

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Santa Ana Regional Water Quality Control Board, Region 8 (Regional Water Board)	Address: 3737 Main Street, Suite 500, Riverside, CA 92501
Agency Caseworker: Nancy Olson-Martin	Case No.: 83003035T

Case Information

USTCF Claim No.: 12822	Global ID: T0605902070
Site Name: USA Gasoline #234	Site Address: 5142 West 1 st Street, Santa Ana, CA 92703
Responsible Party: Moller Investment Group, Inc. Charles Miller	Address: 6591 Collins Drive, #E-11 Moorpark, CA 93021
USTCF Expenditures to Date: \$1,333,799	Number of Years Case Open: 15

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605902070

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. 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 July 1997 following the removal of three 15,000 gallon USTs. Free product has been measured in Site wells at up to 0.38 feet historically. A sheen was reported in 2011. Approximately 793 tons of impacted soil were excavated, transported and disposed in 1997. Dual phase extraction was conducted between 2002 and 2007 extracting a reported 31,854 pounds of petroleum hydrocarbons. Groundwater extraction was extended through July 2012 extracting 7,731,385 gallons of impacted groundwater. According to groundwater data, water quality objectives (WQO) have been achieved for all constituents except for benzene and ethylbenzene.

The petroleum release is limited to the shallow soil and groundwater. According to data available in GeoTracker, there is no California Department of Public Health (CDPH) regulated supply wells 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 Golden State 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 2. The contaminant plume that exceeds WQO 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.
- Vapor Intrusion to Indoor Air: The case meets the Policy Active Station Exclusion - Soil vapor evaluation is not required because Site is an active commercial petroleum fueling facility.
- 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 sites and the concentration limits for a Utility Worker are not exceeded.

Objections to Closure and Responses

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


RESPONSE: The extent of groundwater contamination is adequately defined by the existing monitoring well network. The Case meets all the Policy criteria necessary for closure.

Determination

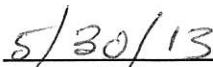
Based on the review performed in accordance with Health & Safety Code Section 25299.39.2 subdivision (a), the Fund Manager has determined that closure of the case is appropriate.

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. Orange County has the regulatory responsibility to supervise the abandonment of monitoring wells.



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



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.¹

<p>Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations? 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>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>If so, was the corrective action performed consistent with any order?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><u>General Criteria</u> General criteria that must be satisfied by all candidate sites:</p> <p>Is the unauthorized release located within the service area of a public water system?</p> <p>Does the unauthorized release consist only of petroleum?</p> <p>Has the unauthorized (“primary”) release from the UST system been stopped?</p> <p>Has free product been removed to the maximum extent practicable?</p> <p>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</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 type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

¹ 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

<p>Has secondary source been removed to the extent practicable?</p> <p>Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?</p> <p>Nuisance as defined by Water Code section 13050 does not exist at the site?</p> <p>Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?</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><u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria:</p> <p>1. Groundwater: 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>Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?</p> <p>Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?</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>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?</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>2. Petroleum Vapor Intrusion to Indoor Air: 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>Is the site an active commercial petroleum fueling facility? 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>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?</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><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>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>3. Direct Contact and Outdoor Air Exposure: 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 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 5142 West 1st Street in Santa Ana and is an active commercial petroleum fueling facility.
- The Site is bounded by South Euclid Street to the west, West 1st Street to the north, and residences to the east and south. The surrounding land use is mixed residential and commercial.
- Twenty monitoring wells have been installed and monitored regularly since 1998.
- Site map showing the location of the current and former USTs, monitoring wells, and groundwater level contours is provided at the end of this closure review summary.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: July 1997.
- Status of Release: USTs replaced.
- Free Product: Free product reported in W-3 (with a maximum measurement of 0.38 feet) last measurable reported in 2002, MW-4 (up to 0.84 feet) last reported measurable thickness in December 2010. Sheen was reported in site wells in 2011.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1-3	15,000	Gasoline	Removed	July 1997
4-6	?	Gasoline	Active	-

