

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

ORDER WQ 2013-0102-UST

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**In the Matter of Underground Storage Tank Case Closure  
Pursuant to Health and Safety Code Section 25296.40 and the  
Low-Threat Underground Storage Tank Case Closure Policy**

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**BY THE EXECUTIVE DIRECTOR:<sup>1</sup>**

By this order, the Executive Director directs closure of the underground storage tank (UST) case at the site listed below, pursuant to subdivision (a) of section 25296.40 of the Health and Safety Code.<sup>2</sup> The name of the Petitioner, the site name, the site address, the Underground Storage Tank Cleanup Fund (Fund) claim number if applicable, the lead agency, and case number are as follows:

**Mr. Steve Lopes, Western States Oil  
Spartan Gas  
444 East Taylor Street, San Jose, California  
Fund Claim No. 14203  
County of Santa Clara, Case No. 07S1E05F03f**

**I. STATUTORY AND PROCEDURAL BACKGROUND**

Upon receipt of a petition from a UST owner, operator, or other responsible party, section 25296.40 authorizes the State Water Resources Control Board (State Water Board) to close or require closure of a UST case where an unauthorized release has occurred, if the State Water Board determines that corrective action at the site is in compliance with all of the requirements of subdivisions (a) and (b) of section 25296.10. The State Water Board, or in certain cases the State Water Board Executive Director, may close a case or require the closure

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<sup>1</sup> State Water Board Resolution No. 2012-0061 delegates to the Executive Director the authority to close or require the closure of any UST case if the case meets the criteria found in the State Water Board's Low-Threat Underground Storage Tank Case Closure Policy adopted by State Water Board Resolution No. 2012-0016.

<sup>2</sup> Unless otherwise noted, all references are to the California Health and Safety Code.

of a UST case. Closure of a UST case is appropriate where the corrective action ensures the protection of human health, safety, and the environment and where the corrective action is consistent with: 1) Chapter 6.7 of division 20 of the Health and Safety Code and implementing regulations; 2) Any applicable waste discharge requirements or other orders issued pursuant to division 7 of the Water Code; 3) All applicable state policies for water quality control; and 4) All applicable water quality control plans.

State Water Board staff has completed a review of the UST case identified above, and recommends that this case be closed. The recommendation is based upon the facts and circumstances of this particular UST case. A UST Case Closure Summary has been prepared for the case identified above and the basis for determining compliance with the Water Quality Control Policy for Low-Threat Underground Storage Tank Case Closures (Low-Threat Closure Policy or Policy) are explained in the Case Closure Summary.

### **Low-Threat Closure Policy**

In State Water Board Resolution No. 2012-0016, the State Water Board adopted the Low-Threat Closure Policy. The Policy became effective on August 17, 2012. The Policy establishes consistent statewide case closure criteria for certain low-threat petroleum UST sites. In the absence of unique attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents, cases that meet the general and media-specific criteria in the Low-Threat Closure Policy pose a low-threat to human health, safety, and the environment and are appropriate for closure under Health and Safety Code section 25296.10. The Policy provides that if a regulatory agency determines that a case meets the general and media-specific criteria of the Policy, then the regulatory agency shall notify responsible parties and other specified interested persons that the case is eligible for case closure. Unless the regulatory agency revises its determination based on comments received on the proposed case closure, the Policy provides that the agency shall issue a uniform closure letter as specified in Health and Safety Code section 25296.10. The uniform closure letter may only be issued after the expiration of the 60-day comment period, proper destruction or maintenance of monitoring wells or borings, and removal of waste associated with investigation and remediation of the site.

Health and Safety Code section 25299.57, subdivision (l)(1) provides that claims for reimbursement of corrective action costs that are received by the Fund more than 365 days after the date of a uniform closure letter or a letter of commitment, whichever occurs later, shall not be reimbursed unless specified conditions are satisfied.

## II. FINDINGS

Based upon the UST Case Closure Summary prepared for the case attached hereto, the State Water Board finds that corrective action taken to address the unauthorized release of petroleum at the UST release site identified as:

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444 East Taylor Street, San Jose, California  
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ensures protection of human health, safety, and the environment and is consistent with Chapter 6.7 of division 20 of the Health and Safety Code, and implementing regulations, the Low-Threat Closure Policy and other water quality control policies and applicable water quality control plans.

