

## State Water Resources Control Board

### UST CASE CLOSURE REVIEW SUMMARY REPORT

#### Agency Information

Agency Name: Lahontan Regional Water Quality Control Board, Region 6 (Regional Board)	Address: 2501 Lake Tahoe Boulevard, South Lake Tahoe, CA 95814
Agency Caseworker: Brian Grey	Case No.: 6B3600841T

#### Case Information

USTCF Claim No.: 17381	Global ID: T0607100895
Site Name: High Desert Unocal	Site Address: 18285 HWY 18, Apple Valley, CA 92307
Responsible Party (RP): High Desert Auto Care Attn: Terry Harmes	Address: Private Address
USTCF Expenditures to Date: \$590,280	Number of Years Case Open: 15

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0607100895](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100895)

#### 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:

An unauthorized leak was reported in February 1998 following the removal of four USTs (one 4,000-gallon gasoline UST, two 7,500-gallon gasoline USTs, and one 550-gallon waste oil UST) and an unknown volume of soil. Soil vapor extraction was conducted from September 2007 through present, which removed approximately 8,217 pounds of total petroleum hydrocarbons as gasoline (TPHg). Six groundwater monitoring wells have been installed and have been monitored for more than eight years. According to groundwater data, water quality objectives have been achieved for all constituents.

The petroleum release is limited to the shallow soil and groundwater. According to data available in GeoTracker, there are no supply wells regulated by California Department of Public Health or surface water bodies within 250 feet of the defined plume boundary. No other water supply wells have been identified within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the Apple Valley Ranchos 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, stable and concentrations declining. 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 1. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. No free product is present. The nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Vapor Intrusion to Indoor Air: The case meets Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in groundwater is less than 100 µg/L. The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 mg/kg of TPH.
- 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

According to the GeoTracker Closure Review page, the Regional Board objects to UST case closure because the extent of contamination has not been defined.

RESPONSE: The extent of contamination is adequately defined. The existing monitoring well network shows the extent of the plume as defined by water quality objectives. The Case meets all the Policy criteria.

#### 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. San Bernardino County has the regulatory responsibility to supervise the abandonment of monitoring wells.

*Lisa Babcock*

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

*3/22/13*

Date

Prepared by: Kirk Larson, P.G.

**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> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>Does the unauthorized release consist only of petroleum?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>Has the unauthorized (“primary”) release from the UST system been stopped?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>Has free product been removed to the maximum extent practicable?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><b>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</b> <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>Media-Specific Criteria</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 checked="" type="checkbox"/> 1 <input 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>If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p>

<p><b>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?</b></p> <p><b>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?</b></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><b>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)?</b></p> <p><b>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?</b></p> <p><b>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?</b></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**

- The Site is located at 18285 Highway 18 in Apple Valley and is an auto shop and smog facility.
- The Site is bounded by a gravel covered parking area to the west, an asphalt and concrete parking area to the north, Olalee Road to the east, and a residence to the south.
- Six monitoring wells have been installed and monitored regularly.
- A Site map showing the location of the soil vapor extraction wells, monitoring wells, and groundwater level contours is provided at the end of this closure summary.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: February 1998.
- Status of Release: USTs removed.
- Free Product: None reported.

**Tank Information**

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	4,000	Gasoline	Removed	1/14/1998
2,3	7,500	Gasoline	Removed	1/14/1998
4	550	Waste Oil	Removed	1/14/1998

**Receptors**

- GW Basin: Upper Mojave River Valley.
- Beneficial Uses: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Freshwater Replenishment, and Aquaculture.
- Land Use Designation: Commercial.
- Public Water System: Apple Valley Ranchos Water Company.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by California Department of Public Health within 250 feet of the defined plume. No other water supply wells were identified within 250 feet of the defined plume in the files reviewed.
- Distance to Nearest Surface Water: There are no identified surface waters within 250 feet of the defined plume.

**Geology/Hydrogeology**

- Stratigraphy: The Site is underlain by interbedded and intermixed sand, silt and clay.
- Maximum Sample Depth: 100 feet below ground surface (bgs).
- Minimum Groundwater Depth: 81.95 feet bgs at monitoring well MW-4.
- Maximum Groundwater Depth: 91.67 feet bgs at monitoring well MW-1.
- Current Average Depth to Groundwater: Approximately 80 feet bgs.
- Saturated Zones(s) Studied: Approximately 82 - 100 feet bgs.
- Groundwater Flow Direction: Predominately to the southwest with an average gradient of 0.004 feet/foot (September 2011).

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (09/29/2011)
MW-1	September 2003	80-100	80.70
MW-2	March 2004	80-100	80.40
MW-3	January 2005	80-100	81.65
MW-4	August 2006	80-100	79.45
MW-5	June 2007	80-100	80.46
MW-6	June 2007	80-100	79.95

**Remediation Summary**

- Free Product: No free product was documented in GeoTracker.
- Soil Excavation: Unknown volume.
- In-Situ Soil Remediation: Soil vapor extraction was conducted between September 2007 and present, which removed approximately 8,217 pounds of TPHg.
- Groundwater Remediation: No groundwater remediation has been conducted.

