

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Orange County Health Care Agency (County)	Address: 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705
Agency Caseworker: Tamera Escobedo	Case No.: 91UT109

Case Information

USTCF Claim No.: 341	GeoTracker Global ID: T0605901363
Site Name: Rapid Gas Station #25	Site Address: 601 West Imperial Highway La Habra, CA 90631
Responsible Party: United Oil Company Attn: Jeff Appel	Address: 17311 South Main Street Gardena, CA 90248
USTCF Expenditures to Date: \$1,437,376	Number of Years Case Open: 21

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901363

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 in La Habra. An unauthorized release was reported in October 1991. High vacuum dual phase extraction was conducted intermittently between July 2008 and September 2011 for a total of 12,145 hours, which removed 2,215 pounds of total petroleum hydrocarbons as gasoline (TPHg) and 831,400 gallons of contaminated groundwater. Since 1991, twenty-six groundwater monitoring wells have been installed and monitored. According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents.

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 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. The nearest surface water body is the Coyote Creek Flood Control Channel which is a concrete lined channel located approximately 100 feet south (downgradient) of the defined plume boundary. Water is provided to water users near the Site by the City of La Habra. 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 and 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 Specific Criteria: The case meets Policy Criterion 1 by Class 5. The regulatory agency determines, based on an analysis of site specific conditions, which under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. There is no free product. The nearest water supply well is greater than 250 feet from the defined plume boundary. The Coyote Creek Flood Control Channel, a concrete lined channel is present approximately 100 feet south (downgradient) of the define plume boundary. Very low concentrations of residual constituents remain localized on site in the source area and groundwater beneath the Site has nearly reached water quality objectives which do not threaten the concrete lined channel.
- Vapor Intrusion to Indoor Air: 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 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. 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

An email from the County dated April 18, 2013, believes this case is ready 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.

Rapid Gas Station #25
601 West Imperial Highway, La Habra
Claim No: 341

August 2013

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

8/16/13

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.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><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>

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 a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</p> <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 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 type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" 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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</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>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><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 an active commercial petroleum fueling facility and car wash and is bounded by residences across Del Sur Avenue to the west, an apartment complex to the north, a parking lot across South Walnut Street to the east, and a soccer field across Imperial Highway to the south.
- A site map showing the location of the USTs, monitoring wells and groundwater level contours is provided at the end of this closure review summary (Frey Environmental, 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: October 1991.
- Status of Release: UST system replaced.
- Free Product: None reported.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	10,000	Diesel	Removed	November 1991
2-5	10,000	Gasoline	Removed	November 1991
6-8	12,000	Gasoline	Active	-
9	12,000	Diesel	Active	-

Receptors

- GW Basin: Coastal Plain of Orange County.
- Beneficial Uses: The Santa Ana Regional Water Quality Control Board (Regional Water Board) Basin Plan lists municipal and domestic supply.
- Land Use Designation: Commercial.
- Public Water System: City of La Habra.
- Water District: Suburban Water District of Southern California.
- 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 250 feet of the defined plume boundary. No other water supply wells were identified within 250 feet of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: A concrete lined channel, the Coyote Creek Flood Control Channel, is located approximately 100 feet south (downgradient) of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded and intermixed sand, silt, and clay.
- Maximum Sample Depth: 60 feet below ground surface (bgs).
- Minimum Groundwater Depth: 1.88 feet bgs at monitoring well GRI-12.
- Maximum Groundwater Depth: 15.48 feet bgs at monitoring well GRI-5.
- Current Average Depth to Groundwater: Approximately 7 feet bgs.
- Saturated Zones(s) Studied: Approximately 2 - 60 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Predominantly south.

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (03/28/12)
MW-7	1991	5-20	6.85
MW-8	1991	5-20	5.31
GRI-1	2002	9-24	8.26
GRI-2	1992	5-17	5.18
GRI-3	1992	5-15	4.38
GRI-4	1992	5-20	3.20
GRI-5	1992	2-18	13.71
GRI-6	1992	5-20	12.86
GRI-7	1992	5-20	12.01
GRI-9	1992	5-12	5.48
GRI-10	1992	5-20	12.02
GRI-12	1992	1-8	4.25
FW-1	2000	5-20	4.00
FW-2	2002	5-20	8.10
FW-3	2004	35-40	13.01
FW-4	2004	55-60	11.38
ASW-1	2005	24-25	3.85
DPEW-1	2006	10-20	4.02
DPEW-2	2007	10-20	4.40
DPEW-3	2007	10-20	5.75
DPEW-4	2007	10-20	5.20
DPEW-5	2007	10-20	4.90
DPEW-6	2007	10-20	3.80
DPEW-7	2007	10-20	6.65
DPEW-8	2007	10-20	6.71
DPEW-9	2007	10-20	7.22

Remediation Summary

- Free Product: No free product was documented in GeoTracker.
- Soil Excavation: Unknown.
- In-Situ Soil/Groundwater Remediation: High vacuum dual phase extraction was conducted intermittently between July 2008 and September 2011 for a total of 12,145 hours, which removed 2,215 pounds of TPHg and 831,400 gallons of contaminated groundwater. In September 2011, the removal rate was 0.12 pounds of TPHg per day.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg (date)]	Maximum 5-10 feet bgs [mg/kg (date)]
Benzene	2 (10/12/92)	8.9 (10/17/91)
Ethylbenzene	2.4 (10/12/92)	21 (10/17/91)
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

