UNDERGROUND STORAGE TANK (UST) CASE CLOSURE SUMMARY

Agency Information

Agency Name: Orange County Health Care Agency, Division of Environmental Health (OCHCA)	Address: 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705
Agency Caseworker: Karl Bewley	Case No.: 97UT021

Case Information

UST Cleanup Fund (Fund) Claim No.: 17421	Global ID: T0605902072
Site Name: Newport Mesa Unified School District	Site Address: 2985A Bear Street Costa Mesa, CA 92626 (Site)
Responsible Party: Newport-Mesa Unified School District Attention: Lance Bidnick	Address: 2985 Bear Street, Building E Costa Mesa, CA 92626
Fund Expenditures to Date: $1,480,000	Number of Years Case Open: 27

GeoTracker Case Record: http://geotracker.waterboards.ca.gov/?gid= T0605902072

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 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.

This Site is an active petroleum fueling facility located at a maintenance yard for the Newport-Mesa Unified School District (Responsible Party). An unauthorized release of petroleum was reported in July 1997 following the removal and replacement of five USTs (one gasoline, two diesel, and two waste-oil) and their associated piping. Soil was excavated from beneath each of the former waste-oil USTs to a minimum depth of 12 feet below ground surface (bgs). Multiple remediation technologies were employed on the source property and downgradient properties between 2005 and 2018 to mitigate the contaminant mass released from the former USTs, resulting in the relatively small

"hot-spot" of contamination impacting groundwater downgradient of the source property. The remaining plume of dissolved contaminants in groundwater is approximately 700 feet long with a maximum benzene concentration of 5,000 micrograms per liter (µg/L) in groundwater monitoring well OffRW-8 (April 2023).

The groundwater plume does not meet the criteria for closure in any of the first four classes for groundwater defined in the Policy. However, State Water Resources Control Board (State Water Board) staff have determined that the remaining plume does not pose a threat to any potential receptors, and therefore, meets Class 5 of the Media-Specific Groundwater Criteria. Additional justification for this determination is presented in the Objections to Closure section below.

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 5**. The State Water Board determines, based on an analysis of site-specific conditions that under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health, safety, and to the environment and water quality objectives (WQOs) will be achieved within a reasonable time frame.
- Petroleum Vapor Intrusion to Indoor Air
    - The source property **meets the Exception** for vapor intrusion to indoor air. Exposure to petroleum vapors associated with historical fuel system releases are comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. In addition, the source property **meets Criteria 2 (a), Scenario 3**. As applicable, the extent of the bioattenuation zone, oxygen concentrations in soil gas, concentrations of total petroleum hydrocarbons as gasoline and diesel combined in soil, and dissolved concentrations of benzene in groundwater meet the Policy.
    - Downgradient of the source property it **meets Criteria 2 (a), Scenario 4**. Concentrations of benzene, ethylbenzene, and naphthalene in soil gas are less than the soil gas criteria for soil gas samples collected at least five feet from the bottom of the building foundation or ground surface for future construction. Additional justification for this determination is presented in the Objections to Closure section below.
- Direct Contact and Outdoor Air Exposure – Site **meets Criteria 3 (b)**. 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 with one exception. Soil samples near the former waste-oil USTs were not analyzed for polyaromatic hydrocarbons; however, the areas around those USTs were excavated to total depths of at least 12 feet bgs, which is beyond the 10-foot depth consideration of the Policy. As such, maximum concentrations of petroleum constituents in soil between ground surface and 10 feet bgs are less than levels that a site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health.

Objections to Closure

OCHCA denied case closure in a letter to the Responsible Party dated February 5, 2024. The closure denial letter addressed contents of two documents submitted on behalf of the Responsible Party: the October 24, 2023 *Soil Vapor Assessment Report* and the October 20, 2023 *Request for Case Closure*. OCHCA denied closure based on the following objections:

1. Objection: "As observed by [OCHCA] staff and documented in the [*Soil Vapor Assessment Report*], the helium supply ran out during the sampling of soil vapor probe SG9. As such, leak check procedures were not performed to the satisfaction of [OCHCA] and additional sampling of SG9 is required and must be conducted in March 2024."

