CONESTOGA-ROVERS
& ASSOCIATES

5900 Hollis Street, Suite A, Emeryville, California 94608
Telephone: 510-420-0700 Facsimile: 510-420-9170
www.CRAworld.com

June 28, 2007

Mr. Barney Chan
Alameda County Department of Environmental Health (ACDEH)
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: **Remedial Action Plan**
Former Chevron Station 9-0020
1633 Harrison Street
Oakland, California
CRA Project No. 311956

Dear Mr. Chan:

Conestoga-Rovers & Associates (CRA) has prepared this *Remedial Action Plan* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. On April 16, 2007, Chevron and CRA met with the Oakland Housing Authority, the proposed developer of the site and their consultant, to discuss measures necessary to facilitate submittal of a U.S Department of Housing and Urban Development (HUD) application for financing the construction of senior housing on the subject site. Requirements for HUD financing include an approved Remedial Action Plan for any onsite remedial activities, which were required by ACDEH, and all remedial work must be completed before construction of the facility begins. This RAP addresses onsite remediation elements. A work plan for supplemental offsite investigation will be submitted under separate cover.

SITE BACKGROUND

The site is a former Chevron gasoline service station located on the southwest corner of 17th and Harrison Streets in Oakland, California. Chevron operated on the site until 1972 when the station was shut down. The station building, dispenser islands, product lines, and used-oil and fuel underground storage tanks (USTs) were all removed at this time. Since December 1975, the site has been operated as a pay parking lot. The site is located in downtown Oakland in an area of commercial and multi-unit residential. Local topography is flat at an elevation of approximately 40 ft above mean sea level (Figure 1).

PREVIOUS INVESTIGATIONS

1988 Soil Vapor Survey Investigation: A soil vapor survey was conducted in January 1988 when 22 samples were collected at 11 locations around the site. The highest hydrocarbon concentrations were detected in the vicinity of the former used-oil oil UST in the west central section of the site.

1988 Monitoring Well Installation: Western Geologic Resources (WGR) drilled and installed wells MW-1 through MW-3 in October 1988. No benzene, toluene, ethylbenzene, and xylenes (BTEX) or total fuel hydrocarbons were detected in groundwater samples from the three wells. However, halogenated volatile organic compounds (HVOCs) were detected.

1989 Soil Boring and Monitoring Well Installation: WGR drilled five soil borings and completed as wells MW-4 through MW-8. Total petroleum hydrocarbons as diesel (TPHd) was detected in soil up to 600 parts-per-million (ppm) at 9.6 feet below grade (fbg) near the former used-oil UST. Total petroleum hydrocarbons as gasoline (TPHg) was detected at a concentration of 50,000 ppm at 23.5 fbg in MW-7, near the northeastern corner of the property.

June 1990 Offsite Well Installation: WGR installed four offsite wells (MW-9 through MW-12) in June 1990. The purpose of this was to delineate the extent of hydrocarbons down-gradient and cross-gradient of the site. No hydrocarbons were detected in any soil sample collected during this phase of investigation. A groundwater sample from well MW-9 contained 5,700 parts per billion (ppb) TPHg and 47 ppb benzene. Offsite wells MW-10 through MW-12 contained HVOCs.

October 1991 Offsite Well Installation: Pacific Environmental Group (PEG) installed well MW-13 to further evaluate the extent of the dissolved hydrocarbon plume, and up-gradient monitoring well MW-14 to investigate suspected offsite origination of HVOCs. Additionally, four soil borings (B-A through B-D) were drilled to assess the extent of hydrocarbons in the vicinity of well MW-7 due to a soil sample at 23.5 fbg containing 50,000 ppm TPHg. Hydrocarbon concentrations were only detected in boring B-D at 120 ppm TPHg and up to 1.8 ppm BTEX.

November-December 1992 Offsite Well Installation: Groundwater Technology Inc. (GTI) installed two offsite wells (MW-15 and MW-16) to further delineate the dissolved hydrocarbon plume. No hydrocarbons were detected in any soil samples.

January 1992 Soil Excavation: PEG oversaw removal of hydrocarbon impacted soil from the vicinity of well MW-4 and excavation of a 30-foot long by 5-foot deep trench across the area of the former USTs to confirm that the USTs had been removed from the site. Removal of the USTs was confirmed, however construction debris such as concrete slabs and piping were observed beneath the surface in the area of the former USTs.

SVE Remediation System Installation and Operation: A soil vapor extraction (SVE) system was installed and operated at the site from July 1, 1993 through December 12, 1993. Evaluation of the system showed minimal

effectiveness. Augmentation of the system with additional wells was evaluated and, due to low permeability soils, it was determined that efficiency would not be appreciably enhanced. The system was shut down in December 1993 and all system equipment was removed in December 1996.

June 2004 Additional Subsurface Investigation: In anticipation of future site development, which was proposed to include subsurface parking, Cambria Environmental Technology, Inc., conducted additional subsurface investigation to further define residual hydrocarbon impacts in soils beneath the site to pre-profile soils for appropriate disposal options. Results confirmed hydrocarbon impacts to soil in the vicinity of well MW-7 that appear to have originated from the first generation dispenser island that had been located approximately 15 feet upgradient of the well.

April 2007 Additional Subsurface Investigation: CRA advanced four soil borings (SB1 thorough SB4) up-gradient of MW-7 to define the extent of hydrocarbon impacts associated with a first generation dispenser island. TPHg and benzene in soil were only detected in borings SB1, SB2, and SB3 at 19.5 fbg, with maximum concentrations of 140 mg/kg and 0.002 mg/kg, respectively. TPHg and benzene were detected in groundwater samples from each boring, except boring SB-4, at maximum concentrations of 11000 µg/l and 10 µg/l, respectively.

June 2007 Soil Vapor Survey Installation and Investigation: CRA installed 12 vapor probes in 6 borings onsite. Samples were collected from all probes and the highest hydrocarbon concentrations were detected in VP-1 in the vicinity of the former used-oil UST in the west central section of the site. TPHg and benzene were detected in soil vapor from all vapor points with maximum concentrations in VP-1 at 2,600,000 µg/m^3 and 2,600 µg/m^3, respectively.

SENSITIVE RECEPTORS

A well survey within ½-mile of the site was conducted in 1990 by Alameda County Public Works Agency using their computer database. No municipal wells were identified within the surveyed area. One irrigation well was identified more than ¼-mile southeast (cross-gradient) of the site.

The nearest surface water is Lake Merritt, located approximately 1,600 feet down-gradient of the site. Oakland Inner Harbor is located approximately 4,750 feet up-gradient of the site.

HYDROCARBON DISTRIBUTION IN SOIL

Hydrocarbon impact in soil onsite near well MW-7 is at approximately 19.5 to 25 fbg, and is defined up-gradient by boring SB4 and cross-gradient by borings B-D and B25. The area of the former used-oil tank, in the southwest section of the site, has shallow hydrocarbon impact above 9.5 fbg (Figure 2). Cumulative soil analytic results are presented on Table 1, cumulative groundwater analytic results on Table 2, and cumulative soil vapor analytic results on Table 3.

HYDROCARBON DISTRIBUTION IN GROUNDWATER

Groundwater beneath the site has been monitored since 1988. Currently, groundwater is monitored quarterly onsite by MW-7. All other onsite wells have been abandoned. Table A below summarizes the most recent onsite hydrocarbon concentrations. The first quarter 2007 groundwater monitoring and sampling report is included as Attachment A.

Table A
Groundwater Analytical Data – March 5, 2007

Well ID	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
	(µg/L)					
MW-7	1,800	66	16	17	19	<0.5

Separate-Phase Hydrocarbons

No separate-phase hydrocarbons have been detected in any of the groundwater monitoring wells.

RISK ASSESSMENT

Risks Posed to Human Health

Chevron conducted an onsite Tier II Risk-Based Corrective Action (RBCA) evaluation, dated May 21, 2007, and submitted in CRA's *Risk Assessment and Proposed Vapor Survey,* dated May 25, 2007 (Attachment B). This

evaluation was conducted to determine if potential exposure pathways exist, to estimate potential risk due to the residual concentrations of petroleum hydrocarbons left in the soil, and to identify any data gaps. Exposure pathways were evaluated for ingestion of soil, dermal contact with soil, ingestion of groundwater, dermal contact with groundwater and inhalation of dust and vapors. The soil vapor data that had been collected onsite was almost 20 years old and was considered unusable for modeling. Soil vapor probes were installed in 2007 and sampled, and undisturbed soil samples were collected to analyze for physical parameters to provide site specific data for the purpose of modeling current site conditions for potential risk from vapor intrusion. An *Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor* is included as Attachment C. Below are the results of the RBCA evaluation and the vapor intrusion evaluation.

The proposed senior housing development plans call for the entire site to be covered by buildings or concrete floors. Landscaping will only be along the street fronts and there is a planned exterior landscaped courtyard that will be located above the garage area on the second floor. Future residents should have no direct contact with soil. The only potential direct contact with impacted soil would be by construction/utility workers during future construction. The maximum detected concentration of TPHg in shallow soil is 600 mg/kg and does not exceed the TPHg environmental screening level (ESL) for construction/trench workers of 6,000 mg/kg.

Historical depth to groundwater across the site ranges from 11.62 fbg to 22.12 fbg, so there is no expected direct contact for either future residents or construction/utility workers.

Soil vapor data was collected on June 18, 2007 from 12 vapor points in 6 borings at 5 fbg and 10 fbg. Only concentrations of BTEX, naphthalene, and chloroform were detected in various borings. An evaluation of potential vapor intrusion into buildings was conducted based on California Environmental Protection Agency (Cal-EPA) and United Stated Environmental Protection Agency (USEPA) guidelines. The potential excess cancer risks were estimated to be 3×10^{-7} and 2×10^{-7} for onsite adult and child residents, respectively, and the noncancer hazard index for onsite child residents was estimated to be 0.01. An acceptable level range for excess cancer risks are from 1×10^{-6} to 1×10^{-4} and an acceptable hazard index is less than 1, as defined by Cal-EPA, the USEPA and other regulatory agencies. This indicates that, given this particular exposure scenario, potential vapor intrusion does not present a health threat to individuals residing in future onsite buildings.

Risks Posed to the Environment

Hydrocarbon impact in the soil, in the vicinity of groundwater monitoring well MW-7, has been well defined from previous investigations. This impacted soil could be contributing to offsite elevated hydrocarbon concentrations in

groundwater. Due to the proposed redevelopment of the site, it was determined that removal of this soil would sufficiently remove the need for any potential onsite remediation in the future.

RECOMMENDED REMEDIAL ACTION

This Remedial Action Plan is restricted to dealing with conditions existing onsite which may pose a risk to human health and the environment. The risk assessment indicates that no significant risks will be posed to future occupants of the proposed structure or construction workers based on the remnant impacts to soil and groundwater. One area below the proposed paved parking area (in the vicinity of the former used-oil tank) does contain elevated concentrations of benzene in soil vapor. Further, based on our review of site data it appears that offsite impacts to groundwater may be related to a potential onsite source in the area of MW-7. To deal with these areas, CRA recommends that the impacted soil source materials be removed to mitigate future mobilization of these source materials (Figure 3).

The proposed remediation method comprised of bucket auger drilling is viewed as being the most efficient method to remove the impacted soil in the vicinity of MW-7. Bucket auger machinery either uses a rotating cylindrical bucket with cutting blades mounted on a hinged bottom to repeatedly cut and lift sediments from the boring or large diameter augers (i.e. 36-inch to 48-inch). CRA estimates that the area of soil that should be removed in the vicinity of MW-7 is approximately 25 ft by 35 ft by 25 ft deep. Since the impacted area is situated below the water table, the issue of soil cave-in could be a problem. Water can be added to the drilled hole to maintain a static head or casing will be used to drill to the final depth. The bucket auger borings will be backfilled to the developer's specifications.

The impacted soil detected at shallow depths in the vicinity of the former used-oil tank will be removed with a backhoe. The extent of the proposed excavation is approximately 5 ft by 10 ft by 10 ft deep. The resulting hole will be backfilled according to the developer's specifications.

If any additional areas of impact are found during construction activities, Chevron will take whatever actions are necessary to meet current clean-up standards and regulatory guidelines.

PROPOSED SCOPE OF WORK

The objective of the proposed scope of work is to remove any petroleum hydrocarbon source material in the soil. In order to accomplish these goals, CRA will conduct the following activities.

Soil and Water Disposal: Excavated soil will be stockpiled onsite, covered in plastic sheeting and labeled appropriately until removed from the site. Soil wastes will be transported to the appropriate Chevron-approved disposal facility following receipt of profiling analytic results.

It is anticipated that groundwater will be encountered in the borings. Due to the unknown groundwater elevation during field activities, if needed, the decision to store and dispose of groundwater will be made during field operations.

Reporting: Upon completion of field activities and review of the analytic results, we will prepare a report that, at a minimum, will contain:

- Descriptions of the bucket auger methods;
- Tabulated soil analytic results;
- Analytic reports and chain-of-custody forms;
- Soil and wastewater disposal details; and
- Conclusions and recommendations.

SCHEDULE

The current owner of the site, Oakland Housing Authority, has expressed a desire to have the remedial work completed as close to the beginning of the proposed construction as possible to allow them to honor an existing lease with a parking concessionaire. As such, the remedial work onsite will be completed by the time construction begins.

Underground Utility Location: CRA will mark the site for Underground Services Alert (USA) clearance. CRA will then contact USA and a private underground utility locating service, to reconfirm that no utilities exist onsite.

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

Permits: CRA will obtain soil boring permits from the Alameda County Department of Public Works and the City of Oakland prior to beginning field operations.

Soil Borings and Sampling: In the vicinity of MW-7, where we propose to use bucket auger machinery to remove impacted soil, it is not possible to collect undisturbed, discrete samples. No confirmation samples can be collected since the bottom of the borings will be below the water table. The impacted soil has been adequately characterized in previous investigations both laterally and vertically and should allow for all impacted material to be removed.

In the vicinity of the used-oil tank, confirmation samples will be taken at the bottom of the excavation.

Soil Chemical Analysis: Soil samples from the vicinity of the former used-oil tank will be analyzed for the following:

- TPHg by EPA Method 8015 modified,
- Total Oil and Grease by EPA Method 9071B modified, and
- Benzene, toluene, ethyl benzene, and xylenes (BTEX), ethanol, tert-butyl alcohol (TBA), methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl-tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), 1,2-dibromoethane (EDB), naphthalene, and HVOCs: carbon tetrachloride, chloroform, tetrachloroethene (PCE), trichloroethene (TCE), trans-1,2-dichloroethene (t-1,2-DCE), cis-1,2-dichloroethene (c-1,2-DCE) 1,1,1-trichloroethane (1,1,1-TCA), 1,2-dichloroethane (1,2-DCA), 1,2-dichloropropane (1,2-DCP), 1,1-dichloroethene (1,1-DCE) by EPA Method 8260B.

Composite soil samples for waste profiling will be analyzed for the above constituents and additionally for the following:

- Total lead by EPA Method 6010B.

RAP APPROVAL

Due to the short timeframe required for the Oakland Housing Authority's submittal of their HUD financing application, we would appreciate review, comments and approval of the remedial Action Plan by July 9, 2007. If there are any comments on the proposed scope of site activities, we would appreciate the chance to discuss those comments before ACDEH submits a final letter.

CLOSING

We appreciate this opportunity to work with your organization toward redevelopment and case closure of this property. Please contact Charlotte Evans at (510) 420-3351 or Satya Sinha of Chevron at (925) 842-9876 if you have any questions or comments.

Sincerely,
Conestoga-Rovers & Associates

Charlotte Evans

FOR: Robert Foss, P.G. #7445

Figures: 1 – Vicinity Map
2 – Siteplan
3 – Proposed Excavation Boundaries

Tables: 1 – Cumulative Soil Analytic Results
2 – Cumulative Groundwater Analytic Results
3 – Cumulative Soil Vapor Analytic Results

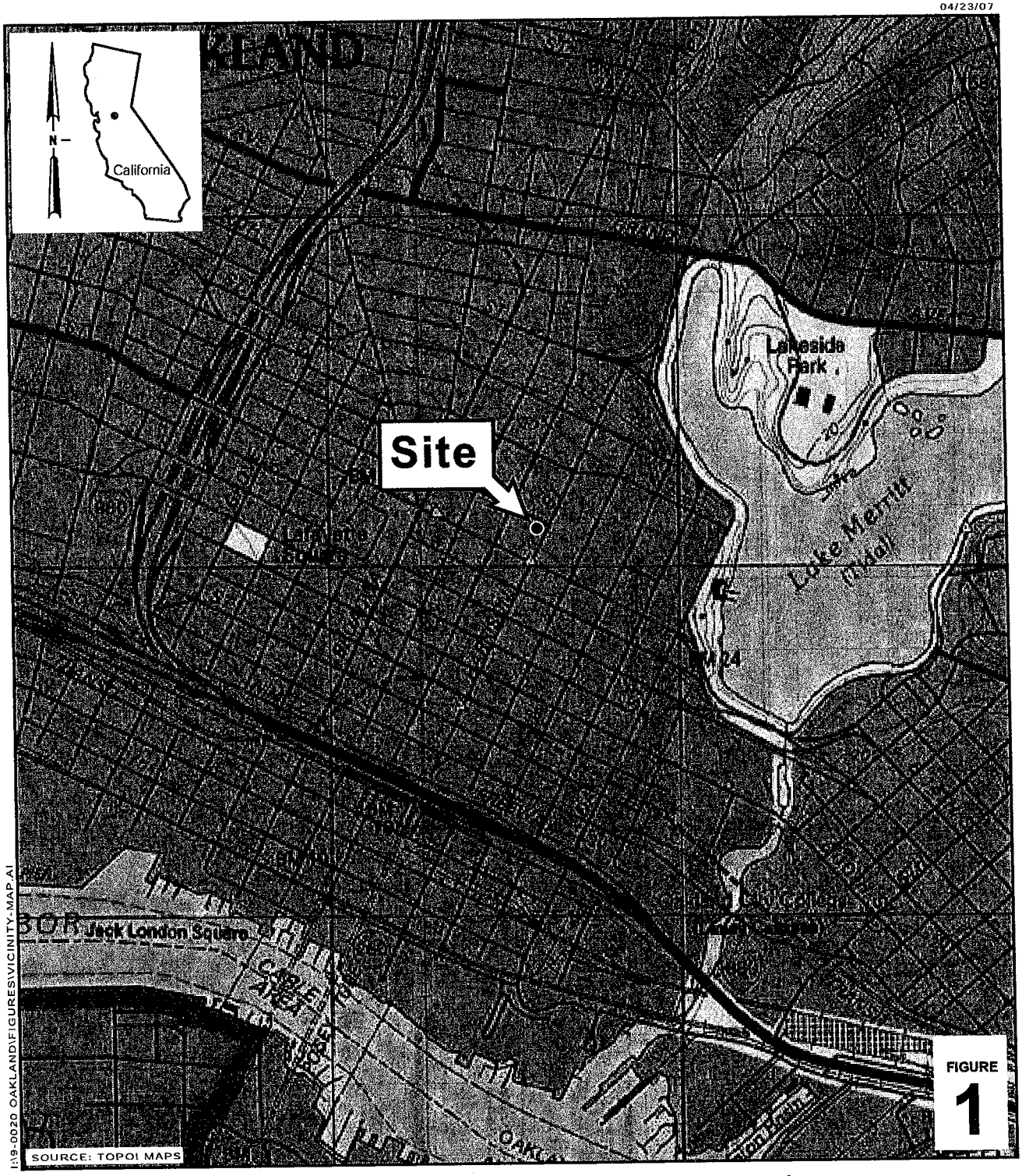
Attachments: A – First Quarter 2007 Groundwater Monitoring Report
B – Onsite Tier II Risk-Based Corrective Action Evaluation
C – Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor

cc: Mr. Satya Sinha, Chevron Environmental Management Company, P.O. Box 6012, San Ramon, CA 94583
Ms. Jeriann Alexander, FugroWest, Inc., 1000 Broadway, Suite 200, Oakland, CA 94607
Mr. Shaddrick Small, Oakland Housing Authority, 1805 Harrison Street, Oakland, CA 94612
Mr. William Pickel, Christian Church Homes/California Community Housing, 303 Hegenberger Road, Suite 201, Oakland, CA 94621

I:\Chevron\9-0020 Oakland\2007 Investigation\Risk Assessment\RAP\9-0020 RAP 06.07.doc

Conestoga-Rovers & Associates (CRA) prepared this document for use by our client and appropriate regulatory agencies. It is based partially on information available to CRA from outside sources and/or in the public domain, and partially on information supplied by CRA and its subcontractors. CRA makes no warranty or guarantee, expressed or implied, included or intended in this document, with respect to the accuracy of information obtained from these outside sources or the public domain, or any conclusions or recommendations based on information that was not independently verified by CRA. This document represents the best professional judgment of CRA. None of the work performed hereunder constitutes or shall be represented as a legal opinion of any kind or nature.

