

State Water Resources Control Board

September 2013

Brian Newman
Central Valley Regional Water Quality Control
Board (Regional Water Board)
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

PRELIMINARY REVIEW SUMMARY REPORT FOR CLAIM NUMBER 1066; FORMER TEXACO SITE, 712 G STREET, DAVIS, CA

The UST Cleanup Fund (Fund) has completed our review of Regional Water Board case number 570114. The Review Summary Report for this case is enclosed for your information and comment. Please note that the Fund's recommendations are based on review of information contained in the Fund's case files, data currently in the Geotracker database and any other sources of information that were readily available to Fund staff at the time the review was conducted. Consequently, they may not reflect historical information that has not been uploaded to the Geotracker database or available in the Fund's case files and any data that has been recently submitted to your office.

The Fund requests that the Regional Water Board staff notify the Fund within 45 days from the date of this letter as to whether you agree or disagree with our recommendations for this case. If you agree with our recommendation, we request that you provide the Fund with an estimated timeframe to either implement the recommendations for additional corrective action or for closing this case. If you do not agree with our recommendations, we request that you provide the Fund with a summary of the reasons for disagreeing and/or impediments to implementing the recommendations for additional corrective action or closing this case. Responses to the Fund may be provided by e-mail, letter or a copy of correspondence to the RP, if the correspondence addresses all the information requested by the Fund.

Fund staff will be sending copies of all completed Review Summary Reports to claimants 45 days from the date of this letter unless the Regional Board notifies the Fund that they wish to discuss this case prior to transmittal to the claimant. If you or your staff has any questions or concerns on specific reports that you would like to discuss with the Fund prior to transmittal of the report to the claimant, please contact us within this period. The Fund reviewer name and telephone number are included on the last page of the summary Report.

Sincerely,



Robert Trommer
Senior Engineering Geologist
Chief, Technical Review Unit
Underground Storage Tank Cleanup Fund

Encl.: Claim 1066 – Preliminary Review
cc: David Stavarek, Regional Water Board, Rancho Cordova



State Water Resources Control Board

REVIEW SUMMARY REPORT – ADDITIONAL WORK PRELIMINARY REVIEW – SEPTEMBER 2013

Agency Information

Agency Name: Central Valley Regional Water Quality Control Board (Regional Water Board)	Address: 11010 Sun Center Drive, #200 Rancho Cordova, CA 95670
Agency Caseworker: David Stavarek	Case No.: 570114

Case Information

USTCF Claim No.: 1066	GeoTracker Global ID: T0611300083
Site Name: Former Texaco Site	Site Address: 712 G Street Davis, CA 95616
Responsible Party: John Whitcombe	Address: 1801 I Street, Suite 220 Sacramento, CA 95814
USTCF Expenditures to Date: \$1,080,364	Number of Years Case Open: 23

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0611300083

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 a former commercial petroleum fueling facility and is now an empty lot. An unauthorized release was reported in May 1990 following the removal of four USTs (three gasoline and one waste oil). An unknown volume of impacted soil was excavated in 1983 and in addition, 848 tons of impacted soil were excavated and disposed offsite in 2011. The excavation continued to a depth of 40 feet. Dual phase extraction was conducted between December 2004 and January 2005, which reportedly removed approximately 168 pounds of TPHg and 54,670 gallons of contaminated groundwater. In-situ chemical oxidation was conducted between April 2009 and May 2009. Since 1990, 18 groundwater monitoring wells have been installed and monitored. According to groundwater data, water quality objectives have not been achieved in the source area.

The petroleum release is limited to the soil and shallow groundwater. According to data available in GeoTracker, there is one supply well regulated by the California Department of Public Health 950 feet southwest (crossgradient) of the defined plume boundary. There are no 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 City of Davis. 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. There is one supply well regulated by the California Department of Public Health 950 feet southeast (crossgradient) of the defined plume boundary. The nearest surface water body is greater than 1,000 feet from the defined plume boundary. The contaminant plume that exceeds water quality objectives is approximately 100 feet in length. There is no free product. 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.
- **Vapor Intrusion to Indoor Air:** The case meets Policy Criterion 2a by Scenario 2. There are high concentrations of petroleum hydrocarbons in soil and groundwater. The minimum distance between the high concentrations and all existing or potential buildings is greater than 30 feet, and the intervening soil contains less than 100 mg/kg of TPH.
- **Direct Contact and Outdoor Air Exposure:** 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. Reportedly, 848 tons of impacted soil were excavated to a total depth of 40 feet and disposed offsite in 2011.

Objections to Closure and Responses

The Regional Water Board, according to the Path to Closure page in GeoTracker, opposes closure because:

- **Secondary source remains.**
RESPONSE: Secondary source was removed by excavation and active remediation.
- **The case does not meet Policy groundwater criteria.**
RESPONSE: The case meets Policy Criterion 1 by Class 5.
- **The case does not meet Policy vapor criteria.**
RESPONSE: The case meets Policy Criterion 2a by Scenario 2.
- **The case does not meet Policy direct contact criteria.**
RESPONSE: This case meets Policy Criterion 3b.