Pursuant to the Low-Threat Closure Policy, notification has been provided to all entities that are required to receive notice of the proposed case closure, a 60-day comment period has been provided to notified parties, and any comments received have been considered by the State Water Board in determining that the case should be closed.

Pursuant to section 21080.5 of the Public Resources Code, environmental impacts associated with the adoption of this Order were analyzed in the substitute environmental document (SED) the State Water Board approved on May 1, 2012. The SED concludes that all environmental effects of adopting and implementing the Low Threat Closure Policy are less than significant, and environmental impacts as a result of complying with the Policy are no different from the impacts that are reasonably foreseen as a result of the Policy itself. A Notice of Decision was filed August 17, 2012. No new environmental impacts or any additional reasonably foreseeable impacts beyond those that were addressed in the SED will result from adopting this Order.

The UST case identified above may be the subject of orders issued by the Regional Water Quality Control Water Board (Regional Water Board) pursuant to division 7 of the Water Code. Any orders that have been issued by the Regional Water Board pursuant to division 7 of the Water Code, or directives issued by a Local Oversight Program (LOP) agency for this case should be rescinded to the extent they are inconsistent with this Order

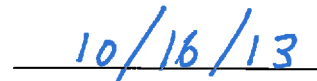
### III. ORDER

**IT IS THEREFORE ORDERED** that:

- A. The UST case identified in Section II of this Order, meeting the general and media-specific criteria established in the Low-Threat Closure Policy, be closed in accordance with the following conditions and after the following actions are complete. Prior to the issuance of a closure letter, the Petitioner is ordered to:
1. Properly destroy monitoring wells and borings unless the owner of real property on which the well or boring is located certifies that the wells or borings will be maintained in accordance with local or state requirements;
  2. Properly remove from the site and manage all waste piles, drums, debris, and other investigation and remediation derived materials in accordance with local or state requirements; and
  3. Within six months of the date of this Order, submit documentation to the regulatory agency overseeing the UST case identified in Section II of this Order that the tasks in subparagraphs (1) and (2) have been completed.
- B. The tasks in subparagraphs (1) and (2) of Paragraph (A) are ordered pursuant to Health and Safety Code section 25296.10 and failure to comply with these requirements may result in the imposition of civil penalties pursuant to Health and Safety Code section 25299, subdivision (d)(1). Penalties may be imposed administratively by the State Water Board or Regional Water Board.
- C. Within 30 days of receipt of proper documentation from the Petitioner that requirements in subparagraphs (1) and (2) of Paragraph (A) are complete, the regulatory agency that is responsible for oversight of the UST case identified in Section II of this Order shall notify the State Water Board that the tasks have been satisfactorily completed.

- D. Within 30 days of notification from the regulatory agency that the tasks are complete pursuant to Paragraph (C), the Deputy Director of the Division of Water Quality shall issue a uniform closure letter consistent with Health and Safety Code section 25296.10, subdivision (g) and upload the uniform closure letter and UST Case Closure Summary to GeoTracker.
- E. Pursuant to section 25299.57, subdivision (l) (1), and except in specified circumstances, all claims for reimbursement of corrective action costs must be received by the Fund within 365 days of issuance of the uniform closure letter in order for the costs to be considered.
- F. Any Regional Water Board or LOP agency directive or order that directs corrective action or other action inconsistent with case closure for the UST case identified in Section II is rescinded, but only to the extent the Regional Water Board order or LOP agency directive is inconsistent with this Order.

  
Executive Director

  
Date



State Water Resources Control Board

UST CASE CLOSURE SUMMARY

Agency Information

Table with 2 columns: Agency Name, Address, Agency Caseworker, Case No.

Case Information

Table with 2 columns: USTCF Claim No., Site Name, Petitioner, USTCF Expenditures to Date, Global ID, Site Address, Address, Number of Years Case Open.

