



Alexis Fischer
Project Manager
Marketing Business Unit

**Chevron Environmental
Management Company**
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Alameda County Environmental Health (ACEH)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RECEIVED

By Alameda County Environmental Health at 3:07 pm, Dec 24, 2014

Re: Former Chevron Service Station No. 90019
210 Grand Avenue
Oakland, CA

I have reviewed the following Hydrocarbon Transport Model and Soil and Groundwater Management Plan, dated September 26, 2014.

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

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

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

A handwritten signature in blue ink that reads "Alexis Fischer".

Alexis Fischer
Project Manager

Attachment: Hydrocarbon Transport Model and Soil and Groundwater Management Plan



**CONESTOGA-ROVERS
& ASSOCIATES**

10969 Trade Center Drive, Suite 107
Rancho Cordova, California 95670
Telephone: (916) 889-8900 Fax: (916) 889-8999
www.CRAworld.com

September 26, 2014

Reference No. 632327D

Mr. Mark Detterman, P.G., C.E.G.
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Hydrocarbon Transport Model and
Soil and Groundwater Management Plan
Former Chevron Service Station 90019
210 Grand Avenue
Oakland, California
Case No. RO0137

Dear Mr. Detterman:

Conestoga-Rovers & Associates (CRA) is submitting this report for the site referenced above on behalf of Chevron Environmental Management Company (Chevron). This report presents a conservative model of dissolved hydrocarbon migration downgradient of the site along an adjacent buried utility line toward Glen Echo Creek showing that hydrocarbon concentrations reaching the creek are below applicable environmental screening levels. This work was undertaken in response to a letter from the Alameda County Environmental Health (ACEH) department dated July 17, 2014 (Attachment A). The model shows that there is likely minimal impact to Glen Echo Creek and Lake Merritt, therefore, CRA has included a Soil and Groundwater Management Plan (SGMP) in anticipation of obtaining site closure from the ACEH.

Site Description and Background

The site was formally a Chevron-branded service station located on the northwest corner of the intersection of Grand Avenue and Bay Place (Figure 1). The majority of the site is currently occupied by a paved parking lot for the Downtown Oakland Senior Center; however, the eastern portion of the site is now covered by the southbound lanes of Bay Place (Figure 2). The date the site was first developed as a service station is unknown, although based on historical

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aerial photographs, the site appears to have included a service station as early as 1946 with a triangular building in a Y-shaped configuration. This configuration is also shown on an older Chevron site survey and facility plan (date unknown), in which a station building and two canopies formed a Y-shape. Between 1946 and 1958, a portion of the western side of the site became part of Montecito Avenue, as this road was reconfigured to intersect perpendicular to Grand Avenue. By 1968, the station appeared to have been reconstructed into the most recent configuration (Figure 2). The station was demolished and all facilities were removed in June 1990. In 1992, the property was acquired by the City of Oakland, and the existing parking lot was constructed over the western portion of the site in the mid-1990s. Bay Place was expanded over the eastern portion of the site. Montecito Avenue was closed at Bay Place and its southernmost portion, between Bay Place and Grand Avenue, was incorporated into the Veteran's Memorial Building property (existing senior center) and converted to a parking lot and landscaping. No structures are present on the original service station property.

Surrounding land use is primarily commercial with some residential further from the site. St. Paul's Episcopal Church is located across Bay Place to the east of the site. The Downtown Oakland Senior Center is located to the northwest of the site. To the south and southeast of the site, across Grand Avenue, is Lakeside Park, located on the shores of Lake Merritt, an estuarine urban surface water body. Lake Merritt, at its closest point, is approximately 225 feet southwest of the site. The site is relatively flat at an approximate elevation of 8 feet above mean sea level (msl).

Dissolved Hydrocarbon Migration Model

CRA previously performed a preferential pathway investigation in the immediate vicinity of the site to identify buried utility lines that could act as pathways for dissolved hydrocarbon migration. The results of this investigation were presented in CRA's *Site Assessment Report*, dated May 22, 2014. CRA identified a storm drain line adjacent to the site, with an associated storm drain catch basin near boring B-6. Storm runoff that enters the drain inlet travels west-northwest from the site in a concrete pipe that terminates at Glen Echo Creek, which empties into Lake Merritt. According to the City of Oakland Public Works department, the



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storm drain trench is possibly backfilled with gravel, which may provide a preferential pathway for hydrocarbon migration. The diagram shown below in Figure A depicts the storm drain line adjacent to the site, draining toward Glen Echo Creek.

