

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Orange County Environmental Health Department (County)	Address: 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705
Agency Caseworker: Shyamala Kalyanasundaram	Case No.: 87UT015

Case Information

USTCF Claim No.: 1807	Global ID: T0605900512
Site Name: Thrifty Oil #075	Site Address: 14121 Newport Boulevard Tustin, CA 92680
Responsible Party: Thrifty Oil Company Attn: Chris Panaitescu	Address: 13116 Imperial Highway Santa Fe Springs, CA 90670
USTCF Expenditures to Date: \$253,795	Number of Years Case Open: 26

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900512

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 December 1986 following the results of a preliminary site assessment. Four gasoline USTs were removed and replaced in July 1988. Soils excavated during the 1988 UST removal and during the 2001 tank sump and dispenser replacement were used as backfill and not removed from the Site. No free product was ever detected at the Site. From 1987 to 1993, ten monitoring wells were installed and regularly monitored to date. In 1992, a vapor extraction test performed on Site wells W-1 and W-7 removed 11 pounds of petroleum hydrocarbons from the soils of the vadose zone. On-site groundwater monitoring wells W-2, W-4, and MW-9 were over-purged, from April 2002 to November 2005, to reduce the concentrations of petroleum hydrocarbons in these wells. Approximately 6,146 gallons of contaminated groundwater were removed from these wells and disposed off-site. Currently, the only contaminant of concern is MTBE. The MTBE plume for this Site is currently defined, stable, and decreasing.

The petroleum release is limited to the shallow soil and groundwater. According to data available in GeoTracker, there are no public supply wells regulated by the California Department of Public Health (CDPH), or surface water bodies, within 250 feet of the defined plume. In addition, according to Orange County Water District Well Location Map, there are no production wells within 250 feet of the defined plume.

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 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 Specific Criteria – The case meets Policy Criterion 1 by Class 1. The contaminant plume that exceeds WQO is less than 100 feet in length. There is no free product and 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 the Policy Active Station Exclusion – Soil vapor evaluation is not required because the 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. 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 naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

Objections to Closure and Responses

The Orange County LOP case worker in the January 10, 2013, telephone communication with Fund staff indicated that the Agency believed that the Site is ready for closure but, closure is being delayed because:

- The LOP has learned recently that the Irvine Water District is planning to reactivate CDPH Wells 21 and 22 (both wells are currently shown on the GeoTracker Map as abandoned and located cross-gradient to the plume at about 900 feet and 1400 feet respectively). The LOP is therefore waiting for these two wells to go into production and then conducting one or more rounds of groundwater monitoring to ensure that water extraction from these wells does not cause the plume to migrate into the wells.
- **RESPONSE:** Regardless of whether Wells 21 and 22 are activated, this case meets Policy Criterion 1 by Class 1. The contaminant plume that exceeds WQO is less than 100 feet in length. There is no free product, and the nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.

Thrifty Oil # 075
14121 Newport Blvd, Tustin
Claim No: 1807

June 2013

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

6/5/13
Date

Prepared by: Mohammed Khan

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 checked="" type="checkbox"/> 1 <input 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? 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

- This case, known as Thrifty Oil #75, is located on the west corner of the intersection of Newport and Mitchell Avenue. It is an active retail gasoline station and convenience store operated by ARCO since May 1997 and by Tesoro since May 2012. The address of the case is 14121 Newport Avenue in Tustin.
- The Site is bounded by a commercial property to the southwest, parking lot to the northwest, Mitchell Avenue to the northeast and Newport Avenue to the southwest. About 100 feet southeast of the Site (Thrifty Oil #075) is the ARCO #1865 retail gasoline station on Newport Avenue (UST Claim # 3948). The area is generally a commercial area near Interstate 5 freeway.
- Site map showing the location of the current and former USTs, monitoring wells and groundwater level contours for Thrifty Oil #075 is provided at the end of this closure review summary (Thrifty Oil Co. 2012). A Site map for ARCO #1865 showing Well B-18 is also included at the end of the closure review summary (Stratus Environmental, Inc. 2011).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST System.
- Date reported: December 03, 1986.
- Status of Release: USTs removed.
- Free Product: None reported in GeoTracker.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/Removed/Active	Date
1	10,000	Gasoline	Removed	July 1988
2	10,000	Gasoline	Removed	July 1988
3	12,000	Gasoline	Removed	July 1988
4	12,000	Gasoline	Removed	July 1988
5	10,000	Gasoline	Active	--
6	10,000	Gasoline	Active	--
7	10,000	Gasoline	Active	--