04/23/07



I:\9-0020 OAKLAND\FIGURES\VICINITY-MAP.AI

FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

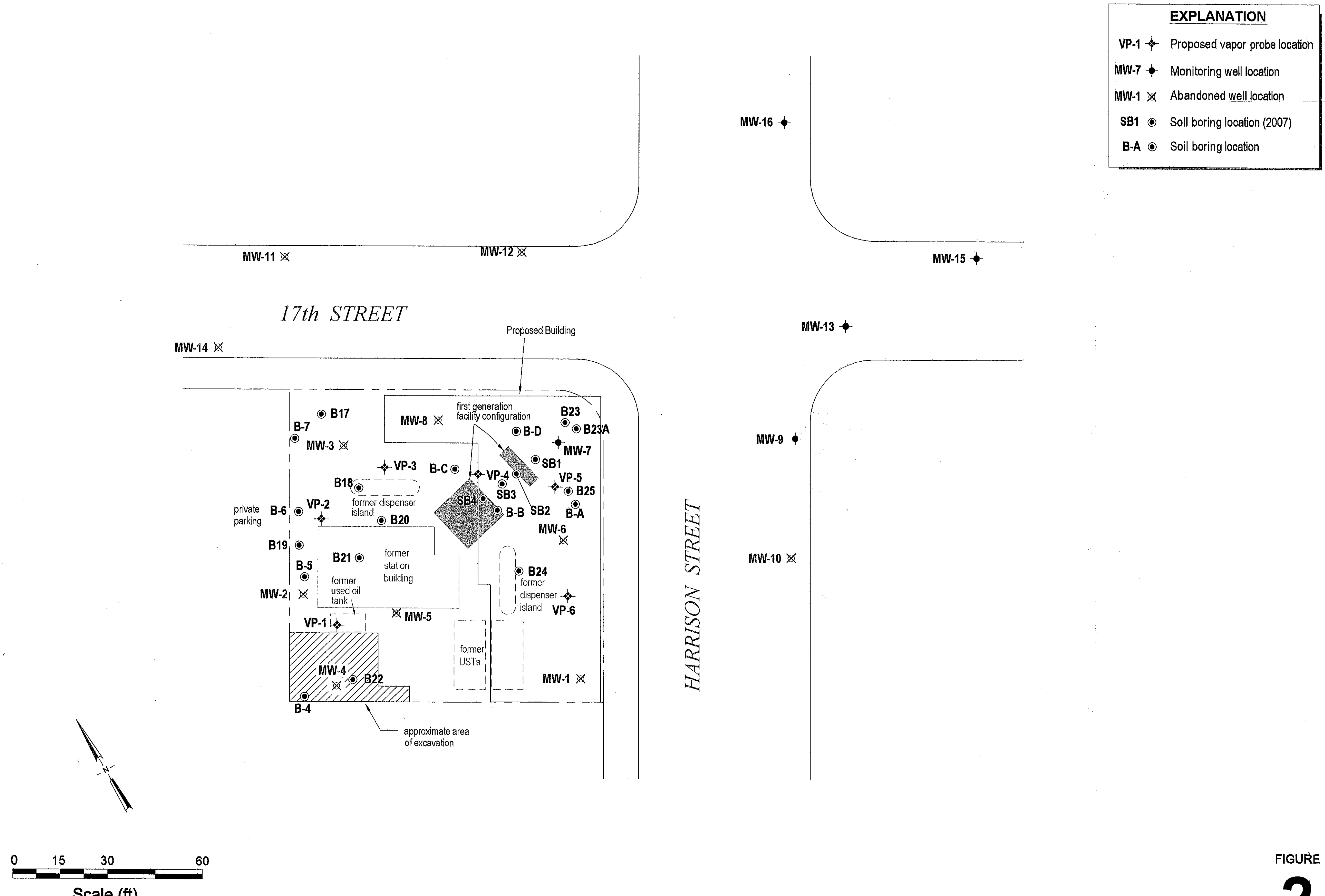
Former Chevron Station 9-0020

1633 Harrison Street

Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map


EXPLANATION
VP-1 Proposed vapor probe location
MW-7 Monitoring well location
MW-1 Abandoned well location
SB1 Soil boring location (2007)
B-A Soil boring location
17th STREET
HARRISON STREET
Proposed Building
first generation facility configuration
former dispenser island
former station building
former used oil tank
former USTs
former dispenser island
private parking
approximate area of excavation
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
MW-13
MW-14
MW-15
MW-16
VP-1
VP-2
VP-3
VP-4
VP-5
VP-6
SB1
SB2
SB3
SB4
B-A
B-B
B-C
B-D
B-4
B-5
B-6
B-7
B17
B18
B19
B20
B21
B22
B23
B23A
B24
B25
N
0 15 30 60
Scale (ft)

06/28/07

Site Plan

CONESTOGA-ROVERS & ASSOCIATES

FIGURE
2

Former Chevron Station 9-0020
1633 Harrison Street
Oakland, California

I:\CHEVRON\9-0020 OAKLAND\FIGURES\9-0020_SITEPLAN.DWG

06/26/07

EXPLANATION

- Proposed area of excavation
- VP-1 — Proposed vapor probe location
- MW-7 — Monitoring well location
- MW-1 — Abandoned well location
- SB1 — Soil boring location (2007)
- B-A — Soil boring location

MW-11 MW-12 MW-16 MW-15

17th STREET

MW-14 MW-13

Proposed Building Proposed Excavation

first generation facility configuration

B17 B-7 MW-3 MW-8 B23 B-D B23A MW-7 VP-3 B-C VP-4 SB1 VP-5 B18 former dispenser island SB4 SB3 B25 private parking B-6 VP-2 B20 SB2 B-A B-B MW-6 B19 B21 former station building B-5 B24 former used oil tank former dispenser island MW-2 VP-6 MW-5 Proposed Excavation VP-1 former USTs MW-4 B22 MW-1 B-4

approximate area of excavation

MW-9 MW-10

HARRISON STREET

N

0 15 30 60

Scale (ft)

Proposed Excavation Boundaries

CONESTOGA-ROVERS & ASSOCIATES

Former Chevron Station 9-0020

1633 Harrison Street

Oakland, California

FIGURE

3

I:\CHEVRON\9-0020 OAKLAND\FIGURES\9-0020_PROP-EXCV.DWG

Table 1. Comprehensive Analytic Results for Soil - Former Chevron Station 9-0020, 1633 Harrison Street, Oakland, California

Sample ID	Sample Date	Sample Depth (fbg)	TPHg	B	T	E	X	HVOC~	Ethanol	MtBE	TBA	DIPE	ETBE	TAME	EDB	1,2-DCA	Carbon Tetrachloride	Chloroform	PCE	TCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCP	1,1-DCE
			Concentrations reported in parts per million (ppm)																							
MW-1 (B-1)	10/26/88	5	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1 (B-1)	10/26/88	10	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1 (B-1)	10/26/88	15	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1 (B-1)	10/26/88	20	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1 (B-1)	10/26/88	29	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1 (B-1)	10/26/88	34	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (B-2)	10/26/88	5	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (B-2)	10/26/88	10	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (B-2)	10/26/88	15	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (B-2)	10/26/88	19	**12***	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (B-2)	10/26/88	20	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (B-2)	10/26/88	25	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (B-2)	10/26/88	30	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3 (B-3)	10/26/88	5	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3 (B-3)	10/26/88	10	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3 (B-3)	10/26/88	15	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3 (B-3)	10/26/88	20	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3 (B-3)	10/26/88	25	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3 (B-3)	10/26/88	30	<10*	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3 (B-3)	10/26/88	34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4	04/89	6	<5.0**	<0.005	<0.005	<0.005	<0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4	04/89	16	<2.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4	04/89	23.2	<2.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	04/89	9.5	<2.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	04/89	14.5	<2.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	04/89	22	<2.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	04/89	9.5	<2.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	04/89	14.5	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	04/89	22	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	04/89	4.2	<1.0**	<0.001	<0.001	<0.001	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	04/89	9.2	<1.0**	<0.001	<0.001	<0.001	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	04/89	14	<0.5**	<0.001	<0.001	<0.001	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	04/89	21.6	<0.5**	<0.001	<0.001	<0.001	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4 (B-8)	04/89	4.5	**600****	<0.001	<0.001	<0.001	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4 (B-8)	04/89	9.6	**600****	<0.01	<0.01	<0.01	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4 (B-8)	04/89	9.6	**450****	<0.02	<0.02	<0.02	<0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4 (B-8)	04/89	14.5	<1.0**	<0.02	<0.02	<0.02	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4 (B-8)	04/89	22.5	<1.0**	<0.02	<0.02	<0.02	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4 (B-8)	04/89	29.5	<1.0**	<0.02	<0.02	<0.02	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4 (B-8)	04/89	34.5	<1.0**	<0.02	<0.02	<0.02	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5 (B-9)	04/89	9	<0.5**	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5 (B-9)	04/89	14	<0.5**	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5 (B-9)	04/89	21	<0.1**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5 (B-9)	1989	29.5	<0.5**	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5 (B-9)	1989	33.5	<5.0**	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6 (B-10)	04/89	9.5	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6 (B-10)	04/89	14.5	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6 (B-10)	04/89	21.5	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6 (B-10)	04/89	27	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7 (B-11)	04/89	9.5	<0.1**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7 (B-11)	04/89	14.25	<2.0**	<0.0002	<0.0002	<0.0002	<0.0004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7 (B-11)	04/89	19.25	**680****	<0.01	<0.01	**0.14**	**0.95**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7 (B-11)	04/89	23.5	**45,000****	<0.1	**4**	**3.5**	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7 (B-11)	04/89	23.5	**50,000****	<0.2	**4.1**	**5**	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7 (B-11)	04/89	29.5	<1.0**	<0.001	<0.001	<0.001	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1. Comprehensive Analytic Results for Soil - Former Chevron Station 9-0020, 1633 Harrison Street, Oakland, California

Sample ID	Sample Date	Sample Depth (fbg)	TPHg	B	T	E	X	HVOC~	Ethanol	MtBE	TBA	DIPE	ETBE	TAME	EDB	1,2-DCA	Carbon Tetrachloride	Chloroform	PCE	TCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCP	1,1-DCE
			Concentrations reported in parts per million (ppm)																							
MW-8 (B-12)	04/89	9.5	<1.0**	<0.002	**0.003**	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8 (B-12)	04/89	14.5	<2.0**	<0.005	<0.005	<0.005	<0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8 (B-12)	04/89	21	<1.0**	<0.002	**0.003**	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8 (B-12)	04/89	24.25	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8 (B-12)	04/89	27.5	<1.0**	<0.002	<0.002	<0.002	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-13	6/18/1990	16	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-13	6/18/1990	21	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-13	6/18/1990	28	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-14	6/19/1990	16	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-14	6/19/1990	21.5	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-14	6/19/1990	29.5	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-15	6/20/1990	16	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-15	6/20/1990	19.5	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-15	6/20/1990	25.2	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-16	6/21/1990	6.2	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-16	6/21/1990	10.6	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-16	6/21/1990	15.6	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-16	6/21/1990	18.8	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-16	6/21/1990	25.6	<1.0**	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	10/3/91	15	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/3/91	20	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/3/91	25	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	10/3/91	10	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/3/91	20	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/3/91	25	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-A	10/5/91	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	15	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	20	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	25	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	30	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-B	10/5/91	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	15	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	20	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	25	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-C	10/5/91	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	15	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	20	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	25	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	28.5	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-D	10/5/91	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	15	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	20	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	25	**120**	ND	**0.16**	**0.14**	**1.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/5/91	28.5	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-15	11/11/1992	20	<1	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/11/1992	30	<1	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-16	12/8/1992	10	<1	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/8/1992	20	<1	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-17	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-17	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-17	6/28/04	20	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-18	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-18	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-18	6/28/04	20	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1. Comprehensive Analytic Results for Soil - Former Chevron Station 9-0020, 1633 Harrison Street, Oakland, California

Sample ID	Sample Date	Sample Depth (fbg)	TPHg	B	T	E	X	HVOC	Ethanol	MtBE	TBA	DIPE	ETBE	TAME	EDB	1,2-DCA	Carbon Tetrachloride	Chloroform	PCE	TCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCP	1,1-DCE
			Concentrations reported in parts per million (ppm)																							
B-19	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-19	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-19	6/28/04	20	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-20	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-20	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-20	6/28/04	20	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-21	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-21	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-22	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-22	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-22	6/29/04	20	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23A	7/29/04	13	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23A	7/29/04	15	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23A	7/29/04	19	**2,400**	<0.062	<0.12	**1.7**	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23A	7/29/04	23.5	**240**	<0.062	<0.12	<0.12	<0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23A	7/29/04	25	**4.2**	<0.001	<0.002	**0.003**	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-24	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-24	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-24	6/29/04	20	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-25	7/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-25	7/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-25	7/29/04	15	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-25	7/29/04	20	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-25	7/29/04	25	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ES-10W	1/9/2007	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ES-8C	1/9/2007	8	**310**	ND	ND	**0.88**	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EE-5N	1/9/2007	5	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EE-10S	1/9/2007	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EN-5W	1/9/2007	5	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EN-10E	1/9/2007	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EW-5S	1/9/2007	5	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EW-10N	1/9/2007	10	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E3-NE	1/9/2007	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E3-NW	1/9/2007	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E3-SW	1/9/2007	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E2S-5E	1/9/2007	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E2B	1/9/2007	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP1	1/9/2007	--	**14+**	ND	ND	ND	**0.09**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP2	1/9/2007	--	**14+**	ND	ND	ND	**0.07**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP3	1/9/2007	--	**5++**	ND	**0.014**	**0.025**	**71**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1. Comprehensive Analytic Results for Soil - Former Chevron Station 9-0020, 1633 Harrison Street, Oakland, California

Sample ID	Sample Date	Sample Depth (fbg)	TPHg	B	T	E	X	HVOC~	Ethanol	MtBE	TBA	DIPE	ETBE	TAME	EDB	1,2-DCA	Carbon Tetrachloride	Chloroform	PCE	TCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	1,2-DCP	1,1-DCE
			Concentrations reported in parts per million (ppm)																							
SB1	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB1	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB1	4/27/07	15	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB1	4/27/07	19.5	**140**	<0.003	<0.005	**0.026**	**0.01**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB1	4/27/07	23.5	<1.0	<0.0005	<0.001	**0.005**	**0.015**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB1	4/27/07	27.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	4/27/07	15	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	4/27/07	19.5	**120**	**0.002**	<0.001	**0.23**	**0.44**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	4/27/07	23.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2	4/27/07	27.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB3	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB3	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB3	4/27/07	15	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB3	4/27/07	19.5	**140**	**0.0008**	**0.001**	**0.24**	**0.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB3	4/27/07	23.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB3	4/27/07	27.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4	4/27/07	15	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4	4/27/07	19.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4	4/27/07	23.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4	4/27/07	27.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-1	6/13/07	3	**48**	<0.003	**0.018**	**0.26**	**1.93**	--	<0.51	<0.003	<0.10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		5	**6.1**	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		9.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.099	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
VP-2	6/13/07	3	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		9.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.099	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
VP-3	6/13/07	3	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.099	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		9.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
VP-4	6/13/07	3	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		9.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.099	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
VP-5	6/13/07	3	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.099	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		9.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
VP-6	6/13/07	3	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.10	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		9.5	<1.0	<0.0005	<0.001	<0.001	<0.001	--	<0.099	<0.0005	<0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Abbreviations/Notes:

Total petroleum hydrocarbons as gasoline (TPHg) by several methods
Benzene, toluene, ethylbenzene, xylenes (BTEX) by several methods
HVOC = Highly volatile organic compounds by unknown method
~ = Measured in parts per billion (ppb)
fbg = Feet below grade
* = Values reported for Total Fuel Hydrocarbons by unknow method
** = Total Purgeable Petroleum Hydrocarbons by unknown method
ND = Not detectable above laboratory detection limits
-- = Not analyzed or not applicable
<x = Not detected above method detection limit

Table 2. Comprehensive Analytic Results for Groundwater - Former Chevron Station 9-0020, 1633 Harrison Street, Oakland, California

Sample ID	Sample Date	TPHg	B	T	E	X
		Concentrations reported in micrograms per liter (µg/L)				
B-17	6/28/04	<50	<0.5	<0.5	<0.5	<0.5
B-18	6/28/04	<50	<0.5	<0.5	<0.5	<0.5
B-19	6/28/04	<50	<0.5	<0.5	<0.5	<0.5
B-20	6/28/04	<50	<0.5	<0.5	<0.5	<0.5
B-22	6/29/04	<50	<0.5	<0.5	<0.5	<0.5
B-23A	7/29/04	**12,000**	**17**	**53**	**180**	**360**
B-24	6/29/04	<50	<0.5	<0.5	<0.5	<0.5
B-25	7/29/04	**480**	<0.5	<0.5	**1.0**	**2.0**
SB1	4/27/07	**11,000**	**10**	<5	**320**	**250**
SB2	4/27/07	**6,700**	**2**	<2	**82**	**140**
SB3	4/27/07	**11,000**	**1**	<0.5	**37**	**66**
SB4	4/27/07	**57**	<0.5	<0.5	<0.5	<0.5

Abbreviations/Notes:

Total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8015M

Benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8260B

<x = Not detected above method detection limit

Table 3. Analytic Results for Soil Vapor - Former Chevron Station 9-0020, 1633 Harrison Street, Oakland, California

Sample ID	Sample Date	Sample Depth (fbg)	TPH (C5+)	TPHg*	B	T	E	X	MTBE	TBA	DIPE	ETBE	TAME	EDB	1,2-DCA	Napthalene	Chloroform	Ethanol	Other HVOCs	Oxygen (% volume)	Carbon dioxide (% volume)
					Concentrations reported in parts per million (ppm)																
V1/A	12/17/1987	3	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V1/B	12/17/1987	5.5	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V1/C	12/17/1987	8	--	**5**	<1	**5**	<1	**5**	--	--	--	--	--	--	--	--	--	--	--	--	--
V1/D	12/17/1987	10.5	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V1/E	12/17/1987	13	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V2/A	12/17/1987	3	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V2/B	12/17/1987	8	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V3/A	12/17/1987	3	--	**10**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V3/B	12/17/1987	5.5	--	**10**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V3	12/17/1987	8	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V3/D	12/17/1987	10.5	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V4	12/17/1987	3	--	**15**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V5	12/17/1987	3	--	**10**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V6/A	12/17/1987	3	--	**20**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V6/B	12/17/1987	8	--	**140**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V6/C	12/17/1987	13	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V7	12/17/1987	3	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V8	12/17/1987	3	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V9/A	12/17/1987	3	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V9/B	12/17/1987	8	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V10	12/17/1987	8	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
V11	12/17/1987	8	--	**5**	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
					Concentrations reported in micrograms per cubic meter - µg/m³																
VP-1	06/13/07	5.0-5.5	**1,000,000**	**1,100,000**	**110**	**220**	**480**	**1000**	<56	<190	<260	<260	<260	<120	<63	<330	<46	<120	ND	**4.5**	**10**
VP-1	LAB DUPLICATE		**1,100,000**	**1,100,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.6**	**10**
VP-1	06/13/07	10.0-10.5	**2,600,000**	**2,600,000**	**2600**	**2000**	**4800**	**5000**	<21	<70	<97	<97	<97	<44	<23	**740**	<17	<44	ND	**5.0**	**6.1**
VP-2	06/13/07	5.0-5.5	**9,300**	**8,900**	**7.9**	**420**	**170**	**530**	<4.4	<15	<21	<21	<21	<9.5	<4.9	<26	<3.6	<9.3	ND	**16**	**1.2**
VP-2	06/13/07	10.0-10.5	**4,300**	**4,000**	**12**	**280**	**66**	**260**	<4.4	<15	<20	<20	<20	<9.3	<4.9	<25	<3.5	<9.1	ND	**16**	**2.3**
VP-2	LAB DUPLICATE		**4,500**	**4,200**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-3	06/13/07	5.0-5.5	**9,100**	**8,200**	**29**	**600**	**120**	**490**	<4.4	<15	<20	<20	<20	<9.3	<4.9	<25	<3.5	<9.1	ND	**16**	**0.8**
VP-3 DUP	06/13/07	5.0-5.5	**9,100**	**8,200**	**28**	**590**	**120**	**490**	<4.4	<15	<20	<20	<20	<9.3	<4.9	<25	**4.3**	<9.1	ND	**16**	**0.79**
VP-3	06/13/07	10.0-10.5	**11,000**	**10,000**	**56**	**1000**	**170**	**630**	<4.4	<15	<20	<20	<20	<9.3	<4.9	<25	**4.3**	<9.1	ND	**15**	**0.93**
VP-3	LAB DUPLICATE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**15**	**0.93**
VP-4	06/13/07	5.0-5.5	**14,000**	**13,000**	**26**	**620**	**130**	**520**	<4.4	<15	<20	<20	<20	<9.3	<4.9	<25	<3.5	**18**	ND	**14**	**0.88**
VP-4	06/13/07	10.0-10.5	**10,000**	**9,800**	**15**	**310**	**120**	**280**	<4.3	<14	<20	<20	<20	<9.1	<4.8	<25	<3.5	<9.0	ND	**13**	**2.9**
VP-4	LAB DUPLICATE		--	--	**14**	**310**	**120**	**280**	<4.3	<14	<20	<20	<20	<9.1	<4.8	<25	<3.5	<9.0	ND	--	--
VP-5	06/13/07	5.0-5.5	**20,000**	**19,000**	**35**	**820**	**160**	**590**	<4.3	<14	<20	<20	<20	<9.1	<4.8	<25	**6.4**	<9.0	ND	**17**	**0.15**
VP-5	06/13/07	10.0-10.5	**8,100**	**6,900**	**9**	**160**	**42**	**130**	<4.2	<14	<19	<19	<19	<9.0	<4.7	<24	<3.4	<8.8	ND	**18**	**1.1**
VP-5 DUP	06/13/07	10.0-10.5	**4,900**	**4,300**	**8**	**160**	**34**	**110**	<4.4	<15	<20	<20	<20	<9.3	<4.9	<25	<3.5	<9.1	ND	**18**	**1.0**

Table 3. Analytic Results for Soil Vapor - Former Chevron Station 9-0020, 1633 Harrison Street, Oakland, California

Sample ID	Sample Date	Sample Depth (fbg)	TPH (C5+)	TPHg*	B	T	E	X	MTBE	TBA	DIPE	ETBE	TAME	EDB	1,2-DCA	Napthalene	Chloroform	Ethanol	Other HVOCs	Oxygen (% volume)	Carbon dioxide (% volume)
					Concentrations reported in parts per million (ppm)																
VP-6	06/13/07	5.0-5.5	**41,000**	**38,000**	**28**	**320**	**130**	**320**	<4.2	<14	<19	<19	<19	<9.0	<4.7	**110**	<3.4	<8.8	ND	**14**	**1.8**
VP-6	06/13/07	10.0-10.5	**17,000**	**15,000**	**20**	**450**	**95**	**330**	<4.2	<14	<19	<19	<19	<9.0	<4.7	**29**	<3.4	<8.8	ND	**12**	**1.4**

ATTACHMENT A

First Quarter 2007 Groundwater Monitoring Report

GETTLER-RYAN INC.

TRANSMITTAL

April 17, 2007
G-R #386499

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

CC: Mr. Satya Sinha
Chevron Environmental
Management Company
P.O. Box 6012, Room K2256
San Ramon, California 94583

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

RE: Former Chevron Service Station
#9-0020
1633 Harrison Street
Oakland, California
RO 0000143

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	April 13, 2004	Groundwater Monitoring and Sampling Report **First Semi-Annual - Event of March 5, 2007**

COMMENTS:

This report is being sent for your review. Please provide any comments/changes and propose any groundwater monitoring modifications for the next event prior to ***April 20, 2007,*** at which time the final report will be distributed to the following:

cc: Mr. Phil Nevel, The Oakland Housing Authority, 1619 Harrison Street, Oakland, CA 94612
Mr. Barney Chan, 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.)**

Enclosures

Trans/9-0020-SS

GETTLER-RYAN INC.

April 13, 2007
G-R Job #386499

Mr. Satya Sinha
Chevron Environmental Management Company
P.O. Box 6012, Room K2256
San Ramon, CA 94583

RE: First Semi-Annual Event of March 5, 2007
Groundwater Monitoring & Sampling Report
Former Chevron Service Station #9-0020
1633 Harrison Street
Oakland, California

Dear Mr. Sinha:

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

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

Groundwater samples were collected from the monitoring wells and submitted to a state certified laboratory for analyses. The field data sheets for this event are attached. Analytical results are presented in the table(s) listed below. The chain of custody document and laboratory analytical report are also attached.