Receptors

- GW Basin: Coastal Plain of Orange County.
- Beneficial Uses: Municipal and domestic Supply.
- Land Use Designation: Aerial photograph available on GeoTracker show the land use is mixed commercial and residential in the vicinity of the Site.
- Public Water System: Golden State Water Company.
- Water District: Metropolitan Water District of Southern California.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by CDPH within 1,000 feet of the defined plume. No other water supply wells were identified within 1,000 feet of the defined plume in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 1,000 feet of the defined plume.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded and intermixed gravel, sand, silt and clay.
- Maximum Sample Depth: 45 feet below ground surface (bgs).
- Minimum Groundwater Depth: 9.10 feet bgs at monitoring well MW-7.
- Maximum Groundwater Depth: 29.89 feet bgs at monitoring well MW-15.
- Current Average Depth to Groundwater: Approximately 12 feet bgs.
- Saturated Zones(s) Studied: Approximately 9 - 35 feet bgs.
- Groundwater Flow Direction: Southerly with an average gradient of 0.009 feet/foot (July 2012).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (07/27/2012)
W-1	March 1998	?-22	12.20
W-2	September 1998	?-15	11.88
W-3	September 1998	?-23	11.31
MW-1	August 1998	?-30	11.21
MW-2	August 1998	?-30	11.79
MW-3	October 1999	?-35	12.02
MW-4	October 1999	?-35	11.82
MW-5	October 1999	?-35	12.74
MW-6	October 1999	?-35	11.71
MW-7	October 1999	?-35	10.50
MW-8	November 2000	?-35	11.13
MW-9	November 2000	?-35	11.35
MW-10	November 2000	?-35	11.18
MW-11	August 2001	?-30	12.01
MW-12	March 2002	?-30	11.90
MW-13	March 2002	?-29	11.89
MW-14	October 2002	?-23	11.92
MW-15	June 2006	5-35	12.07
MW-16	October 2007	?-24	12.31
MW-17	March 2008	4-24	11.99

Remediation Summary

- Free Product: Free product reported in W-3 (with a maximum measurement of 0.38 feet) last measurable reported in 2002, MW-4 (up to 0.84 feet) last reported measurable thickness in December 2010. Sheen was reported in site wells in 2011.
- Soil Excavation: Approximately 793 tons of impacted soil were removed and disposed offsite in 1997.
- In-Situ Soil/Groundwater Remediation: Dual phase extraction was conducted between September 2002 and March 2007, which removed approximately 31,854 pounds of TPHg. Groundwater extraction continued through July 2012 and removed 7,731,385 gallons of contaminated groundwater.

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	<0.125 (08/24/1998)	1.3 (08/24/1998)
Ethylbenzene	<0.125 (08/24/1998)	9.3 (08/24/1998)
Naphthalene	<0.004 (10/17/2007)	<0.004 (10/17/2007)
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)
W-1	07/25/2012	1,420	11	<5	200	<10	<1	<10
W-2	07/25/2012	<50	<1	<5	<5	<10	<1	<10
W-3	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-1	07/25/2012	803	29	<5	<5	<10	2	<10
MW-2	07/25/2012	155	<1	<5	36	<10	<1	<10
MW-3	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-4	07/25/2012	8,630	250	<50	1,900	<10	<1	<100
MW-5	07/25/2012	199	<1	<5	<5	<10	<1	<10
MW-6	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-7	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-8	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-9	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-10	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-11	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-12	07/25/2012	1,140	57	<5	180	<10	7	<10
MW-13	07/25/2012	3,120	13	<25	640	32	<1	<50
MW-14	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-15	07/25/2012	3,070	11	<5	150	179	1.2	<10
MW-16	07/25/2012	<50	<1	<5	<5	<10	<1	<10
MW-17	07/25/2012	<50	<1	<5	<5	<10	<1	<10
WQO	-	-- ^a	1	150	300	1,750	5	1,200 ^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

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Regional Water Board, Basin Plan

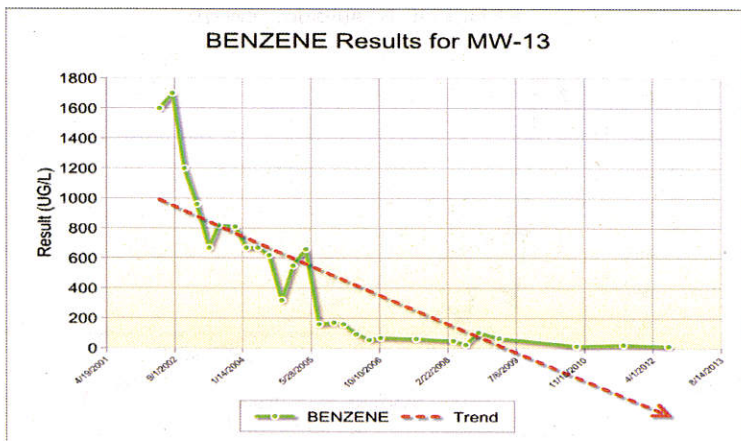
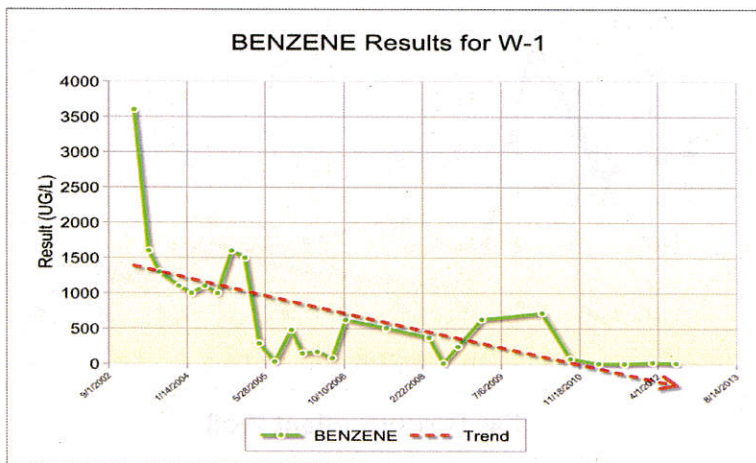
^a: The Regional Water Board basin Plan has no numeric value for TPHg