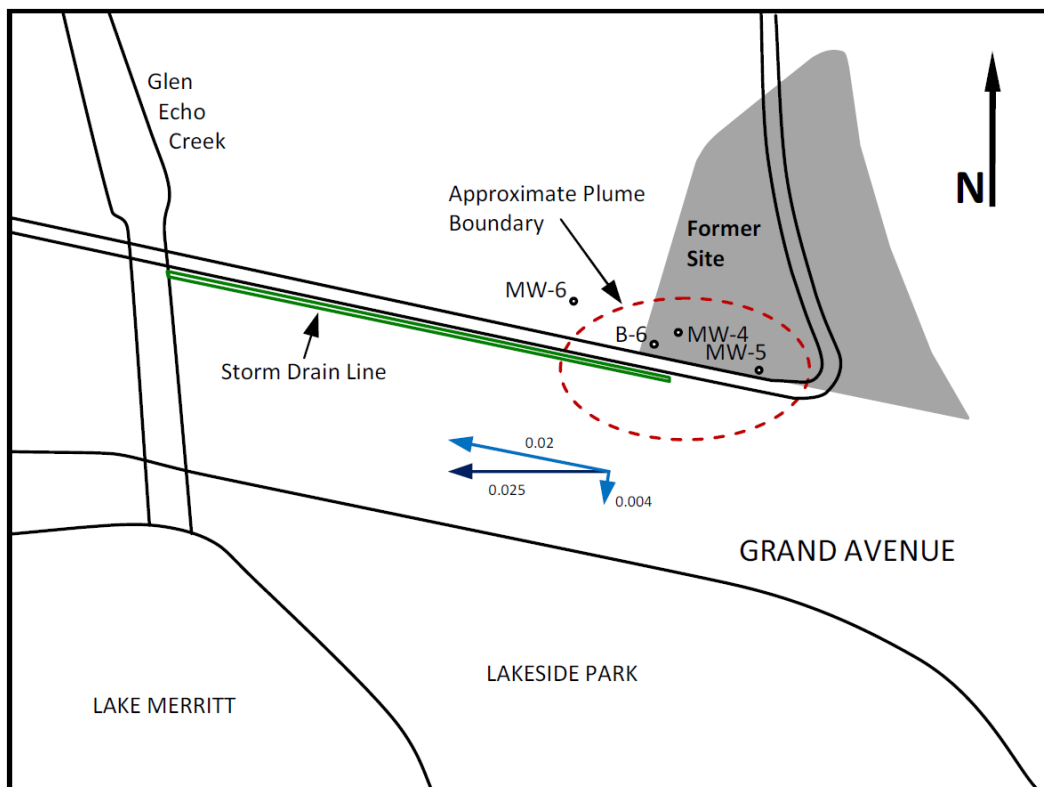


Figure A – Conceptual model for hydrocarbon migration

In addition to showing prominent features surrounding the former site, Figure A also shows the approximate extent of the remaining hydrocarbon plume at the site and the average groundwater flow direction toward the west at a gradient of 0.025. The figure includes component vectors to the groundwater gradient vector that are parallel and perpendicular to the storm drain line along with their associated magnitudes. These component vector magnitudes are used to evaluate mass flux into and migration along the storm drain line.



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The remaining dissolved hydrocarbon mass beneath the site appears primarily limited to a silty sand and gravel horizon encountered between 5 to 10 feet below grade (fbg). The downgradient extent of hydrocarbons in groundwater are controlled by silt and clay where the coarser grain soil horizon pinches out west of the site. Figure 3 presents a geologic cross section showing the area of residual hydrocarbons in soil and groundwater in this horizon in the vicinity of MW-4 and B-6. The cross section also shows the storm drain line intersecting the silty sand and gravel horizon.

CRA evaluated the migration of total petroleum hydrocarbons as gasoline (TPHg), benzene, and ethylbenzene from the site, along the storm drain backfill toward Glen Echo Creek. The following conservative assumptions and calculations were made for evaluating the mass of TPHg, benzene, and ethylbenzene migrating from the site.

- Groundwater elevation beneath the site remains constant, with the upper 3 feet of the water column intersecting the storm drain trench. This value correlates to the maximum high groundwater level beneath the site, and is used to estimate the maximum mass expected to reach Glen Echo Creek. Typically, with groundwater level fluctuations, less than 3 feet of water intersects the trench, which would result in less mass migrating into the trench and eventually reaching the creek.
- The soil beneath the site adjacent to the trench consists of well sorted gravelly sand (hydrocarbon bearing zone), with an effective porosity of 0.25 and hydraulic conductivity (K) of 1.0E-01 centimeters per second (cm/s).¹
- The gradient for groundwater migrating from the site into the storm drain trench is equivalent to 0.004, which is the groundwater gradient component vector magnitude perpendicular to the trench. The predicted seepage velocity for groundwater perpendicular to the trench is approximately 4.54 feet per day (ft/d).²
- Glen Echo Creek is located approximately 220 feet west-northwest of the site, which represents the length of the trench in the model. The storm drain trench is 2 feet wide, so the saturated cross section of the trench is 2 feet by 3 feet.

¹ Fetter, C. W., 1994, Applied Hydrogeology: Macmillan College Publishing Company, New York.

² Kuo, J., 1999, Practical Design Calculations for Groundwater and Soil Remediation: CRC Press LLC, Boca Raton, FL.



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- The volume of the storm drain pipe was subtracted from the saturated section of the trench in the model. The diameter of the storm drain pipe in the trench is 12 inches for the first 90 feet leaving the site, and then 30 inches for the remaining 130 feet to Glen Echo Creek.
- The backfill material in the trench consists of well sorted gravel, with an effective porosity of 0.25 and K of 1.0 cm/s.¹
- The gradient for groundwater migrating along the storm drain trench is 0.02, which is the groundwater gradient component vector magnitude parallel to the trench. The predicted seepage velocity for groundwater within the trench backfill is approximately 227 ft/d, which results in 6,145 liters of water per day entering Glen Echo Creek. This volume of water entering the creek from the trench backfill is a likely exaggeration, although is used in the model for a conservative estimate of mass reaching the creek.

Based on the resulting groundwater seepage velocities of 4.54 ft/d in gravelly sand beneath the site and 227 ft/d in the gravel trench backfill, the migration velocities for TPHg, benzene, and ethylbenzene in groundwater were calculated (Table 1). CRA assumes that the gravel backfill material in the storm drain trench has no organic carbon content to retard hydrocarbon flow, so the hydrocarbon mass flows unimpeded in the trench at a velocity of 227 ft/d. For the gravelly sand encountered beneath the site, CRA used an organic carbon content of 0.6 percent, or 0.006, which is the default value used by the San Francisco Bay Regional Water Quality Control Board (RWQCB) for calculating environmental screening levels (ESLs).³ The resulting calculated hydrocarbon velocities in the gravelly sand are 0.04 ft/d for TPHg, 1.80 ft/d for benzene, and 0.44 ft/d for ethylbenzene.²

CRA calculated the mass flux of TPHg, benzene, and ethylbenzene entering the storm drain trench daily from the site. Table 2 presents these concentrations that are based on the extent of the TPHg, benzene, and ethylbenzene plumes intersecting the north side of the trench facing the site. Using each associated constituents migration rate in the gravelly sand, approximately 0.47 grams of TPHg, 0.63 grams of benzene, and 0.19 grams of ethylbenzene enter the trench each day. With an estimated 6,145 liters of water passing through the trench to Glen Echo

³ San Francisco Bay Regional Water Quality Control Board, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, dated May 2013.