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

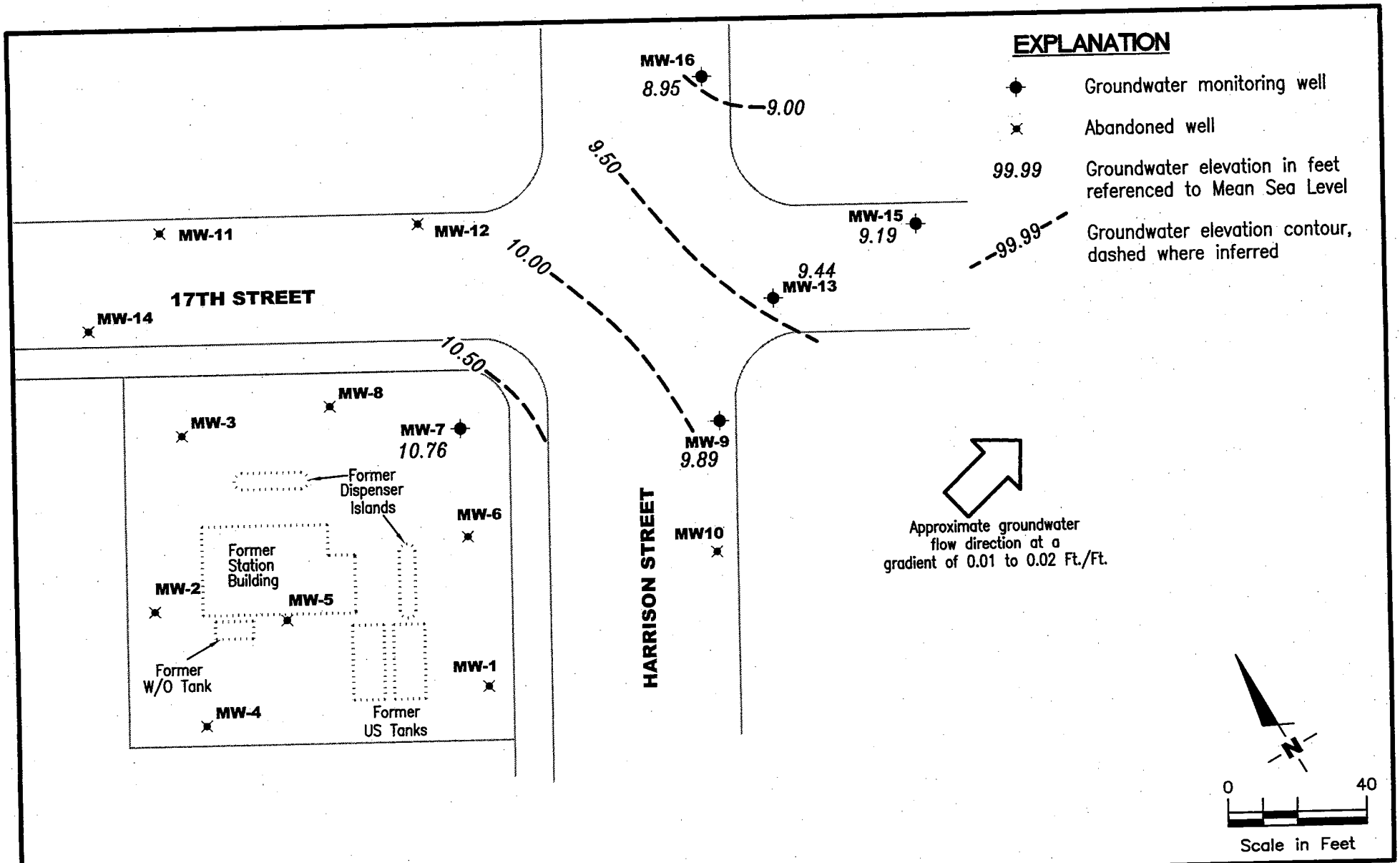
Sincerely,

Deanna L. Harding
Project Coordinator

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

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

Figure 1: Potentiometric Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Groundwater Analytical Results
Table 3: Groundwater Analytical Results – Oxygenate Compounds
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports



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

FIGURE 1

POTENTIOMETRIC MAP
Former Chevron Service Station #9-0020
1633 Harrison Street
Oakland, California

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

PROJECT NUMBER 386499

REVIEWED BY

DATE March 5, 2007

REVISED DATE

FILE NAME: P:\Enviro\Chevron\9-0020\Q07-9-0020.dwg | Layout Tab: Pot1

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE		TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-7											
04/23/89		29.01	10.02	18.99	--	--	--	--	--	--	--
04/24/89		29.01	--	--	8400	100	260	160	1300	--	<3.0
07/28/89		29.01	9.07	19.94	7000	230	90	70	440	--	<3000
07/28/89	(D)	29.01	--	--	6000	280	180	58	430	--	--
10/30/89		29.01	9.04	19.97	10,000	570	55	160	400	--	--
10/30/89	(D)	29.01	--	--	9900	520	82	180	410	--	--
01/09/90		29.01	8.86	20.15	3400	290	72	9.0	200	--	--
04/18/90		29.01	8.64	20.37	6800	350	140	110	400	--	--
06/22/90		29.01	8.61	20.40	--	--	--	--	--	--	--
08/09/90		29.01	8.63	20.38	11,000	360	130	14	660	--	--
11/13/90		29.01	8.60	20.41	6500	230	110	97	460	--	--
05/15/91		29.01	8.54	20.47	4600	180	55	46	300	--	--
08/27/91		29.01	8.87	20.14	7000	220	53	63	340	--	--
11/15/91		29.01	8.79	20.22	3300	150	19	4.9	200	--	--
02/20/92		29.01	8.69	20.32	5200	520	150	100	380	--	--
06/15/92		29.01	9.03	19.98	10,000	760	430	320	1100	--	--
12/16/92		29.01	8.87	20.14	11,000	810	350	280	1100	--	--
04/07/93		29.01	9.87	19.14	150	1.4	0.9	0.9	4.5	--	--
06/09/93		29.01	9.96	19.05	180	4.0	1.0	1.0	3.0	--	--
09/10/93		29.01	--	--	--	--	--	--	--	--	--
09/27/93		29.01	--	--	--	--	--	--	--	--	--
12/17/93		29.01	--	--	--	--	--	--	--	--	--
03/10/94		29.01	--	--	--	--	--	--	--	--	--
06/16/94		29.01	--	--	--	--	--	--	--	--	--
09/07/94		29.01	--	--	--	--	--	--	--	--	--
11/30/94		29.01	INACCESSIBLE		--	--	--	--	--	--	--
01/17/95		29.01	17.39	11.62	2700	140	65	44	200	--	--
03/22/95		29.01	11.33	17.68	160	3.4	<0.5	1.1	0.77	--	--
06/27/95		29.01	9.75	19.26	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/28/95		29.01	9.67	19.34	1500	84	24	26	130	--	--
12/30/95		29.01	9.85	19.16	200	1.6	<0.5	1.3	5.9	5.5	--
02/28/96		29.01	10.57	18.44	650	14	1.3	4.2	16	34	--
06/27/96		29.01	10.29	18.72	640	140	10	9.8	14	55	--
09/13/96		29.01	9.61	19.40	1400	100	30	24	66	130	--
12/16/96		29.01	8.91	20.10	2600	140	72	51	180	<50	--
03/20/97		29.01	10.06	18.95	64	1.7	2.4	<0.5	0.67	<2.5	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-7 (cont)										
09/08/97	29.01	9.34	19.67	590	45	<1.0	7.7	<1.0	46	--
02/16/98	29.01	10.41	18.60	120	8.7	7.5	1.9	11	4.4	--
08/25/98	29.01	9.61	19.40	160	6.2	33	0.84	2.0	<2.5	--
03/09/99	29.01	13.01	16.00	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
09/29/99	29.01	12.12	16.89	276	35.1	2.54	2.17	5.43	<5.0/<2.0[1]	--
03/27/00	29.01	9.42	19.59	721	38.5	1.06	6.31	9.38	7.75	--
09/18/00[3]	29.01	8.99	20.02	88[4]	2.5	0.92	<0.50	1.3	8.7	--
03/27/01[3]	29.01	9.16	19.85	<50.0	<0.500	<0.500	<0.500	<0.500	<0.500	--
09/05/01[3]	29.01	8.60	20.41	220	1.9	2.3	<0.50	<3.0	<2.5	--
03/15/02[3]	29.01	9.16	19.85	NOT SAMPLED - DUE TO INSUFFICIENT WATER				--	--	--
09/14/02[3]	29.01	8.72	20.29	69	2.2	0.85	<0.50	<1.5	<2.5	--
03/26/03[3]	29.01	8.89	20.12	78	<0.50	0.68	<0.50	<1.5	<2.5	--
09/02/03[6,7]	29.01	7.99	21.02	76	<0.5	<0.7	<0.8	<1.6	<0.5	--
03/29/04[6]	29.01	10.13	18.88	160	1	<0.5	0.5	0.6	1	--
09/03/04[6]	29.01	9.52	19.49	110	2	1	0.8	0.8	<0.5	--
03/02/05[6]	29.01	15.59	13.42	850	3	0.9	6	1	<0.5	--
09/22/05[6]	29.01	10.13	18.88	490	29	5	14	4.9	<0.5	--
03/30/06[6]	29.01	10.88	18.13	1,400	51	9	26	10	<0.5	--
08/28/06[6]	29.01	10.16	18.85	1,300	53	12	21	16	<0.5	--
03/05/07[6]	**29.01**	**10.76**	**18.25**	**1,800**	**66**	**16**	**17**	**19**	**<0.5**	--
MW-9										<1000
06/22/90	28.67	7.87	20.80	5700	47	31	280	530	--	--
08/09/90	28.67	7.93	20.74	8000	<0.3	17	210	480	--	--
11/13/90	28.67	7.89	20.78	6400	<3.0	20	240	450	--	--
05/15/91	28.67	8.19	20.48	5700	2.0	16	190	390	--	--
08/27/91	28.67	8.12	20.55	6700	<3.0	31	180	350	--	--
11/15/91	28.67	8.10	20.57	4000	8.8	26	150	280	--	--
02/20/92	28.67	6.90	21.77	3400	13	30	230	460	--	--
06/15/92	28.67	8.30	20.37	4500	19	72	280	560	--	--
12/16/92	28.68	8.39	20.29	9900	380	220	380	1300	--	--
04/07/93	28.68	9.36	19.32	8700	51	150	360	1000	--	--
06/09/93	28.68	9.52	19.16	8900	170	160	350	1100	--	--
09/10/93	28.68	--	--	4600	110	63	190	350	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-0020
1633 Harrison Street
Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-9 (cont)										
09/27/93	28.68	8.74	19.94	--	--	--	--	--	--	--
12/17/93	28.68	8.37	20.31	4600	92	85	180	300	--	--
03/10/94	28.68	8.38	20.30	3300	8.0	29	120	170	--	--
06/16/94	28.68	8.42	20.26	2900	4.8	16	85	64	--	--
09/07/94	28.68	8.27	20.41	2900	<0.5	9.9	70	75	--	--
11/30/94	28.68	8.70	19.98	2100	<5.0	<5.0	53	51	--	--
03/22/95	28.68	9.27	19.41	2200	<5.0	5.3	26	69	--	--
06/27/95	28.68	9.28	19.40	2900	7.4	10	68	99	--	--
09/28/95	28.68	9.13	19.55	4000	32	<10	36	44	--	--
12/30/95	28.68	8.88	19.80	3800	<5.0	13	<5.0	120	120	--
02/28/96	28.68	8.93	19.75	2000	9.9	<5.0	46	30	<25	--
06/27/96	28.68	9.13	19.55	2400	36	7.1	65	72	<50	--
09/13/96	28.68	8.86	19.82	2500	26	8.4	53	39	36	--
12/16/96	28.68	7.91	20.77	1200	3.5	2.4	12	14	<10	--
03/20/97	28.68	9.28	19.40	2400	25	5.8	26	22	<25	--
09/08/97	28.68	8.59	20.09	1800	9.5	8.1	22	21	12	--
02/16/98	28.68	9.45	19.23	950	5.6	3.1	13	13	18	--
08/25/98	28.68	9.18	19.50	2100	2.5	6.4	35	51	8.9	--
03/09/99	28.68	8.87	19.81	1400	12	7.8	8.8	16	8.8	--
07/19/99[2]	28.68	--	--	--	--	--	--	--	--	--
09/29/99	28.68	8.27	20.41	217	1.36	1.14	1.56	1.49	<5.0/<2.0[1]	--
03/27/00	28.68	INACCESSIBLE		--	--	--	--	--	--	--
09/18/00[3]	28.68	8.63	20.05	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
03/27/01[3]	28.68	8.84	19.84	718	<0.500	<0.500	3.31	12.3	<0.500	--
09/05/01[3]	28.68	8.39	20.29	1,500	<0.50	2.9	11	25	<2.5	--
03/15/02[3]	28.68	8.07	20.61	740	0.56	<0.50	4.0	5.3	<2.5	--
09/14/02[3]	28.68	8.62	20.06	580	<1.0	<1.0	1.8	3.4	3.4	--
03/26/03[3]	28.68	8.71	19.97	440	1.7	0.69	<5.0	<1.5	<2.5	--
09/02/03[6,7]	28.68	7.82	20.86	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/29/04[6]	28.68	9.54	19.14	660	<0.5	<0.5	12	11	0.8	--
09/03/04[6]	28.68	8.91	19.77	350	<0.5	<0.5	2	0.9	<0.5	--
03/02/05[6]	28.68	9.57	19.11	800	<0.5	<0.5	3	1.6	<0.5	--
09/22/05[6]	28.68	9.67	19.01	690	<0.5	<0.5	0.6	<1.0	<0.5	--
03/30/06[6]	28.68	10.02	18.66	540	<0.5	0.9	4	4	<0.5	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-9 (cont)										
08/28/06[6]	28.68	9.43	19.25	2,700	<0.5	7	10	56	<0.5	--
03/05/07[6]	**28.68**	**9.89**	**18.79**	**800**	**<0.5**	**<0.5**	**0.7**	**1**	**<0.5**	--
MW-13										
11/15/91	28.63	7.56	21.07	3100	68	40	110	270	--	--
02/20/92	28.63	6.46	22.17	3100	120	50	240	400	--	--
06/15/92	28.63	7.96	20.67	3200	35	33	210	300	--	--
12/16/92	28.62	8.28	20.34	87,000	1400	540	2400	11,000	--	--
04/07/93	28.62	9.21	19.41	1500	72	12	70	160	--	--
06/09/93	28.62	9.42	19.20	210	6.0	2.0	7.0	16	--	--
09/10/93	28.62	--	--	73	3.0	<0.5	2.0	3.0	--	--
09/27/93	28.62	8.27	20.35	--	--	--	--	--	--	--
12/17/93	28.62	7.86	20.76	640	43	12	12	37	--	--
03/10/94	28.62	7.93	20.69	540	44	22	10	69	--	--
06/16/94	28.62	7.95	20.67	1800	63	12	18	64	--	--
09/07/94	28.62	7.79	20.83	1400	59	12	22	50	--	--
11/30/94	28.62	8.21	20.41	700	36	4.4	18	31	--	--
03/22/95	28.62	8.80	19.82	190	1.4	1.4	<0.5	<0.5	--	--
06/27/95	28.62	8.86	19.76	220	1.8	<0.5	<0.5	0.84	--	--
09/28/95	28.62	8.58	20.04	160	3.2	<0.5	0.97	2.2	--	--
12/30/95	28.62	8.32	20.30	190	0.94	<0.5	0.74	1.1	<2.5	--
02/28/96	28.62	8.73	19.89	130	<0.5	<0.5	<0.5	<0.5	<2.5	--
06/27/96	28.62	8.64	19.98	280	<0.5	1.4	<0.5	3.8	9.4	--
09/13/96	28.62	8.34	20.28	170	<0.5	<0.5	<0.5	0.89	2.7	--
12/16/96	28.62	8.15	20.47	170	<0.5	0.51	0.6	3.0	<2.5	--
03/20/97	28.62	8.72	19.90	290	1.6	0.78	1.1	1.5	3.4	--
09/08/97	28.62	8.13	20.49	140	0.52	1.5	<0.5	1.2	<2.5	--
02/16/98	28.62	8.87	19.75	64	<0.5	<0.5	<0.5	<0.5	<2.5	--
08/25/98	28.62	8.60	20.02	99	<0.5	<0.5	<0.5	1.7	<2.5	--
03/09/99	28.62	8.62	20.00	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
09/29/99	28.62	8.13	20.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0/<2.0[1]	--
03/27/00	28.62	8.58	20.04	89.5	0.765	0.682	<0.5	0.688	4.04	--
09/18/00	28.62	8.13	20.49	1,300[5]	6.9	2.8	14	28	12	--
03/27/01	28.62	8.34	20.28	<50.0	<0.500	<0.500	<0.500	<0.500	<0.500	--

As of 03/05/07

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-13 (cont)										
09/05/01	28.62	7.96	20.66	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
03/15/02	28.62	8.52	20.10	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
09/14/02	28.62	8.16	20.46	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
03/26/03	28.62	8.20	20.42	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
09/02/03[6]	28.62	7.27	21.35	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/29/04[6]	28.62	8.96	19.66	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
09/03/04[6]	28.62	8.48	20.14	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/02/05[6]	28.62	9.11	19.51	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
09/22/05[6]	28.62	9.33	19.29	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/30/06[6]	28.62	9.52	19.10	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
08/28/06[6]	28.62	9.08	19.54	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/05/07[6]	**28.62**	**9.44**	**19.18**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<1.0**	**<0.5**	**--**
MW-15										
12/16/92	28.04	8.30	19.74	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	28.04	9.24	18.80	<50	1.3	<0.5	<0.5	<1.5	--	--
06/09/93	28.04	9.44	18.60	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	28.04	--	--	--	--	--	--	--	--	--
09/27/93	28.04	8.11	19.93	<50	2.0	<0.5	<0.5	<0.5	--	--
12/17/93	28.04	7.72	20.32	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/10/94	28.04	7.75	20.29	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/16/94	28.04	7.73	20.31	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/07/94	28.04	7.61	20.43	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/30/94	28.04	8.03	20.01	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/22/95	28.04	8.57	19.47	69	4.9	<0.5	<0.5	<0.5	--	--
06/27/95	28.04	8.70	19.34	<50	3.9	<0.5	1.4	<0.5	--	--
09/28/95	28.04	8.38	19.66	<50	0.82	<0.5	<0.5	<0.5	--	--
12/30/95	28.04	8.10	19.94	160	7.0	1.4	<0.5	1.8	14	--
02/28/96	28.04	8.41	19.63	81	1.7	<0.5	<0.5	<0.5	<2.5	--
06/27/96	28.04	8.44	19.60	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
09/13/96	28.04	8.14	19.90	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
12/16/96	28.04	7.81	20.23	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
03/20/97	28.04	8.52	19.52	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
09/08/97	28.04	7.86	20.18	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--

