UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: San Francisco Regional Water Quality Control Board (Regional Water Board)	Address: 1515 Clay Street, Suite 1400 Oakland, CA 94612
Agency Caseworker: Cherie McCaulou	Case No.: TT0037
Agency Name: Alameda County Water District (ACWD)	Address: 43885 South Grimmer Boulevard Fremont, CA 94538
Agency Caseworker: Doug Young	Case No.: RO0000456

Case Information

USTCF Claim No.: 5861	Global ID: T0600100346
Site Name: Chevron No. 4230	Site Address: 5300 Mowry Ave, Fremont, CA 94538
Responsible Party: Chevron Products Company, Attn: Evelyn Wang	Address: 6111 Bollinger Canyon Road #3592, San Ramon, CA 94583
USTCF Expenditures to Date: $1,381,937	Number of Years Case Open: 28

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600100346

Summary

The Low-Threat Underground Storage Tank Case Closure Policy (Policy) contains general and media-specific criteria, and cases that meet those criteria are appropriate for closure pursuant to the Policy. This case meets all of the required criteria of the Policy. A summary evaluation of compliance with the Policy is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Case Information (Conceptual Site Model).** Highlights of the case follow:

An unauthorized release was reported in November 1984. In April 1995, five gasoline USTs and one waste oil UST were removed, free product was recovered, and an unknown quality of contaminated soil was excavated. A soil vapor extraction pilot test was conducted for approximately 4 hours in 1992, which removed approximately 23 pounds of total petroleum hydrocarbons as gasoline (TPHg). Groundwater extraction was conducted between June 1990 and July 1994, which removed 1,360,527 gallons of groundwater, 399 pounds of dissolved TPHg. Since 1988, twenty-eight groundwater monitoring wells have been installed and monitored. According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents except benzene and methyl tert-butyl ether (MTBE).

The petroleum release is limited to the soil and shallow groundwater. According to data available in GeoTracker, there are no supply wells regulated by the California Department of Public Health or surface water bodies within 250 feet of the defined plume boundary. No other water supply

wells have been identified within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the ACWD. The affected groundwater is not currently being used as a source of drinking water, and it is highly unlikely that the affected groundwater will be used as a source of drinking water in the foreseeable future. Other designated beneficial uses of impacted groundwater are not threatened, and it is highly unlikely that they will be, considering these factors in the context of the site setting. Remaining petroleum hydrocarbon constituents are limited and stable, and concentrations are decreasing. Corrective actions have been implemented and additional corrective actions are not necessary. Any remaining petroleum hydrocarbon constituents do not pose a significant risk to human health, safety or the environment.

Rationale for Closure under the Policy

- General Criteria: The case meets all eight Policy general criteria.
- Groundwater Specific Criteria: The case meets Policy Criterion 1 by Class 1. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. There is no free product. The nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Vapor Intrusion to Indoor Air: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility.
- Direct Contact and Outdoor Air Exposure: This case meets Policy Criterion 3b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from potential exposure to residual soil contamination found that maximum concentrations of petroleum constituents remaining in soil will have no significant risk of adversely affecting human health. The Site is paved and accidental exposure to site soils is prevented. As an active petroleum fueling facility, any construction worker working at the Site will be prepared for exposure in their normal daily work.

Objections to Closure and Responses

ACWD requires additional groundwater monitoring for this Site, prior to consideration of closure.
RESPONSE: The Case meets all Policy Criteria.

Determination

Based on the review performed in accordance with Health & Safety Code Section 25299.39.2 subdivision (a), the Fund Manager has determined that closure of the case is appropriate.

Recommendation for Closure

Based on available information, residual petroleum hydrocarbons at the Site do not pose a significant risk to human health, safety, or the environment, and the case meets the requirements of the Policy. Accordingly, the Fund Manager recommends that the case be closed. The State Water Board is conducting public notification as required by the Policy. Alameda County has the regulatory responsibility to supervise the abandonment of monitoring wells.

Lisa Babcock
Lisa Babcock, P.G. 3939, C.E.G. 1235

11/4/13
Date

Prepared by: Walter Bahm

ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW

The case complies with the State Water Resources Control Board policies and state law. Section 25296.10 of the Health and Safety Code requires that sites be cleaned up to protect human health, safety, and the environment. Based on available information, any residual petroleum constituents at the site do not pose significant risk to human health, safety, or the environment.

