · · · · · · · · · · ·			

Chevro	on Califo	rnia Reg	ion	Anc	lysi	s Requ	est/	Chain of Custo
Lancaster Laboratories Ø3Ø3Ø1-9	\$5	Acct. #: 1	090	<u>Y</u> _San	For Lan	caster Laborat	orles use 8 - 8	Group #: 01650
00/0 /000 -000				A	nalyse	Requested		
Facility #:S#9-1026-OML G-R#385127 Global ID#TC Site Address: Chauran DLACCRAU	0600100334	Matrix	<del>1</del> 1 ft	dnu	reserva	ntion Codes		$\begin{array}{c} Preservative Codes\\ H = HCI & T = Thiosulfate\\ N = HNO_3 & B = NaOH \end{array}$
G-R, Inc., 6747 Sierra Court, Suite J, Du Consultant/Office: Deanna L. Harding (deanna@grinc.co	om)	Devable NPDES Containers	g 8021	] Silica Gel Clea				S = H <sub>2</sub> SO <sub>4</sub> O = Other
Consultant Phone #20-351-7555         Fax #.925-55           Sampler:		r ] Air Number of C	+ MTBE 8260 E	115 MOD DRO	Oxygenates ad Method	ed Lead Mathod		8021 MTBE Confirmation
Sample Identification Date Collected Collected	Time Take E Collected 5 0 	Soli Mate Oii □ 1 otal		TPH 80	Total Le	Dissolv		Run oxy's on highest hit     Run oxy's on all hits     Comments / Remarks
EA-1 V	0930 0852	V 6	~					
Turnaround Time Requested (TAT) (please circle)       STB. TAT       72 hour       48 hour       24 hour       4 day       5 day	Refinguisted by:			Date 3-3, c	Time	Received by:	lazer	Date Time
Nata Package Options (please circle if required)         IC Summary       Type I - Full         ype VI (Raw Data)       Coelt Deliverable not nee FAPF/EDD         VIP (Raw Oce)       Coelt Deliverable not nee FAPF/EDD	Relinquished by:	Commercial Carrier:		3/3/27 Date	/SZD Time	Received by:	×	Date Time
	Temperature Upor	n Receipt ( · :	3-2-2		C°	Cristody Sea	M s/mact?	No Shilog Daw

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

4804.01 (north) Rev. 10/12/06

1



**Analysis Report** 

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17805-2425 • 717-858-2300 Fox: 717-658-2681 • www.lancasterlabs.com

#### ANALYTICAL RESULTS

Prepared for:

Chevron 6001 Bollinger Canyon Rd L4310 San Ramon CA 94583



MAR 1-7 2009

GEERERALCOBMURACERES

925-842-8582

Prepared by:

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

#### SAMPLE GROUP

The sample group for this submittal is 1134454. Samples arrived at the laboratory on Wednesday, March 04, 2009. The PO# for this group is 0015040460 and the release number is COSTA.

Client Description QA-T-090303 NA Water E-W-090303 Grab Water F-W-090303 Grab Water EA-1-W-090303 Grab Water

Lancaster Labs Number 5612978 5612979 5612980 5612981

ELECTRONIC CRA c/o Gettler-Ryan COPY TO

Attn: Cheryl Hansen





2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-856-2300 Fox: 717-656-2681 • www.lancasterlabs.com

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

Respectfully Submitted,

Un MWW Dullar Christine Dulanoy Senior Specialist





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

Page 1 of 1

#### Lancaster Laboratories Sample No. WW5612978

QA-T-090303 NA Water Facility# 91026 Job# 385127 GRD 3701 Broadway-Oakland T0600100334 QA Collected:03/03/2009

Submitted: 03/04/2009 09:10 Reported: 03/16/2009 at 15:18 Discard: 04/16/2009 Group No. 1134454

Account Number: 10904

Chevron 6001 Bollinger Canyon Rd L4310 San Ramon CA 94583

#### BOAQA

CAT			As Received	As Received Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	ug/l	1
06054	BTEX+MTBE by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