Determination

The Fund Manager has notified the tank owners or operators and reviewed the case history of their tank case. The Fund Manager determines that closure of the tank case is appropriate based upon that review. The Fund Manager has prepared this review summary report summarizing the reasons for this determination, provided the Review Summary Report to the applicable regional board and local agency, as appropriate, with an opportunity for comment on the Review Summary Report.

Recommendation

The Fund staff recommends the following actions be completed in an effort to move the case to closure.

- Complete one additional round of groundwater sampling for all monitoring wells to establish current groundwater conditions.
- Evaluate the case for closure using the Policy.



Kirk Larson, P.G. 9/18/13
Engineering Geologist Date
Technical Review Unit
(916) 341-5663



Robert Trommer, C.H.G. 9/18/13
Senior Engineering Geologist Date
Chief, Technical Review Unit
(916) 341-5684

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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 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>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 checked="" type="checkbox"/> 2 <input 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. 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 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

- This case is an empty lot and is bounded by residences across G Street to the west, residences across Sweat Briar Drive to the north, railroad tracks to the east, and businesses to the south.
- A Site map showing the location of the former USTs, monitoring wells, and historic groundwater gradients is provided at the end of this review summary (CRA, 2011).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: May 1990.
- Status of Release: USTs removed.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1,2	10,000	Gasoline	Removed	1983
3	7,500	Gasoline	Removed	1983
4	280	Waste Oil	Removed	1983

Receptors

- GW Basin: Sacramento Valley – Yolo.
- Beneficial Uses: Regional Water Board Basin Plan lists agricultural, municipal, domestic, industrial service and process supply.
- Land Use Designation: Aerial photograph available on GeoTracker indicates mixed residential and commercial land use in the vicinity of the Site.
- Public Water System: City of Davis.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there is one supply well regulated by the California Department of Public Health 950 feet southwest (crossgradient) 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: The Site is underlain by interbedded and intermixed sand, silt, and clay.
- Maximum Sample Depth: 75 feet below ground surface (bgs).
- Minimum Groundwater Depth: 9.31 feet bgs at monitoring well MW-9.
- Maximum Groundwater Depth: 40.24 feet bgs at monitoring well MW-12.
- Current Average Depth to Groundwater: Approximately 22 feet bgs.
- Saturated Zones(s) Studied: Approximately 9-75 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: South (April 2011).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (04/15/11)
MW-1	February 1990	24-25	22.13
MW-2D	September 2003	65-75	22.18
MW-3	February 1990	25-75	22.41
MW-3D	June 2008	67-75	22.53
MW-4	August 1990	35-50	20.65
MW-5	August 1990	35-50	21.60
MW-6	August 1990	35-50	22.71
MW-7	August 1990	28-48	22.24
MW-8	August 1990	30-50	22.35
MW-9	June 1994	32-48	NM
MW-10	July 1998	18-45	22.07
MW-11	July 1998	18-45	22.20
MW-12	September 2003	65-75	22.83
MW-13	June 2008	15-35	22.50
MW-14	June 2008	15-35	22.28
MW-14D	June 2008	65-75	22.14
DPE-1S	September 2003	Destroyed 2011	NA
DPE-2S	November 2003	17-40	22.81

NM: Not measured

Remediation Summary

- Free Product: Noted in MW-2 (up to 0.60 feet). Not noted since 1998.
- Soil Excavation: Unknown volume of impacted soil was excavated and disposed offsite in 1983. In addition, 848 tons of impacted soil were excavated and disposed offsite in 2011. The excavated continued to a depth of 40 feet.
- In-Situ Soil/Groundwater Remediation: Dual phase extraction was conducted between December 2004 and January 2005, which reportedly removed approximately 168 pounds of TPHg and 54,670 gallons of contaminated groundwater. In-situ chemical oxidation was conducted between April 2009 and May 2009.

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	NA	<0.005, (07/06/98)
Ethylbenzene	NA	<0.005, (07/06/98)
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