The case complies with the requirements of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.[1]

Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations? The corrective action provisions contained in Chapter 6.7 of the Health and Safety Code and the implementing regulations govern the entire corrective action process at leaking UST sites. If it is determined, at any stage in the corrective action process, that UST site closure is appropriate, further compliance with corrective action requirements is not necessary. Corrective action at this site has been consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations and, since this case meets applicable case-closure requirements, further corrective action is not necessary, unless the activity is necessary for case closure.	☒ Yes ☐ No
Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?	☐ Yes ☒ No
If so, was the corrective action performed consistent with any order?	☐ Yes ☐ No ☒ NA
General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☐ Yes ☐ No ☒ NA
Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No

[1] Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.
http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf

Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?	☒ Yes ☐ No
Nuisance as defined by Water Code section 13050 does not exist at the site?	☒ Yes ☐ No
Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
Media-Specific Criteria Candidate sites must satisfy all three of these media-specific criteria: **1. 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:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites? If YES, check applicable class: ☒ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5**	☒ Yes ☐ No ☐ NA
For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?	☐ Yes ☐ No ☒ NA
2. Petroleum Vapor Intrusion to Indoor Air: The site is considered low-threat for vapor intrusion to indoor air if site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies.	
Is the site an active commercial petroleum fueling facility? Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.	☒ Yes ☐ No
a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4? If YES, check applicable scenarios: ☐ **1** ☐ **2** ☐ **3** ☐ **4**	☐Yes ☐ No ☒ NA

b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?	☐ Yes ☐ No ☒ NA
c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?	☐ Yes ☐ No ☒ NA
3. Direct Contact and Outdoor Air Exposure: The site is considered low-threat for direct contact and outdoor air exposure if site-specific conditions satisfy one of the three classes of sites (a through c).	
a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?	☐ Yes ☐ No ☒ NA
b. Are maximum concentrations of petroleum constituents in soil less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health?	☒ Yes ☐ No ☐ NA
c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?	☐ Yes ☐ No ☒ NA

ATTACHMENT 2: SUMMARY OF BASIC CASE INFORMATION (Conceptual Site Model)

Site Location/History

- The Site is an active commercial petroleum fueling facility and is bounded by a commercial petroleum fueling facility across Mowry Avenue, a business across Farwell Drive to the northeast, and residences to the south.
- A Site map showing the location of the current and former USTs, monitoring wells, and groundwater level contours for the Chevron site is provided at the end of this closure review summary (Conestoga-Rovers & Associates [CRA], 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST System.
- Date reported: November 1984.
- Status of Release: USTs removed.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1-4	Unknown	Unknown	Removed	1981
5	5,760	Gasoline	Removed	April 1995
6	9,652	Gasoline	Removed	April 1995
7	9,652	Gasoline	Removed	April 1995
8	9,652	Gasoline	Removed	April 1995
9	1,500	Waste Oil	Removed	April 1995

Receptors

- GW Basin: Santa Clara Valley - Niles Cone
- Beneficial Uses: Regional Water Board Basin Plan lists agricultural, municipal, domestic, industrial service, and process supply.
- Land Use Designation: Commercial.
- Public Water System: Alameda County Water District.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by the California Department of Public Health within 250 feet of the defined plume boundary. No other water supply wells were identified within 250 feet of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 250 feet of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by silty to sandy clay to a depth of 20 feet.
- Maximum Sample Depth: 60.5 feet below ground surface (bgs).
- Minimum Groundwater Depth: 9.65 feet bgs at monitoring well C-4.
- Maximum Groundwater Depth: 26.78 feet bgs at monitoring well C-15.
- Current Average Depth to Groundwater: Approximately 17 feet bgs.
- Saturated Zones(s) Studied: Approximately 10 to 55 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Shallow groundwater is predominately southerly at between 0.003-0.03 feet/foot (CRA, 2013).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (10/16/12)
C-1	May 1988	10 – 27	16.62
C-2	May 1988	10 – 27	16.97
C-3	May 1988	10 – 27	15.75
C-4	May 1988	10 – 27	14.10
C-5	December 1988	10 – 27	16.00
C-6	August 1989	10 – 27	16.45
C-7	August 1989	10 – 27	15.35
C-8	August 1989	10 – 27	16.62
C-9	August 1989	10 – 27	NM
C-10	August 1989	10 – 27	NM
C-11	August 1989	10 – 27	NM
C-12	August 1991	10 – 27	16.77
C-13	April 2003	10 – 27	17.31
C-14	April 2003	10 – 27	17.11
C-15	April 2003	10 – 27	26.78
C-16	October 2004	10 – 27	16.53
C-17	October 2004	10 – 27	16.42
C-18	July 2005	10 – 27	16.37
C-19	July 2005	10 – 27	16.85
C-20	July 2005	10 – 27	NM
C-21	July 2005	10 – 27	NM
C-22	July 2005	45 – 55	25.40
C-23	July 2005	10 – 27	NM
C-24	July 2005	10 – 27	NM
CR-1	August 1989	10 – 27	16.11
CR-2	August 1989	10 – 27	17.17

