

## State Water Resources Control Board

### UST CASE CLOSURE REVIEW SUMMARY REPORT

#### Agency Information

Agency Name: Alameda County Environmental Health Department (LOP)	Address: 1131 Harbor Bay Parkway Alameda, CA 94502
Agency Caseworker: Keith Nowell	Case No.: R00000175

#### Case Information

USTCF Claim No.: 14095	GeoTracker Global ID: T0600102286
Site Name: Foothill Mini Mart	Site Address: 6600 Foothill Boulevard, Oakland, CA 94605
Responsible Party 1: Ravi Sekhon & Mandeep Sekhon	Address: 21696 Knuppe Place, Castro Valley, CA 94552;
Responsible Party 2: Zaroon, Inc. Att: Abdul Ghaffar	Address: 40092 Davis Street, Freemont, CA 94538-2605
USTCF Expenditures to Date: \$418,488	Number of Years Case Open: 15

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0600102286](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600102286)

#### 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 an active commercial petroleum fueling facility. An unauthorized release was reported in December 1998. Following the release, one 8,000-gallon UST was removed from the Site. In 1998 and an unknown quantity of soil and groundwater was removed and disposed during the UST removal activities and removal of free product. During the summer of 2011 the injection of ozone and peroxide were tested at the site. A separate parallel plume is originating from an unregulated property next door to the east. A total of 13 groundwater monitoring wells have been installed and monitored since 2001. According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents at subject site monitoring wells.

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 1,000 feet of the defined plume boundary. No other water supply wells have been identified within 1,000 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the East Bay Municipal Utility District. 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, 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 Risk from Residual Petroleum Hydrocarbons:** The case meets Policy Criterion 1 by Class 2. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The nearest 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 µg/L (micrograms per Liter), and the dissolved concentration of MTBE is less than 1,000 µg/L. A second petroleum hydrocarbon plume is originating from an unregulated property next door to the east based on analytical data, historical groundwater flow directions, and aerial photography review.
- **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 access to site soils is prevented. As an active fueling facility, any construction worker working at the Site will be prepared for exposure in their normal daily work.

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

The Alameda County Department of Environmental Health disagrees with the closure of the Site, (phone conversation of April 19, 2013), stating the plume is not defined, and additional corrective action is required.

RESPONSE: Review of the existing groundwater data demonstrates that the plume is defined using the existing groundwater well network. Additional corrective action is not necessary.

#### **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*

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

*10/3/13*

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Date

Prepared by: Abdul Karim Yusufzai

**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</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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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>of the release been developed?</b></p> <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 checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input 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 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>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 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>
<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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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>

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

### Site Location/History

- The Site is an active gasoline service station located at 6600 Foothill Boulevard, Oakland, California. The Site is a corner lot bounded on south-southeast by the Foothill Boulevard and on the west and southwest by Havenscourt Boulevard (Figure 1). To the east and on the opposite side of Foothill Boulevard, south of the Site, there are vacant lots formerly used as gas stations.
- The Site is located in an area with mixed commercial and residential uses, and has been a retail gas station since 1959.
- A second parallel plume appears to be associated with an unregulated property next door to the east. This parcel appears to be a former service station that is not documented in GeoTracker or being actively regulated.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: December 1998.
- Status of Release: USTs
- Free Product: None reported.

### Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	8,000	Gasoline	Removed	December 1998
2	10,000	Gasoline	Active	Current
3	10,000	Gasoline	Active	Current

### Receptors

- GW Basin: Santa Clara Valley – East Bay Plain.
- Beneficial Uses: The San Francisco Regional Water Quality Control Board (Regional Water Board) Basin Plan Lists: Municipal and Domestic Supply
- Land Use Designation: A review of aerial photography indicates the Site is located in a commercial and residential land use.
- Public Water System: East Bay Municipal Utility 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 1,000 feet of the defined plume boundary. No other water supply wells were identified within 1,000 feet of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 1,000 feet of the defined plume boundary.

### Geology/Hydrogeology

- Stratigraphy: Soil conditions beneath the Site consist of heterogeneous mixture of fine grained soils (silt/clay mixtures) and coarser grained soils (silty sand, sand, clayey gravel, sandy gravel, and gravel) from surface grade to approximately 50 feet bgs.
- Maximum Sample Depth: 50 feet below ground surface (bgs).
- Minimum Groundwater Depth: 4.26 feet bgs at monitoring well MW-6.
- Maximum Groundwater Depth: 40.48 feet bgs at monitoring well MW-12B.



- Current Average Depth to Groundwater: Approximately 7 feet bgs.
- Saturated Zones(s) Studied: Approximately 10-40 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Southwest a 0.03 ft/ft.