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Creek each day, the resulting concentrations of each constituent entering the creek are 76 micrograms per liter ($\mu\text{g/L}$) TPHg, 10 $\mu\text{g/L}$ benzene, and 30 $\mu\text{g/L}$ ethylbenzene. Animal and plant life in the aquatic habitat are primarily the likely receptors effected by dissolved hydrocarbons entering the creek. The RWQCB ESLs for the estuary aquatic habitat are 500 $\mu\text{g/L}$ for TPHg, 46 $\mu\text{g/L}$ for benzene, and 43 $\mu\text{g/L}$ for ethylbenzene. Based on these goals, the concentrations of TPHg, benzene, and ethylbenzene predicted to enter the creek from the site are well below the screening levels, and do not pose a significant threat. In addition, this model is a conservative estimate of trench backfill details which are not fully known, and the stable hydrocarbon concentrations in site monitoring wells indicate that the actual hydrocarbon mass migrating to the creek from the site is expected to be much less than that predicted in the model.

Soil and Groundwater Management Plan

Due to the low threat that remaining hydrocarbons in soil and groundwater pose at this site, CRA prepared a SGMP in anticipation of obtaining site closure from the ACEH. The SGMP presented as Attachment B was prepared to protect human health by providing guidance and contact information in the event future onsite construction activities encounter affected soil and/or affected groundwater.

Conclusions and Recommendations

The results of previous site investigations, periodic groundwater monitoring, and fate and transport evaluation show that there is no significant risk posed by remaining hydrocarbons in soil and groundwater beneath this site. Current site conditions meet the intent of the State Water Resources Control Board Resolution 2012-0016, the *Low Threat Underground Storage Tank Case Closure Policy*. Therefore, on behalf of Chevron, CRA requests the ACEH grant case closure by issuing a No Further Action letter.



**CONESTOGA-ROVERS
& ASSOCIATES**

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Please contact CRA Project Manager Nate Allen at (916) 889-8929 if you have any questions or need any additional information.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

A handwritten signature in black ink, appearing to read 'David Herzog'.



David Herzog, P.G. 7211

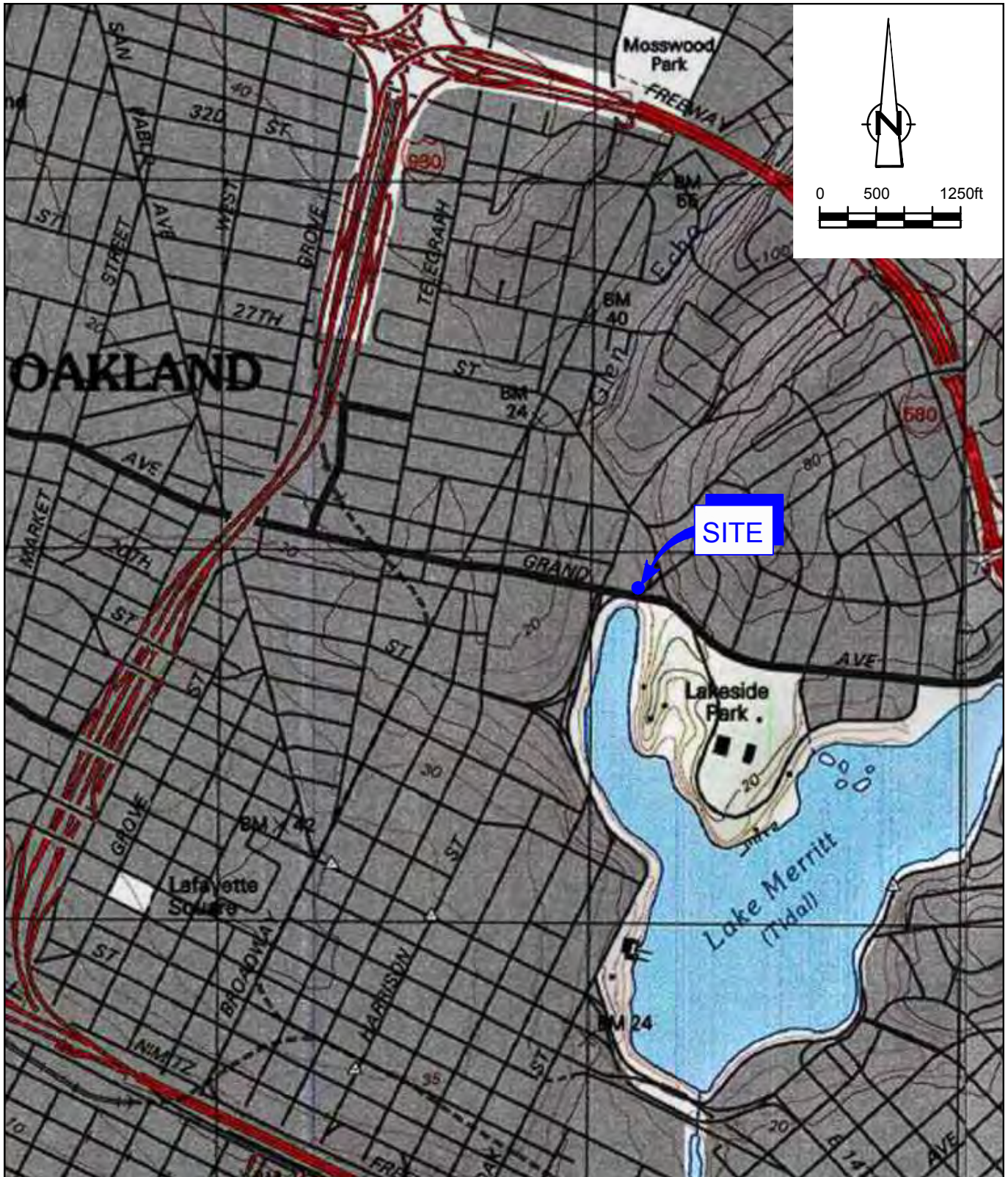
DH/aa/17

Encl.