NM: Not Measured

Remediation Summary

- Free Product: Reportedly 57 gallons of free product were removed from site wells in 1991. No free product has been reported since the late-1990s
- Soil Excavation: Unknown volume of contaminated soil was excavated during the 1996 UST removal.
- In-Situ Soil Remediation: Soil vapor extraction pilot test was conducted for approximately 4 hours in 1992, which removed approximately 23 pounds of TPHg and 0.049 pounds of benzene.
- Groundwater Remediation: Groundwater extraction was conducted between June 1990 and July 1994, which removed 1,360,527 gallons of extracted groundwater, 399 pounds of dissolved TPHg and 61 pounds of benzene.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg (date)]	Maximum 5-10 feet bgs [mg/kg (date)]
Benzene	NA	NA
Ethylbenzene	NA	NA
Naphthalene	NA	NA
PAHs	NA	NA

NA: Not Analyzed, Not Applicable or Data Not Available
mg/kg: milligrams per kilogram, parts per million
<: Not detected at or above stated reporting limit
PAHs: Polycyclic aromatic hydrocarbons

Most Recent Concentrations of Petroleum Constituents in Groundwater

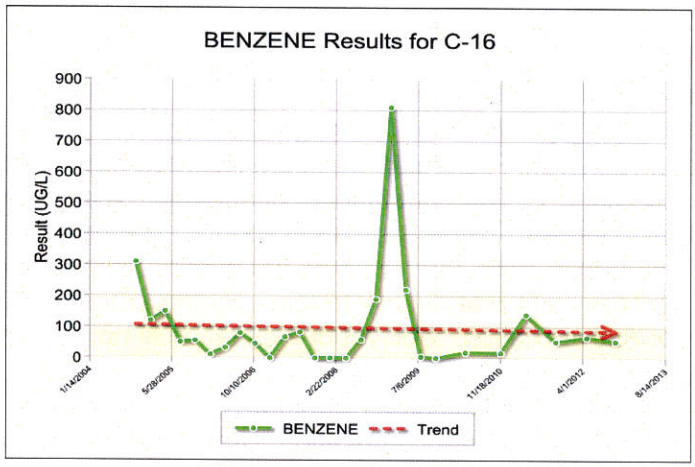
Sample ID	Sample Date	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
C-1	10/16/12	1,200	270	<1	<1	<1	<1	0.8	8
C-2	10/16/12	400	<0.5	<1	<1	<1	<1	<1	<5
C-5	10/16/12	750	210	<1	<1	<1	<1	1	13
C-6	10/16/12	15,000	520	<1	<1	<1	<1	0.5	7
C-8	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
C-12	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
C-13	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
C-14	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
C-15	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
C-16	10/16/12	1,500	3,800	**54**	10	8	18	<1	9
C-17	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
C-18	10/16/12	240	89	<1	<1	<1	<1	0.6	<5
C-19	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
C-21	04/25/12	<100	<100	<1	<1	<1	<1	**110**	<5
C-22	10/16/12	<50	<50	0.8	<1	<1	<1	<1	<5
C-24	04/25/12	<100	<100	<1	<1	<1	<1	<1	<5
CR-1	10/16/12	1,200	2,400	**29**	2	2	11	2	12
CR-2	10/16/12	<100	<100	<1	<1	<1	<1	<1	<5
WQOs	-	--	--	**1**	**150**	**680**	**1,750**	**5**	**1,200[a]**

NA: Not Analyzed, Not Applicable or Data Not Available
µg/L: Micrograms per liter, parts per billion
<: Not detected at or above stated reporting limit
TPHg: Total petroleum hydrocarbons as gasoline
TPHd: Total petroleum hydrocarbons as diesel
MTBE: Methyl tert-butyl ether
TBA: Tert-butyl alcohol
WQOs: Water Quality Objectives, Regional Water Board Basin Plan
--: Regional Water Board Basin Plan does not have a numeric WQO value for TPHg and TPHd
[a]: California Department of Public Health, Response Level