#### Laboratory Chronicle

			V.			
CAT		-		Dilution		
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	03/09/2009 21:32	Robert L Garrett	1
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	03/10/2009 06:27	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/09/2009 21:32	Robert L Garrett	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/10/2009 06:27	Michael A Ziegler	1





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

Page 1 of 1

#### Lancaster Laboratories Sample No. WW5612979

E-W-090303 Grab Water Facility# 91026 Job# 385127 GRD 3701 Broadway-Oakland T0600100334 E Collected:03/03/2009 10:12 by JA

Submitted: 03/04/2009 09:10 Reported: 03/16/2009 at 15:18 Discard: 04/16/2009 Group No. 1134454

Account Number: 10904

Chevron 6001 Bollinger Canyon Rd L4310 San Ramon CA 94583

#### BOAKE

		As Received	As Received Method		Dilution
Analysis Name	CAS Number	Result	Detection	Units	Factor
TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	ug/l	1
BTEX+MTBE by 8260B					
Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	uq/l	1
Benzene	71-43-2	N.D.	0.5	ug/l	1
Toluene	108-88-3	N.D.	0.5	ug/l	1
Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1
	Analysis Name TPH-GRO N. CA water C6-C12 BTEX+MTBE by 8260B Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	Analysis NameCAS NumberTPH-GRO N. CA water C6-C12n.a.BTEX+MTBE by 8260B	Analysis NameAs Received ResultTPH-GRO N. CA water C6-C12n.a.N.D.BTEX+MTBE by 8260B	As Received As Received ResultAs Received Method Detection LimitTPH-GRO N. CA water C6-C12n.a.N.D.50BTEX+MTBE by 8260B1634-04-4N.D.0.5Methyl Tertiary Butyl Ether1634-04-4N.D.0.5Benzene71-43-2N.D.0.5Toluene108-88-3N.D.0.5Ethylbenzene100-41-4N.D.0.5Xylene (Total)1330-20-7N.D.0.5	As Received MathodAs Received MathodAs Received MathodAnalysis NameCAS NumberResultDetection LimitUnitsTPH-GRO N. CA water C6-C12n.a.N.D.50ug/lBTEX+MTBE by 8260B

State of California Lab Certification No. 2116

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

#### Laboratory Chronicle CAT Analysis Dilution No. Analysis Name Method Trial# Date and Time Analyst Factor 01728 TPH-GRO N. CA water C6-C12 SW-846 8015B 1 03/10/2009 00:23 Robert L Garrett 1 06054 BTEX+MTBE by 8260B SW-846 8260B 1 03/10/2009 06:52 Michael A Ziegler 1 GC VOA Water Prep 01146 SW-846 5030B 1 03/10/2009 00:23 Robert L Garrett 1 01163 GC/MS VOA Water Prep SW-846 5030B 03/10/2009 06:52 1 Michael A Ziegler 1





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

Page 1 of 1

#### Lancaster Laboratories Sample No. WW5612980

F-W-090303 Grab Water Facility# 91026 Job# 385127 GRD 3701 Broadway-Oakland T0600100334 F Collected:03/03/2009 09:30 by JA

Submitted: 03/04/2009 09:10 Reported: 03/16/2009 at 15:18 Discard: 04/16/2009

#### Group No. 1134454

Account Number: 10904

Chevron 6001 Bollinger Canyon Rd L4310 San Ramon CA 94583

#### BOAKC

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	ug/l	1
06054	BTEX+MTBE by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	uq/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

#### Laboratory Chronicle CAT Analysis Dilution No. Analysis Name Method Trial# Date and Time Analyst Factor TPH-GRO N. CA water C6-C12 01728 SW-846 8015B 1 03/10/2009 00:48 Robert L Garrett 1 06054 BTEX+MTBE by 8260B SW-846 8260B 03/11/2009 03:24 1 Michael A Ziegler 1 GC VOA Water Prep 01146 SW-846 5030B 1 03/10/2009 00:48 Robert L Garrett 1 01163 GC/MS VOA Water Prep SW-846 5030B 1 03/11/2009 03:24 Michael A Ziegler 1