URL: http://geotracker.waterboards.ca.gov/profile\_report.asp?global\_id=T0608502375

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 Low-Threat 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 Site Information. Highlights of the Conceptual Site Model of the Case are as follows:

The release at the Site was discovered when thirteen underground storage tanks (UST) were removed in 1998 and 1999 and replaced with three USTs. During the UST removals and over-excavation activities, approximately 2,080 cubic yards of soil, 28 gallons of free product, and 40,000 gallons of impacted groundwater were removed from the excavations, and processed for disposal. During 2005 and 2006 a dual phase extraction (DPE) system removed approximately 346 pounds of total petroleum hydrocarbons as gasoline (TPHg), 6 pounds of benzene, and 3 pounds of methyl tert-butyl ether (MTBE). The system was shut down because contaminant levels decreased to below cleanup goals. A Tier 2 Risk-Based Corrective Action (RBCA) closure evaluation was completed in 2008. The report concluded that residual petroleum contaminant concentrations in soil and groundwater at the Site pose no significant risk to human health and the environment.

The petroleum release is limited to the shallow soil and groundwater. The nearest public supply well regulated by the California Department of Public Health is located approximately 2,900 feet southwest (generally downgradient) of the Site. Water is provided to water users near the Site by the San Jose Water Company.

FELICIA M. ARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

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Spartan Gas  
444 East Taylor Street, San Jose

The affected groundwater is not currently being used as a source of drinking water or for any other designated beneficial use, and it is highly unlikely that the affected groundwater will be used as a source of drinking water or for any other beneficial use in the foreseeable future. Public supply wells are usually constructed with competent sanitary seals and intake screens that are in deeper more protected aquifers. Remaining petroleum constituents are limited, stable and declining. Remedial actions have been implemented and further remediation would be ineffective and expensive. Additional assessment/monitoring will not likely change the conceptual model. Any remaining petroleum constituents do not pose significant risk to human health, safety or the environment.

#### Rationale for Closure under the Policy

- General Criteria – Site **MEETS ALL EIGHT GENERAL CRITERIA** under the Policy.
- Groundwater Media-Specific Criteria – Site meets the criterion in **CLASS 4**. Based on an analysis of Site-specific conditions that 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 (WQOs) will be achieved within a reasonable time frame.
- Petroleum Vapor Intrusion to Indoor Air Criteria – Site meets the **EXCEPTION**. The Site is an active petroleum fueling facility and has no release characteristics that can be reasonably believed to pose an unacceptable health risk. A Tier 2 RBCA closure evaluation was completed in 2008. The report concluded that residual contaminant concentrations in soil and groundwater at the Site pose no significant risk to human health or the environment.
- Direct Contact and Outdoor Air Exposure Criteria – Site meets **CRITERIA (3) a**. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1. The estimated naphthalene concentrations in soil 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

Santa Clara County staff objected to UST case closure because:

1. The contaminant source has not been removed to the extent practicable.  
Response: Site conditions demonstrate that the residual petroleum constituents in soil and groundwater are protective of human health. (See Attachments 1 and Attachment 2 for further discussion.) During the 1998 and 1999 UST removals and over-excavation, approximately 2,080 cubic yards of soil, 28 gallons of free product, and 40,000 gallons of impacted groundwater were removed from the excavations, and disposed off-Site. A DPE remediation system operated from 2005 to 2006; approximately 346 pounds of TPHg, 6 pounds of benzene, and 3 pounds of MTBE was removed. The system was shut down because contaminant levels decreased to below cleanup goals. A Tier 2 RBCA closure evaluation was completed in 2008. The report concluded that residual contaminant concentrations in soil and groundwater at the Site pose no significant risk to human health and the environment.
2. The groundwater plume is not stable or decreasing.  
Response: The Site has been sufficiently assessed/monitored and additional assessment/monitoring won't likely change the conceptual model. Remedial actions have been

implemented and remaining petroleum constituents are limited, stable and declining. To the extent limited areas of groundwater may exceed WQOs for certain petroleum constituents, the impact will not unreasonably impair beneficial uses even if the period of impairment is decades to hundreds of years. Shallow affected groundwater is not currently being used as a source of drinking water or for any other designated beneficial use and it is highly unlikely, in part due to standard supply well construction practices, that the affected groundwater will be used as a source of drinking water or for any other beneficial use in the foreseeable future.

3. Remaining petroleum constituents pose a potential risk to human health and the environment. Response: Site-specific conditions satisfy all eight general criteria, groundwater media-specific criteria, petroleum vapor intrusion to Indoor air criteria, and direct contact and outdoor air exposure criteria under the Policy. TPHg, TPH as diesel, benzene, MTBE, and tert-butyl alcohol (TBA) currently exist in groundwater at the Site above WQOs. However, based on an analysis of Site-specific conditions that under current and reasonably anticipated near-term future scenarios, the residual contaminant plume poses a low-threat to human health, safety and the environment and WQOs will be achieved within a reasonable time frame.