- | | |
|--------------|---|
| Figure 1 | Vicinity Map |
| Figure 2 | Site Plan |
| Figure 3 | Geologic Cross Section A-A' |
| Table 1 | Hydrocarbon Velocity Calculations |
| Table 2 | Mass and Concentration Migration Calculations |
| Attachment A | ACEH Correspondence |
| Attachment B | Soil and Groundwater Management Plan |

cc: Ms. Alexis Fischer, Chevron (*electronic copy*)
Mr. Anthony Reese, City of Oakland

FIGURES

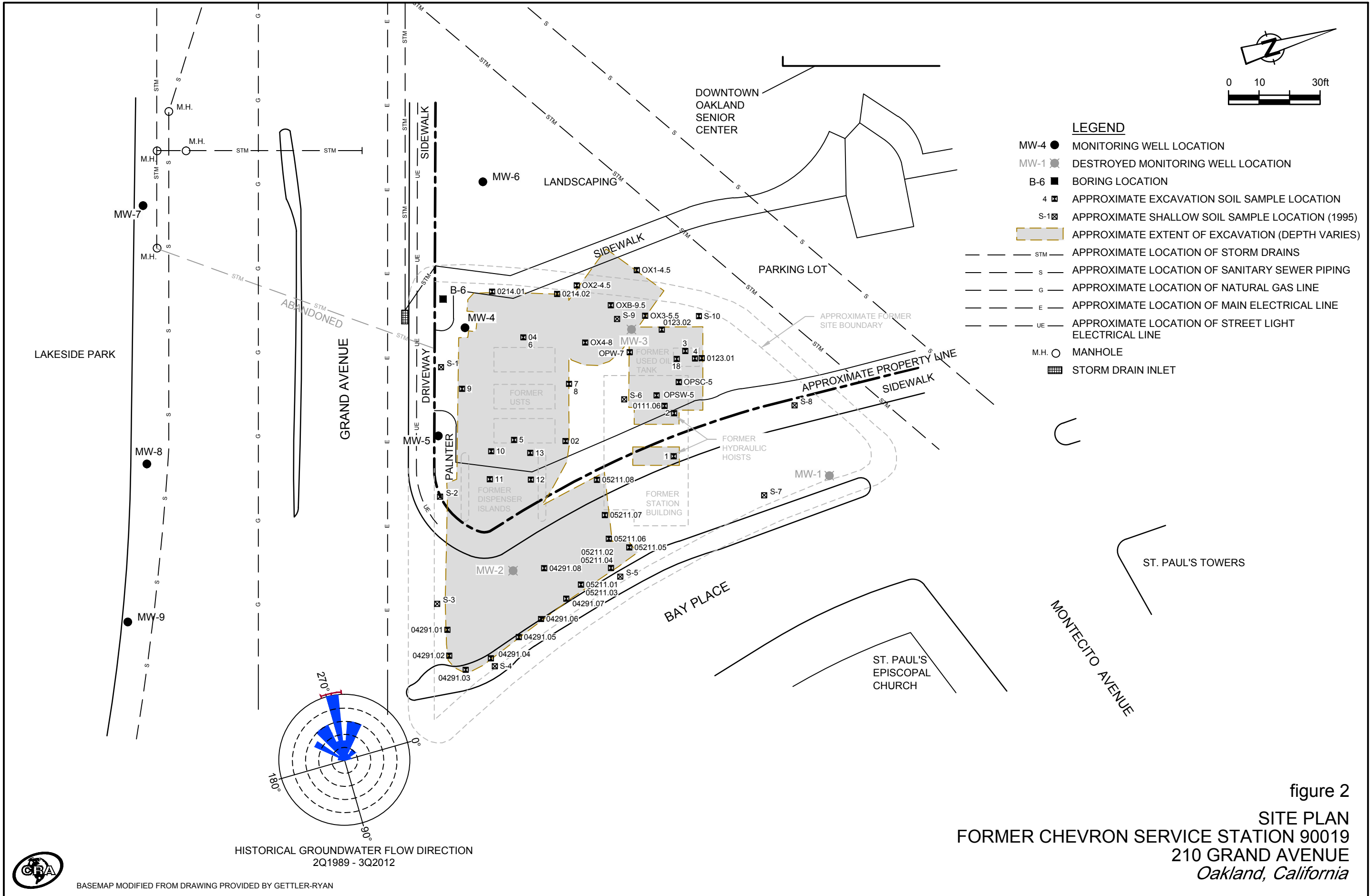


SOURCE: TOPO! MAPS.

figure 1

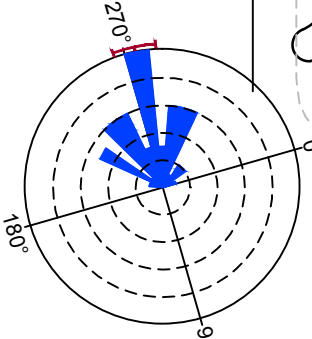
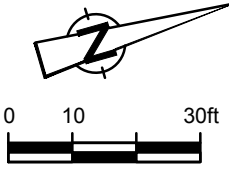
VICINITY MAP
 FORMER CHEVRON SERVICE STATION 90019
 210 GRAND AVENUE
 Oakland, California





