

State Water Resources Control Board

UNDERGROUND STORAGE TANK (UST) CASE CLOSURE SUMMARY

Agency Information

Agency Name: Orange County Health Care Agency (Orange County)	Address: 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705
Agency Caseworker: Julie Wozencraft	Case No.: 94UT039

Case Information

UST Cleanup Fund (Fund) Claim No.: 15458	Global ID: T0605901815
Site Name: Chevron #9-1202	Site Address: 9491 Edinger Avenue Westminster, CA 92683 (Site)
Petitioner: Chevron Environmental Management Company Attention: Mr. Eugene Francisco	Address: 145 South State College Boulevard, #400 Brea, CA 92821
Fund Expenditures to Date: \$0	Number of Years Case Open: 22

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901815

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.

The Site is currently a vacant lot, and it is planned to be developed for commercial use upon case closure. The release was discovered in 1994 during the removal of four USTs (including one waste-oil UST), dispensers, product piping, and an underground concrete clarifier from the Site. Total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX), and fuel oxygenates were detected in the soil beneath the former gasoline USTs, dispensers, and product piping. No contamination was detected beneath the waste-oil UST and underground concrete clarifier.

In August 2001, a large portion of the Site under the former gasoline USTs, northeastern dispenser island, and product lines was excavated to a depth of 18 feet below ground surface (bgs). In August 2004, an area of the Site under the former southern dispenser island was excavated to a depth of 16 feet bgs. A total of 300 pounds of Oxygen Release Compound (ORC) were applied on southern portion of the western excavation sidewall, the southwest corner of the excavation, and the southern excavation sidewall from 5 to 16 feet bgs

as well as the excavation bottom at 16 feet bgs, where contaminated soil could not be excavated to non-detect (ND) and avoid undermining a nearby street. Approximately 2,040 tons of contaminated soil and 1,440 gallons of contaminated groundwater were removed. March through May 2009 overpurgings were conducted in monitoring well MW-02, which removed 540 gallons of contaminated groundwater. The fuel oxygenates ethyl tert-butyl ether and tert-butyl alcohol (TBA) remain in groundwater at the Site above their respective water quality objectives in monitoring well MW-02.

The Site overlies fill and fine-grained alluvial deposits including silt and clay with thin sandy near-surface semi-perched groundwater-bearing zones that are separated from deeper usable aquifers by a thick section of silts and clays having low permeability. Based on observations made during excavation activities as well as boring logs, shallow groundwater flow at the Site occurs predominately in a thin sandy layer at approximately 10 feet bgs. Petroleum constituents in source area soil have been delineated to ND at 25 feet bgs, indicating vertical migration of petroleum constituents through underlying silt and clay layers is not significant. The shallow groundwater gradient at the Site is relatively flat varying between 0.001 and 0.007. Monitoring wells situated in native soil recharge slowly, demonstrating the shallow groundwater-bearing zone has a low capacity for groundwater and contaminant flow thus having a high capacity for natural attenuation of contaminants. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary. Remaining petroleum constituents are limited, stable, and decreasing. Additional assessment would be unnecessary and will not likely change the conceptual model. Any remaining petroleum constituents do not pose significant risk to human health, safety, or the environment under current conditions.

Rationale for Closure under the Policy

- General Criteria – Site **MEETS ALL EIGHT GENERAL CRITERIA** under the Policy.
- Groundwater Media-Specific Criteria – Site meets the criteria in **Class 2**. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary. The dissolved concentration of benzene is less than 3,000 micrograms per liter ($\mu\text{g/L}$), and the dissolved concentration of methyl tert-butyl ether (MTBE) is less than 1,000 $\mu\text{g/L}$.
- Petroleum Vapor Intrusion to Indoor Air – Site meets **Criteria 2 (a), Scenario 3**. As applicable, the extent of the bioattenuation zone, oxygen concentrations in soil gas, concentrations of TPH-g and total petroleum hydrocarbons as diesel combined in soil, and dissolved concentrations of benzene in groundwater meet the Policy.
- Direct Contact and Outdoor Air Exposure – Site meets **Criteria 3 (a)**. Maximum concentrations of petroleum constituents in soil from confirmation soil samples are less than or equal to those listed in Table 1 of the Policy.

Objections to Closure

Orange County staff objects to UST case closure because:

1. The extent of the plume is not captured by the current monitoring well network. Based on groundwater flow to the southwest-south, the plume may have migrated off-site downgradient of MW-02. TBA may not have reached the location of GPB-11 through

GPB-14 in 2003. The observed decrease of TBA concentrations may be indicative of the TBA plume migrating off-site to the southwest since 2014, and the contaminant plume needs to be located.