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (1/2/2013)
MW-1	June 2001	10-25	6.15
MW-2	June 2001	10-25	6.23
MW-3	June 2001	10-25	8.47
MW-4	June 2002	7.5-20	4.64
MW-5	June 2002	7.5-20	6.24
MW-5B	June 2002	35-45	11.01
MW-6	June 2002	7.5-20	4.26
MW-6B	September 2009	33-50	39.22
MW-7	September 2009	9-25	8.46
MW-10	September 2009	15-25	9.16
MW-11	September 2009	10-25	8.41
MW-12A	September 2009	10-25	6.71
MW-12B	September 2009	33-43	39.76
MW-13A	September 2009	5-25	4.81

NM: Not measured

**Remediation Summary**

- Free Product: Sheen was observed in the tank pit during the 8,000-gallon UST removal. No sheen has been reported since 1998.
- Soil Excavation: An unknown amount of soil was excavated, characterized and transported to the Vasco Road landfill after UST removal activities in 1998.
- In-Situ Soil Remediation: None reported.
- Groundwater Remediation: An unknown amount of water was pumped from the UST excavation in 1998; this water was treated and released to the local storm sewer under permit by the East Bay Municipal Utility District. In May and June 2011, ISCO pilot test was performed by injecting ozone and hydrogen peroxide in the shallow saturated interval.

**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	NA	0.025 (2009)
Ethylbenzene	NA	<0.005 (4/6/2011)
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	Sample Date	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
<b>Foothill Mini Mart Wells</b>								
MW-1	01/02/2013	<50	<0.5	<0.5	<0.5	0.58	<b>11</b>	<10
MW-2	01/02/2013	150	<0.5	<0.5	<0.5	<0.5	<b>5.9</b>	950
MW-3	01/02/2013	<100	<0.5	<0.5	<0.5	0.52	3.0	440
MW-7	01/02/2013	<50	<0.5	<0.5	<0.5	1.2	<b>5.0</b>	<10
MW-10	01/02/2013	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-11	01/02/2013	<50	<0.5	<0.5	<0.5	<0.5	1.6	<10
<b>Parallel Plume Site Wells</b>								
MW-4*	01/02/2013	1,200	<0.5	0.51	1.5	3.0	2	<b>1,200</b>
MW-5*	01/02/2013	<200	<1.0	<1.0	<1.0	1.3	3.0	<b>3,900</b>
MW-5B*	01/02/2013	<50	<0.5	<0.5	<0.5	1.4	<b>22</b>	<10
MW-6*	01/02/2013	3,500	<b>61</b>	<2.5	29	32.6	<b>360</b>	<b>1,300</b>
MW-6B*	01/02/2013	<50	<0.5	<0.5	<0.5	0.65	<0.5	<10
MW-12A*	01/02/2013	72	<0.5	<0.5	<0.5	0.69	<b>140</b>	<10
MW-12B*	01/02/2013	<50	<0.5	<0.5	<0.5	1.2	<b>5.0</b>	<10
MW-13A*	01/02/2013	970	<1.0	<1.0	<1.0	0.89	3.7	26
<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>

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, San Francisco Regional Water Quality Control Board (Region Water Board) Basin Plan.

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

\*: Wells related to the up/side gradient parallel plume from adjacent property.

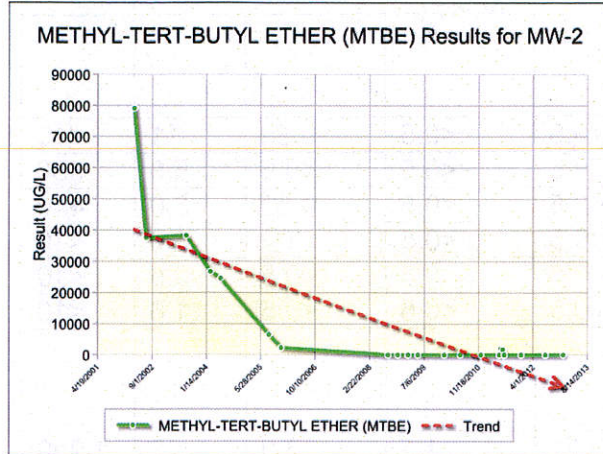
<sup>a</sup>: Secondary maximum contaminant level (MCL)

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

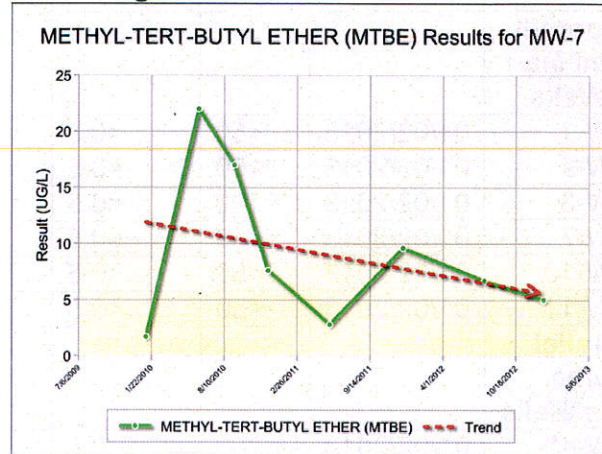
**Groundwater Trends**

- There are 12 years of irregular groundwater monitoring data for this case. MTBE trends are shown below.

**Onsite source area well MW-2**



**Downgradient well MW-7**



**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 Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 2. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The nearest 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 µg/L, and the dissolved concentration of MTBE is less than 1,000 µg/L. A second petroleum hydrocarbon plume is originating from an unregulated property next door to the east based on analytical data, historical groundwater flow directions, and aerial photography review.
- 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: The case meets Policy Criterion 3b. A professional assessment of site-specific risk from exposure shows that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health. Furthermore, the Site is paved and accidental access to site soils is prevented. As an active gas station, any construction worker working at the Site will be prepared for exposure in their normal daily work.