^b: California Department of Public Health, Response Level

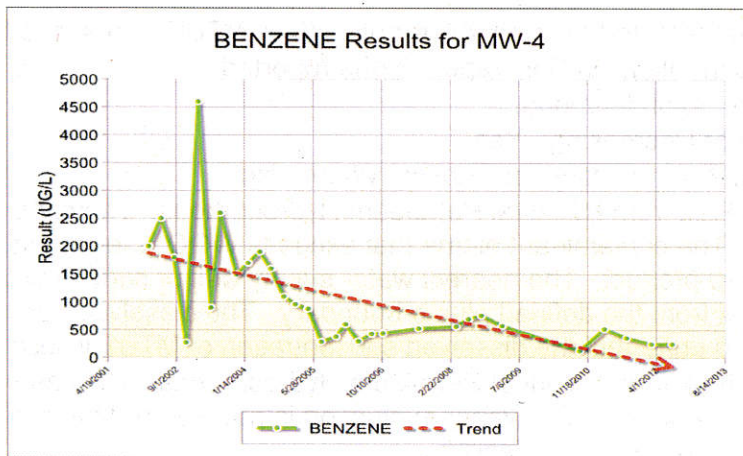
Groundwater Trends

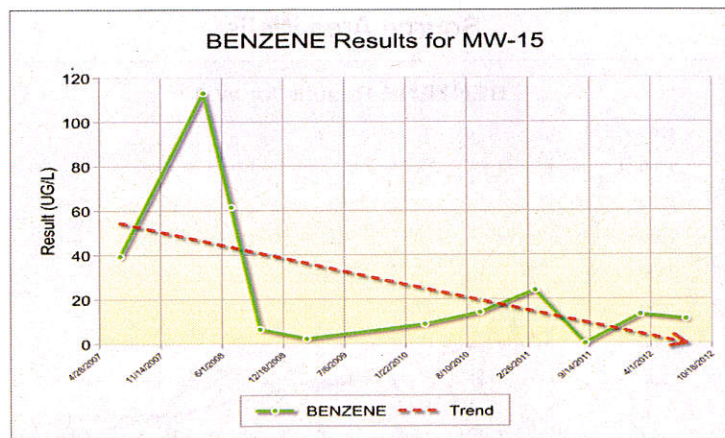
There are 14 years of regular groundwater monitoring data for this case. Benzene trends are shown below: Source Area (W-1 and MW-13), Near Downgradient (MW-4 and MW-15), and Far Downgradient (MW-10). The graphs demonstrate the plume is stable, decreasing and petroleum hydrocarbon constituents are generally onsite and near the source area.

Source Area Wells

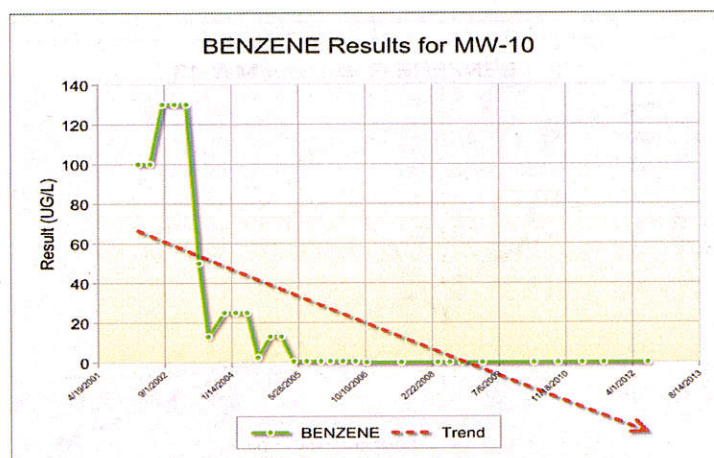


Near Downgradient Wells





Far 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: <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 WQO 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.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets the Policy Active Station Exclusion - Soil vapor evaluation is not required because Site is an active commercial petroleum fueling facility.
- Direct Contact Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Table 1 for Commercial/Industrial sites and the concentration limits for a Utility Worker are not exceeded.