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

Page 1 of 1

#### Lancaster Laboratories Sample No. WW5612981

EA-1-W-090303 Grab Water Facility# 91026 Job# 385127 GRD 3701 Broadway-Oakland T0600100334 EA-1 Collected:03/03/2009 08:52 by JA

Submitted: 03/04/2009 09:10 Reported: 03/16/2009 at 15:18 Discard: 04/16/2009 Group No. 1134454

Account Number: 10904

Chevron 6001 Bollinger Canyon Rd L4310 San Ramon CA 94583

#### BOEA1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection	Units	Dilution Factor
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	ug/l	1
06054	BTEX+MTBE by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/1	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

#### Laboratory Chronicle

CAT		-		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	03/10/2009 01:36	Robert L Garrett	1
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	03/10/2009 16:04	Jason M Long	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/10/2009 01:36	Robert L Garrett	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/10/2009 16:04	Jason M Long	1





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

Page 1 of 3

### Quality Control Summary

Client Name: Chevron Reported: 03/16/09 at 03:18 PM Group Number: 1134454

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

<u>Analysis Name</u>	Blank <u>Result</u>	Blank <u>MDL</u>	Report <u>Units</u>	LCS <u>%REC</u>	LCSD <u>%REC</u>	LCS/LCSD Limits	<u>RPD</u>	RPD Max
Batch number: 09068A08A	Sample 1	number(s):	5612978-56	12981				
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	100	109	75-135	9	30
Batch number: D090693AA	Sample 1	number(s):	5612980					
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	101	90	78-117	11	30
Benzene	N.D.	0.5	ug/l	95	99	80-116	5	30
Toluene	N.D.	0.5	ug/l	97	102	80-115	4	30
Ethylbenzene	N.D.	0.5	uq/l	98	103	80-113	5	30
Xylene (Total)	N.D.	0.5	ug/l	95	100	81-114	5	30
Batch number: E090691AA	Sample r	umber(s):	5612981					
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	93		78-117		
Benzene	N.D.	0.5	ug/l	97		80-116		
Toluene	N.D.	0.5	uq/l	100		80-115		
Ethylbenzene	N.D.	0.5	uq/1	95		80-113		
Xylene (Total)	N.D.	0.5	ug/l	97		81-114		
Batch number: Z090683AA	Sample r	umber(s):	5612978-56	12979				
Methyl Tertiary Butyl Ether	N.D.	0.5	uq/l	104		78-117		
Benzene	N.D.	0.5	ug/l	105		80-116		
Toluene	N.D.	0.5	ug/1	111		80-115		
Ethylbenzene	N.D.	0.5	uq/1	111		80-113		
Xylene (Total)	N.D.	0.5	ug/l	112		81-114		

#### 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 <u>%REC</u>	MSD <u>%REC</u>	MS/MSD Limits	RPD	RPD <u>MAX</u>	BKG <u>Conc</u>	DUP <u>Conc</u>	DUP <u>RPD</u>	Dup RPD <u>Max</u>
Batch number: 09068A08A	Sample	number(s	): 5612978	-561298	1 UNSPR	C: P61299	0		
TPH-GRO N. CA water C6-C12	118		63-154				-		
Batch number: D090693AA	Sample	number(s	): 5612980	UNSPK:	P61564	2			
Methyl Tertiary Butyl Ether	111		72-126			-			
Benzene	105		80-126						
Toluene	104		80-125						
Ethylbenzene	103		77-125						
Xylene (Total)	101		79-125						
Batch number: E090691AA	Sample	number(s	): 5612981	UNSPK	P61298	3			
Methyl Tertiary Butyl Ether	100	101	72-126	1	30	-			

\*- 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.