As of 03/05/07

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-15 (cont)										
02/16/98	28.04	8.67	19.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
08/25/98	28.04	8.34	19.70	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
03/09/99	28.04	8.35	19.69	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
09/29/99	28.04	7.92	20.12	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
03/27/00	28.04	8.37	19.67	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
09/18/00	28.04	7.91	20.13	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
03/27/01	28.04	8.13	19.91	<50.0	<0.500	<0.500	<0.500	<0.500	<0.500	--
09/05/01	28.04	7.76	20.28	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
03/15/02	28.04	8.33	19.71	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
09/14/02	28.04	7.94	20.10	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
03/26/03	28.04	7.99	20.05	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
09/02/03[6]	28.04	7.12	20.92	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/29/04[6]	28.04	8.73	19.31	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
09/03/04[6]	28.04	8.31	19.73	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/02/05[6]	28.04	8.93	19.11	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
09/22/05[6]	28.04	9.19	18.85	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/30/06[6]	28.04	9.29	18.75	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
08/28/06[6]	28.04	8.92	19.12	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--
03/05/07[6]	**28.04**	**9.19**	**18.85**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<1.0**	**<0.5**	--
MW-16										
12/16/92	28.32	8.74	19.58	--	--	--	--	--	--	--
12/21/92	28.32	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	28.32	9.91	18.41	<50	<0.5	6.8	<0.5	<0.5	--	--
06/09/93	28.32	10.07	18.25	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	28.32	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/27/93	28.32	8.16	20.16	--	--	--	--	--	--	--
12/17/93	28.32	--	--	--	--	--	--	--	--	--
03/10/94	28.32	7.77	20.55	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/16/94	28.32	7.67	20.65	<50	0.9	0.7	<0.5	<0.5	--	--
09/07/94	28.32	7.59	20.73	150	1.3	0.8	1.2	3.6	--	--
11/30/94	28.32	8.04	20.28	4200	300	<5.0	34	350	--	--
03/22/95	28.32	8.65	19.67	2900	180	5.7	21	91	--	--
06/27/95	28.32	8.72	19.60	2000	330	10	27	48	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-1 (cont)										
07/28/89	29.82	9.24	20.58	<50	<0.1	<0.5	<0.2	<0.5	--	<3000
10/30/89	29.82	9.30	20.52	<500	<0.3	<0.3	<0.3	<0.6	--	--
01/09/90	29.82	9.05	20.77	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	29.82	8.87	20.95	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	29.82	8.82	21.00	--	--	--	--	--	--	--
08/09/90	29.82	8.88	20.94	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	29.82	8.84	20.98	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/15/91	29.82	9.18	20.64	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	29.82	9.03	20.79	110	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	29.82	9.07	20.75	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/20/92	29.82	8.92	20.90	<50	0.5	0.6	<0.5	0.9	--	--
06/15/92	29.82	9.18	20.64	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	29.82	8.98	20.84	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	29.82	9.91	19.91	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	29.82	9.97	19.85	--	--	--	--	--	--	--
09/10/93	29.82	--	--	--	--	--	--	--	--	--
09/27/93	29.82	9.47	20.35	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/17/93	29.82	9.14	20.68	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/10/94	29.82	9.25	20.57	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/16/94	29.82	9.27	20.55	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/07/94	29.82	9.13	20.69	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/30/94	29.82	9.59	20.23	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/22/95	29.82	10.37	19.45	<50	<0.5	<0.5	<0.5	<0.5	--	--
ABANDONED										
MW-2										
11/03/88	30.59	9.70	20.89	<1000	<1.0	<1.0	<1.0	<1.0	--	--
02/02/89	30.59	9.38	21.21	--	--	--	--	--	--	--
02/10/89	30.59	--	--	<100	<0.2	<0.2	<0.2	<0.4	--	--
04/23/89	30.59	9.77	20.82	--	--	--	--	--	--	--
04/24/89	30.59	--	--	<50	<0.5	<1.0	<1.0	<1.0	--	<3000
07/28/89	30.59	9.57	21.02	<100	<0.2	<1.0	<0.2	<0.5	--	<3000
10/30/89	30.59	9.63	20.96	<500	<0.3	<0.3	<0.3	<0.6	--	--
01/09/90	30.59	9.34	21.25	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	30.59	9.06	21.53	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	30.59	9.02	21.57	--	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-2 (cont)										
08/09/90	30.59	9.04	21.55	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	30.59	9.05	21.54	<50	<0.5	0.8	<0.5	0.9	--	--
05/15/91	30.59	9.44	21.15	83	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	30.59	9.32	21.27	97	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	30.59	9.29	21.30	<50	0.5	1.5	0.8	3.6	--	--
02/20/92	30.59	9.13	21.43	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/15/92	30.59	9.41	21.18	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	30.56	9.09	21.47	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	30.56	10.03	20.53	66	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	30.56	10.11	20.45	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	30.56	--	--	--	--	--	--	--	--	--
09/27/93	30.56	9.59	20.97	--	--	--	--	--	--	--
12/17/93	30.56	9.25	21.31	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/10/94	30.56	9.33	21.23	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/16/94	30.56	9.35	21.21	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/07/94	30.56	9.22	21.34	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/30/94	30.56	9.66	20.90	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/22/95	30.56	10.22	20.34	<50	<0.5	<0.5	<0.5	<0.5	--	--
ABANDONED										
MW-3										
11/03/88	30.09	9.55	20.54	<1000	<1.0	<1.0	<1.0	<1.0	--	--
02/02/89	30.09	9.24	20.85	--	--	--	--	--	--	--
02/10/89	30.09	--	--	<100	<0.2	<0.2	<0.2	<0.4	--	--
04/23/89	30.09	9.66	20.43	--	--	--	--	--	--	--
04/24/89	30.09	--	--	<50	<0.5	<1.0	<1.0	<1.0	--	<3000
07/28/89	30.09	9.45	20.64	<100	<0.2	<1.0	<0.2	<0.4	--	<3000
10/30/89	30.09	9.48	20.61	<500	<0.3	<0.3	<0.3	<0.6	--	--
01/09/90	30.09	9.21	20.88	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	30.09	8.94	21.15	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	30.09	8.89	21.20	--	--	--	--	--	--	--
08/09/90	30.09	8.91	21.18	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	30.09	8.94	21.15	51	<0.5	<0.5	<0.5	<0.5	--	--
05/15/91	30.09	9.18	20.91	85	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	30.09	9.20	20.89	91	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	30.09	9.07	21.02	<50	<0.5	0.7	<0.5	1.3	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-3 (cont)										
02/20/92	30.09	9.02	21.07	<50	<0.5	<0.5	<0.5	0.9	--	--
06/15/92	30.09	9.27	20.82	50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	30.08	9.07	21.07	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	30.08	9.95	20.13	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	30.08	10.03	20.05	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	30.08	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/27/93	30.08	9.50	20.58	--	--	--	--	--	--	--
12/17/93	30.08	9.07	21.01	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/10/94	30.08	9.22	20.86	<50	<0.5	<0.5	<0.5	1.1	--	--
06/16/94	30.08	9.21	20.87	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/07/94	30.08	9.11	20.97	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/30/94	30.08	10.45	19.63	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/22/95	30.08	10.27	19.81	<50	<0.5	<0.5	<0.5	<0.5	--	--
ABANDONED										
MW-4										
04/23/89	31.17	9.84	21.33	--	--	--	--	--	--	--
04/24/89	31.17	--	--	<50	<0.5	<1.0	<1.0	<1.0	--	<3000
07/28/89	31.17	9.59	21.58	<50	<0.1	<0.5	<0.1	<0.2	--	<3000
10/30/89	31.17	9.63	21.54	<500	<0.3	<0.3	<0.3	<0.6	--	--
01/09/90	31.17	9.35	21.82	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	31.17	9.08	22.09	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	31.17	9.05	22.12	--	--	--	--	--	--	--
08/09/90	31.17	9.06	22.11	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	31.17	9.07	22.10	<50	<0.5	1.0	0.5	1.0	--	--
05/15/91	31.17	9.46	21.71	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	31.17	9.30	21.87	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	31.17	9.37	21.80	97	<0.5	0.9	<0.5	1.9	--	--
02/20/92	31.17	9.18	21.99	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/15/92	31.17	9.43	21.74	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	31.17	9.12	22.05	<50	0.7	0.5	0.5	1.3	--	--
04/07/93	31.17	10.06	21.11	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	31.17	--	--	--	--	--	--	--	--	--
09/10/93	31.17	--	--	--	--	--	--	--	--	--
09/27/93	31.17	9.63	21.54	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/17/93	31.17	9.28	21.89	<50	<0.5	<0.5	<0.5	<0.5	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-4 (cont)										
03/10/94	31.17	--	--	--	--	--	--	--	--	--
06/16/94	31.17	10.63	20.54	--	--	--	--	--	--	--
09/07/94	31.17	9.27	21.90	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/30/94	31.17	9.83	21.34	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/21/95	31.17	10.55	20.62	<50	<0.5	<0.5	<0.5	<0.5	--	--
ABANDONED										
MW-5										
04/23/89	30.28	9.66	20.62	--	--	--	--	--	--	--
04/24/89	30.28	--	--	<50	<0.5	<1.0	<1.0	<1.0	--	<3000
07/28/89	30.28	9.42	20.86	<100	<0.2	<1.0	<0.2	<0.4	--	<3000
10/30/89	30.28	9.46	20.82	<500	<0.3	<0.3	<0.3	<0.6	--	--
01/09/90	30.28	9.21	21.07	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	30.28	8.93	21.35	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	30.28	8.90	21.38	--	--	--	--	--	--	--
08/09/90	30.28	8.92	21.36	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	30.28	8.93	21.35	<50	<0.5	1.0	<0.5	1.0	--	--
05/15/91	30.28	8.99	21.29	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	30.28	9.17	21.11	94	3.0	5.0	1.5	5.5	--	--
11/15/91	30.28	9.10	21.18	<50	0.9	1.7	<0.5	2.2	--	--
02/20/92	30.28	9.03	21.25	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/15/92	30.28	9.28	21.00	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	30.28	9.05	21.23	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	30.28	9.97	20.31	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	30.28	--	--	--	--	--	--	--	--	--
09/10/93	30.28	--	--	--	--	--	--	--	--	--
09/27/93	30.28	9.52	20.76	--	--	--	--	--	--	--
ABANDONED										
MW-6										
04/23/89	29.46	9.41	20.05	--	--	--	--	--	--	--
04/24/89	29.46	--	--	<50	<0.5	<1.0	<1.0	<1.0	--	<3.0
07/28/89	29.46	9.16	20.30	<100	<0.2	<1.0	<0.2	<0.4	--	<3.0
10/30/89	29.46	9.14	20.32	<500	<0.3	<0.3	<0.3	<0.6	--	--
01/09/90	29.46	8.95	20.51	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	29.46	8.74	20.72	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	29.46	8.69	20.77	--	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-6 (cont)										
08/09/90	29.46	8.72	20.74	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	29.46	8.71	20.75	<50	3.0	5.0	0.5	2.0	--	--
05/15/91	29.46	8.85	20.61	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	29.46	8.93	20.53	180	6.1	12	3.8	14	--	--
11/15/91	29.46	8.93	20.53	<50	<0.5	0.6	<0.5	<0.5	--	--
02/20/92	29.46	8.77	20.69	<50	0.9	1.1	<0.5	1.4	--	--
06/15/92	29.46	9.08	20.38	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	29.45	8.88	20.57	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	29.45	9.86	19.59	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	29.45	9.95	19.50	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	29.45	--	--	--	--	--	--	--	--	--
09/27/93	29.45	9.38	20.07	--	--	--	--	--	--	--
ABANDONED										
MW-8										
04/23/89	29.57	9.43	20.14	--	--	--	--	--	--	--
04/24/89	29.57	--	--	<50	<0.5	<1.0	<1.0	<1.0	--	3000
04/24/89[1]	29.57	--	--	<50	<0.5	<1.0	<1.0	<1.0	--	--
07/28/89	29.57	9.20	20.37	<100	<0.2	<1.0	<0.2	<0.4	--	<3000
10/30/89	29.57	9.25	20.32	<500	<0.3	<0.3	<0.3	<0.6	--	--
01/09/90	29.57	8.97	20.60	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	29.57	8.70	20.87	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	29.57	9.23	20.34	--	--	--	--	--	--	--
08/09/90	29.57	8.68	20.89	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	29.57	8.71	20.86	<50	<0.5	0.8	<0.5	2.0	--	--
05/15/91	29.57	9.08	20.49	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	29.57	8.97	20.60	73	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	29.57	8.95	20.62	<50	<0.5	0.7	<0.5	2.1	--	--
02/20/92	29.57	8.77	20.80	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/15/92	29.57	9.09	20.48	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	29.57	8.89	20.68	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	29.57	9.87	19.70	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	29.57	9.97	19.60	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	29.57	--	--	--	--	--	--	--	--	--
09/27/93	29.57	9.35	20.22	--	--	--	--	--	--	--
ABANDONED										

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-10										
06/22/90	28.60	8.12	20.48	<50	<0.5	<0.5	<0.5	<0.5	--	<1000
08/09/90	28.60	8.15	20.45	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	28.60	8.13	20.47	<50	<0.5	2.0	0.5	2.0	--	--
05/15/91	28.60	8.45	20.15	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	28.60	8.33	20.27	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	28.60	8.27	20.33	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/20/92	28.60	7.15	21.45	<50	2.0	2.2	<0.5	2.1	--	--
06/15/92	28.60	7.30	21.30	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	28.62	8.45	20.17	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	28.62	9.41	19.26	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	28.62	9.55	19.07	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	28.62	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/24/93	28.62	8.90	19.72	--	--	--	--	--	--	--
12/17/93	28.62	8.55	20.07	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/10/94	28.62	8.65	19.97	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/16/94	28.62	8.64	19.98	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/07/94	28.62	8.50	20.12	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/30/94	28.62	8.92	19.70	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/22/95	28.62	9.70	18.92	<50	<0.5	<0.5	<0.5	<0.5	--	--
ABANDONED										
MW-11										
06/22/90	29.37	8.34	21.03	<50	<0.5	<0.5	<0.5	<0.5	--	<1000
08/09/90	29.37	8.35	21.02	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	29.37	8.44	20.93	76	0.6	1.0	0.9	4.0	--	--
05/15/91	29.37	8.76	20.61	78	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	29.37	8.67	20.70	110	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	29.37	8.69	20.68	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/20/92	29.37	7.46	21.91	<50	1.9	2.1	1.0	4.4	--	--
06/15/92	29.37	8.81	20.56	--	--	--	--	--	--	--
12/16/92	29.39	8.64	20.75	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	29.39	9.56	19.83	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	29.39	9.72	19.67	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	29.39	--	--	--	--	--	--	--	--	--
09/27/93	29.39	9.06	20.33	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/17/93	29.39	8.66	20.73	<50	<0.5	<0.5	<0.5	<0.5	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-11 (cont)										
03/10/94	29.39	8.70	20.69	--	--	--	--	--	--	--
06/16/94	29.39	8.83	20.56	<50	<0.5	<0.5	<0.5	<0.5	--	--
ABANDONED										
MW-12										
06/22/90	28.43	7.98	20.45	<50	<0.5	<0.5	<0.5	<0.5	--	<1000
08/09/90	28.43	8.00	20.43	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	28.43	7.98	20.45	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/15/91	28.43	8.36	20.07	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	28.43	8.28	20.15	56	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	28.43	8.18	20.25	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/20/92	28.43	7.06	21.37	<50	2.5	3.1	0.7	3.0	--	--
06/15/92	28.43	8.53	19.90	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	28.43	8.63	19.80	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	28.43	9.68	18.75	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	28.43	--	--	--	--	--	--	--	--	--
09/10/93	28.43	--	--	--	--	--	--	--	--	--
09/27/93	28.43	8.80	19.63	--	--	--	--	--	--	--
ABANDONED										
MW-14										
11/15/91	29.46	9.13	20.33	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/20/92	29.46	8.05	21.41	<50	1.3	1.8	1.1	5.2	--	--
06/15/92	29.46	--	--	--	--	--	--	--	--	--
12/16/92	29.45	8.79	20.66	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	29.45	--	--	--	--	--	--	--	--	--
06/09/93	29.45	--	--	--	--	--	--	--	--	--
09/10/93	29.45	--	--	--	--	--	--	--	--	--
09/27/93	29.45	9.19	20.26	--	--	--	--	--	--	--
ABANDONED										
TRIP BLANK										
11/03/88	--	--	--	--	<1.0	<1.0	<1.0	<1.0	--	--
02/10/89	--	--	--	<50	<0.1	<0.1	<0.1	<0.2	--	--
04/24/89	--	--	--	<50	<0.5	<0.5	<1.0	<1.0	--	--
07/28/89	--	--	--	<50	<0.1	<0.1	<0.1	<0.2	--	--
10/30/89	--	--	--	<500	<0.3	<0.3	<0.3	<0.6	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
TRIP BLANK (cont)										
01/09/90	--	--	--	<50	<0.3	<0.3	<0.3	<0.6	--	--
04/18/90	--	--	--	<50	<0.3	<0.3	<0.3	<0.6	--	--
06/22/90	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/09/90	--	--	--	<50	<0.3	<0.3	<0.3	<0.6	--	--
11/13/90	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/15/91	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/27/91	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/15/91	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/20/92	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/15/92	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/92	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
04/07/93	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/09/93	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/10/93	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/27/93	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/17/93	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/10/94	--	--	--	<50	<0.5	0.6	<0.5	0.6	--	--
06/16/94	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/07/94	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/30/94	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
01/17/95	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
03/22/95	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
06/27/95	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
09/28/95	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/30/95	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/28/96	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
06/27/96	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
09/13/96	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/16/96	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
03/20/97	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
09/08/97	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
02/16/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
08/25/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
03/09/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
09/29/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
03/27/00	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	TOC (ft.)	GWE (msl)	DTW (ft.)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
TRIP BLANK (cont)										
09/18/00	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
03/27/01	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<0.500	--
09/05/01	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
QA										
03/15/02	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
09/14/02	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
03/26/03	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
09/02/03[6]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
03/29/04[6]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
09/03/04[6]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
03/02/05[6]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
09/22/05[6]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
03/30/06[6]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/28/06[6]	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
03/05/07[6]	--	--	--	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

EXPLANATIONS:

Groundwater monitoring data and analytical results prior to September 18, 2000, were compiled from reports prepared by Blaine Tech Services, Inc.

TOC = Top of Casing
(ft.) = Feet
GWE = Groundwater Elevation
(msl) = Mean sea level
DTW = Depth to Water
TPH-G = Total Petroleum Hydrocarbons as Gasoline

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
MTBE = Methyl tertiary butyl ether
TOG = Total Oil and Grease

(ppb) = Parts per billion
-- = Not Measured/Not Analyzed
(D) = Duplicate
QA = Quality Assurance/Trip Blank

1 Confirmation run.
2 ORC installed.
3 ORC in well.
4 Laboratory report indicates gasoline C6-C12.
5 Laboratory report indicates gasoline C6-C12 + unidentified hydrocarbons C6-C12.
6 BTEX and MTBE by EPA Method 8260.
7 Removed ORC in well.

Table 2

Groundwater Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	Carbon Tet (ppb)	Chloroform (ppb)	PCE (ppb)	TCE (ppb)	1, 2,-DCE (ppb)	t-1, 2-DCE (ppb)	c-1, 2-DCE (ppb)	1, 1, 1-TCA (ppb)	1,2-DCA (ppb)	1,2-DCP (ppb)	1,1-DCE (ppb)	MC (ppb)
MW-7												
04/24/89[2]	3.0	9.0	<1.0	<1.0	<1.0	--	--	<1.0	<1.0	--	--	--
07/28/89	<2.0	<10	<2.0	<2.0	--	<2.0	<2.0	<10	6.0	--	--	--
07/28/89	<5.0	<20	<5.0	<5.0	--	<5.0	<0.5	<5.0	<5.0	--	--	--
10/30/89	<1.0	3.9	<1.0	<1.0	<1.0	--	--	<1.0	6.4	--	--	--
10/30/89	<1.0	3.1	<1.0	<1.0	<1.0	--	--	<1.0	6.2	--	--	--
01/09/90	<0.5	3.0	<0.5	<0.5	<0.5	--	--	<0.5	8.4	--	--	--
04/18/90	<0.5	3.2	<0.5	<0.5	<0.5	--	--	<0.5	7.7	0.6	0.6	--
08/09/90	3.3	7.7	<0.5	<0.5	<0.5	--	--	<0.5	8.4	<0.5	<0.5	--
11/13/90	0.6	3.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	4.0	<0.5	<0.5	--
05/15/91	2.0	2.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	3.0	<0.5	<0.5	--
08/27/91	0.7	2.8	<0.5	<0.5	--	--	<0.5	<0.5	2.7	<0.5	<0.5	--
11/15/91	0.8	2.7	<0.5	<0.5	--	<0.5	<0.5	<0.5	3.1	<0.5	<0.5	--
02/20/92	2.2	1.9	<0.5	<0.5	--	<0.5	<0.5	<0.5	3.3	<0.5	<0.5	--
06/15/92	1.1	1.8	<0.5	<0.5	--	<0.5	<0.5	<0.5	4.5	<0.5	<0.5	--
09/02/03	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/29/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	11	<1	<0.8	<2
09/03/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/02/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
09/22/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/30/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
08/28/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/05/07	**<1**	**<0.8**	**<0.8**	**<1**	--	**<0.8**	**<0.8**	**<0.8**	**<0.5**	**<1**	**<0.8**	**<2**
MW-9												
06/22/90	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	0.71	<0.5	<0.5	--
11/13/90	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	--
05/15/91	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	--
08/27/91	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/15/91	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	--
02/20/92	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
09/02/03	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2

Table 2

Groundwater Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	Carbon Tet (ppb)	Chloroform (ppb)	PCE (ppb)	TCE (ppb)	1, 2,-DCE (ppb)	t-1, 2-DCE (ppb)	c-1, 2-DCE (ppb)	1, 1, 1-TCA (ppb)	1,2-DCA (ppb)	1,2-DCP (ppb)	1,1-DCE (ppb)	MC (ppb)
MW-9 (cont)												
03/29/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.8	<1	<0.8	<2
09/03/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/02/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.5	<2
09/22/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/30/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
08/28/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/05/07	**<1**	**<0.8**	**<0.8**	**<1**	--	**<0.8**	**<0.8**	**<0.8**	**<0.5**	**<1**	**<0.8**	**<2**
MW-13												
11/15/91[3]	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
02/20/92	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
09/02/03	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/29/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
09/03/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/02/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
09/22/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/30/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
08/28/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/05/07	**<1**	**<0.8**	**<0.8**	**<1**	--	**<0.8**	**<0.8**	**<0.8**	**<0.5**	**<1**	**<0.8**	**<2**
MW-15												
09/02/03	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/29/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
09/03/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/02/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
09/22/05	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/30/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
08/28/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/05/07	**<1**	**<0.8**	**<0.8**	**<1**	--	**<0.8**	**<0.8**	**<0.8**	**<0.5**	**<1**	**<0.8**	**<2**

Table 2

Groundwater Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	Carbon Tet (ppb)	Chloroform (ppb)	PCE (ppb)	TCE (ppb)	1, 2,-DCE (ppb)	t-1, 2-DCE (ppb)	c-1, 2-DCE (ppb)	1, 1, 1-TCA (ppb)	1,2-DCA (ppb)	1,2-DCP (ppb)	1,1-DCE (ppb)	MC (ppb)
MW-16												
09/03/04	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/02/05	<3	<2	<2	<3	--	<2	<2	<2	<1	<3	<2	<5
09/22/05	<5	<4	<4	<5	--	<4	<4	<4	<3	<5	<4	<10
03/30/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
08/28/06	<1	<0.8	<0.8	<1	--	<0.8	<0.8	<0.8	<0.5	<1	<0.8	<2
03/05/07	**<2**	**<2**	**<2**	**<2**	--	**<2**	**<2**	**<2**	**<1**	**<2**	**<2**	**<4**
MW-1												
11/03/88	18	7.0	<1.0	<1.0	--	<1.0	--	<1.0	<1.0	--	--	--
02/10/89	17	6.0	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	--	--	--
04/24/89	16	6.0	<1.0	<1.0	<1.0	--	--	<1.0	<1.0	--	--	--
07/28/89	20	6.4	<0.1	<0.1	--	<0.1	<0.1	0.3	<0.1	--	--	--
10/30/89	11	4.9	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	--	--	--
01/09/90	24	7.2	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	--	--	--
04/18/90	23	5.5	<0.5	<0.5	<0.5	--	--	1.4	<0.5	<0.5	<0.5	--
08/09/90	32	11	0.7	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	24	7.0	60.7	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
05/15/91	15	5.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/27/91	18	4.2	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/15/91	21	7.9	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
02/20/92	24	7.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	10	3.2	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-2												
11/03/88	3.0	2.0	34	3.0	--	10	--	<1.0	<1.0	--	--	--
02/10/89	1.4	1.0	17.2	<0.2	--	<0.2	6.3	<0.2	<0.2	--	--	--
04/24/89	2.0	2.0	38	3.0	9.0	--	--	<1.0	<1.0	--	--	--
07/28/89	3.7	2.0	46	2.6	--	<0.2	<0.2	<0.2	<0.2	--	--	--
10/30/89	1.4	2.6	53	1.1	14	--	--	<0.5	<0.5	--	--	--
01/09/90	3.6	3.9	78	5.3	16	--	--	<0.5	<0.5	--	--	--
04/18/90	1.5	2.7	130	3.9	19	--	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	2.1	2.1	74	6.1	15	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	<0.5	2.0	40	4.0	--	<0.5	10	<0.5	<0.5	<0.5	<0.5	--