   Response: Soil gas data collected prior to those presented in the *Soil Vapor Assessment Report* indicated there is not a vapor intrusion threat to the school or residences located above or near the dissolved benzene "hotspot" measured at well OffRW-8. The samples collected in September 2023 were meant to confirm the data collected previously. Two of the three soil vapor probes sampled met all parameters of the leak check procedures. There was adequate helium at the beginning of the sampling procedure for probe SG9 to confirm there was not a leak which would have altered the results. Furthermore, potential contaminant concentrations in the samples collected in September 2023 were consistent with concentrations measured in samples collected from the three probes in April 2022. Oxygen concentrations measured in all three probes indicate a strong bioattenuation zone is present in the shallow subsurface near the school and adjacent residences. Concentrations of the key Policy constituents (benzene, ethylbenzene, and naphthalene) detected in the September 2023 samples were several orders of magnitude below the soil gas thresholds listed in the Policy when a bioattenuation zone is present. It is highly unlikely the results of the sampling of soil vapor probe SG9 in September 2023 would have been significantly, if at all, different than the results obtained, if the helium supply had not run out during sample collection. Review of the data from the entire history of soil gas assessment indicates the concentrations of the key Policy constituents do not exceed the thresholds listed in the Policy. Therefore, State Water Board staff have determined the vapor intrusion criteria of the Policy have been met.

2. Objection: "Benzene concentrations in off-site monitoring well OffRW-8, located adjacent to residences and on elementary school property, continue to exceed the [Policy] threshold (3,000 [μg/L]). In the most recent groundwater monitoring event (April 2023), benzene was detected at 4,900 μg/L in well MW-25/OffRW-8 and at similar concentrations during prior monitoring events. Further, benzene concentrations show an increasing trend since April 2011 based on available data in GeoTracker... In addition, the length of the contaminant plume that exceeds the water quality objectives is greater than 700 feet. [OCHCA] reiterates that additional remedial action is needed to reduce the benzene such that criteria of the [Policy] is met. Note, [OCHCA] understands, due to the proximity of the Paularino Channel, groundwater will likely be closed under Scenario 5 of the [Policy]; however, all other criteria of one of the established scenarios (1-4) must be met due to the sensitive nature of the occupancy overlying the contamination plume."

   Response: The State Water Board agrees that the plume that exceeds the benzene WQO does not meet any of the first four classes of the groundwater criteria. And, as OCHCA identified, the case will never meet class 1 through 4 of the Policy to the proximity of the Paularino Channel to the plume boundary. However, the benzene plume upgradient and beneath the Channel has been appropriately mitigated. The remaining concentrations of benzene are located downgradient of the Channel. The bottom of the channel has historically been shallower than the groundwater surface, significantly reducing the potential risk to the Channel. While it does not appear that groundwater has impacted the Channel, the Channel appears to have influenced the groundwater flow pattern within its proximity. The predominant groundwater flow direction is to the southwest; however, groundwater elevation data indicates a bifurcation of the groundwater flow on either side of the Channel. The length of the benzene plume downgradient of the Site appears to have been impacted by this localized influence on groundwater, resulting in an atypically long benzene plume south of the Channel. This Channel influence can also explain the residual benzene source mass that appears to be disconnected from the primary plume at approximately 30 to 35 feet bgs in the vicinity of well OffRW-8 (previously MW-25). As the groundwater elevation decreased between 2011 to 2017, along with concurrent on-site remediation, the concentrations in OffRW-8 declined significantly. Since 2017, groundwater elevation has increased, likely bringing groundwater back into contact with the residual contamination in the subsurface, which is why concentration trends have seen a corresponding increase in OffRW-8. However, an increasing concentration trend in one well does not indicate the plume is unstable. Plume stability, according to the Policy, is defined by changes in the areal extent of the entire contaminant plume.