RESPONSE: At this Site, TBA follows the classic MTBE degradation to TBA, which indicates contamination has been stable and degrading in place for 17 years. The maximum historical concentration of MTBE was 38,400 µg/L in monitoring well MW-02 on July 14, 1999. On August 5, 2016, MTBE concentrations were ND in all monitoring wells. The maximum historical concentration of TBA was 27,000 µg/L in monitoring well MW-02 on November 15, 2002. On August 5, 2016, the maximum TBA indicated was 3,000 µg/L in monitoring well MW-02. Monitoring wells MW-04R and MW-03, located within 40 feet southwest of the source area, are ND for TBA. Significant concentrations of contaminants have not reached monitoring well MW-05, approximately 180 feet southeast from the source, despite southeast being the primary downgradient direction from 2005 to 2013.

The Site boring logs as well as observations made during excavation activities show the Site lithology is dominated by low permeability silt and clay, with contamination concentrated in and directly below a thin water-bearing sand layer at approximately 10 feet bgs. Groundwater wells located in native soil recharge very slowly and there is a low hydraulic gradient at this Site, demonstrating the native soil has a low capacity for groundwater and contaminant flow, thus having a high ability for natural attenuation of contaminants.

Although contamination likely extends off-site into the street, the data does not support plume migration or a mobile source. The contaminant plume does not exceed 250 feet in length, the length criterion for a Class 2 contaminant plume. There is no sensitive receptor to either the southeast or southwest. Continued investigation and delineation of this limited hot spot of contamination downgradient from the source area is unnecessary. Contaminant transport behavior and plume length with a varying lateral groundwater flow direction is supported with the conceptual model and meets Groundwater Media-Specific Criteria in Class 2.

2. Sample results from downgradient groundwater monitoring well MW-05 may not be representative of the formation because the well screen is submerged and the well has been purged to dryness and sampled shortly after purging since 2001. Depth to water ranges from 7.07 to 10.12 feet bgs.

RESPONSE: Sample results from monitoring well MW-05, which is screened from 10 to 25 feet bgs (this is 0 to 3 feet below the water table), provide sufficient information to prepare a conceptual site model. Prior to 2007, monitoring well MW-05 was allowed to recharge and was always ND. The slowness of recharge is demonstration that the formation does not allow groundwater or contaminants mobility. Recent samples from monitoring well MW-05 are ND. The sampler did not wait for 80% recharge due to traffic control concerns. Monitoring well MW-05 is located in a left-turn lane of an intersection.

3. Groundwater has not been fully assessed for naphthalene using a full-scan Volatile Organic Compound (VOC) analysis. Naphthalene was detected in a verification soil sample of an excavation sidewall as well as in all seven soil samples collected from the excavation stockpiles.

RESPONSE: Groundwater sampling completed in August 2016 using full-scan VOC analysis indicates that naphthalene is ND in all monitoring wells.

Furthermore, verification sidewall sample EXCAV V6 measuring naphthalene was 2.9 milligrams per kilogram (mg/kg) and verification bottom samples EXCAV V1, EXCAV V2, and EXCAV V7 were ND. Excavated soil no longer exists at the Site; therefore, it should not be an issue.

Analysis for BTEX and fuel oxygenates has been conducted using Method 8260B since at least 2005. Analyses include all key indicators for groundwater plume length, as discussed in the Technical Justification for Groundwater Media-Specific Criteria. These key indicators are benzene, MTBE, and TPH-g. BTEX has biodegraded in place to ND. It is highly unlikely to find significant naphthalene in groundwater.

Additionally, Santa Ana Regional Water Quality Control Board staff objects to UST case closure as follows:

1. The plume needs vertical delineation.

RESPONSE: There is a single, low detection of TBA in groundwater at depth in the source area. Twenty-five soil borings give vertical delineation of TBA in saturated soil at 5-foot intervals to 25 feet bgs where TBA concentrations are ND.

2. Free product may be present on-site in the vicinity of monitoring well MW-04R but has not been identified.

RESPONSE: There has never been evidence of free product. In 2004, the Site was excavated to 16 feet bgs in the vicinity of monitoring well MW-04R. In 2004, the Site was excavated to 16 feet bgs in the area surrounding monitoring well MW-04R. Excavation bottom and sidewall samples indicate between ND and 56 mg/kg TPH-g remain in the vicinity of monitoring well MW-04R subsequent to excavation activities. A total of 300 pounds of ORC were applied in the excavated area in the vicinity of the sidewall sample SWW, which indicated 56 mg/kg TPH-g. Monitoring wells, including MW-04R, in and around 40 feet of the source area have been sampled and results are ND for TPH-g and BTEX. These findings do not indicate free product nearby.