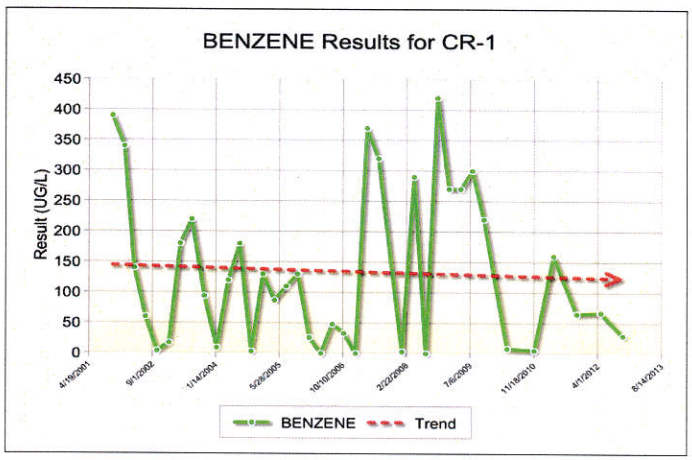
Groundwater Trends

- Groundwater monitoring data has been collected since 1988. Benzene trends are shown below: Source Area (C-16), Near Downgradient (CR-1), and Far Downgradient (C-21).

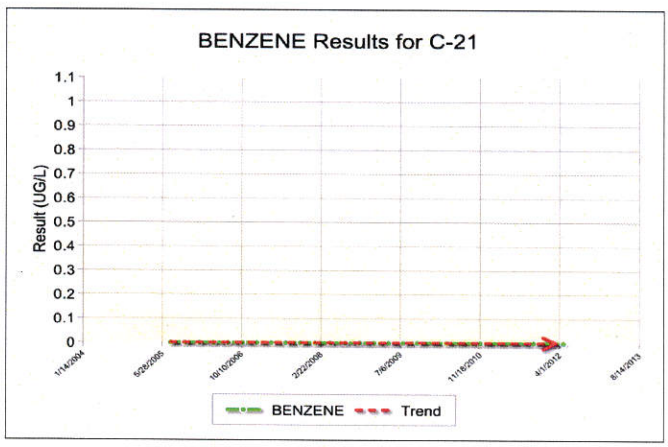
Source Area Well



Near Downgradient Well

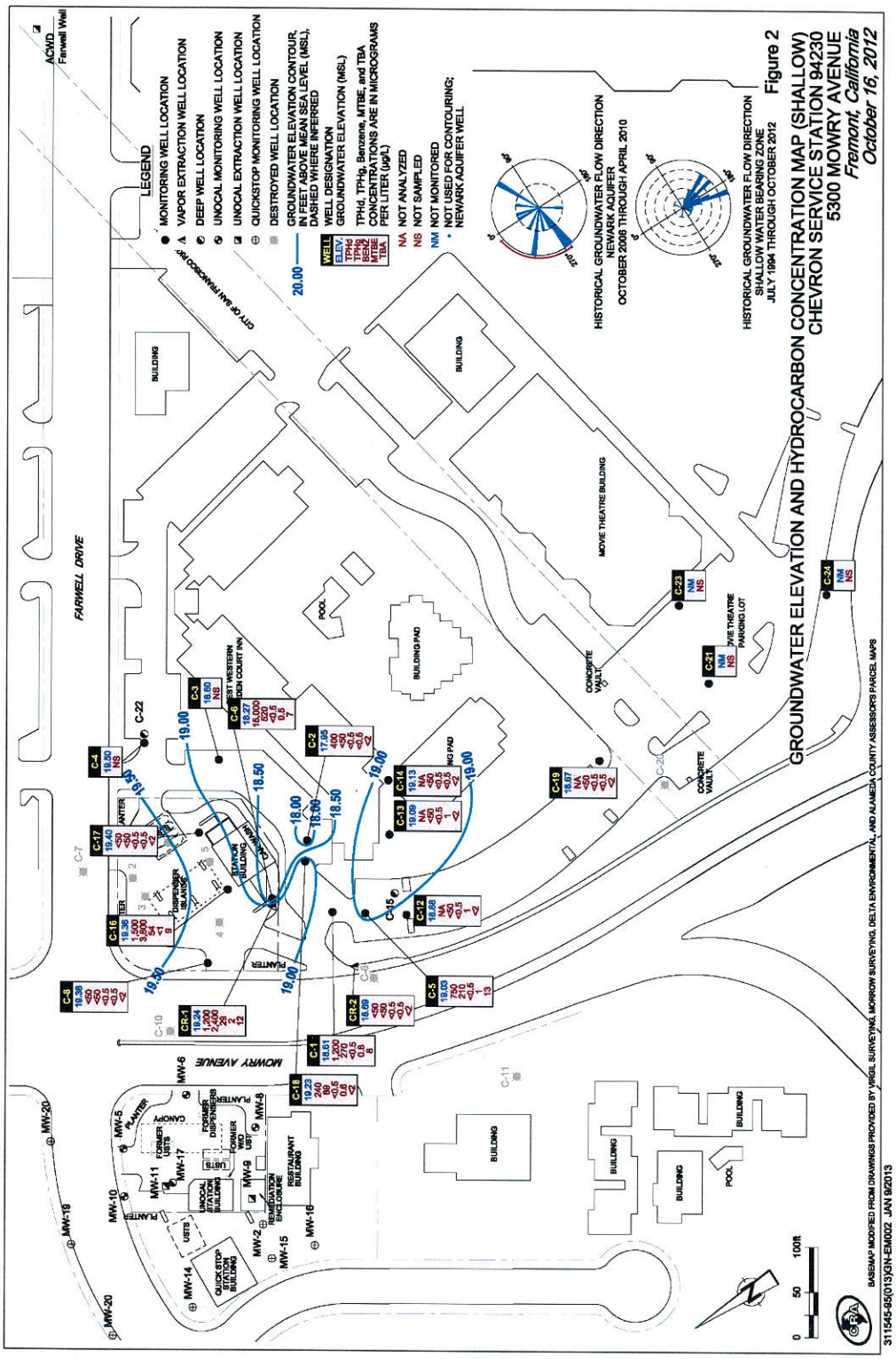


Far Downgradient Well



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for MTBE: Yes.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <100 feet.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 1. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. There is no free product. The nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility.
- Direct Contact Risk from Residual Petroleum Hydrocarbons: This case meets Policy Criterion 3b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from potential exposure to residual soil contamination found that maximum concentrations of petroleum constituents remaining in soil will have no significant risk of adversely affecting human health. The Site is paved and accidental exposure to site soils is prevented. As an active petroleum fueling facility, any construction worker working at the Site will be prepared for exposure in their normal daily work.


GROUNDWATER ELEVATION AND HYDROCARBON CONCENTRATION MAP (SHALLOW)