**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	<0.002 (01/20/2011)	<0.002 (01/20/2011)
Ethylbenzene	<0.002 (01/20/2011)	<0.002 (01/20/2011)
Naphthalene	<0.005 (01/20/2011)	<0.005 (01/20/2011)
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-1	09/29/2011	<50	<1	<1	<1	<2	<2	<20
MW-2	09/29/2011	<50	<1	<1	<1	<2	<2	<20
MW-3	09/29/2011	<50	<1	<1	<1	<2	<2	<20
MW-4	09/29/2011	<50	<1	<1	<1	<2	<2	<20
MW-5	09/29/2011	<50	<1	<1	<1	<2	<2	<20
MW-6	09/29/2011	<50	<1	<1	<1	<2	<2	<20
WQOs	-	--	1	150	300	1,750	5	1,200 <sup>a</sup>

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

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Region 6 Basin Plan

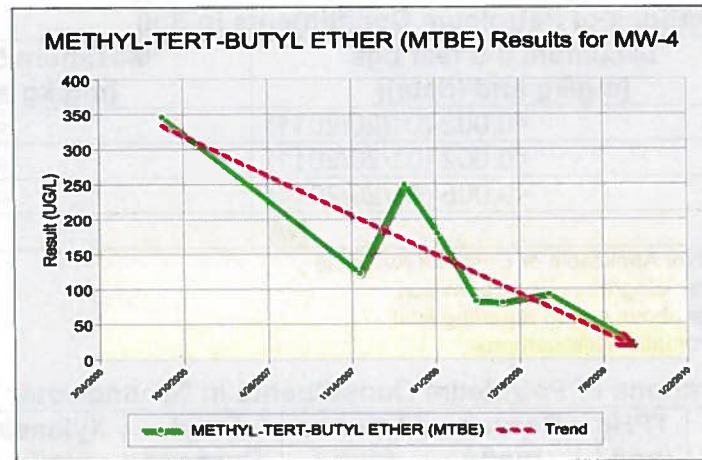
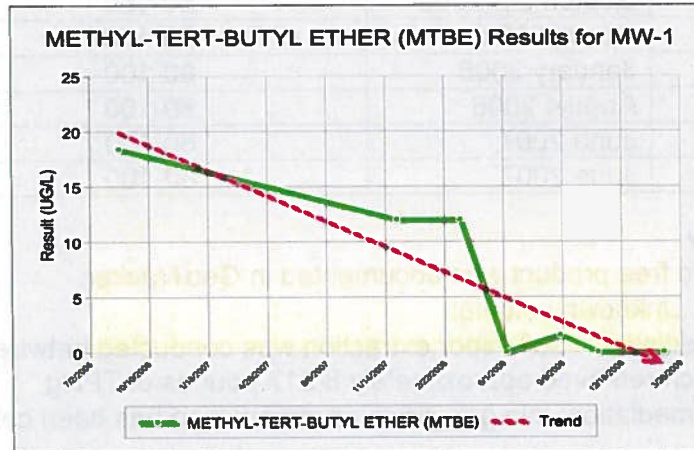
--: Region Basin Plan does not have a numeric water quality objective for TPHg

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

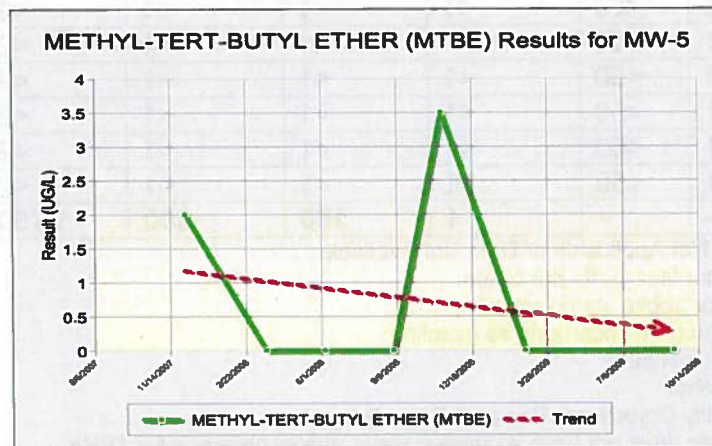
**Groundwater Trends**

There are more than 8 years of groundwater monitoring data for this Site. MTBE trends are shown below: Source Area (MW-1 and MW-4) and Downgradient (MW-5).

**Source Area Wells**



**Downgradient Well**





### 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: <100 feet long.
- Plume Stable or Degrading: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 1. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. No free product is present. The nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in groundwater is less than 100 µg/L. The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 mg/kg of TPH.
- Direct Contact Risk from Residual Petroleum Hydrocarbons: 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.