LEGEND

- MW-4 ● MONITORING WELL LOCATION
- MW-1 ■ DESTROYED MONITORING WELL LOCATION
- B-6 ■ BORING LOCATION
- 4 ■ APPROXIMATE EXCAVATION SOIL SAMPLE LOCATION
- S-1 ■ APPROXIMATE SHALLOW SOIL SAMPLE LOCATION (1995)
- APPROXIMATE EXTENT OF EXCAVATION (DEPTH VARIES)
- STM --- APPROXIMATE LOCATION OF STORM DRAINS
- S --- APPROXIMATE LOCATION OF SANITARY SEWER PIPING
- G --- APPROXIMATE LOCATION OF NATURAL GAS LINE
- E --- APPROXIMATE LOCATION OF MAIN ELECTRICAL LINE
- UE --- APPROXIMATE LOCATION OF STREET LIGHT ELECTRICAL LINE
- M.H. ○ MANHOLE
- STORM DRAIN INLET

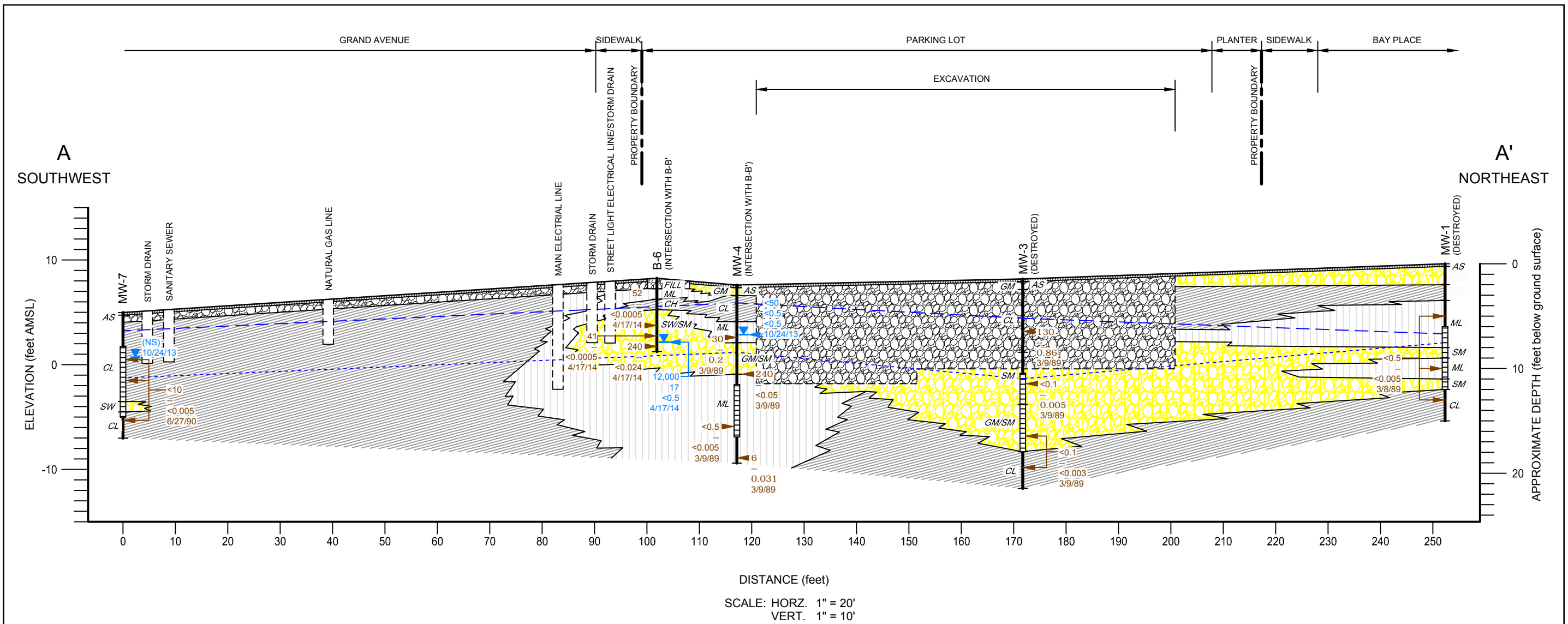


HISTORICAL GROUNDWATER FLOW DIRECTION
2Q1989 - 3Q2012

figure 2
SITE PLAN
FORMER CHEVRON SERVICE STATION 90019
210 GRAND AVENUE
Oakland, California



BASEMAP MODIFIED FROM DRAWING PROVIDED BY GETTLER-RYAN

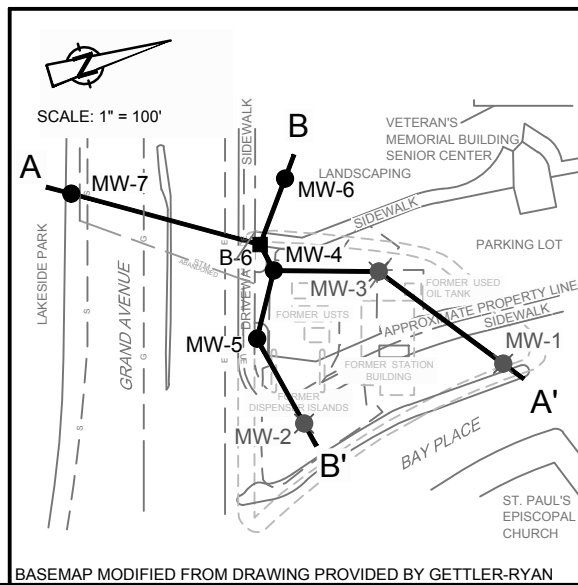


SCALE: HORZ. 1" = 20'
VERT. 1" = 10'