Receptors

- GW Basin: Coastal Plain of Orange County.
- Beneficial Uses: Municipal and Domestic Supply according to GeoTracker.
- Land Use Designation: Commercial according to Geotracker.
- Public Water System: Metropolitan Water District of Southern California and City of Tustin's, Water Operations Division supplies the water to users in the vicinity of the Site.
- Distance to Nearest Supply Well: According to data available in GeoTracker there are no active public supply wells regulated by CDPH within 250 feet of the defined plume. In addition, according to Orange County Water District Well Location Map, there are no active production wells within 250 feet of the defined plume. No other supply wells were identified within 250 feet of the defined plume in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 250 feet of the defined plume.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by silt and silty clay interbedded with layers of silty sand with occasional lenses of gravel.
- Maximum Sample Depth: 72 feet below ground surface (bgs).
- Minimum Groundwater Depth: 42.00 feet bgs at monitoring well MW-9 and MW-10.
- Maximum Groundwater Depth: 53.54 feet bgs at monitoring well MW-11.
- Current Average Depth to Groundwater: 47 feet bgs.
- Saturated Zones(s) Studied: Approximately 40 - 70 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: South to south southeast with an average gradient of 0.001 feet/foot (ft/ft).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (09/25/12)
W-1	October 1987	45 – 65	47.01
W-2	October 1988	41 – 71	47.14
W-3	September 1988	45 – 70	47.49
W-4	August 1991	40 – 70	47.39
W-5	August 1991	40 – 70	46.80
W-6	August 1991	40 – 70	46.84
W-7	August 1991	5 – 35	NS
MW-9	June 1993	45 – 70	46.38
MW-10	June 1993	43 – 68	46.35
MW-11	June 1993	45 – 70	48.36

NS: Not Sampled

Remedial Summary

- Free Product: None reported in GeoTracker.
- Soil Excavation: Soils excavated during the 1988 UST removal and during the 2001 tank sump and dispenser replacement were used as backfill.
- In-Situ Soil Remediation: In 1992 a vapor extraction test performed on Site wells W-1 and W-7 removed 11 pounds of petroleum hydrocarbons from the vadose zone soils during that test.
- Groundwater Remediation: On-site groundwater monitoring wells W-2, W-4, and MW-9 were over-purged, from April 2002 to November 2005, to reduce the concentrations of petroleum hydrocarbons in these wells. Approximately 6,146 gallons of contaminated groundwater were removed from these wells and disposed off-site.

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	<0.00032 (01/16/07)	<0.00032 (01/15/07)
Ethylbenzene	<0.00032 (01/16/07)	<0.00032 (01/15/07)
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	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
W-1	9/25/12	<50	<1	<5	<5	<5	<1	<10
W-2	9/25/12	<50	<1	<5	<5	<5	<1	<10
W-3	9/25/12	<50	<1	<5	<5	<5	<1	<10
W-4	9/25/12	<50	<1	<5	<5	<5	<1	<10
W-5	9/25/12	<50	<1	<5	<5	<5	<1	<10
W-6	9/25/12	<50	<1	<5	<5	<5	5.7	<10
MW-9	9/25/12	<50	<1	<5	<5	<5	<1	<10
MW-10	9/25/12	<50	<1	<5	<5	<5	18	<10
MW-11	9/25/12	<50	<1	<5	<5	<5	<1	<10
ARCO B-18 ^a	10/24/12	<50	<2	<2	<2	<4	<5	<50
WQOs		-- ^b	1	150	300	1,750	5	1,200^c

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, Santa Ana Regional Water Board Basin Plan

^a: ARCO Well B-18 is located about 80 feet down gradient, in a southerly direction from the off-site Thrifty Well MW-10.

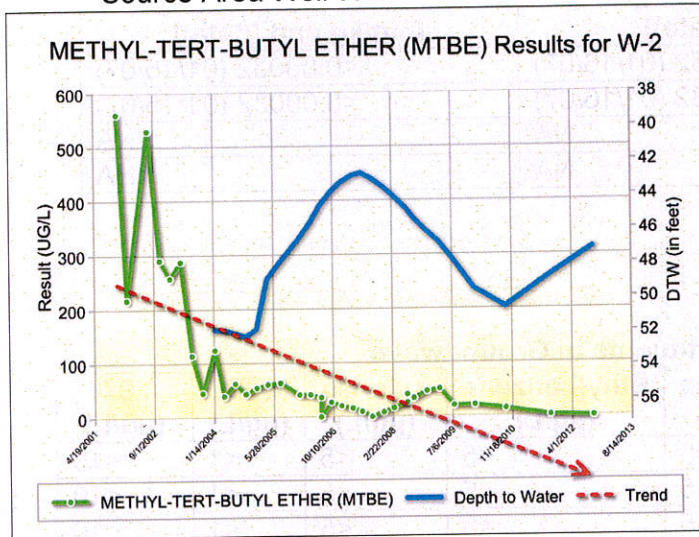
^b: The Santa Ana Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg.