   Data indicates that the benzene plume is fully defined and decreasing in overall length. There is no free product and sensitive receptors within at least 1,000 feet of the defined plume boundary, with the exception of the Channel, which as

indicated above, is not likely at risk from the residual Site contamination. Furthermore, soil gas data collected in the vicinity of OffRW-8 does not indicate a vapor intrusion threat associated with the elevated benzene concentrations in groundwater. This is important because it indicates there isn't a vapor intrusion threat to occupants of the school on which OffRW-8 is located or to residences adjacent to the school property. State Water Board staff have determined that the benzene exceeding WQOs does not pose a threat to any receptors and will decline naturally within a reasonable timeframe. Therefore, State Water Board staff have determined the case meets Class 5 of the Groundwater Criterion.

3. Objection: "Revisions to the groundwater monitoring program were conditionally approved in [OCHCA] correspondence dated March 6, 2023. Specifically, monitoring and sampling of 10 off-site wells on a semi-annual basis and four on-site wells on an annual basis was approved. However, only one monitoring report, documenting the April 2023 sampling event, has been submitted since that agency directive. The subject [Responsible Party] correspondence suggests that groundwater monitoring and sampling activities have been discontinued. As discussed in the February 7, 2023 conference call, groundwater monitoring is required until the case closure process is initiated. As the Fourth Quarter 2023 event was apparently skipped, groundwater monitoring and sampling must be conducted as soon as possible and in the First Quarter 2024...."

   Response: State Water Board staff do not believe that groundwater monitoring and sampling is necessary to confirm plume stability. There are more than 20 years of groundwater elevation and concentration data to demonstrate that the plume is stable to decreasing in areal extent. However, the Responsible Party should comply with well permitting requirements until such time as the wells are destroyed in preparation for case closure.

4. Objection: "A review of the case file indicates that only select wells have been gauged and/or sampled since July 2015. To fully evaluate current on and off site conditions, the [OCHCA] requires at least one groundwater monitoring event that consists of the monitoring and sampling of the following wells: MW-1, MW-5, OnRW-2/MW-7, MW-8, OnRW-4/MW-14, OnRW-3/MW-10, OffRW-3/MW-19, OffRW-6/MW-23, OffRW-4, MW-28/OffRW-9, OffRW-8/MW-25, MW-22/OffRW-5, OffRW-10, MW-26, and MW-29. This event must be conducted in the First Quarter 2024."

   Response: As indicated above, State Water Board staff have determined that there are sufficient data to demonstrate that the plume is stable to decreasing. Additionally, it is assumed the abovementioned wells were removed from the monitoring program because it had been determined data from those wells were no longer necessary to evaluate plume conditions, so additional monitoring of these wells is not warranted.

In addition to the reasons for denying closure documented in OCHCA's February 5, 2024 letter, OCHCA specified additional objections to case closure in the LTCP checklist in GeoTracker, updated May 28, 2024. According to the checklist, OCHCA objects to closure due to the case not meeting either the Groundwater or Vapor Intrusion to Indoor Air Media-Specific Criteria. Responses to those objections are provided above. There is one additional criterion that OCHCA indicates in the checklist has not been met:

5. General Criterion e. (A conceptual site model [CSM] that assesses the nature, extent, and mobility of the release has not been developed). The checklist has the "Other" box checked in relation to this criterion with the following note: "Ongoing concern regarding off-site vapor (samples taken incorrectly) and groundwater concentrations (benzene above gw criteria and limited recent sampling) near residences and school - see 2/5/2024 [OCHCA] letter (case closure denial)."

   Response: The noted deficiencies are essentially the same rationale for closure denial provided in OCHCA's February 5, 2024 letter. Responses to those closure objections are provided above. Based on those responses, State Water Board staff have determined that the nature, extent, and mobility of the release have been adequately assessed. Therefore, State Water Board staff have determined the CSM criterion has been met.

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.

Prepared by:

June 3, 2024

William E. Brasher
Water Resource Control Engineer

Date

Reviewed By:

June 25, 2024

Dayna Cordano, P.G. No. 9694
Senior Engineering Geologist

Date