Table 2

Groundwater Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	Carbon Tet (ppb)	Chloroform (ppb)	PCE (ppb)	TCE (ppb)	1, 2,-DCE (ppb)	t-1, 2-DCE (ppb)	c-1, 2-DCE (ppb)	1, 1, 1-TCA (ppb)	1,2-DCA (ppb)	1,2-DCP (ppb)	1,1-DCE (ppb)	MC (ppb)
MW-2 (cont)												
05/15/91	2.0	2.0	56	6.0	--	<0.5	15	<0.5	<0.5	<0.5	<0.5	--
08/27/91	1.1	0.9	46	3.9	--	--	8.0	<0.5	<0.5	<0.5	<0.5	--
11/15/91	0.6	1.1	58	3.1	--	<0.5	6.3	<0.5	<0.5	<0.5	<0.5	--
02/20/92	11	<2.5	62	3.1	--	<2.5	4.3	<2.5	<2.5	<2.5	<2.5	--
06/15/92	<0.5	1.2	45	3.1	--	<0.5	4.8	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-3												
11/03/88	8.0	6.0	84	3.0	--	5.0	--	<1.0	<1.0	--	--	--
02/10/89	5.8	4.0	53	1.9	--	<0.2	9.0	<0.2	<0.2	--	--	--
04/24/89	7.0	6.0	110	3.0	11	--	--	<1.0	<1.0	--	--	--
07/28/89	8.6	5.0	49	2.1	--	<0.2	11	<0.2	<0.1	--	--	--
10/30/89	5.6	5.3	62	0.7	8.2	--	--	<0.5	<0.5	--	--	--
01/09/90	8.6	6.1	81	73.8	8.7	--	--	<0.5	<0.5	--	--	--
04/18/90	7.6	5.8	120	2.4	11	--	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	11	6.7	81	5.1	11	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	7.0	5.0	43	4.0	--	<0.5	9.0	<0.5	<0.5	<0.5	<0.5	--
05/15/91	6.0	4.0	46	3.0	--	<0.5	8.0	<0.5	<0.5	<0.5	<0.5	--
08/27/01[1]	5.5	3.8	43	2.6	--	--	8.1	<0.5	<0.5	<0.5	<0.5	--
11/15/91	6.3	5.0	67	3.4	--	0.8	7.4	0.9	<0.5	<0.5	<0.5	--
02/20/92	2.8	4.0	96	3.0	--	<2.5	6.1	<2.5	<2.5	<2.5	<2.5	--
06/15/92	5.0	3.9	86	2.9	--	<0.5	7.5	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-4												
04/24/89	35	11	<1.0	<1.0	<1.0	--	--	<1.0	<1.0	--	--	--
07/28/89	32	9.3	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	--	--	--
10/30/89	32	8.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	--	--	--
01/09/90	36	9.8	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	--	--	--
04/18/90	41	9.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	38	11	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	40	11	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
05/15/91	35	10	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/27/91	28	6.1	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/15/91	23	9.1	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
02/20/92	400	140	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--

As of 03/05/07

Table 2

Groundwater Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	Carbon Tet (ppb)	Chloroform (ppb)	PCE (ppb)	TCE (ppb)	1, 2,-DCE (ppb)	t-1, 2-DCE (ppb)	c-1, 2-DCE (ppb)	1, 1, 1-TCA (ppb)	1,2-DCA (ppb)	1,2-DCP (ppb)	1,1-DCE (ppb)	MC (ppb)
MW-4 (cont)												
06/15/92	38	11	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-5												
04/24/89	4.0	5.0	4.0	<1.0	2.0	--	--	<1.0	<1.0	--	--	--
07/28/89	5.6	4.0	5.3	0.3	--	<0.2	2.3	0.5	<0.2	--	--	--
10/30/89	2.9	2.0	2.7	<0.5	0.86	--	--	<0.5	<0.5	--	--	--
01/09/90	8.2	4.6	7.8	0.6	3.1	--	--	<0.5	<0.5	--	--	--
04/18/90	6.3	2.8	2.6	<0.5	1.7	--	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	11	4.8	6.0	<0.5	2.3	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	7.0	3.0	5.0	<0.5	--	<0.5	1	<0.5	<0.5	<0.5	<0.5	--
05/15/91	4.0	2.0	3.0	<0.5	--	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	--
08/27/91	3.3	1.1	2.3	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/15/91	5.7	2.8	5.5	<0.5	--	<0.5	1.7	<0.5	<0.5	<0.5	<0.5	--
02/20/92	4.0	2.0	3.9	<0.5	--	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	--
06/15/92	4.0	2.0	5.0	<0.5	--	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-6												
04/24/89	13	7.0	<1.0	<1.0	<1.0	--	--	<1.0	<1.0	--	--	--
07/28/89	9.6	4.0	<0.2	<0.2	--	<0.2	<0.2	0.5	0.6	--	--	--
10/30/89	8.2	3.6	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	--	--	--
01/09/90	10	4.2	<0.5	<0.5	<0.5	--	--	<0.5	1.8	--	--	--
04/18/90	11	3.8	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	20	6.6	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	15	5.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
05/15/91	11	4.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/27/91	8.0	2.2	2.4	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/15/91	13	5.4	<0.5	<0.5	--	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	--
02/20/92	11	4.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	9.6	4.2	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-8												
04/24/89	2.0	3.0	6.0	<1.0	4.0	--	--	<1.0	<1.0	--	--	--
04/24/89	2.0	2.0	6.0	<1.0	3.0	--	--	<1.0	<1.0	--	--	--
07/28/89	2.3	2.0	5.6	<0.2	--	<0.2	3.8	<0.2	<0.2	--	--	--

Table 2

Groundwater Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	Carbon Tet (ppb)	Chloroform (ppb)	PCE (ppb)	TCE (ppb)	1, 2,-DCE (ppb)	t-1, 2-DCE (ppb)	c-1, 2-DCE (ppb)	1, 1, 1-TCA (ppb)	1,2-DCA (ppb)	1,2-DCP (ppb)	1,1-DCE (ppb)	MC (ppb)
MW-8 (cont)												
10/30/89	2.5	2.6	8.0	<0.5	5.5	--	--	<0.5	<0.5	--	--	--
01/09/90	4.9	3.9	19	0.9	6.6	--	--	<0.5	<0.5	--	--	--
04/18/90	3.8	2.8	17	0.6	5.7	--	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	5.3	4.4	27	1.2	9.2	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	3.0	2.0	21	0.7	--	<0.5	6.0	<0.5	<0.5	<0.5	<0.5	--
05/15/91	2.0	2.0	30	0.9	--	<0.5	6.0	<0.5	<0.5	<0.5	<0.5	--
08/27/91	1.4	1.1	32	1.0	--	--	4.7	<0.5	<0.5	<0.5	<0.5	--
11/15/91	1.5	1.9	50	<0.5	--	<0.5	5.8	<0.5	<0.5	2.0	2.0	--
02/20/92	1.3	2.3	68	2.4	--	<0.5	7.6	<0.5	<0.5	<0.5	<0.5	--
06/15/92	0.7	1.9	46	1.6	--	<0.5	5.6	<0.5	--	<0.5	<0.5	--
ABANDONED												
MW-10												
06/22/90	9.6	8.9	<0.5	<0.5	--	<0.5	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	11	7.8	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	5.0	4.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
05/15/91	5.0	4.0	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/27/91	6.9	3.4	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/15/91	2.7	3.3	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
02/20/92	3.3	3.4	3.0	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	4.5	2.9	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-11												
06/22/90	4.6	6.5	73	1.3	--	<0.5	8.9	<0.5	<0.5	<0.5	<0.5	--
08/09/90	8.1	6.8	84	2.0	4.6	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	<0.5	<0.5	39	<0.5	--	<0.5	2.0	5	<0.5	<0.5	<0.5	--
05/15/91	1.0	3.0	7	0.5	--	<0.5	2.0	<0.5	<0.5	<0.5	<0.5	--
08/27/91	4.1	3.3	73	1.0	--	--	2.4	<0.5	<0.5	<0.5	<0.5	--
11/15/91	3.3	3.6	64	0.9	--	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	--
02/20/92	<2.5	<2.5	62	<2.5	--	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--
06/15/92	--	--	--	--	--	--	--	--	--	--	--	--
ABANDONED												
MW-12												
06/22/90	6.0	7.3	7.4	<0.5	--	<0.5	13	<0.5	<0.5	<0.5	<0.5	--
08/09/90	8.0	7.0	6.7	<0.5	5.8	--	--	<0.5	<0.5	<0.5	<0.5	--

Table 2

Groundwater Analytical Results

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID/ DATE	Carbon Tet (ppb)	Chloroform (ppb)	PCE (ppb)	TCE (ppb)	1, 2,-DCE (ppb)	t-1, 2-DCE (ppb)	c-1, 2-DCE (ppb)	1, 1, 1-TCA (ppb)	1,2-DCA (ppb)	1,2-DCP (ppb)	1,1-DCE (ppb)	MC (ppb)
MW-12 (cont)												
11/13/90	<0.5	<0.5	9.0	<0.5	--	<0.5	3.0	3.0	<0.5	<0.5	<0.5	--
05/15/91	4.0	4.0	10	<0.5	--	<0.5	3.0	<0.5	<0.5	<0.5	<0.5	--
08/27/91	3.1	2.6	10	<0.5	--	--	2.3	<0.5	<0.5	<0.5	<0.5	--
11/15/91	1.9	3.5	8.9	<0.5	--	<0.5	5.9	<0.5	<0.5	<0.5	<0.5	--
02/20/92	3.3	3.4	3.7	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	2.2	3.7	13	<0.5	--	<0.5	4.5	<0.5	<0.5	<0.5	<0.5	--
ABANDONED												
MW-14												
11/15/91	<0.5	5.5	33	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
02/20/92	<0.5	4.3	38	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	--	--	--	--	--	--	--	--	--	--	--	--
ABANDONED												
TRIP BLANK												
11/03/88	<1.0	<1.0	<1.0	<1.0	--	<1.0	--	<1.0	<1.0	--	--	--
02/10/89	<0.1	<0.5	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	--	--	--
04/24/89	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<1.0	--	--	--
07/28/89	<0.1	<0.5	<0.1	<0.5	<0.1	--	<0.1	<0.1	<0.1	--	--	--
10/30/89	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	--	--	--
01/09/90	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	--	--	--
04/18/90	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
06/22/90	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	<0.5	<0.5	<0.5	--
08/09/90	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	<0.5	<0.5	<0.5	--
11/13/90	<0.5	0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
05/15/91	--	--	--	--	--	--	--	--	--	--	--	--
08/27/91	--	--	--	--	--	--	--	--	--	--	--	--
11/15/91	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
02/20/92	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
06/15/92	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--

EXPLANATIONS:

Groundwater analytical results prior to September 2, 2003, were compiled from reports prepared by Blaine Tech Services, Inc.

Carbon Tet = Carbon Tetrachloride
PCE = Tetrachloroethene
TCE = Trichloroethene
1,2-DCE = 1,2-Dichloroethene
t-1,2-DCE = trans-1,2-Dichloroethene
c-1,2-DCE = cis-1,2-Dichloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
1,2-DCA = 1,2-Dichloroethane
1,2-DCP = 1,2-Dichloropropane
1,1-DCE = 1,1-Dichloroethene
MC = Methylene chloride
-- = Not Analyzed

1 1,1-DCE was detected at 1.3 ppb, 1,1-DCA was detected at 0.5 and Chlorobenzene was detected at 0.7 ppb.
2 2-butanone was detected at 160 ppb and Acetone was detected at 5.0 ppb.
3 1,1-DCA was detected at 0.6 ppb.

NOTE: All other HVOCs by EPA Method 8260 were not detected unless noted above.

Table 3

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID	DATE	ETHANOL *(ppb)*	TBA *(ppb)*	MTBE *(ppb)*	DIPE *(ppb)*	ETBE *(ppb)*	TAME *(ppb)*	EDB *(ppb)*
MW-7	09/02/03	<50	<5	<0.5	<0.5	<0.5	<0.8	<1
	03/29/04	<50	9	1	<0.5	<0.5	<0.5	2
	09/03/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/02/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/22/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/30/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/28/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/05/07	**<50**	**<5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-9	09/02/03	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/29/04	<50	<5	0.8	<0.5	<0.5	<0.5	<0.5
	09/03/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/02/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/22/05	<50	12	<0.5	<0.5	<0.5	<0.5	<0.5
	03/30/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/28/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/05/07	**<50**	**<5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-13	09/02/03	<50	<5	<0.5	<0.5	<0.5	<0.5	<5
	03/29/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/03/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/02/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/22/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/30/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/28/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/05/07	**<50**	**<5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-15	09/02/03	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/29/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/03/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/02/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	EDB (ppb)
MW-15 (cont)	09/22/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/30/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/28/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/05/07	**<50**	**<5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-16	09/03/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/02/05	<130	<13	<1	<1	<1	<1	<1
	09/22/05	<250	<25	<3	<3	<3	<3	<3
	03/30/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/28/06	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/05/07	**<100**	**<10**	**<1**	**<1**	**<1**	**<1**	**<1**

Table 3

Groundwater Analytical Results - Oxygenate Compounds

Former Chevron Service Station #9-0020

1633 Harrison Street

Oakland, California

EXPLANATIONS:

TBA = Tertiary butyl alcohol

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

EDB = 1,2-Dibromoethane

(ppb) = Parts per billion

ANALYTICAL METHODS:

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 Hill, California.

WELL CONDITION STATUS SHEET

Client/Facility #: Chevron #9-0020
Site Address: 1633 Harrison Street
City: Oakland, CA

Job #: 386499
Event Date: 3-5-07
Sampler: Joe

WELL ID	Vault Frame Condition	BOLTS (# Missing)	Bolt Flanges B= Broken S= Stripped	APRON Condition (Cracked Broken)	Grout Seal (Deficient)	Casing (Condition prevents tight cap seal)	REPLACE LOCK	REPLACE CAP	WELL LID Manufacture/Size/ # of Bolts	Pictures Taken
MW-7	O.K	O.K	O.K	O.K	O.K	O.K			No name 16"x16" Square box 3/8"	
MW-9	↓	↓	↓	↓	↓	↓			8" hole in the middle no name city box	
MW-13	↓	(2) 1/2"	Both flanges stripped	↓	↓	↓	✓	✓	Morrison 12" - 1/2"	
MW-15	↓	↓	↓	↓	↓	↓			Morrison 12" - 1/2"	
MW-16	↓	↓	↓	↓	↓	↓			Morrison 12" - 1/2"	

Comments: MW-13 box is O.K, but both flanges are stripped. Installed (2) new bolts ~~by~~ after taping thread section with electric tape. Loose bolts must have been popping out in busy street.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Chevron #9-0020 Job Number: 386499
Site Address: 1633 Harrison Street Event Date: 3-5-07 (inclusive)
City: Oakland, CA Sampler: JG

Well ID MW-7 Date Monitored: 3-5-07 Well Condition: O.K.
Well Diameter 2 / (4) in.
Total Depth 26.50 ft.
Depth to Water 18.25 ft.
8.25 xVF 0.66 = 5.45 x3 case volume= Estimated Purge Volume: 16 gal.

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

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

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Discrete Bailer
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0600 Weather Conditions: cloudy
Sample Time/Date: 0645 / 3-5-07 Water Color: clear Odor: yes
Purging Flow Rate: gpm. Sediment Description:
Did well de-water? yes If yes, Time: 0611 + 0630 Volume: 28+10 gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0608	5	6.76	696	63.3		
0611	8	6.77	715	62.4		
0630	10	6.83	721	62.3		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	6 x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	3 x voa vial	YES	HCL	LANCASTER	HVOC'S(8010 list)8260

COMMENTS:

Add/Replaced Lock: Add/Replaced Plug: Size:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Chevron #9-0020 Job Number: 386499
Site Address: 1633 Harrison Street Event Date: 3-5-07 (inclusive)
City: Oakland, CA Sampler: Joe

Well ID MW-9 Date Monitored: 3-5-07 Well Condition: o.k
Well Diameter 2 4 in.
Total Depth 24.20 ft.
Depth to Water 18.79 ft.

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

5.41 xVF 0.17 = 0.92 x3 case volume= Estimated Purge Volume: 3 gal.

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

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Discrete Bailer
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0730 Weather Conditions: cloudy
Sample Time/Date: 0755 / 3-5-07 Water Color: clear Odor: Yes
Purging Flow Rate: 0.5 gpm. Sediment Description:
Did well de-water? If yes, Time: Volume: gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0738	1	6.62	847	57.2		
0742	2	6.60	841	57.1		
0745	3	6.59	848	57.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	6 x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	3 x voa vial	YES	HCL	LANCASTER	HVOC'S(8010 list)8260

COMMENTS:

Add/Replaced Lock: Add/Replaced Plug: Size:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Chevron #9-0020 | Job Number: 386499
Site Address: 1633 Harrison Street | Event Date: 3-5-07 (inclusive)
City: Oakland, CA | Sampler: Sox

Well ID MW-13 | Date Monitored: 3-5-07 | Well Condition: O.K. (See Comments)
Well Diameter (2) 4 in.
Total Depth 26.68 ft.
Depth to Water 19.18 ft.
7.50 xVF 0.17 = 1.28 x3 case volume= Estimated Purge Volume: 4 gal.

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

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

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Discrete Bailer
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0810 | Weather Conditions: cloudy
Sample Time/Date: 0840 / 3.5.07 | Water Color: clear | Odor: none
Purging Flow Rate: 0.5 gpm. | Sediment Description:
Did well de-water? | If yes, Time: | Volume: gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0818	1.5	6.89	810	56.2		
0823	3	6.90	776	56.5		
0827	4	6.84	784	56.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-13	6 x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	3 x voa vial	YES	HCL	LANCASTER	HVOC'S(8010 list)8260

COMMENTS: Well box is o.k. However, both ½" flange are stripped.

Add/Replaced Lock: ✓ | Add/Replaced Plug: ✓ Size: 2"

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Chevron #9-0020 Job Number: 386499
Site Address: 1633 Harrison Street Event Date: 3-5-07 (inclusive)
City: Oakland, CA Sampler: Joe

Well ID MW-15 Date Monitored: 3-5-07 Well Condition: O.K
Well Diameter (2) 4 in.
Total Depth 26.31 ft.
Depth to Water 18.85 ft.

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

7.46 xVF 0.17 = 1.27 x3 case volume= Estimated Purge Volume: 4 gal.

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

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Discrete Bailer
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0855 Weather Conditions: cloudy
Sample Time/Date: 0925 / 3-5-07 Water Color: clear Odor: none
Purging Flow Rate: 0.5 gpm. Sediment Description:
Did well de-water? If yes, Time: Volume: gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0905	1.5	6.95	897	59.0		
0909	3	7.17	923	58.4		
0913	4	7.24	919	58.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-15	6 x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	3 x voa vial	YES	HCL	LANCASTER	HVOC'S(8010 list)8260

COMMENTS:

Add/Replaced Lock: Add/Replaced Plug: Size:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Chevron #9-0020 Job Number: 386499
Site Address: 1633 Harrison Street Event Date: 3-5-07 (inclusive)
City: Oakland, CA Sampler: JDL

Well ID MW-16 Date Monitored: 3-5-07 Well Condition: O.K
Well Diameter 2 | 4 in.
Total Depth 25.45 ft.
Depth to Water 19.37 ft.

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

6.08 xVF 0.17 = 1.03 x3 case volume= Estimated Purge Volume: 3.5 gal.

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

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Discrete Bailer
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0938 Weather Conditions: Cloud
Sample Time/Date: 1005 / 3-5-07 Water Color: Clear Odor: yes
Purging Flow Rate: 0.1 gpm. Sediment Description:
Did well de-water? If yes, Time: Volume: gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0946	1	6.70	1002	56.2		
0950	2	6.72	975	56.5		
0954	3.5	6.67	981	56.7		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-16	6 x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX+MTBE(8260)/ 8 OXYS(8260)
	3 x voa vial	YES	HCL	LANCASTER	HVOC'S(8010 list)8260

COMMENTS:

Add/Replaced Lock: Add/Replaced Plug: Size:

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories

030507-03

For Lancaster Laboratories use only
Acct. #: 10904 Sample #: 499169316-41 Group #: 001734
Group# 102749

Facility #: SS#9-0020-OML G-R#386499 Global ID#T0600100304
Site Address: 1633 HARRISON STREET, OAKLAND, CA
Chevron PM: SS
Lead Consultant: CAMBRIACE
Consultant/Office: G-R, Inc., 6747 Sierra Court, Suite J, Dublin, Ca. 94568
Consultant Prj. Mgr.: Deanna L. Harding (deanna@grinc.com)
Consultant Phone #: 925-551-7555 Fax #: 925-551-7899
Sampler: JOE AJEMIAN

Matrix: ☐ Potable ☐ NPDES; Soil / Water / Oil ☐ Air

Analyses Requested — Preservation Codes

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

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

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil ☐ Air	Total Number of Containers	BTEX + MTBE 8260 ☒ 8021 ☐ (H)	TPH 8015 MOD GRO (H)	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates (8260) (H)	Total Lead Method	Dissolved Lead Method	HVOC's (8010 list) 8260 (H)
QA	—	—	✓			✓		2	✓	✓						
MW-7	3-5-07	0645						9	✓	✓			✓			✓
MW-9		0755						9	✓	✓			✓			✓
MW-13		0840						9	✓	✓			✓			✓
MW-15		0925						9	✓	✓			✓			✓
MW-16		1005						9	✓	✓			✓			✓

Comments / Remarks

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

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

	Date	Time		Date	Time
Relinquished by:	3-5-07	1340	Received by:	3/5/07	1340
Relinquished by:	3/5/07		Received by:	3/5/07	
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: DHL			Received by: Kathy Binkley	3-6-07	0935

Temperature Upon Receipt .5° - 2.6° C° Range
Custody Seals Intact? Yes No

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.

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

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

925-842-8582

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1027949. Samples arrived at the laboratory on Tuesday, March 06, 2007. The PO# for this group is 0015009981 and the release number is SINHA.