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

Page 2 of 3

### Quality Control Summary

Client Name: Chevron Reported: 03/16/09 at 03:18 PM

Group Number: 1134454

### 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

<u>Analysis Name</u> Benzene Toluene Ethylbenzene Xylene (Total)	<b>MS</b> <u>%RBC</u> 104 104 100 102	MSD <u>%REC</u> 103 103 100 101	<b>MS/MSD</b> <u>Limits</u> 80-126 80-125 77-125 79-125	<b>RPD</b> 1 1 0 2	<b>RPD</b> <u>MAX</u> 30 30 30 30	BKG Conc	DUP <u>Conc</u>	DUP <u>RPD</u>	Dup RPD <u>Max</u>
Batch number: Z090683AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	Sample 106 109 114 114 112	number(s 110 110 116 117 115	3): 5612978 72-126 80-126 80-125 77-125 79-125	3-56129 3 0 2 3 3	79 UNSI 30 30 30 30 30 30	PK: P610275	i		

#### 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: TPH-GRO N. CA water C6-C12 Batch number: 09068A08A Trifluorotoluene-F

5612978	94			
5612979	93			
5612980	92			
5612981	91			2
Blank	94			
LCS	98			
LCSD	98			
MS	98			
Limits:	63-135	<u> </u>		
Analysis 1 Batch numl	Name: BTEX+MTBE by 8260B ber: D090693AA Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5612980	88	90	87	86
Blank	90	87	89	89
LCS	88	91	88	90
LCSD	91	90	91	50
MS	91	91	90	92
Limits:	80-116	77-113	80-113	78-113
Analysis N Batch numb	Jame: BTEX+MTBE by 8260B Der: E090691AA			
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5612981	92	93	94	91
BIANK	92	89	94	92

\*- 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.





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

Page 3 of 3

### Quality Control Summary

Client N Reported	Name: Chevron 1: 03/16/09 at 03:18	Group N	Group Number: 1134454				
-	, ,	Surrogate Q	uality Control				
LCS	90	92	95	96			
MS	91	90	94	99			
MSD	89	90	93	98			
Limits:	80-116	77-113	80-113	78-113			
Analysis N Batch numb	Mame: BTEX+MTBE by 8260B per: Z090683AA Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene			
5612978	94	91	92	82			
5612979	93	91	93	82			
Blank	93	91	95	85			
LCS	90	90	94	90			
MS	90	92	95	90			
MSD	91	91	96	91			
Limits:	80-116	77-113	80-113	78-113			

\*- 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:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
С	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	Ĩ	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
			-

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

> greater than

**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.

U.S. EPA 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 quatitated on a diluted sample
- E Concentration exceeds the calibration range of the instrument
- J Estimated value
- 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  $\geq$ IDL
- E Estimated due to interference
- M Duplicate injection precision not met
- N Spike amount 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 for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client. APPENDIX E

TREND GRAPHS

**TPHg and Benzene versus Time Well A** 

Former Chevron Station 9-1026 3701 Broadway, Oakland, CA



Former Chevron Station 9-1026 3701 Broadway, Oakland, CA



ng/L



Former Chevron Station 9-1026 3701 Broadway, Oakland

ng/L

Former Chevron Station 9-1026 3701 Broadway, Oakland, CA



ng/L



Former Chevron Station 9-1026 3701 Broadway, Oakland, CA APPENDIX F

### STANDARD FIELD PROCEDURES FOR MONITORING WELL INSTALLATION

# Conestoga-Rovers & Associates

#### STANDARD FIELD PROCEDURES FOR MONITORING WELL INSTALLATION

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

#### SOIL BORINGS

#### Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Professional Geologist (P.G.) or Professional Engineer (P.E.).

#### Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

#### Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4° C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

#### Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

# Conestoga-Rovers & Associates

### Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

### Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

### MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

### Well Construction and Surveying

Groundwater monitoring wells are installed to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 feet below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two feet above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

# Conestoga-Rovers & Associates

#### Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

### **Groundwater Sampling**

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

### Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite and covered by plastic sheeting. At least three individual soil samples are collected from the stockpiles and composited at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples in addition to any analytes required by the receiving disposal facility. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Groundwater removed during development and sampling is typically stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Upon receipt of analytic results, the water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

I:\misc\Templates\SOPs\GW well Installation.doc