State Water Resources Control Board

UNDERGROUND STORAGE TANK (UST) CASE CLOSURE SUMMARY

Agency Information

Agency Name: Santa Ana Regional Water Quality Control Board (Santa Ana Water Board)	Address: 3737 Main Street, Suite 500 Riverside, CA 92501-3348
Agency Caseworker: Patricia Hannon	Case No.: 083001036T

Case Information

UST Cleanup Fund (Fund) Claim No.: N/A	Global ID: T0605900818
Site Name: US Marine Corps Air Station El Toro, PCA, UST 398	Site Address: USMCAS El Toro UST 398 Irvine, CA 92709 (Site)
Responsible Party Naval Facilities Engineering Command Southwest Base Realignment and Closure Project Management Office West Attention: Guy Chammas	Address: 33000 Nixie Way, Building 50 San Diego, CA 92147
Fund Expenditures to Date: N/A	Number of Years Case Open: 31

GeoTracker Case Record:
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900818

Summary

This case has been proposed for closure by the State Water Resources Control Board at the request of the Santa Ana Regional Water Quality Control Board, which concurs with closure.

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 because they pose a low threat to human health, safety, and the environment. The Site meets all of the required criteria of the Policy and therefore, is subject to closure.

The Site was an aircraft fueling facility at the former Marine Corps Air Station (MCAS) El Toro, an installation currently undergoing decommissioning and redevelopment. The Site featured a 108,000-gallon underground storage tank (UST) which contained JP-5 jet fuel, four (4) dispenser islands, a 14-inch product pipeline, and an associated dry well used for the disposal of excess jet fuel prior to 1972. A release was reported in 1988 after the product pipeline failed integrity testing. In 1990, the product piping was excavated and repaired, and visual soil staining was observed. Additional leaks in the product pipeline were identified in 1991 and the 108,000-gallon UST was removed in 1993. Periodic groundwater monitoring was conducted from 1996 to 2013 and additional site assessment was conducted in 2001 and 2010.

Free product recovery began with pilot testing in 1992, and an automated skimming system reportedly removed 9,650 gallons of free product and 7,564 gallons of water-product mixture from groundwater between 1995 and 1998. Soil vapor extraction (SVE) operated at the site from 1996 to 1999 , 2004 to 2005, and during 2009, removing an estimated total of 127,000 pounds of hydrocarbons. Manual bailing of free product was conducted from 2004 to 2018 and removed a reported total of 1,021 gallons free product and 2,023 gallons of product-water mixture. Historically, free product has been reported at thicknesses up to 7.1-feet; as of the most recent gauging event in May 2018, the measured thickness was 0.04 feet.

Free product does not extend off-site and a land use covenant preventing groundwater extraction has been placed on the property. Concentrations of petroleum constituents have been below site cleanup goals, as well as Policy criteria, in all wells since 2006, and prior to most wells at the Site going dry were consistently at or below detection limits in most wells, with the exception of MW398-04 which showed a slight increasing trend. The vadose zone portion of the Site was granted no further action in 2011 as no significant petroleum impacts remain in shallow soil. 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 3**. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. Free product has been removed to the maximum extent practicable, may still be present below the Site where the release originated, but does not extend off-site. The plume has been stable or decreasing for a minimum of five years. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary. The property owner is willing to accept a land use restriction if the regulatory agency requires a land use restriction as a condition of closure.

- Petroleum Vapor Intrusion to Indoor Air – Site **meets Criteria 2 (a), Scenario 1**. There is a bioattenuation zone that provides a separation of at least 30 feet vertically between the Light Non-Aqueous Phase Liquid in groundwater and the foundation of existing or potential buildings. Concentrations of total petroleum hydrocarbons as gasoline and diesel combined in soil are less than 100 milligrams per kilogram throughout the entire depth of the bioattenuation zone.
- 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.

  There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of aromatic compounds in JP-5. Taken from the National Research Council, Subcommittee on Permissible Exposure Levels for Military Fuels, Permissible Exposure Levels for Selected Military Fuel Vapor, (https://www.ncbi.nlm.nih.gov/books/NBK231234/), JP-5 mixtures contain approximately 16% aromatics, such as benzene and naphthalene. Therefore, TPH concentrations can be used as a proxy for aromatic concentrations with a safety factor of six (6). TPH as JP-5 concentrations at the Site were consistently below their detection limits of 10 to 12 mg/kg in all shallow soil samples collected to date. This meets the naphthalene thresholds in Table 1 of the Policy for commercial/industrial and utility worker exposure scenarios with a safety factor of at least 6. Furthermore, as naphthalene does not account for the entire aromatic fraction, and the fact that JP-5 was not reported above detection limits in shallow soils, it is unlikely that the residential threshold for Table 1 of the Policy would be exceeded.

Recommendation for Closure

The corrective action performed at this Site ensures the protection of human health, safety, and the environment. The corrective action performed at this Site is consistent with chapter 6.7 of division 20 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.

Reviewed By: _____
Matthew Cohen, PG No. 9077
Senior Engineering Geologist

02/03/2020
Date