Client Description			Lancaster Labs Number
QA-T-070305	NA	Water	4996936
MW-7-W-070305	Grab	Water	4996937
MW-9-W-070305	Grab	Water	4996938
MW-13-W-070305	Grab	Water	4996939
MW-15-W-070305	Grab	Water	4996940
MW-16-W-070305	Grab	Water	4996941

ELECTRONIC COPY TO Cambria c/o Gettler-Ryan Attn: Cheryl Hansen

Lancaster Laboratories

Analysis Report

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

Questions? Contact your Client Services Representative
Angela M Miller at (717) 656-2300

Respectfully Submitted,

Maria S. Lord

Maria S. Lord
Senior Specialist

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996936

QA-T-070305 NA Water GRD
Facility# 90020 Job# 386499
1633 Harrison-Oakland T0600100304 QA
Collected:03/05/2007

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HARQA

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
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

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	03/08/2007 13:47	Steven A Skiles	1
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	03/14/2007 20:53	Michael A Ziegler	1
01I46	GC VOA Water Prep	SW-846 5030B	1	03/08/2007 13:47	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/14/2007 20:53	Michael A Ziegler	1

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996937

MW-7-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-7
Collected:03/05/2007 06:45 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HARM7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	1,800.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05382	EPA SW846/8260 (water)					
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05396	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	66.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	0.5	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05404	1,2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1
05406	Bromodichloromethane	75-27-4	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	16.	0.5	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05411	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	1
05412	1,2-Dibromoethane	106-93-4	N.D.	0.5	ug/l	1
05413	Chlorobenzene	108-90-7	N.D.	0.8	ug/l	1
05415	Ethylbenzene	100-41-4	17.	0.5	ug/l	1
05416	m+p-Xylene	1330-20-7	17.	0.5	ug/l	1
05417	o-Xylene	95-47-6	2.	0.5	ug/l	1
05419	Bromoform	75-25-2	N.D.	1.	ug/l	1
05421	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05432	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
05433	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08202	EPA SW 846/8260 - Water					

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996937

MW-7-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-7
Collected:03/05/2007 06:45 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HARM7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	5.	ug/l	1
06306	trans-1,3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	1
06307	cis-1,3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
08203	Freon 113	76-13-1	N.D.	2.	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 No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	03/08/2007 16:44	Steven A Skiles	1
05382	EPA SW846/8260 (water)	SW-846 8260B	1	03/09/2007 15:53	Daniel H Heller	1
08202	EPA SW 846/8260 - Water	SW-846 8260B	1	03/09/2007 15:53	Daniel H Heller	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/08/2007 16:44	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/09/2007 15:53	Daniel H Heller	1

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996938

MW-9-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-9
Collected:03/05/2007 07:55 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HARM9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	800.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05382	EPA SW846/8260 (water)					
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05396	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	0.5	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05404	1,2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1
05406	Bromodichloromethane	75-27-4	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05411	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	1
05412	1,2-Dibromoethane	106-93-4	N.D.	0.5	ug/l	1
05413	Chlorobenzene	108-90-7	N.D.	0.8	ug/l	1
05415	Ethylbenzene	100-41-4	0.7	0.5	ug/l	1
05416	m+p-Xylene	1330-20-7	1.	0.5	ug/l	1
05417	o-Xylene	95-47-6	N.D.	0.5	ug/l	1
05419	Bromoform	75-25-2	N.D.	1.	ug/l	1
05421	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05432	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
05433	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08202	EPA SW 846/8260 - Water					

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996938

MW-9-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-9
Collected:03/05/2007 07:55 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HARM9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	5.	ug/l	1
06306	trans-1,3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	1
06307	cis-1,3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
08203	Freon 113	76-13-1	N.D.	2.	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 No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	03/08/2007 17:13	Steven A Skiles	1
05382	EPA SW846/8260 (water)	SW-846 8260B	1	03/09/2007 13:32	Daniel H Heller	1
08202	EPA SW 846/8260 - Water	SW-846 8260B	1	03/09/2007 13:32	Daniel H Heller	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/08/2007 17:13	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/09/2007 13:32	Daniel H Heller	1

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996939

MW-13-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-13
Collected:03/05/2007 08:40 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HAR13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05382	EPA SW846/8260 (water)					
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05396	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	0.5	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05404	1,2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1
05406	Bromodichloromethane	75-27-4	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05411	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	1
05412	1,2-Dibromoethane	106-93-4	N.D.	0.5	ug/l	1
05413	Chlorobenzene	108-90-7	N.D.	0.8	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
05416	m+p-Xylene	1330-20-7	N.D.	0.5	ug/l	1
05417	o-Xylene	95-47-6	N.D.	0.5	ug/l	1
05419	Bromoform	75-25-2	N.D.	1.	ug/l	1
05421	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05432	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
05433	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08202	EPA SW 846/8260 - Water					

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996939

MW-13-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-13
Collected:03/05/2007 08:40 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HAR13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	5.	ug/l	1
06306	trans-1,3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	1
06307	cis-1,3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
08203	Freon 113	76-13-1	N.D.	2.	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 No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	03/08/2007 18:42	Steven A Skiles	1
05382	EPA SW846/8260 (water)	SW-846 8260B	1	03/09/2007 13:55	Daniel H Heller	1
08202	EPA SW 846/8260 - Water	SW-846 8260B	1	03/09/2007 13:55	Daniel H Heller	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/08/2007 18:42	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/09/2007 13:55	Daniel H Heller	1

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996940

MW-15-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-15
Collected: 03/05/2007 09:25 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HAR15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05382	EPA SW846/8260 (water)					
05385	Chloromethane	74-87-3	N.D.	1.	ug/l	1
05386	Vinyl Chloride	75-01-4	N.D.	1.	ug/l	1
05387	Bromomethane	74-83-9	N.D.	1.	ug/l	1
05388	Chloroethane	75-00-3	N.D.	1.	ug/l	1
05389	Trichlorofluoromethane	75-69-4	N.D.	2.	ug/l	1
05390	1,1-Dichloroethene	75-35-4	N.D.	0.8	ug/l	1
05391	Methylene Chloride	75-09-2	N.D.	2.	ug/l	1
05392	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	ug/l	1
05393	1,1-Dichloroethane	75-34-3	N.D.	1.	ug/l	1
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	ug/l	1
05396	Chloroform	67-66-3	N.D.	0.8	ug/l	1
05398	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	ug/l	1
05399	Carbon Tetrachloride	56-23-5	N.D.	1.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05402	1,2-Dichloroethane	107-06-2	N.D.	0.5	ug/l	1
05403	Trichloroethene	79-01-6	N.D.	1.	ug/l	1
05404	1,2-Dichloropropane	78-87-5	N.D.	1.	ug/l	1
05406	Bromodichloromethane	75-27-4	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05408	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	ug/l	1
05409	Tetrachloroethene	127-18-4	N.D.	0.8	ug/l	1
05411	Dibromochloromethane	124-48-1	N.D.	1.	ug/l	1
05412	1,2-Dibromoethane	106-93-4	N.D.	0.5	ug/l	1
05413	Chlorobenzene	108-90-7	N.D.	0.8	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
05416	m+p-Xylene	1330-20-7	N.D.	0.5	ug/l	1
05417	o-Xylene	95-47-6	N.D.	0.5	ug/l	1
05419	Bromoform	75-25-2	N.D.	1.	ug/l	1
05421	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1.	ug/l	1
05432	1,3-Dichlorobenzene	541-73-1	N.D.	1.	ug/l	1
05433	1,4-Dichlorobenzene	106-46-7	N.D.	1.	ug/l	1
05435	1,2-Dichlorobenzene	95-50-1	N.D.	1.	ug/l	1
08202	EPA SW 846/8260 - Water					

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996940

MW-15-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-15
Collected:03/05/2007 09:25 by JA

Account Number: 10904

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

HAR15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01587	Ethanol	64-17-5	N.D.	50.	ug/l	1
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	5.	ug/l	1
06306	trans-1,3-Dichloropropene	10061-02-6	N.D.	1.	ug/l	1
06307	cis-1,3-Dichloropropene	10061-01-5	N.D.	1.	ug/l	1
08203	Freon 113	76-13-1	N.D.	2.	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 No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	03/08/2007 19:12	Steven A Skiles	1
05382	EPA SW846/8260 (water)	SW-846 8260B	1	03/09/2007 14:18	Daniel H Heller	1
08202	EPA SW 846/8260 - Water	SW-846 8260B	1	03/09/2007 14:18	Daniel H Heller	1
01146	GC VOA Water Prep	SW-846 5030B	1	03/08/2007 19:12	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/09/2007 14:18	Daniel H Heller	1

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996941

MW-16-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-16
Collected:03/05/2007 10:05 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HAR16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	8,900.	250.	ug/l	5
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05382	EPA SW846/8260 (water)					
05385	Chloromethane	74-87-3	N.D.	2.	ug/l	2
05386	Vinyl Chloride	75-01-4	N.D.	2.	ug/l	2
05387	Bromomethane	74-83-9	N.D.	2.	ug/l	2
05388	Chloroethane	75-00-3	N.D.	2.	ug/l	2
05389	Trichlorofluoromethane	75-69-4	N.D.	4.	ug/l	2
05390	1,1-Dichloroethene	75-35-4	N.D.	2.	ug/l	2
05391	Methylene Chloride	75-09-2	N.D.	4.	ug/l	2
05392	trans-1,2-Dichloroethene	156-60-5	N.D.	2.	ug/l	2
05393	1,1-Dichloroethane	75-34-3	N.D.	2.	ug/l	2
05395	cis-1,2-Dichloroethene	156-59-2	N.D.	2.	ug/l	2
05396	Chloroform	67-66-3	N.D.	2.	ug/l	2
05398	1,1,1-Trichloroethane	71-55-6	N.D.	2.	ug/l	2
05399	Carbon Tetrachloride	56-23-5	N.D.	2.	ug/l	2
05401	Benzene	71-43-2	330.	1.	ug/l	2
05402	1,2-Dichloroethane	107-06-2	N.D.	1.	ug/l	2
05403	Trichloroethene	79-01-6	N.D.	2.	ug/l	2
05404	1,2-Dichloropropane	78-87-5	N.D.	2.	ug/l	2
05406	Bromodichloromethane	75-27-4	N.D.	2.	ug/l	2
05407	Toluene	108-88-3	78.	1.	ug/l	2
05408	1,1,2-Trichloroethane	79-00-5	N.D.	2.	ug/l	2
05409	Tetrachloroethene	127-18-4	N.D.	2.	ug/l	2
05411	Dibromochloromethane	124-48-1	N.D.	2.	ug/l	2
05412	1,2-Dibromoethane	106-93-4	N.D.	1.	ug/l	2
05413	Chlorobenzene	108-90-7	N.D.	2.	ug/l	2
05415	Ethylbenzene	100-41-4	38.	1.	ug/l	2
05416	m+p-Xylene	1330-20-7	110.	1.	ug/l	2
05417	o-Xylene	95-47-6	12.	1.	ug/l	2
05419	Bromoform	75-25-2	N.D.	2.	ug/l	2
05421	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	2.	ug/l	2
05432	1,3-Dichlorobenzene	541-73-1	N.D.	2.	ug/l	2
05433	1,4-Dichlorobenzene	106-46-7	N.D.	2.	ug/l	2
05435	1,2-Dichlorobenzene	95-50-1	N.D.	2.	ug/l	2
08202	EPA SW 846/8260 - Water					

Lancaster Laboratories

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

Analysis Report

Lancaster Laboratories Sample No. WW 4996941

MW-16-W-070305 Grab Water
Facility# 90020 Job# 386499 GRD
1633 Harrison-Oakland T0600100304 MW-16
Collected:03/05/2007 10:05 by JA

Account Number: 10904

Submitted: 03/06/2007 09:35
Reported: 03/15/2007 at 16:22
Discard: 04/15/2007

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

HAR16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01587	Ethanol	64-17-5	N.D.	100.	ug/l	2
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	1.	ug/l	2
02011	di-Isopropyl ether	108-20-3	N.D.	1.	ug/l	2
02013	Ethyl t-butyl ether	637-92-3	N.D.	1.	ug/l	2
02014	t-Amyl methyl ether	994-05-8	N.D.	1.	ug/l	2
02015	t-Butyl alcohol	75-65-0	N.D.	10.	ug/l	2
06306	trans-1,3-Dichloropropene	10061-02-6	N.D.	2.	ug/l	2
06307	cis-1,3-Dichloropropene	10061-01-5	N.D.	2.	ug/l	2
08203	Freon 113	76-13-1	N.D.	4.	ug/l	2

The reporting limits for the GC/MS volatile compounds were raised due to the level of non-target compounds.

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 No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	03/08/2007 21:10	Steven A Skiles	5
05382	EPA SW846/8260 (water)	SW-846 8260B	1	03/09/2007 16:40	Daniel H Heller	2
08202	EPA SW 846/8260 - Water	SW-846 8260B	1	03/09/2007 16:40	Daniel H Heller	2
01146	GC VOA Water Prep	SW-846 5030B	1	03/08/2007 21:10	Steven A Skiles	5
01163	GC/MS VOA Water Prep	SW-846 5030B	1	03/09/2007 16:40	Daniel H Heller	2

Lancaster Laboratories

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

Analysis Report

Quality Control Summary

Client Name: Chevron
Group Number: 1027949
Reported: 03/15/07 at 04:22 PM

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 07067A08A	Sample number(s): 4996936-4996941							
TPH-GRO - Waters	N.D.	50.	ug/l	109	109	75-135	0	30
Batch number: D070734AA	Sample number(s): 4996936							
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	91		73-119		
Benzene	N.D.	0.5	ug/l	98		78-119		
Toluene	N.D.	0.5	ug/l	98		85-115		
Ethylbenzene	N.D.	0.5	ug/l	96		82-119		
Xylene (Total)	N.D.	0.5	ug/l	99		83-113		
Batch number: W070681AA	Sample number(s): 4996937-4996941							
Ethanol	N.D.	50.	ug/l	102		39-161		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	98		73-119		
di-Isopropyl ether	N.D.	0.5	ug/l	95		70-123		
Ethyl t-butyl ether	N.D.	0.5	ug/l	95		74-120		
t-Amyl methyl ether	N.D.	0.5	ug/l	94		79-113		
t-Butyl alcohol	N.D.	5.	ug/l	93		69-127		
Chloromethane	N.D.	1.	ug/l	82		47-132		
Vinyl Chloride	N.D.	1.	ug/l	84		54-123		
Bromomethane	N.D.	1.	ug/l	68		47-129		
Chloroethane	N.D.	1.	ug/l	72		57-125		
Trichlorofluoromethane	N.D.	2.	ug/l	88		57-141		
1,1-Dichloroethene	N.D.	0.8	ug/l	105		76-122		
Methylene Chloride	N.D.	2.	ug/l	100		85-120		
trans-1,2-Dichloroethene	N.D.	0.8	ug/l	99		83-117		
1,1-Dichloroethane	N.D.	1.	ug/l	99		83-127		
cis-1,2-Dichloroethene	N.D.	0.8	ug/l	98		84-117		
Chloroform	N.D.	0.8	ug/l	99		86-124		
1,1,1-Trichloroethane	N.D.	0.8	ug/l	97		83-127		
Carbon Tetrachloride	N.D.	1.	ug/l	98		77-130		
Benzene	N.D.	0.5	ug/l	98		78-119		
1,2-Dichloroethane	N.D.	0.5	ug/l	99		77-132		
Trichloroethene	N.D.	1.	ug/l	98		87-117		
1,2-Dichloropropane	N.D.	1.	ug/l	96		80-117		
Bromodichloromethane	N.D.	1.	ug/l	93		83-121		
Toluene	N.D.	0.5	ug/l	96		85-115		
1,1,2-Trichloroethane	N.D.	0.8	ug/l	96		86-113		
Tetrachloroethene	N.D.	0.8	ug/l	97		74-125		
Dibromochloromethane	N.D.	1.	ug/l	92		78-119		
1,2-Dibromoethane	N.D.	0.5	ug/l	96		81-114		
Chlorobenzene	N.D.	0.8	ug/l	95		85-115		
Ethylbenzene	N.D.	0.5	ug/l	96		82-119		
m+p-Xylene	N.D.	0.5	ug/l	96		83-113		
o-Xylene	N.D.	0.5	ug/l	97		83-113		
Bromoform	N.D.	1.	ug/l	88		69-118		
1,1,2,2-Tetrachloroethane	N.D.	1.	ug/l	96		72-119		
1,3-Dichlorobenzene	N.D.	1.	ug/l	95		81-114		

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The background result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 03/15/07 at 04:22 PM

Group Number: 1027949

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,4-Dichlorobenzene	N.D.	1.	ug/l	96		84-116		
1,2-Dichlorobenzene	N.D.	1.	ug/l	94		81-112		
trans-1,3-Dichloropropene	N.D.	1.	ug/l	94		79-114		
cis-1,3-Dichloropropene	N.D.	1.	ug/l	93		78-114		
Freon 113	N.D.	2.	ug/l	101		66-125		

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 07067A08A	Sample number(s): 4996936-4996941 UNSPK: P996900								
TPH-GRO - Waters	57*		63-154						
Batch number: D070734AA	Sample number(s): 4996936 UNSPK: P996943								
Methyl Tertiary Butyl Ether	93	90	69-127	2	30				
Benzene	102	100	83-128	3	30				
Toluene	103	100	83-127	3	30				
Ethylbenzene	103	99	82-129	4	30				
Xylene (Total)	104	102	82-130	3	30				
Batch number: W070681AA	Sample number(s): 4996937-4996941 UNSPK: P995774								
Ethanol	103	107	41-159	4	30				
Methyl Tertiary Butyl Ether	102	99	69-127	3	30				
di-Isopropyl ether	101	100	68-129	1	30				
Ethyl t-butyl ether	101	98	78-119	3	30				
t-Amyl methyl ether	99	97	72-125	2	30				
t-Butyl alcohol	95	96	64-130	1	30				
Chloromethane	89	85	46-149	4	30				
Vinyl Chloride	95	92	54-143	3	30				
Bromomethane	75	75	52-141	0	30				
Chloroethane	79	78	56-140	1	30				
Trichlorofluoromethane	106	104	64-165	2	30				
1,1-Dichloroethene	115	112	87-145	3	30				
Methylene Chloride	105	102	79-133	3	30				
trans-1,2-Dichloroethene	106	102	82-133	4	30				
1,1-Dichloroethane	105	102	85-135	3	30				
cis-1,2-Dichloroethene	105	102	83-126	3	30				
Chloroform	104	101	83-139	3	30				
1;1,1-Trichloroethane	106	105	81-142	2	30				
Carbon Tetrachloride	110	106	82-149	3	30				
Benzene	105	102	83-128	3	30				
1,2-Dichloroethane	103	100	70-143	3	30				
Trichloroethene	104	102	83-136	2	30				
1,2-Dichloropropane	101	101	83-129	0	30				
Bromodichloromethane	98	96	80-129	2	30				
Toluene	106	103	83-127	3	30				
1,1,2-Trichloroethane	100	97	77-125	3	30				
Tetrachloroethene	106	106	78-133	1	30				
Dibromochloromethane	97	96	82-119	1	30				
1,2-Dibromoethane	102	96	78-120	6	30				

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

Quality Control Summary

Client Name: Chevron
Reported: 03/15/07 at 04:22 PM

Group Number: 1027949

Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Chlorobenzene	103	100	83-120	3	30				
Ethylbenzene	104	102	82-129	2	30				
m+p-Xylene	105	103	82-130	2	30				
o-Xylene	107	104	82-130	3	30				
Bromoform	92	90	64-119	3	30				
1,1,2,2-Tetrachloroethane	99	96	73-121	3	30				
1,3-Dichlorobenzene	100	98	79-123	3	30				
1,4-Dichlorobenzene	101	97	81-122	4	30				
1,2-Dichlorobenzene	100	98	82-117	3	30				
trans-1,3-Dichloropropene	97	96	77-123	1	30				
cis-1,3-Dichloropropene	98	96	80-126	3	30				
Freon 113	121	116	78-146	5	30				

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 - Waters
Batch number: 07067A08A

	Trifluorotoluene-F
4996936	91
4996937	146*
4996938	100
4996939	91
4996940	90
4996941	134
Blank	87
LCS	90
LCSD	91
MS	91
Limits:	63-135

Analysis Name: BTEX+MTBE by 8260B
Batch number: D070734AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4996936	103	105	101	99
Blank	102	102	100	97
LCS	104	106	102	100
MS	104	108	103	102
MSD	98	100	96	95
Limits:	80-116	77-113	80-113	78-113

Analysis Name: EPA SW846/8260 (water)
Batch number: W070681AA

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

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

Lancaster Laboratories

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

Analysis Report

Quality Control Summary

Client Name: Chevron
Reported: 03/15/07 at 04:22 PM

Group Number: 1027949

Surrogate Quality Control

4996937	86	87	85	85
4996938	83	85	85	85
4996939	85	82	85	82
4996940	84	88	84	82
4996941	84	84	85	84
Blank	85	84	84	82
LCS	85	87	86	86
MS	85	84	87	86
MSD	84	85	86	86
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 background 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
TNTC	Too Numerous To Count
IU	International Units
umhos/cm	micromhos/cm
C	degrees Celsius
Cal	(diet) calories
meq	milliequivalents
g	gram(s)
ug	microgram(s)
ml	milliliter(s)
m3	cubic meter(s)

BMQL	Below Minimum Quantitation Level
MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units
NTU	nephelometric turbidity units
F	degrees Fahrenheit
lb.	pound(s)
kg	kilogram(s)
mg	milligram(s)
l	liter(s)
ul	microliter(s)
fib >5 um/ml	fibers greater than 5 microns in length per ml

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

> greater than

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 ≥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.

ATTACHMENT B

Onsite Tier II Risk-Based Corrective Action Evaluation

ONSITE TIER II RISK-BASED CORRECTIVE ACTION EVALUATION
FORMER CHEVRON STATION NUMBER 9-0020

Introduction

At the request of the Alameda County Health Care Services (ACHCS), hazards due to exposures to residual concentrations of petroleum hydrocarbons were estimated for chemicals of potential concern (COPCs) identified in soil at the former Chevron Service Station Number 9-0020 located at 1633 Harrison Street, Oakland, California. The main purpose of this report is to answer the question, "Could residual concentrations of chemicals in soil pose adverse health effects to future occupants of a residential building located on the site and to future construction/utility workers on the site?" In general, risk and hazard estimates provide an answer to that question. It is understood that in order to develop a residential building at the site, the Oakland Housing Authority will be required to conduct a Tier II Risk-Based Corrective Action (RBCA) evaluation for the site in order to obtain a grant from the United States Department of Housing and Urban Development. The results of this evaluation may be used to support a RBCA process and closure for the site.

The focus of this evaluation is to assess potential exposures to future residents and construction/utility workers at the site to COPCs in onsite subsurface soil. The specific exposure pathways evaluated include; ingestion of soil, dermal contact with soil, and inhalation of dust and vapors. Potential exposures to constituents that may have migrated offsite are not considered in this scope of work and, following an understanding with ACHCS, will be addressed in a separate evaluation.

Direct contact groundwater exposure pathways are not expected to be complete for future onsite residents. However, dissolved phase constituents have been detected historically in an onsite groundwater monitoring well at low concentrations. Given this fact, it is possible that the volatile constituents may migrate from groundwater to soil vapor into the indoor air spaces of future onsite residences.

Potential exposures to constituents in soil vapor are not evaluated due to the fact that the analytical results for soil vapor collected onsite are almost twenty years old. In order to evaluate potential inhalation of vapors in indoor air, to be health protective it is recommended that soil vapor data be collected at the site prior to construction of a residential complex and submitted under separate cover.

The following sections describe information that was used to estimate hazards. Included are relevant discussions on site history and characterization, the approach used to select COPCs in soil, exposure assessment, toxicity criteria, and lastly hazard characterization. This report follows risk assessment guidance recommended by the California Environmental Protection Agency (Cal/EPA) and the United States Environmental Protection Agency (USEPA). This report does not include an evaluation of potential ecological receptors.

Site History

Chevron operated a service station on the site until 1972. At the time of closure, all underground storage tanks were removed. In 1992, areas impacted with petroleum hydrocarbons in soil were excavated.

From 1988 to 1992, sixteen groundwater monitoring wells were installed; GW-1 to GW-8 (onsite) and GW-9 to GW-16 (offsite). Groundwater at the site has been monitored quarterly since 1988. GW-7 is the only current onsite groundwater monitoring well. In the last 4 sampling events, benzene, toluene, ethylbenzene, and xylenes (BTEX) have been detected at maximum concentrations of 53 µg/L, 12 µg/L, 26 µg/L, and 16 µg/L, respectively.