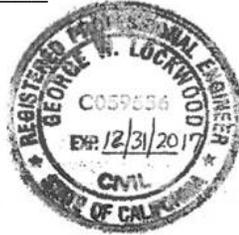
Recommendation for Closure

The corrective action performed at this Site ensures the protection of human health, safety, the environment. The corrective action performed at this Site is consistent with chapter 6.7 of the Health and Safety Code, implementing regulations, applicable state policies for water quality control and applicable water quality control plans. Case closure is recommended.

Prepared By: Jennifer L Marion
Jennifer Marion
Water Resource Control Engineer

09/27/16
Date

Reviewed By: George Lockwood
George Lockwood, PE No. 59556
Senior Water Resource Control Engineer

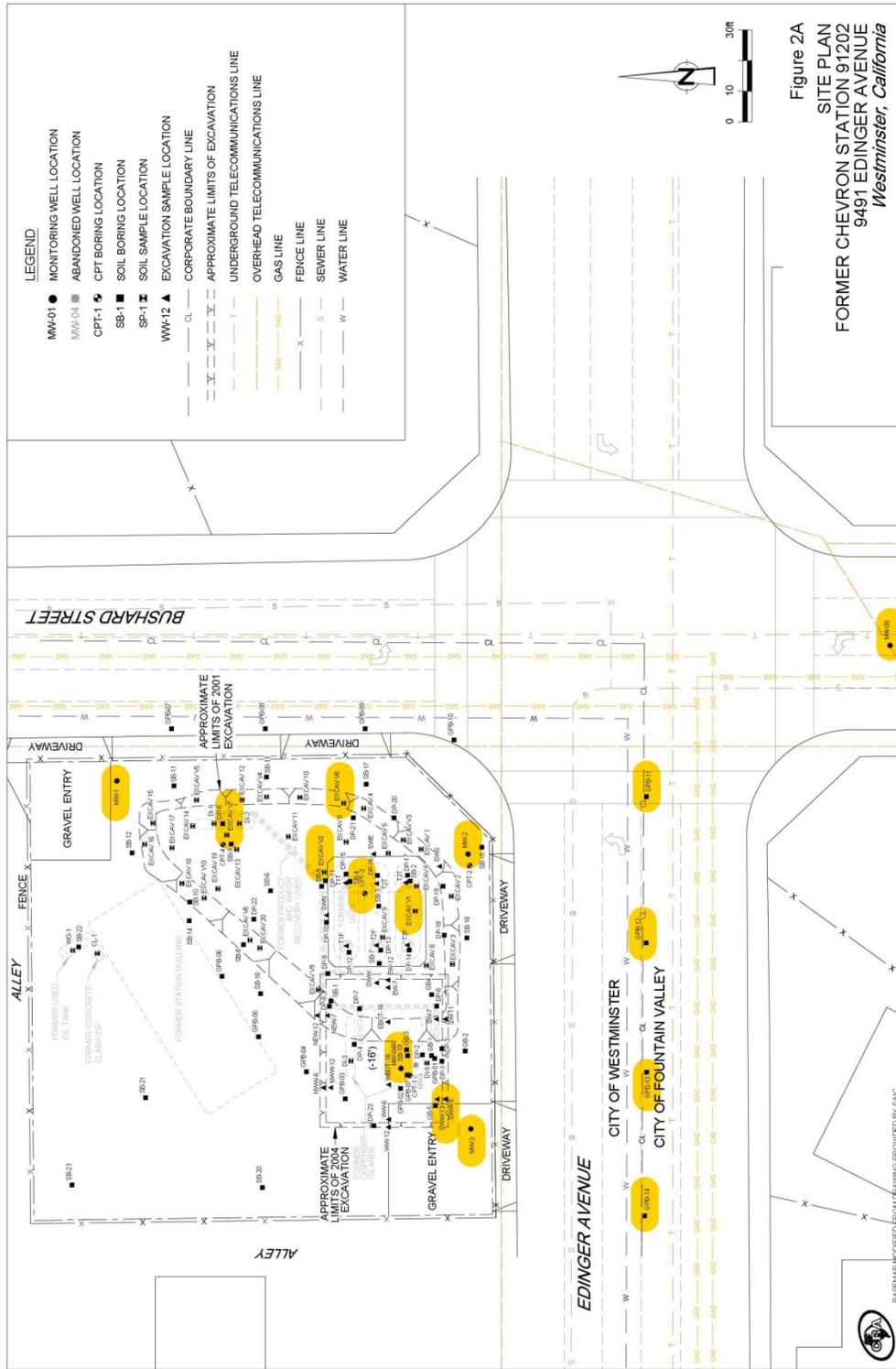


09/27/16
Date

Chevron #9-1202
 9491 Edinger Avenue, Westminster

ATTACHMENT 1: SITE MAPS

Referenced Sampling Locations



Vertical Delineation Locations

