

## State Water Resources Control Board

### REVISED UST CASE CLOSURE REVIEW SUMMARY REPORT

#### Agency Information

Agency Name: Orange County Environmental Health Department (County)	Address: 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705
Agency Caseworker: Kevin Lambert	Case No.: 86UT028

#### Case Information

USTCF Claim No.: 4861	GeoTracker Global ID: T0605940167
Site Name: Chevron #9-5568	Site Address: 12541 Seal Beach Blvd. Seal Beach, CA 90740
Responsible Party: Chevron Products Company Attn: Daryl Pessler, Chevron Environmental Management Company	Address: 145 S. State College Blvd., 5 <sup>th</sup> Floor Brea, CA 92821
USTCF Expenditures to Date: \$1,490,000	Number of Years Case Open: 19

**URL:** [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0605940167](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605940167)

#### Summary

The Low-Threat Underground Storage Tank (UST) 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:

This case is a former active commercial petroleum fueling facility, and is currently being redeveloped as a Rite Aid. An unauthorized release was reported in July 1994 following the removal of five USTs (three gasoline, one diesel and one waste oil UST). One additional waste oil UST was removed in July 1990, four more USTs (three gasoline and one waste oil) were removed in April 2011 and one additional 450-gallon waste oil tank was removed during property redevelopment in October 2013. Soil excavations removed approximately 3,000 cubic yards of impacted soil in 1994 and 2011 during the UST removals. Another soil excavation from July to October 2011 removed approximately 4,214 cubic yards of soil. An unknown volume of soil was removed during the 2013 waste oil tank removal. Soil vapor extraction removed approximately 8,500 pounds of gasoline between 1995 and 2009. Dual phase extraction and air sparging were performed at the Site from 2000 to 2010. Since 1992, 21 groundwater monitoring wells had been installed and monitored. Prior to excavation a total of 18 onsite wells were abandoned. Currently only three downgradient monitoring wells remain and being sampled after soil excavation and Site

demolition. The three downgradient monitoring wells are all below water quality objectives for all petroleum hydrocarbon constituents.

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 within 1,000 feet of the defined plume boundary. One irrigation well and an artificial lake have been identified approximately 900 feet southeast and downgradient of the defined plume boundary in files reviewed. Water is provided to water users near the Site by Golden State Water Company. 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 5. Extensive soil excavations were performed at the source areas down to 23 to 27 feet below surface (SAIC, December 2011). Soil samples collected at the bottoms of the excavations showed petroleum constituent concentrations below detection limits or at very low remaining levels. Therefore, the residual groundwater contaminant plume, if present, does not pose significant risk to the irrigation well and artificial lake approximately 900 feet downgradient from the Site. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product.
- Vapor Intrusion to Indoor Air: The case meets Policy Criterion 2b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from exposure through the vapor intrusion pathway was performed by Fund staff. The assessment found that there is no significant risk of petroleum vapors adversely affecting human health. Over 7,200 cubic yards of impacted soil in the source areas were excavated down to 23 to 27 feet bgs, removed from the Site and replaced with clean fill.
- Direct Contact and Outdoor Air Exposure: The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial use, and the concentration limits for a Utility Worker are not exceeded.

#### **Objections to Closure and Responses**

In a letter dated September 7, 2012, the County objected to UST case closure because:

- An irrigation well is located approximately 900 feet downgradient from the Site is screened from 150 feet to 300 feet below ground surface, and large volumes of water are pumped periodically from this well.

**RESPONSE:** Downgradient wells MW-8, MW-9, and MW-15 have reported no detectable concentrations of petroleum hydrocarbons since 2001, 2002 and 2009, respectively. This provides 800 foot buffer laterally from these sentinel wells, two of which were installed years prior to the second over-excavation. It can be reasonably assumed that no petroleum hydrocarbons were migrating prior to over-excavation.

- The County approved a workplan to reinstall four monitoring wells to evaluate the effectiveness of the soil excavation conducted between July and October 2011, and requested the installation of two additional depth-discrete groundwater monitoring wells to determine if a diving plume was present between the Site and the downgradient production wells.

**RESPONSE:** Due to the extensive excavation and removal of the impacted soil in the source areas down to below the first groundwater table, and soil samples collected at the bottoms of the excavations showing petroleum constituent concentrations below detection limits or at very low residual concentrations, any residual groundwater plume does not pose significant risk to the irrigation well.

**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. Orange County has the regulatory responsibility to supervise the abandonment of monitoring wells.