LEGEND

- WELL DESIGNATION
- GROUND SURFACE
- OBSERVATION WELL INSTALLATION
- STRATIGRAPHIC BOUNDARY
- CL — TYPICAL SOIL CLASSIFICATION
- SCREENED INTERVAL
- BOTTOM OF BORING
- ▲ APPROXIMATE SOIL SAMPLE LOCATION
- ▲ HYDROCARBON CONCENTRATIONS IN SOIL (mg/kg)
- ▲ DATE
- ▲ APPROXIMATE GROUNDWATER SAMPLE LOCATION
- ▲ HYDROCARBON CONCENTRATIONS IN GROUNDWATER (µg/L)
- ▲ DATE
- ▲ GROUNDWATER DEPTH (10/24/13)
- (NS) NOT SAMPLED
- NOT ANALYZED
- < NOT DETECTED AT OR ABOVE STATED REPORTING LIMITS
- HIGHEST GROUNDWATER ELEVATION
- LOWEST GROUNDWATER ELEVATION
- FILL
- AS - ASPHALT
- CL/CH - INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS, INORGANIC CLAY OF HIGH PLASTICITY
- ML - INORGANIC SILTS, VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, CLAYEY SILTS WITH SLIGHT PLASTICITY
- GM/SM/SW - SILTY GRAVEL AND SILTY SANDS, SAND-SILT MIXTURES - WELL-GRADED SAND, GRAVELLY SANDS, LITTLE OR NO FINES

figure 3
GEOLOGIC CROSS SECTION A-A'
FORMER CHEVRON SERVICE STATION 90019
210 GRAND AVENUE
Oakland, California



TABLES

TABLE 1
HYDROCARBON VELOCITY CALCULATIONS
FORMER CHEVRON SERVICE STATION
210 GRAND AVENUE, OAKLAND, CALIFORNIA

		v_s (ft/day)	ρ_b (g/cm ³)	f_{oc}	K_{oc} (cm ³ /g)	K_p (cm ³ /g)	Φ	R	v_p (ft/day)
TPHg	Gravelly Sand	4.535	1.50	0.006	5,000	30	0.35	129.57	0.04
	Gravel	227.0	1.682	0	5,000	0	0.35	1.00	227.00
Benzene	Gravelly Sand	4.535	1.50	0.006	59	0.354	0.35	2.52	1.80
	Gravel	227.0	1.682	0	59	0.000	0.35	1.00	227.00
Ethylbenzene	Gravelly Sand	4.535	1.50	0.006	360	2.16	0.35	10.26	0.44
	Gravel	227.0	1.682	0	360	0.00	0.35	1.00	227.00

Notes:

TPHg - Total petroleum hydrocarbons as gasoline

v_s - Groundwater seepage velocity

ρ_b - Dry bulk density

f_{oc} - Fraction of organic carbon

K_{oc} - Organic carbon partition coefficient

K_p - Partition coefficient

Φ - Porosity

R - Retardation factor

v_p - Hydrocarbon migration velocity

ft/day - feet per day

g/cm³ - grams per cubic centimeter

cm³/g - cubic centimeters per gram

Equations¹:

$$v_p = v_s / R$$

$$R = 1 + ((\rho_b K_p) / \Phi)$$

$$K_p = f_{oc} K_{oc}$$

¹ Kuo, J., 1999, Practical Design Calculations for Groundwater and Soil Remediation

TABLE 2
 MASS AND CONCENTRATION MIGRATION CALCULATIONS
 FORMER CHEVRON SERVICE STATION
 210 GRAND AVENUE, OAKLAND, CALIFORNIA

	Plume Contour Interval	Utility Trench Length ^a (feet)	Volume of Water		Constituent Concentration ^c (µg/liter)	Mass Entering Utility Trench (µg/day)	Groundwater Entering Creek from Utility Trench		Estuary Aquatic Habitat Goal ^e (µg/liter)
			Entering Utility Trench (ft ³ /day) ^b	(liters/day)			Volume ^d (liters/day)	Concentration (µg/liter)	
TPHg	10,000	23	0.845	23.94	17,500	418,906			
	1,000	8	0.294	8.33	5,500	45,793			
	100	8	0.294	8.33	550	4,579			
	10	8	0.294	8.33	55	458			
					Total	469,737	6,145	76	500
Benzene	10	19	35.9	1,017.9	55	55,985			
	1	23	43.5	1,232.2	5.5	6,777			
					Total	62,762	6,145	10	46
Ethylbenzene	100	23.5	10.9	309.0	550	169,928			
	10	23.5	10.9	309.0	55	16,993			
					Total	186,920	6,145	30	43

^a Length of plume contour interval intersecting the storm drain trench

^b Volume of water entering the trench from beneath the site, based on the hydrocarbon migration velocity (v_p)

^c Average contour interval constituent concentration

^d Volume of water entering Glen Echo Creek from storm drain trench, based on groundwater seepage velocity (v_s)

^e San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels, May 2013

ATTACHMENT A
ACEH CORRESPONDENCE



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

July 17, 2014

Ms. Alexis Fischer
Chevron Environmental Management Co.
6101 Bollinger Canyon Road.
San Ramon, CA 94583
(Sent via electronic mail to:
AFischer@chevron.com)

Mr. Mark Gomez
City of Oakland
250 Frank Ogawa Plaza, Suite 5301
Oakland, CA 94612
(Sent via electronic mail to:
mmgomez@oaklandnet.com)

Subject: Request Groundwater Plume Analysis; Fuel Leak Case No. RO0000137 and Geotracker Global ID T0600100313, Chevron #9-0019, 210 Grand Avenue, Oakland, CA 94610

Dear Ms. Fischer and Mr. Gomez:

Alameda County Environmental Health (ACEH) staff has reviewed the case file including the *Site Assessment Report*, dated May 22, 2014. The report was prepared and submitted on your behalf by Conestoga-Rovers & Associates (CRA). Thank you for submitting the report.