CHEVRON SERVICE STATION 94230
5300 MOWRY AVENUE
Fremont, California
October 16, 2012
Figure 2
LEGEND
MONITORING WELL LOCATION
VAPOR EXTRACTION WELL LOCATION
DEEP WELL LOCATION
UNOCAL MONITORING WELL LOCATION
UNOCAL EXTRACTION WELL LOCATION
QUICKSTOP MONITORING WELL LOCATION
DESTROYED WELL LOCATION
GROUNDWATER ELEVATION CONTOUR, IN FEET ABOVE MEAN SEA LEVEL (MSL). DASHED WHERE INFERRED
WELL DESIGNATION
GROUNDWATER ELEVATION (MSL)
TPHd, TPHg, Benzene, MTBE, and TBA CONCENTRATIONS ARE IN MICROGRAMS PER LITER (µg/L)
NA NOT ANALYZED
NS NOT SAMPLED
NM NOT MONITORED
* NOT USED FOR CONTOURING; NEWARK AQUIFER WELL
HISTORICAL GROUNDWATER FLOW DIRECTION NEWARK AQUIFER OCTOBER 2006 THROUGH APRIL 2010
HISTORICAL GROUNDWATER FLOW DIRECTION SHALLOW WATER BEARING ZONE JULY 1994 THROUGH OCTOBER 2012
FARWELL DRIVE
MOWRY AVENUE
MOVIE THEATRE BUILDING
BUILDING
POOL
CONCRETE VAULT
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-9
MW-10
MW-11
MW-14
MW-15
MW-16
MW-17
MW-18
MW-19
MW-20
C-1
C-2
C-3
C-4
C-5
C-6
C-8
C-9
C-10
C-11
C-12
C-13
C-14
C-15
C-16
C-17
C-18
C-19
C-21
C-22
C-23
C-24
CR-1
CR-2
0
50
100ft
BASEMAP MODIFIED FROM DRAWINGS PROVIDED BY VIRGIL SURVEYING, MORROW SURVEYING, DELTA ENVIRONMENTAL, AND ALAMEDA COUNTY ASSESSORS PARCEL MAPS
311545-95(013)GN-EM002 JAN 9/2013