From October 1988 to April 2007, subsurface soil, from as shallow as 4.2 feet below grade (fbg) to as deep as 34.5 fbg, has been sampled and analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) and BTEX. No surface soil data are available for the site. Benzene has not been detected in subsurface soil down to 10 fbg.

A soil vapor survey was conducted at the site in January 1988. Twenty-two samples were collected at eleven locations around the site ranging from 3 to 13 fbg. The highest TPHg concentrations were detected in the vicinity of the former used-oil UST. BTEX were all nondetect, with the exception of toluene and xylenes detected in one sample at low concentrations.

In 2001, a "limited" Tier RBCA evaluation was prepared to assess potential vapor intrusion of TPHg and benzene from soil and groundwater at the site. Maximum and average concentrations of benzene in subsurface soil and groundwater were compared with Oakland Tier 1 Risk-Based Screening Levels (RBSLs) for residential receptors. Maximum and average concentrations of TPHg in subsurface soil and groundwater were compared with Massachusetts Department of Environmental Protection (MADEP) Method 1 Cleanup Standards (Delta, 2001). Based on results of this evaluation, site concentrations were below the RBSLs and cleanup standards.

Site Characterization

The site consists primarily of silty sands with some intermittent sandy, clayey and gravelly silts to approximately 30 fbg. The depth to groundwater at the site ranges from 11.5 fbg to 22 fbg.

Selection of COPCs in Subsurface Soil

A list of COPCs in subsurface soil was derived based on chemicals detected in soil down to 10 fbg during sampling conducted at the site from October 1988 to April 2007. Volatile organic chemicals (VOCs) detected in subsurface soil at least once above the method reporting limit were considered COPCs. Table 1 presents the list of COPCs and their detected concentrations by sample location. The list of COPCs includes: toluene, ethylbenzene, and xylenes (TEX). The maximum concentrations of TEX detected in subsurface soil are 0.003 mg/kg, 0.88 mg/kg, and 2.8 mg/kg, respectively.

As shown in Table 1, in 1989 TPHg was detected in subsurface soil at one sample location at a maximum concentration of 600 mg/kg. The frequency of detection of TPHg in subsurface soil is 4/59 or about 7% of the samples.

Exposure Assessment

Land Use

The site is currently used as a parking lot. The areas immediately adjacent to the site are commercial and multi-unit residences. The site is expected to be developed as a multi-story senior housing facility with a slab-on-grade foundation. Due to the proximity to the San Francisco Bay, groundwater beneath the site is not used as a drinking water source and it is not expected to be used as a potable source in the future.

Conceptual Site Model

Figure 1 presents a conceptual site model of the site. For this evaluation, the potentially complete exposure pathways include; future onsite construction/utility workers ingestion of, dermal contact with and inhalation of dust and vapors from COPCs in subsurface soil. Future onsite construction/utility workers are not expected to come into contact with groundwater as the shallowest historic depth to groundwater reported is 11.5 fbg.

Future onsite residents are not expected to come into direct contact with COPCs in soil because the portions of the site not occupied with buildings will be paved. In addition, future landscaping is expected to consist of potted vegetation.

An exposure pathway considered to be complete is future onsite adult and child residents' inhalation of VOCs in indoor air from soil vapor. Risks and hazards were not estimated for this exposure pathway, but will be evaluated once there is current soul vapor data.

Quantification of Exposure

Hazard estimates were calculated using standard risk assessment algorithms. The exposure parameters used to estimate hazards to future onsite construction/utility workers are presented in Table 3. Most of the exposure parameters are from USEPA sources. For example, construction worker soil ingestion and inhalation rates of 330 mg/day and 20 m^3/day, respectively are from USEPA (1997), and exposed surface area (3,300 cm^2/day) and adherence factor (0.3 mg/cm^2) are from USEPA (2004a). Average adult body weight is from USEPA (1989). The other reference used is the San Francisco Region-Regional Water Quality Control Board (2005) for a construction worker exposure frequency of 20 days per year, an exposure duration of 7 years and a particulate emission factor of 1.44×10^6 m^3/kg.

Typically, for Tier II RBCA evaluations representative COPC concentrations, such as 95 percent upper confidence limit (UCL) of the mean concentrations, are evaluated. However, for this site maximum concentrations of TEX in subsurface soil down to 10 fbg were assessed.

Toxicity Assessment

Table 3 presents the oral and inhalation toxicity criteria used to estimate risks and hazards. The primary source of oral inhalation cancer slope factors (CSFs) is Cal/EPA's (2007) Office of Environmental Health Hazard Assessment's (OEHHA) Toxicity Criteria Database, and secondarily from USEPA's (2007) Integrated Risk Information System (IRIS). Oral and inhalation reference doses (RfDs) were obtained from IRIS (2007). Soil-to-skin absorption (ABS) and volatilization factors (VF) were obtained from the USEPA (2004b) Preliminary Remediation Goals table.

Hazard Characterization

A hazard estimate for future onsite construction/utility workers was calculated using standard risk assessment algorithms. It is provided in Table 4. The noncarcinogenic hazard index for future onsite construction/utility workers is 0.0003. This value is well below USEPA's target risk level of 1.0 for noncarcinogenic effects. Exposure to xylenes contributed the majority to the overall hazard index.

Risk and hazards are not usually estimated for THPg, as it represents a mixture of petroleum hydrocarbons of varying toxicity. Therefore, TPHg measurements were compared with the San Francisco Region-Regional Water Quality Control Board's Environmental Screening Level (ESL) for potential construction/trench worker exposures. The maximum detected concentration of TPHg in subsurface soil, 600 mg/kg, does not exceed the TPHg ESL for construction/trench workers of 6,000 mg/kg.

Uncertainties

Maximum concentrations of TEX in subsurface soil down to 10 fbg were assessed for the direct contact exposure pathway. The majority of soil data for TEX are nondetect at this site, and estimated risks assuming 95% UCL concentrations, e.g., representative concentrations, would be even lower than those presented in this evaluation.

Risks and hazards were not estimated for future onsite adult and child residents' inhalation of VOCs in indoor air from soil vapor exposure pathway because site-specific soil vapor data are almost 20 years old. This represents a data gap in the evaluation. However, if the older data were used to represent the concentrations of COPCs beneath future building structures, estimated risks and hazards would be insignificant as benzene was not detected.

Conclusions

Hazards were estimated for potential future onsite construction/utility worker direct contact exposures to COPCs in subsurface soil at the former Chevron Service Station Number 9-0020 located in Oakland, California. Based on the maximum detected concentrations of COPCs in subsurface soil down to 10 fbg, the estimated hazard index is well below the USEPA's established target level. Potential direct contact exposure pathways to future onsite residents were not considered to be complete with the exception of inhalation of VOCs in indoor air. However, this pathway was not quantitatively evaluated due to the age of site-specific soil vapor data for BTEX. In order to evaluate potential inhalation of vapors in indoor air, it is recommended that soil vapor data be collected at the site prior to construction of a residential complex.

References

Cal/EPA (California Environmental Protection Agency). 2007. Office of Environmental Health Hazard Assessment, OEHHA Toxicity Criteria Database.

CRA. Conestoga Rovers Associates. 2007. Comprehensive Analytic Results for Soil.

Delta (Delta Environmental Consultants, Inc.). 2001. Tier 1 RBCA Evaluation Addendum, Former Chevron Station #9-0020. November 14.

SFR-RWQCB (San Francisco Region-Regional Water Quality Control Board). 2005. Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (4th edition, February 2005).

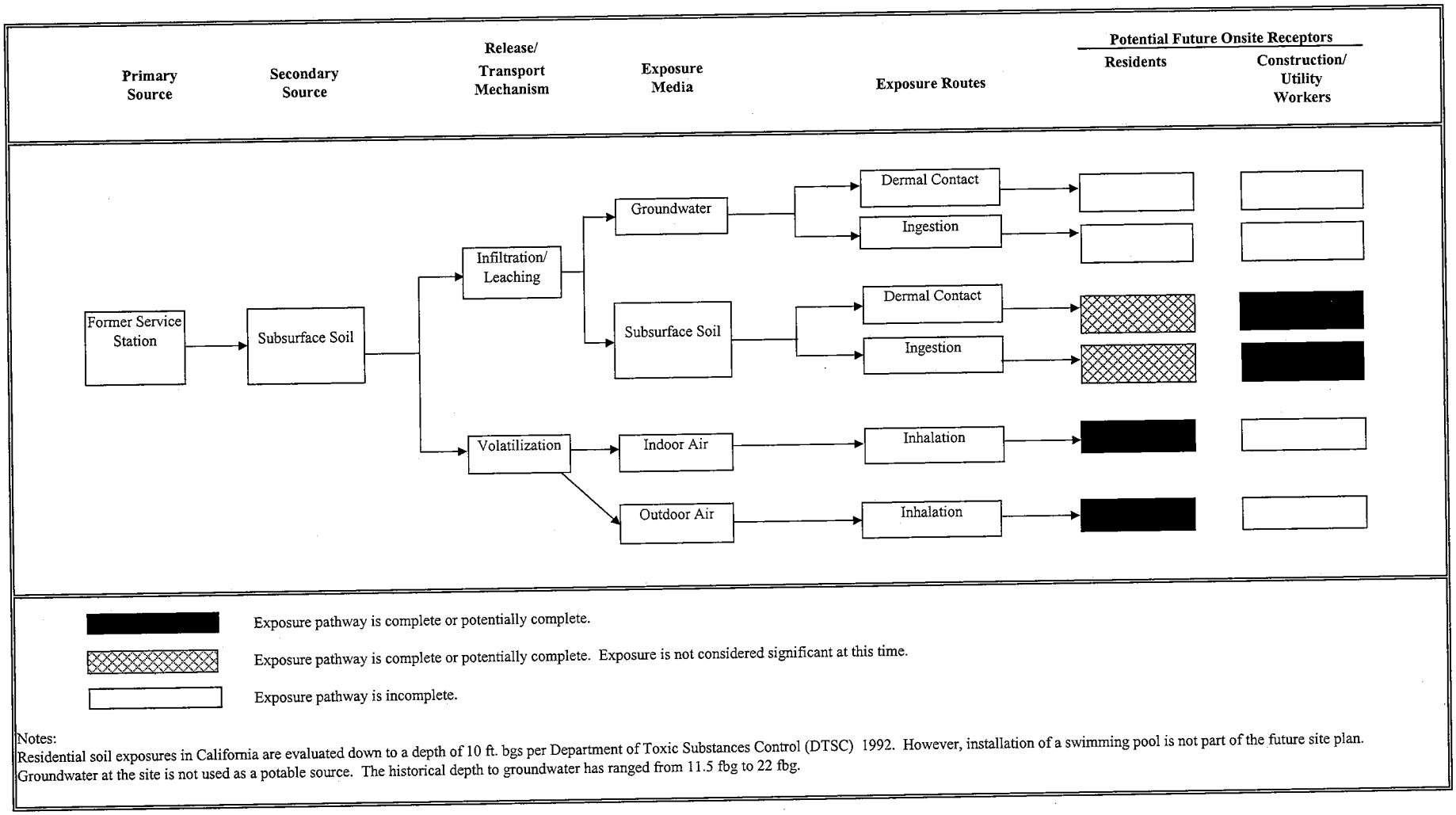
USEPA (United States Environmental Protection Agency). 1997. Exposure Factors Handbook. Office of Research and Development. EPA/600/P-95/002Fa. August.

USEPA (United States Environmental Protection Agency). 2004a. Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Final. EPA/540/R/99/005.

USEPA (United States Environmental Protection Agency). 2004b. Region 9 Preliminary Remediation Goals Table.

USEPA (United States Environmental Protection Agency). 2007. Integrated Risk Information System. Duluth, MN.

Figure 1. Conceptual Site Model for Former Chevron Station 9-0020, Oakland, California



Notes:
Residential soil exposures in California are evaluated down to a depth of 10 ft. bgs per Department of Toxic Substances Control (DTSC) 1992. However, installation of a swimming pool is not part of the future site plan.
Groundwater at the site is not used as a potable source. The historical depth to groundwater has ranged from 11.5 fbg to 22 fbg.

Table 1. Comprehensive Analytic Results for Onsite Soil[1]
Former Chevron Service Station 9-0020

Sample ID	Sample Date	Sample Depth (fbg)	TPHg	B	T	E	X
B-1	10/26/88	5	<10*	<0.3	<0.3	<0.3	<0.3
B-1	10/26/88	10	<10*	<0.3	<0.3	<0.3	<0.3
B-2	10/26/88	5	<10*	<0.3	<0.3	<0.3	<0.3
B-2	10/26/88	10	<10*	<0.3	<0.3	<0.3	<0.3
B-3	10/26/88	5	<10*	<0.3	<0.3	<0.3	<0.3
B-3	10/26/88	10	<10*	<0.3	<0.3	<0.3	<0.3
B-4	1989	6	<5.0**	<0.005	<0.005	<0.005	<0.01
B-5	1989	9.5	<2.0**	<0.002	<0.002	<0.002	<0.004
B-6	1989	9.5	<2.0**	<0.002	<0.002	<0.002	<0.004
B-7	1989	4.2	<1.0**	<0.001	<0.001	<0.001	<0.002
B-7	1989	9.2	<1.0**	<0.001	<0.001	<0.001	<0.002
B-8	1989	4.5	**600****	<0.001	<0.001	<0.001	<0.002
B-8	1989	9.6	**600****	<0.01	<0.01	<0.01	<0.02
B-8	1989	9.6	**450****	<0.02	<0.02	<0.02	<0.04
B-9	1989	9	<0.5**	<0.005	<0.005	<0.005	<0.010
B-10	1989	9.5	<1.0**	<0.002	<0.002	<0.002	<0.004
B-11	1989	9.5	<0.1**	<0.002	<0.002	<0.002	<0.004
B-12	1989	9.5	<1.0**	<0.002	**0.003**	<0.002	<0.004
B-16	6/21/1990	6.2	<1.0**	<0.005	<0.005	<0.005	<0.005
B-A	10/5/91	10	ND	ND	ND	ND	ND
B-B	10/5/91	10	ND	ND	ND	ND	ND
B-C	10/5/91	10	ND	ND	ND	ND	ND
B-D	10/5/91	10	ND	ND	ND	ND	ND
ES-10W	1/9/2007	10	ND	ND	ND	ND	ND
ES-8C	1/9/2007	8	**310**	ND	ND	**0.88**	**2.8**
EE-5N	1/9/2007	5	ND	ND	ND	ND	ND
EE-10S	1/9/2007	10	ND	ND	ND	ND	ND
EN-5W	1/9/2007	5	ND	ND	ND	ND	ND
EN-10E	1/9/2007	10	ND	ND	ND	ND	ND
EW-5S	1/9/2007	5	ND	ND	ND	ND	ND
EW-10N	1/9/2007	10	ND	ND	ND	ND	ND
B-17	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-17	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
B-18	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-18	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
B-19	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-19	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
B-20	6/28/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-20	6/28/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
B-21	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-21	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
B-22	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-22	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
B-23	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-23	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001

Table 1. Comprehensive Analytic Results for Onsite Soil[1]
Former Chevron Service Station 9-0020

Sample ID	Sample Date	Sample Depth (fbg)	TPHg	B	T	E	X
B-24	6/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-24	6/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
B-25	7/29/04	5	<1.0	<0.0005	<0.001	<0.001	<0.001
B-25	7/29/04	10	<1.0	<0.0005	<0.001	<0.001	<0.001
SB1	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001
SB1	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001
SB2	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001
SB2	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001
SB3	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001
SB3	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001
SB4	4/27/07	5	<1.0	<0.0005	<0.001	<0.001	<0.001
SB4	4/27/07	10	<1.0	<0.0005	<0.001	<0.001	<0.001
		Maximum	**310**	**0.0**	**0.003**	**0.88**	**2.8**

Abbreviations/Notes:

[1] Source: Conestoga-Rovers & Associates

Concentration units are in milligrams per kilogram

Total petroleum hydrocarbons as gasoline (TPHg) by several methods

Benzene, toluene, ethylbenzene, xylenes (BTEX) by several methods

fbg = Feet below grade

* = Values reported for Total Fuel Hydrocarbons by unknown method

** = Total Purgeable Petroleum Hydrocarbons by unknown method

ND = Not detectable above laboratory detection limits

<x = Not detected above method detection limit

Table 2. Exposure Parameters Used to Estimate Hazards
Former Chevron Service Station 9-0020

Subsurface Soil Concentration	C_{soil}	mg/kg	CS	Table 1
Ingestion Rate of Soil-Construction/Utility Worker	IRS_{cw}	mg/day	330	USEPA, 1997
Exposed Surface Area-Soil Contact-Construction Worker	SA_{cw}	cm^2/day	3,300	USEPA, 2004a
Adherence Factor-Construction/Utility Worker	AF_{cw}	mg/cm^2	0.3	USEPA, 2004a
Soil-to-Skin Absorption Factor	ABS	unitless	CS	Table 3
Inhalation Rate-Construction/Utility Worker	IRA_{cw}	m^3/day	20	USEPA, 1997
Exposure Frequency-Construction/Utility Worker	EF_{cw}	days/year	20	SFBRWQCB, 2005
Exposure Duration-Construction/Utility Worker	ED_{cw}	years	7	SFBRWQCB, 2005
Averaging Time-Construction Worker (Noncarcinogens)	AT_{nc-cw}	days	2,555	ED x 365
Conversion Factor	CF	mg/kg	1.E+06	-
Body Weight-Adult	BW_{adult}	kg	70	USEPA, 1989
Volatilization Factor	VF	m^3/kg	CS	USEPA, 2004b
Particulate Emission Factor-Construction/Utility Worker	PEF_{cw}	m^3/kg	1.44E+06	SFBRWQCB, 2005

CS = Chemical-specific. See Table 3.
USEPA (1989) Risk Assessment Guidance for Superfund. Human Health Evaluation Manual.
USEPA (1997). Exposure Factors Handbook. Recommened soil ingestion rate for people involved in activities with heavy soil contact.
USEPA (2004a). Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment).
USEPA (2004b). Preliminary Remediation Goals Table.
SFBRWQCB (2005). Environmental Screening Levels.

Table 3. Toxicity Criteria
Former Chevron Service Station 9-0020

Chemical	Oral RfD mg/kg/day	Inhalation RfD mg/kg/day	Inhalation RfC (mg/m^3)	ABS (unitless)	VF (m^3/kg)
Benzene	4.00E-03	8.57E-03	3.00E-02	0.00E+00	2.7E+03
Ethylbenzene	1.00E-01	2.86E-01	1.00E+00	0.00E+00	5.4E+03
Toluene	8.00E-02	1.43E+00	5.00E+00	0.00E+00	4.0E+03
Xylenes	2.00E-01	2.86E-02	1.00E-01	1.00E-01	6.1E+03

RfD = Reference dose. Source = USEPA (2007) Integrated Risk Information System
RfC = Inhalation reference concentration.
ABS = Soil-to-skin absorption factor. Source = USEPA (2004b) Region 9 Preliminary Remediation Goals Table.
VF = Volatilization factor. Source = USEPA (2004b) Region 9 Preliminary Remediation Goals Table.
NC = Noncarcinogen

Table 4. Estimated Noncarcinogenic Hazards
Former Chevron Service Station 9-0020

Chemical	Maximum Onsite Subsurface Soil Concentration[a] (mg/kg)	Construction/Utility Worker
		Noncancer Hazard
Benzene	NA	NA
Ethylbenzene	0.88	1.1E-05
Toluene	0.003	1.8E-08
Xylenes	2.8	2.6E-04
Total		**2.69E-04**

[a] Table 1.
NA = Not available. Benzene was not detected in subsurface soil down to 10 fbg.

ATTACHMENT C

Evaluation of Vapor Intrusion to Indoor Air from Soil Vapor

EVALUATION OF VAPOR INTRUSION TO INDOOR AIR FROM SOIL VAPOR FORMER CHEVRON STATION NUMBER 9-0020

Introduction

At the request of the Alameda County Health Care Services (ACHCS), risks and hazards were estimated for indoor air exposures to chemicals of potential concern (COPCs) identified in soil vapor at the former Chevron Service Station Number 9-0020 located at 1633 Harrison Street, Oakland, California. The main purpose of this report is to answer the question, "Could residual concentrations of chemicals in soil vapor pose adverse health effects to future occupants of a residential building located on the site?" In general, risk and hazard estimates provide an answer to that question. It is understood that in order to develop a residential building at the site, a Remedial Action Plan, including a Tier II Risk-Based Corrective Action (RBCA) evaluation for the site, will be required and approved by the ACHCS. The results of this soil vapor evaluation may be used to support a RBCA process and closure for the site.

This evaluation describes the methods and assumptions used to evaluate potential vapor intrusion exposures to future onsite residents. Based on the results of this evaluation, potential health risks for adult and child residents exposed to vapors that could migrate from COPCs identified in soil vapor onsite are within acceptable levels. The potential excess cancer risks were estimated to be 3×10^{-7} and 2×10^{-7} for onsite adult and child residents, respectively, and the noncancer hazard index for onsite child residents is estimated to be 0.01, which is below the acceptable level of 1.0. The established acceptable risk range, which is from 1×10^{-6} to 1×10^{-4}, and the hazard index are defined by the California Environmental Protection Agency (Cal-EPA), the United States Environmental Protection Agency (USEPA) and other regulatory agencies. This indicates that, given this particular exposure scenario, potential vapor intrusion does not present a health threat to individuals residing in future onsite buildings. The following sections describe the methods and information that were used to arrive at this conclusion.

Site Description

Currently, the site consists of an asphalt paved parking lot. The areas immediately adjacent to the site are commercial and multi-unit residences. The site is expected to be developed as a multi-story senior housing facility with a slab-on-grade building foundation. The entire property area not included as part of the building complex will be paved and used for parking. Future landscaping will consist of potted plants placed on top of the pavement.

COPCs have been detected in soil, groundwater, and soil vapor samples collected onsite. A soil vapor survey was conducted at the site in January 1988. Twenty-two samples were collected at eleven locations around the site ranging from 3 to 13 feet below grade (fbg). The highest Total Petroleum Hydrocarbon as gasoline concentrations were detected in the vicinity of the former used-oil underground storage tank. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in any sample, with the exception of toluene and xylenes detected in one sample at low concentrations.

A second round of soil vapor sampling was conducted on June 13, 2007. Soil vapor samples were collected from six locations, VP-1 to VP-6 (See Figure 2 of the Remedial Action Plan for

the sample locations). For each soil vapor sample location, the probe depth intervals were from 5.0 to 5.5 fbg, and 10.0 to 10.5 fbg. Soil vapor sample locations VP-1 through VP-3 are located outside of the proposed building footprint, while soil vapor sample locations VP-4 through VP-6 are located within the proposed building footprint.