ACEH has previously evaluated the data presented in the above-mentioned report, in conjunction with case files, to determine if the site is eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on ACEH staff review, we have determined that the site fails to meet the LTCP Media-Specific Criteria for Groundwater and the Media-Specific Criteria for Vapor Intrusion to Indoor Air (see Geotracker for an updated copy).

However, ACEH is of the opinion that limited additional information may allow a determination by ACEH that the site is closable as a low-risk site. Based on the review of the case file ACEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

- 1. LTCP Media Specific Criteria for Groundwater** – To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

Our review of the case files indicates that insufficient data collection and analysis has been presented to support the requisite characteristics of plume stability or plume classification as follows:

- a. Length of Groundwater Plume** – Based on the grab groundwater sample collected from soil bore B-6 in April 2014 the length of the shallow groundwater plume has not been sufficiently determined. Bore B-6 contained 12,000 micrograms per liter ($\mu\text{g/l}$) Total Petroleum Hydrocarbons as gasoline (TPHg), 17 $\mu\text{g/l}$ benzene, and 520 $\mu\text{g/l}$ ethylbenzene.
- b. Stable and Decreasing Trend** – Neglecting the temporary reduction of contaminant concentrations in well MW-5 by the introduction of oxygen gas into well MW-5 in 2009, groundwater collected from well MW-5 appears to generally exhibit a stable and slowly declining concentration trend.
- c. Benzene Concentrations** – The concentration of benzene in well MW-5 has undergone a reduction from up to 18,000 $\mu\text{g/l}$ in May 1992, and was most recently 1,100 $\mu\text{g/l}$ in October 2013. Since March 2012 benzene concentrations in well MW-5 appear to be stable between 1,100 and 1,300 $\mu\text{g/l}$ benzene.

- d. **Distance to Nearest Surface Water Body** – The groundwater flow direction at the site vicinity has historically flowed towards Glen Echo Creek and Lake Merritt. These two downgradient surface water bodies are located approximately 195 to 220 feet from soil bore B-6 and well MW-5, the two locations with the highest residual concentrations of contamination in groundwater at the site.

Monitoring wells MW-7, MW-8, and MW-9 located across Grand Avenue from the site, and in one of the downgradient directions have been consistently non-detectable. Therefore it appears that groundwater contamination is migrating in the shallow gravelly sand unit observed in bores logs from wells MW-4 and MW-5, and borehole B-6. Boring B-6 was advanced to collect a sample from this gravelly unit due to the submerged screen interval in well MW-4. Concentrations of 12,000 µg/l TPHg substantiate the migration of contamination along shallow preferential pathways including the gravelly sand unit and utility trench backfill in Grand Avenue.

It appears that there is significant attenuation occurring in groundwater from MW-5 to B-6; however, there is still a potential for risk to ecological receptors in these adjacent surface water bodies. Therefore, it appears appropriate to conduct a groundwater attenuation analysis utilizing historic groundwater concentrations between MW-5, B-6, and the creek. Therefore, please provide this analysis by the date identified below.

2. **LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air** – The LTCP describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

Our review of the case files indicates that the site data and analysis fail to support the requisite characteristics of one of the four scenarios as described more fully in the May 24, 2013 directive letter. However, ACEH's evaluation indicates that an institution control, namely a site commercial land use restriction coupled with a requirement for case review at the time of any reuse or redevelopment of the parking lot at the site, would allow this criterion to be satisfied. ACEH has not been informed if this would be acceptable to all responsible parties, and requests this information by the date identified below.

Alternatively, this criterion can be satisfied by the collection of soil vapor data in conformance with LTCP requirements. Please note, that if direct measurement of soil gas is proposed, ensure that your strategy is consistent with the field sampling protocols described in the Department of Toxic Substances Control's Final Vapor Intrusion Guidance (October 2011). Consistent with the guidance, ACEH requires installation of permanent vapor wells to assess temporal and seasonal variations in soil gas concentrations.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **September 26, 2014** – Groundwater Plume Length, Attenuation Analysis, Acceptability of a Land Use Restriction; File to be named: RO137_MISC_R_yyyy-mm-dd

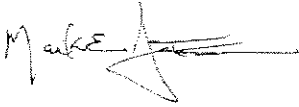
These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>. If your email address is not listed on the first page of this letter, or in the list of cc's listed below, ACEH is requesting your email address to help expedite communications and to help lower overall costs.

Ms. Fischer and Mr. Gomez
July 17, 2014, RO0000137
Page 3

Should you have any questions, please contact me at (510) 567--6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,



Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email,
c=US
Date: 2014.07.17 16:33:38 -07'00'

Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 -- Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: Nathan Allen, Conestoga-Rovers & Associates, 10969 Trade Center Drive, Suite 107, Rancho Cordova, CA 95670; (sent via electronic mail to nallen@croworld.com)

Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Suite 3341, Oakland, CA 94612-2032
(sent via electronic mail to lgriffin@oaklandnet.com)

Dilan Roe, ACEH (Sent via E-mail to: dilan.roe@acgov.org)

Mark Detterman, ACEH (sent via electronic mail to mark.detterman@acgov.org)
Geotracker, Electronic Files

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

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

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	REVISION DATE: May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- Please **do not** submit reports as attachments to electronic mail.
- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to deh.loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include "ftp PASSWORD REQUEST" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
 - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT B

SOIL AND GROUNDWATER MANAGEMENT PLAN

**SOIL AND GROUNDWATER
MANAGEMENT PLAN
Former Chevron Service Station 90019
210 Grand Avenue
Oakland, Alameda County, California**

September 26, 2014

**SOIL AND GROUNDWATER MANAGEMENT PLAN
FORMER CHEVRON SERVICE STATION 90019
210 Grand Avenue
Oakland, Alameda County, California**

September 26, 2014

Prepared by:

Conestoga-Rovers & Associates
10969 Trade Center Drive, Suite 107
Rancho Cordova, California 95670



Dave Herzog, PG 7211
Senior Geologist

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ATTACHMENT

Attachment A Contact Sheet

SOIL AND GROUNDWATER MANAGEMENT PLAN

FORMER CHEVRON SERVICE STATION 90019

1. INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this soil and groundwater management plan (SGMP) at the request of Chevron Environmental Management Company (CEMC) for the property located at 210 Grand Avenue, Oakland, Alameda County, California (the "Site"). The Site may contain petroleum hydrocarbon-impacted soil or petroleum hydrocarbon-impacted groundwater associated with Chevron U.S.A.'s operations (Covered Soil and Covered Groundwater, respectively). This SGMP provides information about CEMC's environmental assessment of the Site and outlines the process for working with CEMC to address Covered Soil and/or Covered Groundwater related to excavation or dewatering activities necessary for on-site construction activities. A contact sheet is provided as Attachment A.