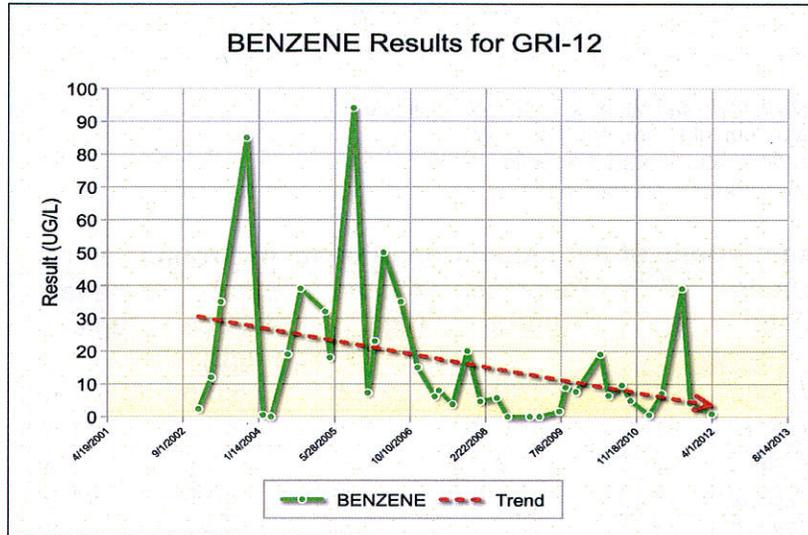
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-7	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	36
MW-8	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	19
GRI-1	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
GRI-2	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
GRI-3	03/28/12	<100	0.54	0.58	0.63	5.7	<2	<10
GRI-4	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
GRI-5	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
GRI-6	03/28/12	<100	1	1.4	0.62	5.5	<2	<10
GRI-7	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
GRI-9	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
GRI-10	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
GRI-12	03/28/12	280	0.91	1.1	1.5	11	8.1	920
FW-1	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
FW-2	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
FW-3	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
FW-4	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
ASW-1	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
DPEW-1	03/28/12	<100	<0.5	<0.5	<0.5	1.65	<2	<10
DPEW-2	03/28/12	820	<0.5	<0.5	<0.5	<1.5	<2	<10
DPEW-3	03/28/12	600	0.98	<0.5	1.4	5.7	<2	<10
DPEW-4	03/28/12	<100	<0.5	<0.5	<0.5	<1.5	<2	<10
DPEW-5	03/28/12	720	0.71	1.0	1.2	10.5	<2	<10
DPEW-6	03/28/12	250	<0.5	<0.5	<0.5	<1.0	<2	<10
DPEW-7	03/28/12	<100	<0.5	<0.5	<0.5	3	<2	13
DPEW-8	03/28/12	<100	<0.5	<0.5	<0.5	1.73	2.5	16
DPEW-9	03/28/12	<100	<0.5	0.52	0.64	5.7	<2	<10
WQOs		--	1	150	300	1,750	5^a	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, Santa Ana Regional Water Quality Control Board (Regional Water Board)
 --: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg
^a: Secondary maximum contaminant level (MCL) ^b: California Department of Public Health, Response Level

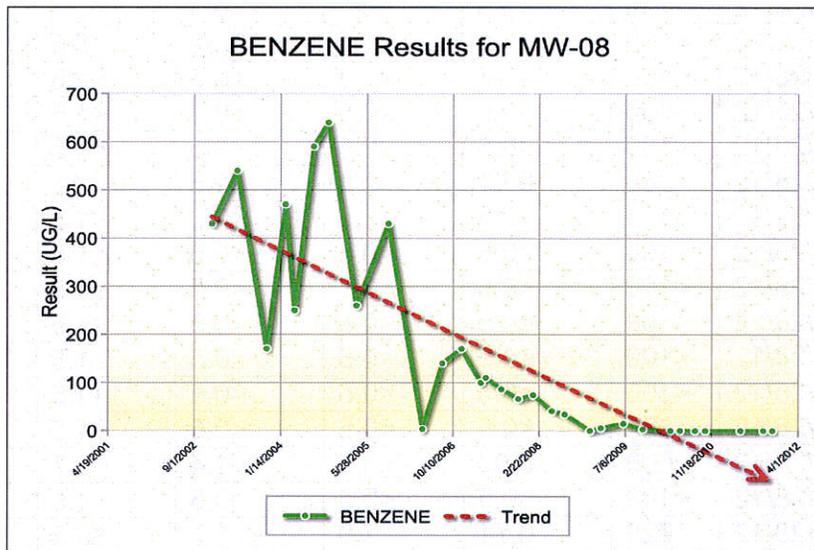
Groundwater Trends

- There are 22 years of groundwater monitoring data for this case. Benzene trends are shown below: Source Area (GRI-12) and Downgradient (MW-8).

Source Area



Downgradient



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.
- 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 5. The regulatory agency determines, based on an analysis of site specific conditions, which under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. There is no free product. The nearest water supply well is greater than 250 feet from the defined plume boundary. The Coyote Creek Flood Control Channel, a concrete lined channel is present approximately 100 feet south (downgradient) of the defined plume boundary. Very low concentrations of residual constituents remain localized on site in the source area and groundwater beneath the Site has nearly reached water quality objectives which do not threaten the concrete lined channel.
- 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 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. 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.