^c: California Department of Public Health, Response Level

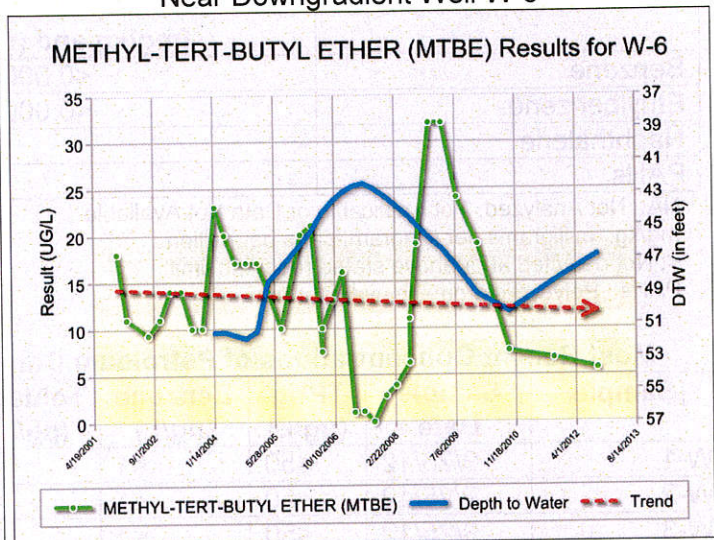
Groundwater Trends

- Since 1987 groundwater has been regularly monitored at this Site. Currently, the only contaminant of concern is MTBE. The MTBE plume for this Site is currently defined, stable, and decreasing. In order to define the plume for this Site, MTBE data from monitoring well B-18, belonging to the ARCO # 1865 station is used. ARCO # 1865 station is located 80 feet downgradient from Thrifty # 075 station.

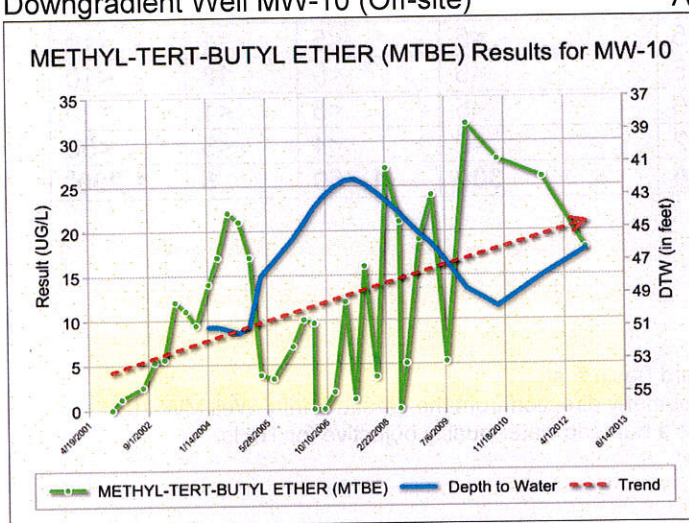
Source Area Well W-2



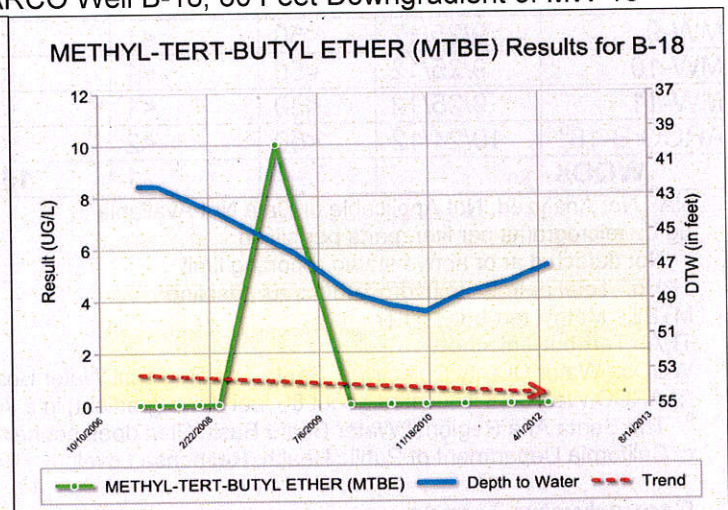
Near Downgradient Well W-6



Downgradient Well MW-10 (Off-site)



ARCO Well B-18, 80 Feet Downgradient of MW-10



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tertiary-butyl ether (MTBE): Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <100 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 1. The plume that exceeds WQO is less than 100 feet in length. There is no free product and 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 the Policy Active Station Exclusion – Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility. Nevertheless, the results for soil vapor samples collected on May 30, 2008 at the Site were reported as non-detect (i.e. less than 0.02 µg/L) for all analytes. Risk assessment results for vapor intrusion, using the Department of Toxic Substances Control SG-ADVANCED risk model, indicated cancer risk and non-cancer hazard were well below the accepted standards of 1.0×10^{-6} and 1.0 respectively.
- 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 case, and the concentration limits for a Utility Worker are not exceeded. 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 naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