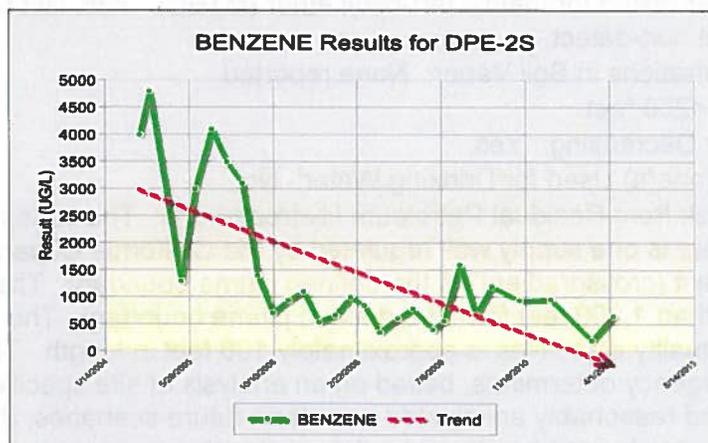
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)
MW-1	04/15/11	99	<1	<1	<1	<1
MW-2D	04/15/11	<100	<1	<1	<1	<1
MW-3	04/15/11	<100	<1	<1	<1	<1
MW-3D	04/15/11	<100	<1	<1	<1	<1
MW-4	04/15/11	<100	<1	<1	<1	<1
MW-5	10/11/10	<50	<0.5	<0.5	<0.5	<1
MW-6	04/15/11	3,200	590	1	250	54
MW-7	10/11/10	<50	<0.5	<0.5	<0.5	<1
MW-8	10/11/10	<50	<0.5	<0.5	<0.5	<1
MW-9	10/11/10	<50	<0.5	<0.5	<0.5	<1
MW-10	10/11/10	<50	<0.5	<0.5	<0.5	<1
MW-11	10/11/10	<50	<0.5	<0.5	<0.5	<1
MW-12	04/15/11	<100	<1	<1	<1	<1
MW-13	04/15/11	3,500	930	<2	70	14
MW-14	04/30/12	8,200	2,800	<10	460	180
MW-14D	01/25/10	<50	<0.5	<0.5	<0.5	<1
DPE-2S	04/30/12	5,800	650	<5	220	31
WQO	-	5	0.15	42	29	17

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
 WQOs: Water Quality Objectives, Regional Water Board Basin Plan

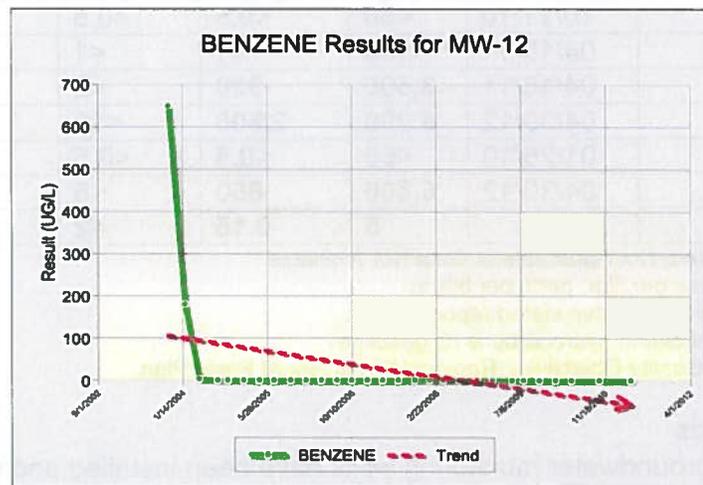
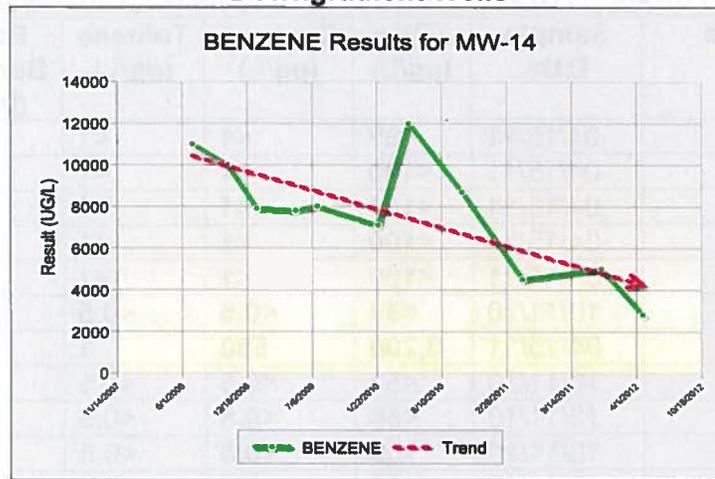
Groundwater Trends

- Since 1990, 18 groundwater monitoring wells have been installed and monitored. Benzene trends are shown below: Source Area (DPE-2S), Near Downgradient (MW-14), and Far Downgradient (MW-12).

Source Area Well



Downgradient Wells



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, last tested in 01/25/10, all wells reported at non-detect.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <250 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. There is one supply well regulated by the California Department of Public Health 950 feet southeast (crossgradient) of the defined plume boundary. The nearest surface water body is greater than 1,000 feet from the defined plume boundary. The contaminant plume that exceeds water quality objectives is approximately 100 feet in length. There is no free product. 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.

- **Indoor Vapor Risk from Residual Petroleum Hydrocarbons:** The case meets Policy Criterion 2a by Scenario 2. There are high concentrations of petroleum hydrocarbons in soil and groundwater. The minimum distance between the high concentrations and all existing or potential buildings is greater than 30 feet, and the intervening soil contains less than 100 mg/kg of TPH.
- **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 exposure to site soils is prevented. Reportedly, 848 tons of impacted soil were excavated to a total depth of 40 feet and disposed offsite in 2011.