As described in the Conestoga-Rovers & Associate Soil Vapor Survey Report (CRA, 2007), soil vapor samples were analyzed using modified EPA Method TO-15. Of the suite of chemicals analyzed, the specific chemicals detected in soil vapor include; BTEX, chloroform, and naphthalene. These 6 chemicals are considered the COPCs in soil vapor for the site. Table 1 presents the concentrations of COPCs detected in soil vapor. Ethanol was also detected from 5 to 5.5 fbg at one sample location, VP-4, at a concentration of 18 $\mu g/m^3$. However, it was not selected as a COPC because it is not recognized as carcinogenic or noncarcinogenic by the USEPA or Cal-EPA's Office of Environmental Health Hazard Assessment (OEHHA).

Exposure Assessment

The COPCs in soil vapor have the potential to volatilize. Therefore, the most likely exposure pathway for future onsite residents is inhalation of vapors which have migrated from soil vapor through soil into buildings.

Following Cal-EPA Department of Toxic Substances Control (DTSC, 2004) guidance, it was assumed that the maximum concentrations of COPCs detected in the soil vapor samples collected onsite could serve as the vapor source. Concentrations of the COPCs were based on the soil vapor analytical data collected by Conestoga-Rovers & Associates (CRA) on June 13, 2007 (Table 1). The maximum concentrations of BTEX, chloroform and naphthalene in soil vapor collected from VP-1 to VP-6 are: 2,600; 2,000; 4,800; 5,000; 14; and 740 $\mu g/m^3$, respectively. The maximum soil vapor concentrations of BTEX and naphthalene were detected in VP-1 at 10-10.5 fbg. The maximum soil vapor concentration of chloroform was detected in VP-2 at 5-5.5 fbg. Both of the locations at which the maximum concentrations were detected are outside the footprint of the proposed building.

A scientific model for evaluating the migration of volatile chemicals from soil vapor to indoor air, SG-SCREEN (Version 2.0), developed by the USEPA (2003) and modified by the Cal-EPA DTSC was used to predict concentrations of the volatile chemicals in indoor air based on their concentrations in soil vapor. The SG-SCREEN model was last modified on January 21, 2005 and is based on the Johnson and Ettinger (1991) indoor air vapor intrusion model, often referred to as the J&E Model. Based on recent construction schemes, the proposed building will have a slab-on-grade foundation.

In addition to maximum chemical concentrations in soil vapor, site-specific characteristics of soils at the property were used in the SG-SCREEN model, when available, and were assumed to represent the characteristics of site soils. Table 2 presents the input parameters used to estimate indoor air levels of the COPCs. The shallowest soil vapor sampling depth below grade was 5 feet. The soil type was assumed to be sand. Soil physical parameters were measured on April 27, 2007 at 10 fbg from SB1 and again on June 13, 2007 at 9.5 fbg from VP-1 by CRA (2007). Average vadose zone soil dry bulk density and porosities were used from these data. The average vadose zone soil dry bulk density is 1.83 g/cm^3, the average vadose zone total porosity is 32.4%, and the average air and water-filled porosities are 4.5%, and 27.9, respectively. Cal-EPA DTSC default assumptions were used for all other soil properties.

The indoor air concentrations of the COPCs predicted by the SG-SCREEN model were then used to estimate potential health risks and hazards to future onsite residents. The exposure parameters used to estimate potential exposures to residents are summarized in Table 3. Standard default parameters, as recommended by DTSC (1992) and USEPA (1989; 1991; and 1997), were used.

Inhalation Toxicity Criteria

The USEPA's (2007) Integrated Risk Information System (IRIS) and Cal-EPA's OEHHA (2007) have established specific toxicity criteria for BTEX, chloroform, and naphthalene for use in risk evaluations. Following standard practice for sites located in California, if available, the most recent OEHHA inhalation toxicity criteria were used. If unavailable, then toxicity criteria established by the USEPA were used. Table 4 presents the inhalation toxicity criteria used in this evaluation.

Risk Characterization

Using standard equations recommended by Cal-EPA and USEPA, the predicted indoor air concentrations, and exposure assumptions and toxicity criteria described above, the potential health risks and hazards were estimated for future onsite residents. The potential health risks presented by carcinogenic chemicals, such as benzene, are described in terms of excess cancer risk, or the probability of getting cancer over a lifetime that may be associated with the particular exposures evaluated. Noncarcinogenic chemicals, such as toluene, ethylbenzene, and xylenes are expressed in terms of a hazard index or a ratio of the chemical exposure estimate to a "safe" dose.

Based on indoor air concentrations predicted by the SG-SCREEN model results shown in Attachment A, Table 5 presents the estimated excess lifetime cancer risks and noncancer hazard index for future onsite adult and child residents assuming maximum site-wide COPC soil vapor concentrations. Tables A-1 to A-12 in Attachment A present the SG-SCREEN model runs for each COPC assuming slab-on-grade building foundation assuming maximum site-wide COPC soil vapor concentrations as the source beneath a future building structure. Table 6 presents the estimated excess lifetime cancer risks and noncancer hazard index for future onsite adult and child residents assuming maximum COPC soil vapor concentrations within the footprint of the proposed building.

As shown in Table 5, with maximum site-wide COPC soil vapor concentrations used as the source, assuming a standard slab-on-grade building foundation of 15 cm, the potential excess cancer risks were estimated to be 3×10^{-7} and 2×10^{-7} for onsite adult and child residents, respectively. The potential noncancer hazard index (for total exposure to BTEX, and naphthalene) for onsite child residents was estimated to be 0.01. Only children were evaluated for noncancer effects because they are the most conservative potential receptors.

Assuming maximum COPC soil vapor concentrations within the footprint of the proposed building as the source, assuming a standard slab-on-grade building foundation of 15 cm, the potential excess cancer risks were estimated to be 2×10^{-8} and 1×10^{-8} for onsite adult and child residents, respectively (Table 6). The potential noncancer hazard index (for total exposure to BTEX, and naphthalene) for onsite child residents was estimated to be 0.001.

Uncertainties

Uncertainty, which includes natural variability and incertitude originating from a lack of understanding (i.e., relevant data) are inherent in the risk assessment process. Many of the variables used to estimate risks and hazards are standard default values and may not accurately describe future conditions or characteristics of the site. As default values tend to overestimate exposure, the impact of this uncertainty is to typically overestimate risks.

For example, prediction of indoor air vapor concentrations for buildings is an area of uncertainty. However, the air exposure models incorporated into SG-SCREEN are based on equations recommended by Cal-EPA DTSC and USEPA which provide a very conservative overestimate of actual risk for most cases. The degree to which this may impact the estimated risks and hazards was not quantified.

The actual dimensions and structural integrity of the proposed future onsite building foundation is not known. However, as stated previously, default model values tend to overestimate exposure and the impact of this uncertainty is to typically overestimate risks.

The degradability of volatile petroleum hydrocarbons was not considered and it is likely that risk and hazard estimates have been overestimated. Use of petroleum hydrocarbon soil vapor data to evaluate potential onsite indoor air exposures, without considering natural attenuation mechanisms known to affect petroleum hydrocarbons, is likely to overestimate risks and hazards for residents. However, the degree to which this may impact risk and hazard estimates cannot be quantitatively determined.

Soil vapor samples were collected beneath the current asphalt pavement. With the exception of the area that is expected to be developed as a residential building, the entire site will be paved with asphalt. Essentially, the condition from which soil vapor samples were collected, e.g., beneath asphalt pavement, resembles that anticipated in the future. Therefore, the amount of oxygen available to degrade petroleum hydrocarbons in subsurface soil in the future is expected to be similar to the current conditions. It should be noted that the oxygen level in soil vapor at VP1, from 4.5 to 5.0%, is fairly depleted.

Although Cal-EPA's OEHHA has established an inhalation toxicity criterion for naphthalene, e.g., an inhalation cancer slope factor, the USEPA's IRIS has not officially recognized it has a human carcinogen. The potential carcinogenicity of naphthalene is currently the subject of much scientific research and debate. Assuming that it is carcinogenic, as was done in this analysis, may overestimate the potential health risks.

Finally, this evaluation was based on use of the maximum detected soil vapor COPC concentrations as a source beneath a future onsite building. Typically, the 95 percent upper confidence limit of the mean soil vapor concentrations of the COPCs are also evaluated, because they are likely to be more representative estimates of the potential vapor source strength. As such, this evaluation will tend to over predict risks and hazards.

Conclusions

Using the approach described in this evaluation, the estimated excess cancer risks for future onsite residents at the former Chevron Service Station Number 9-0020 do not exceed the established acceptable risk range, from 1×10^{-6} to 1×10^{-4}, as defined by Cal-EPA, USEPA and

other regulatory agencies. Moreover, the estimated hazard index for future onsite residents is also below an acceptable level, of 1.0, for noncancer effects. These results indicate that potential health risks for future occupants of an onsite building exposed to potential vapors migrating from chemicals in soil vapor collected onsite are below levels of concern.

References

Cal-EPA (California Environmental Protection Agency). 2007. Office of Environmental Health Hazard Assessment, OEHHA. Toxicity Criteria Database.

Cal-EPA (California Environmental Protection Agency). 2004. Department of Toxic Substances Control (DTSC). Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. Interim Final. Revised February 7, 2005.

Cal-EPA (California Environmental Protection Agency). 1992. Department of Toxic Substances Control (DTSC). Office of the Science Advisor Guidance. Interim Final Default Exposure Parameters.

Conestoga-Rovers & Associates (CRA). 2007. Soil Vapor Survey Report. Soil Vapor Analytical Data and Physical Parameters Data Collected June 13, 2007, and Physical Parameters Data collected on April 27, 2007 for Chevron Station 9-0020 17th and Harrison Streets Oakland California.

Johnson, P.C., R.A. Ettinger. 1991. Heuristic model for predicting the intrusion of contaminant vapors into buildings. Environ. Sci. Technol. 25(8): 1445-1452.

USEPA (United States Environmental Protection Agency). 2007. Integrated Risk Information System. Duluth, MN.

USEPA (United States Environmental Protection Agency). 2003. SG-SCREEN Model Version 2.0, April. Modified by Cal-EPA DTSC January 21, 2005.

USEPA (United States Environmental Protection Agency). 1997. Exposure Factors Handbook. EPA/600/P-95/002Fa. Office of Research and Development, Washington, D.C.

USEPA (United States Environmental Protection Agency). 1991. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Publication 9285.6-03. Office of Emergency and Remedial Reponse, Washington, D.C.

USEPA (United States Environmental Protection Agency). 1989. Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual. OSWER Dir. 9285.7-01a.

TABLES

Table 1. Chemicals of Potential Concern in Soil Vapor and Their Detected Concentrations
Former Chevron Station No. 9-0020, Oakland, California

Chemical	VP1	VP1	VP2	VP2	VP3	VP3	VP4	VP4	VP5	VP5	VP6	VP6	Maximum Concentration	
Probe Depth Interval (fbg)	5-5.5	10-10.5	5-5.5	10-10.5	5-5.5	10-10.5	5-5.5	10-10.5	5-5.5	10-10.5	5-5.5	10-10.5	Site- Wide	Within Proposed Building Footprint
Benzene	110	2,600	7.9	12	29	56	26	15	35	9	28	20	2,600	35
Chloroform	<46	<17	14	<3.5	4.3	4.3	<3.5	<3.5	6.4	<3.5	<3.4	<3.4	14	6
Ethylbenzene	480	4,800	170	66	120	170	130	120	160	42	130	95	4,800	160
Naphthalene	330	740	<26	<25	<25	<25	<25	<25	<25	<25	110	29	740	110
Toluene	220	2,000	420	280	600	1,000	620	310	820	160	320	450	2,000	820
Xylenes	1,000	5,000	530	260	490	630	520	280	590	130	320	330	5,000	590
Oxygen	4.6	5	16	16	16	15	14	13	17	18	14	12	18	18
Carbon Dioxide	10	6.1	1.2	2.3	0.8	0.93	0.88	2.9	0.15	1.1	1.8	1.4	10	3

BTEX, chloroform, and naphthalene concentration units are in micrograms per cubic meter ($\mu g/m^3$).
O2 and CO2 concentration units are in percent volume.
< = not detected above specified reporting limit.
All soil vapor samples were collected on June 13, 2007 by Conestoga-Rovers & Associates.

Table 2. Input Parameters Used to Estimate Indoor Air Risks and Hazards
Former Chevron Station No. 9-0020, Oakland, California

Parameter	Value	Units	Source
Source vapor concentration, C_{source}	Chemical-specific	$\mu g/m^3$	Measured (Table 1)
Depth below grade to bottom of enclosed space floor[1]	15	cm	Model default
Shallowest soil vapor sampling depth below grade	152.4 (5)	cm (ft)	Assumed
Average soil temperature	24 (75)	°C (°F)	DTSC indoor air guidance default
Vadose zone SCS soil type	Sand (S)	-	Assumed
Average vadose zone soil dry bulk density[2]	1.83	g/cm^3	Measured
Average vadose zone total porosity[2]	32.4%	percent	Measured
Average air-filled porosity[2]	4.5%	percent	Measured
Average vadose zone soil water-filled porosity[2]	27.9%	percent	Measured

[1] Assumes slab-on-grade building foundation.

[2] Average based on samples collected 4/27/07 (SB-1) and 6/13/07 (VP-1) at 10 and 9.5 fbg, respectively.

Table 3. Exposure Parameters Used to Estimate Indoor Air Risks
Former Chevron Station No. 9-0020, Oakland, California

Parameter	Symbol	Units	Value	Source
Infinite source building concentration	$C_{building}$	$\mu g/m^3$	Chemical-specific	Modeled
Inhalation rate-adult resident	IRA_{adult}	m^3/day	15	DTSC, 1992
Inhalation rate-child resident	IRA_{child}	m^3/day	10	USEPA, 1997
Exposure frequency-resident	EF_r	days/year	350	USEPA, 1991; DTSC, 1992
Exposure duration-adult resident	ED_{adult}	years	30	USEPA, 1991; DTSC, 1992
Exposure duration-child resident	ED_{child}	years	6	USEPA, 1991; DTSC, 1992
Averaging time-adult and child (carcinogens)	AT_c	days	25,550	USEPA, 1989
Averaging time-adult resident (noncarcinogens)	AT_{nc-a}	days	10,950	ED x 365
Averaging time-child (noncarcinogens)	AT_{nc-c}	days	2,190	ED x 365
Conversion factor	CF	µg/mg	1,000	-
Body weight-adult	BW_{adult}	kg	70	USEPA, 1989; DTSC 1992
Body weight-child	BW_{child}	kg	15	USEPA, 1991; DTSC, 1992

Table 4. Inhalation Toxicity Criteria
Former Chevron Station No. 9-0020, Oakland, California

Chemical	Inhalation RfD mg/kg/day	Inhalation CSF $(mg/kg\text{-}day)^{-1}$
Benzene	8.57E-03	1.02E-01
Chloroform	NA	9.10E-02
Ethylbenzene	2.86E-01	NC
Naphthalene	8.57E-04	1.20E-01
Toluene	1.43E+00	NC
Xylenes	2.86E-02	NC

RfD = Reference dose
CSF = Cancer slope factor
NA = Not available
NC = Noncarcinogen
Source of RfDs = USEPA (2007) Integrated Risk Information System
Source of CSFs = Cal/EPA OEHHA (2007) Toxicity Criteria Database

Table 5. Estimated Excess Lifetime Cancer Risks and Noncarcinogenic Hazards
Site-Wide Maximum Soil Vapor Concentrations
Former Chevron Station No. 9-0020, Oakland, California

Equations:

$Risk = CSF \times C_{building} \times 1/CF \times (IRA_{adult} \times EF_r \times ED_{adult}) / (BW_{adult} \times AT_c)$

$Risk = CSF \times C_{building} \times 1/CF \times (IRA_{child} \times EF_r \times ED_{child}) / (BW_{child} \times AT_c)$

$Hazard = (1/RFD) \times C_{building} \times 1/CF \times (IRA_{child} \times EF_r \times ED_{child}) / (BW_{child} \times AT_{nc-c})$

Chemical	Maximum Soil Vapor Concentration[1] ($\mu g/m^3$)	Predicted Indoor Air Concentration[2] $C_{building}$ ($\mu g/m^3$)	Adult Excess Cancer Risk	Child Excess Cancer Risk	Child Noncancer Hazard
Benzene	2,600	1.87E-02	1.7E-07	1.0E-07	1.4E-03
Chloroform	14	1.25E-04	1.0E-09	6.2E-10	NA
Ethylbenzene	4,800	2.76E-02	NC	NC	6.2E-05
Naphthalene	740	1.17E-02	1.2E-07	7.7E-08	8.7E-03
Toluene	2,000	1.36E-02	NC	NC	6.1E-06
Xylenes	5,000	2.98E-02	NC	NC	6.7E-04
Total			**3.E-07**	**2.E-07**	**1.E-02**

[1] Indoor air chemical concentrations were predicted from maximum soil vapor concentrations collected across the site. See Table 1.

[2] Source: USEPA's (2003) SG-SCREEN model Version 2.0 modified by Cal/EPA's HERD on 1/21/05.

NC = Noncarcinogen

NA = Not available

Table 6. Estimated Excess Lifetime Cancer Risks and Noncarcinogenic Hazards
Within Proposed Building Footprint
Former Chevron Station No. 9-0020, Oakland, California

Equations:

Risk = $CSF \times C_{building} \times 1/CF \times (IRA_{adult} \times EF_r \times ED_{adult}) / (BW_{adult} \times AT_c)$

Risk = $CSF \times C_{building} \times 1/CF \times (IRA_{child} \times EF_r \times ED_{child}) / (BW_{child} \times AT_c)$

Hazard = $(1/RFD) \times C_{building} \times 1/CF \times (IRA_{child} \times EF_r \times ED_{child}) / (BW_{child} \times AT_{nc-c})$

Chemical	Maximum Soil Vapor Concentration[1] ($\mu g/m^3$)	Predicted Indoor Air Concentration[2] $C_{building}$ ($\mu g/m^3$)	Adult Excess Cancer Risk	Child Excess Cancer Risk	Child Noncancer Hazard
Benzene	35	2.52E-04	2.3E-09	1.4E-09	1.9E-05
Chloroform	6	5.38E-05	4.3E-10	2.7E-10	NA
Ethylbenzene	160	9.21E-04	NC	NC	2.1E-06
Naphthalene	110	1.73E-03	1.8E-08	1.1E-08	1.3E-03
Toluene	820	5.56E-03	NC	NC	2.5E-06
Xylenes	590	3.52E-03	NC	NC	7.9E-05
Total			**2.E-08**	**1.E-08**	**1.E-03**

[1] Indoor air chemical concentrations were predicted from maximum soil vapor concentrations collected within the proposed building footprint. See Table 1.

[2] Source: USEPA's (2003) SG-SCREEN model Version 2.0 modified by Cal/EPA's HERD on 1/21/05.

NC = Noncarcinogen

NA = Not available

ATTACHMENT A

SG-SCREEN MODEL RESULTS FOR SITE-WIDE DATA

DATA ENTRY SHEET

Table A-1. Benzene-Maximum Soil Vapor Concentration Outside Proposed Building Footprint

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
71432	2.60E+03			Benzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.83	0.324	0.279	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Table A-2 Benzene Predicted Indoor Air Concentration

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.045	0.834	1.02E-07	0.055	5.62E-09	4,000	2.60E+03	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,977	5.29E-03	2.17E-01	1.80E-04	3.36E-05	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	2.60E+03	1.25	8.33E+01	3.36E-05	5.00E+03	#NUM!	7.19E-06	1.87E-02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
2.9E-05	3.0E-02

END

DATA ENTRY SHEET

Table A-3. Ethylbenzene-Maximum Soil Vapor Concentration Outside Proposed Building Footprint

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
100414	4.80E+03			Ethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.83	0.324	0.279	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Table A-4. Ethylbenzene Predicted Indoor Air Concentration

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.045	0.834	1.02E-07	0.055	5.62E-09	4,000	4.80E+03	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,994	7.43E-03	3.05E-01	1.80E-04	2.69E-05	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	4.80E+03	1.25	8.33E+01	2.69E-05	5.00E+03	#NUM!	5.76E-06	2.76E-02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.0E+00

END

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

Table A-5. Naphthalene-Maximum Soil Vapor Concentration Outside Proposed Building Footprint

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

ENTER Chemical CAS No. (numbers only, no dashes)	Soil Gas Concentration Data: ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
91203	7.40E+02			Naphthalene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.83	0.324	0.279	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Table A-6. Naphthalene Predicted Indoor Air Concentration

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.045	0.834	1.02E-07	0.055	5.62E-09	4,000	7.40E+02	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	12,768	4.48E-04	1.84E-02	1.80E-04	7.38E-05	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	7.40E+02	1.25	8.33E+01	7.38E-05	5.00E+03	#NUM!	1.58E-05	1.17E-02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
3.4E-05	3.0E-03

END

Table A-7. Toluene-Maximum Soil Vapor Concentration Outside Proposed Building Footprint

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

ENTER Chemical CAS No. (numbers only, no dashes)	Soil Gas Concentration Data: ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
108883	2.00E+03			Toluene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.83	0.324	0.279	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Table A-8. Toluene Predicted Indoor Air Concentration

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^v (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.045	0.834	1.02E-07	0.055	5.62E-09	4,000	2.00E+03	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,001	6.29E-03	2.58E-01	1.80E-04	3.17E-05	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	2.00E+03	1.25	8.33E+01	3.17E-05	5.00E+03	#NUM!	6.78E-06	1.36E-02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	3.0E-01

END

DATA ENTRY SHEET

Table A-9. Xylenes-Maximum Soil Vapor Concentration Outside Proposed Building Footprint

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Soil gas conc., C_g ($\mu g/m^3$)	OR	**ENTER** Soil gas conc., C_g (ppmv)	Chemical
106423	5.00E+03			p-Xylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	**ENTER** Soil gas sampling depth below grade, L_s (cm)	**ENTER** Average soil temperature, T_s (°C)	**ENTER** Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	**ENTER** User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	**ENTER** Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^V (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	**ENTER** Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.83	0.324	0.279	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Table A-10. Xylenes Predicted Indoor Air Concentration

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.045	0.834	1.02E-07	0.055	5.62E-09	4,000	5.00E+03	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	10,083	7.22E-03	2.96E-01	1.80E-04	2.79E-05	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	5.00E+03	1.25	8.33E+01	2.79E-05	5.00E+03	#NUM!	5.97E-06	2.98E-02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.0E-01

END

Table A-11. Chloroform-Maximum Soil Vapor Concentration Outside Proposed Building Footprint

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC

Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
67663	1.40E+01			Chloroform

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.83	0.324	0.279	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Table A-12 Chloroform Predicted Indoor Air Concentration

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.045	0.834	1.02E-07	0.055	5.62E-09	4,000	1.40E+01	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,407	3.51E-03	1.44E-01	1.80E-04	4.19E-05	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.40E+01	1.25	8.33E+01	4.19E-05	5.00E+03	#NUM!	8.96E-06	1.25E-04

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.3E-06	3.0E-01

END