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

12/16/13  
Date

Prepared by: James Young, R.C.E. #60266

**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.<sup>1</sup>**

<p><b>Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations?</b>          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.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?</b></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b>If so, was the corrective action performed consistent with any order?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b><u>General Criteria</u></b>          General criteria that must be satisfied by all candidate sites:</p> <p><b>Is the unauthorized release located within the service area of a public water system?</b></p> <p><b>Does the unauthorized release consist only of petroleum?</b></p> <p><b>Has the unauthorized (“primary”) release from the UST system been stopped?</b></p> <p><b>Has free product been removed to the maximum extent practicable?</b></p> <p><b>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

<sup>1</sup> 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](http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf)

<p><b>Has secondary source been removed to the extent practicable?</b></p> <p><b>Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?</b></p> <p><b>Nuisance as defined by Water Code section 13050 does not exist at the Site?</b></p> <p><b>Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b><u>Media-Specific Criteria</u></b>                  Candidate sites must satisfy all three of these media-specific criteria:</p> <p><b>1. Groundwater:</b>                  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:</p> <p><b>Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?</b></p> <p><b>Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?</b></p> <p>If YES, check applicable class: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 5</p> <p><b>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?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b>2. Petroleum Vapor Intrusion to Indoor Air:</b>                  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.</p> <p><b>Is the Site an active commercial petroleum fueling facility?</b>                  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.</p> <p><b>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?</b></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

<p>If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4</p> <p>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?</p> <p>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?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b>3. Direct Contact and Outdoor Air Exposure:</b>          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).</p> <p>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)?</p> <p>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?</p> <p>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?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

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

**Site Location/History**

- This case is located on the northwest corner of Seal Beach Boulevard and St. Cloud Drive in Seal Beach. It was an active commercial petroleum fueling facility until January 2011, when the Site demolition began. The Site is being redeveloped as a Rite Aid store October 2013.
- The Site is bounded by a fast food restaurant to the north, an office building to the west, a shopping facility to the east across Seal Beach Boulevard, residential housing to the south across St. Cloud Drive, and Old Ranch Golf Course to the southeast across Seal Beach Boulevard.
- Site map showing the location of the former USTs, monitoring wells and groundwater level contours is provided at the end of this closure review summary (SAIC, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: July 1994.
- Status of Release: USTs removed.
- Free Product: None reported.

**Tank Information**

Tank No.	Size in Gallons	Contents	Closed in Place/Removed/Active	Date
1	12,000	Gasoline	Removed	April 2011
2	12,000	Gasoline	Removed	April 2011
3	12,000	Gasoline	Removed	April 2011
4	1,000	Waste Oil 1	Removed	April 2011
5	120	Waste Oil 2	Removed	April 2011
6	10,000	Gasoline	Removed	August 1994
7	7,000	Gasoline	Removed	August 1994
8	5,000	Gasoline	Removed	August 1994
9	2,000	Diesel	Removed	August 1994
10	Not available	Waste Oil	Removed	July 1990
11	450	Waste Oil	Removed	October 2013

**Receptors**

- GW Basin: Lower Santa Ana River Basin in the South Coastal Plain.
- Beneficial Uses: The Santa Ana Regional Water Quality Control Board (Regional Water Board) Basin Plan lists municipal and domestic supply.
- Land Use Designation: Aerial photograph available on GeoTracker indicates mixed residential and commercial land use in the vicinity of the Site.
- Public Water System: Golden State Water Company.
- 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 1,000 feet of the defined plume boundary. One golf course irrigation well is located 900 feet downgradient of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: One golf course artificial lake is located 900 feet downgradient of the defined plume boundary in the files reviewed.

**Geology/Hydrogeology**

- Stratigraphy: Past assessment activities indicate that soils beneath the site consist primarily of inter-layered silts and clays, with lesser amounts of fine-grained sand to clean silts.
- Maximum Sample Depth: 35 feet below ground surface (bgs).
- Minimum Groundwater Depth: 7.01 feet bgs at monitoring well MW-11.
- Maximum Groundwater Depth: 21.43 feet bgs at monitoring well MW-10.
- Current Average Depth to Groundwater: Approximately 12 feet bgs.
- Saturated Zones(s) Studied: Approximately 7 to 35 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: South to southeast with an average gradient of 0.05 feet/foot (March 2013).