2. SITE CONDITIONS

2.1 SITE DESCRIPTION

The Site is shown on (Figures 1 and 2). The Site is located on Assessor's Parcel Number (APN) 010-768-06, owned by the City of Oakland (Figure 1). The site was formally a Chevron-branded service station located on the northwest corner of the intersection of Grand Avenue and Bay Place (Figure 1). The majority of the site is currently occupied by a paved parking lot for the Downtown Oakland Senior Center; however, the eastern portion of the site is now covered by the southbound lanes of Bay Place (Figure 2). The date the site was first developed as a service station is unknown; however, based on historical aerial photographs, the site appears to have included a service station as early as 1946 with a triangular building in a Y-shaped configuration. In 1992, the property was acquired by the City of Oakland, and the existing parking lot was constructed over the western portion of the site in the mid-1990s. Bay Place was expanded over the eastern portion of the site. Montecito Avenue was closed at Bay Place and its southernmost portion, between Bay Place and Grand Avenue, was incorporated into the Veteran's Memorial Building property (existing senior center) and converted to a parking lot and landscaping. No structures are present on the original service station property.

2.2 ENVIRONMENTAL INVESTIGATION SUMMARY

Environmental investigations and assessments have been ongoing since 1989 when monitoring wells were installed. Investigations to date include: installing monitoring wells MW-1 through MW-9; advancing one soil boring, quarterly to semi-annual groundwater monitoring; confirmation soil sampling during UST removal; and a soil vapor survey. Monitoring wells MW-4 and MW-5 remain onsite, well MW-6 is offsite in a landscaped area to the west, and wells MW-7 through MW-9 are in Grand Avenue to the south and southwest. Monitoring wells MW-1 through MW-3 have been destroyed due to construction or soil excavation. Well locations are shown on Figure 2. Soil and groundwater remedial actions have consisted of extensive over-excavation of hydrocarbon-bearing source area soil (approximately 1,700 cubic yards) in 1990, 1991, and 1996; groundwater extraction (approximately 2,500 gallons) in 1993;

the placement of Oxygen Releasing Compound®(ORC) in well MW-5 from 1998 to 2004; and oxygen injection into well MW-5 in 2009.

In a letter dated July 17, 2014, the ACEH requested preparation of this SGMP.

3. ROLES AND RESPONSIBILITIES

This section outlines the process for requesting CEMC's assistance in identifying and managing Covered Soil and/or Covered Groundwater.

3.1 NOTIFICATION

CEMC requests that the City of Oakland, or the current property owner(s), provide CEMC with advance notice of plans to conduct construction activities that may encounter Covered Soil and/or Covered Groundwater. If potentially impacted soil and/or groundwater is observed during necessary construction activities and a CEMC-authorized representative is not on site, CEMC should be notified as early as possible to allow CEMC to provide consultation on the profiling and eventual disposal or reuse of any Covered Soil and discharge or disposal of any Covered Groundwater. CEMC may be reached at (800) 338-5434.

3.2 PROFILING AND MANAGEMENT

This SGMP was prepared as a prerequisite to obtaining a "no further action" letter (NFA) for the Site from Alameda County Environment Health (ACEH). Issuance of an NFA means that no further corrective action is required for the Site. Accordingly, absent the identification of conditions that were not considered prior to issuance of the NFA or redirection from ACEH, it is reasonable to presume that material excavated from the Site may be reused on the Site. Profiling is intended to ensure that reuse of excavated materials on-site is consistent with the NFA determination.

After discovery that potentially impacted soil and/or groundwater have been observed during Site construction activities, samples of the soil and/or groundwater (either in situ or from a segregated stockpile) should be collected by the property owner for profiling purposes. If, based on a review of the profiling results, ACEH prohibits excavated Covered Soil from being reused on the Site due to the presence of petroleum hydrocarbons, CEMC will coordinate with the property owner regarding the proper off-site disposal of that excavated soil. The City of Oakland, or the current property owner(s), should ensure that any excavated Covered Soil is stockpiled in a separate location from non-impacted soil to allow for proper soil profiling, management, and disposal.

**Appendix A:
Contact Sheet**

**APPENDIX A:
CONTACT SHEET**

Chevron Environmental Management Company

Ms. Alexis Fisher
Project Manager
P.O. Box 6012
San Ramon, California 94583-0712
(800) 338-5434

Consultant

Conestoga-Rovers & Associates
10969 Trade Center Drive, Suite 107
Rancho Cordova, California, 95670
(916) 889-8900

Owners/Contacts

City of Oakland
Attn: Mr. Anthony Reese
250 Frank H. Ogawa Plaza, Suite 4314
Oakland, California 94612
(510) 238-6357

Regulatory Oversight

San Francisco Bay RWQCB
Attn: Ms. Cherie McCaulou
1515 Clay Street, Suite 1400
Oakland, California 94612
(510) 622-2300

Alameda County Environmental Health
Attn: Mr. Mark Detterman
1131 Harbor Bay Parkway, Suite 250
Alameda, California, 94502
(510) 567-6876