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (03/11/2013)
MW-02A	1995	10-30	Destroyed
MW-03R	2003	10-30	Destroyed
MW-05	1992	7-27	Destroyed
MW-06	1992	12-32	Destroyed
MW-08	1992	12-32	12.60
MW-09	1992	7-27	11.65
MW-10	1992		Destroyed
MW-14	2009	5-29.5	Destroyed
MW-15	2009	5-29.5	10.90
RW-01	1992	10-34.6	Destroyed
EW-01	2006	9.5-29.5	Destroyed

**Remediation Summary**

- Free Product: None reported.
- Soil Excavation: Soil excavations removed up to 3,000 cubic yards of impacted soil in 1994 and 2011 during the UST removals, and another approximately 4,214 cubic yards in July to October 2011 during Site demolition.
- In-Situ Soil/Groundwater Remediation: Soil vapor extraction removed approximately 8,500 pounds of gasoline in 1995 and 2009. Dual phase extraction and air sparging were performed at the Site from 2000 to 2010.

**Most Recent Concentrations of Petroleum Constituents in Soil**

Constituent	Maximum 0-5 feet bgs [mg/kg and (date)]	Maximum 5-10 feet bgs [mg/kg and (date)]
Benzene	<0.0020 (7/28/11)	<0.00048 (10/14/11)
Ethylbenzene	<0.0020 (7/28/11)	<0.00048 (10/14/11)
Naphthalene	<0.0011 (7/28/11)	<0.0011 (10/14/11)
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	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-08	3/11/2013	<22	<0.5	<0.5	<0.5	<0.5	<0.5	<2
MW-09	3/11/2013	<22	<0.5	<0.5	<0.5	<0.5	<0.5	<2
MW-15	3/11/2013	<22	<0.5	<0.5	<0.5	<0.5	<0.5	<2
<b>WQOs</b>		--	<b>1</b>	<b>150</b>	<b>300</b>	<b>1,750</b>	<b>5<sup>a</sup></b>	<b>1,200<sup>b</sup></b>

µg/L: Micrograms per liter, parts per billion

<: Not detected at or above stated reporting limit

TPHg: Total petroleum hydrocarbons as gasoline

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Regional Water Board Basin Plan

--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg

<sup>a</sup>: Secondary maximum contaminant level (MCL)

<sup>b</sup>: California Department of Public Health, Response Level

**Groundwater Trends**

Since 1992, 21 groundwater monitoring wells have been installed and monitored. Currently only three monitoring wells remain to sample. Other wells were destroyed after soil excavation and Site demolition in 2011. Petroleum concentrations have been below laboratory detection limits in the three remaining wells. Although groundwater petroleum hydrocarbon concentrations were above water quality objectives in several source wells prior to the 2011 soil excavation and Site demolition, the plume was stable and not migrating. The removal of an additional approximately 4,214 cubic yards of soil in the source area down to 23 to 27 feet below surface in 2011 further ensured the residual plume does not pose significant risk to human health and the environment. An unknown volume of soil was removed as the result of the October 2013 waste oil tank removal.

**Evaluation of Current Risk**

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <250 feet long.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Specific Criteria: The case meets Policy Criterion 1 by Class 5. Extensive soil excavations were performed at the source areas down to 23 to 27 feet below surface (SAIC, December 2011). Soil samples collected at the bottoms of the excavations showed petroleum constituent concentrations below detection limits or at very low remaining levels. Therefore, the residual groundwater contaminant plume, if present, does not pose significant risk to the irrigation well and artificial lake approximately 900 feet downgradient from the Site. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product.
- Vapor Intrusion to Indoor Air: The case meets Policy Criterion 2b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from exposure through the vapor intrusion pathway shows that there to be no significant risk of petroleum vapors adversely affecting human health. Over 7,200 cubic yards of impacted soil in the source areas were excavated down to below the first groundwater table and removed from the Site.

- Direct Contact and Outdoor Air Exposure: The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial use, and the concentration limits for a Utility Worker are not exceeded.

Well ID	Date	Depth (ft)	Parameter	Concentration (µg/L)	Limit (µg/L)
MW-08	8/1/2013	10	VOCs	<0.5	100
MW-09	8/1/2013	10	VOCs	<0.5	100
MW-10	8/1/2013	10	VOCs	<0.5	100
MW-11	8/1/2013	10	VOCs	<0.5	100
MW-12	8/1/2013	10	VOCs	<0.5	100
MW-13	8/1/2013	10	VOCs	<0.5	100
MW-14	8/1/2013	10	VOCs	<0.5	100
MW-15	8/1/2013	10	VOCs	<0.5	100
MW-16	8/1/2013	10	VOCs	<0.5	100
MW-17	8/1/2013	10	VOCs	<0.5	100
MW-18	8/1/2013	10	VOCs	<0.5	100
MW-19	8/1/2013	10	VOCs	<0.5	100
MW-20	8/1/2013	10	VOCs	<0.5	100