### Recommendation for Closure

The corrective action performed at this Site ensures the protection of human health, safety, the environment and is consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations, applicable state policies for water quality control and the applicable water quality control plan, and case closure is recommended.

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Engineering Geologist

7/1/2013  
Date

Reviewed By: Ben D. Henningburg  
Benjamin Henningburg, PG No. 8130  
Senior Engineering Geologist

7/2/2013  
Date



**ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW**

The Site complies with 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 Site complies with the requirements of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.<sup>1</sup>**

<p><b>Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations?</b>          The corrective action provisions contained in Chapter 6.7 of the Health and Safety Code and the implementing regulations govern the entire corrective action process at leaking UST sites. If it is determined, at any stage in the corrective action process, that UST case closure is appropriate, further compliance with corrective action requirements is not necessary. Corrective action at this Site has been consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations and, since this case meets applicable case-closure requirements, further corrective action is not necessary, unless the activity is necessary for case closure.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this Site?</b></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b>If so, was the corrective action performed consistent with any order?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b><u>General Criteria</u></b>          General criteria that must be satisfied by all candidate sites:</p> <p><b>Is the unauthorized release located within the service area of a public water system?</b></p> <p><b>Does the unauthorized release consist only of petroleum?</b></p> <p><b>Has the unauthorized ("primary") release from the UST system been stopped?</b></p> <p><b>Has free product been removed to the maximum extent practicable?</b></p> <p><b>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

<sup>1</sup> Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

<p><b>Has secondary source been removed to the extent practicable?</b></p> <p><b>Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?</b></p> <p><b>Does nuisance as defined by Water Code, section 13050 exist at the Site?</b></p> <p><b>Are there unique Site attributes or Site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b><u>Media-Specific Criteria</u></b>        Candidate sites must satisfy all three of these media-specific criteria:</p> <p><b>1. Groundwater:</b>        To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites:</p> <p><b>Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?</b></p> <p><b>Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?</b></p> <p>If YES, check applicable class: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5</p> <p><b>For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b>2. Petroleum Vapor Intrusion to Indoor Air:</b>        The Site is considered low-threat for vapor intrusion to indoor air if Site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies.</p> <p><b>Is the Site an active commercial petroleum fueling facility?</b>        Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.</p> <p><b>a. Do Site-specific conditions at the release Site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4?</b>        If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4</p> <p><b>b. Has a Site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?</b></p>	<p><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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

<p><b>c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b>3. Direct Contact and Outdoor Air Exposure:</b>          The Site is considered low-threat for direct contact and outdoor air exposure if Site-specific conditions satisfy one of the three classes of sites (a through c).</p> <p><b>a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?</b></p> <p><b>b. Are maximum concentrations of petroleum constituents in soil less than levels that a Site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health?</b></p> <p><b>c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

**ATTACHMENT 2: SUMMARY OF BASIC INFORMATION (Conceptual Site Model)**

**Site Location/ History**

- The Site is located at the intersection of East Taylor Street and North 10<sup>th</sup> Street in San Jose. The Site is an operating service station and convenience store.
- The Site is bounded by residential properties in the southwest to northeast directions and commercial properties in all other directions.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Primary Source of Release: UST system
- Discovery Date: 1998
- Release Type: Petroleum<sup>2</sup>
- Sixteen Geoprobe® soil borings have been drilled and sampled.
- Eleven monitoring wells and four remediation wells have been installed.
- Free Product: 28 gallons removed in 1999, during the removal of 13 USTs. No free product in Site wells since 1999.

**Table A: USTs**

Tank No.	Size	Contents	Status	Date
1	12,000-gallon	Gasoline	Removed	1998
2	12,000-gallon	Gasoline	Removed	1998
3	12,000-gallon	Gasoline	Removed	1998
4	8,000-gallon	Gasoline	Removed	1998
5	12,000-gallon	Gasoline	Removed	1998
6	12,000-gallon	Diesel	Removed	1998
7	8,000-gallon	Gasoline and/or Diesel	Removed	1998
8	8,000-gallon	Gasoline and/or Diesel	Removed	1998
9	8,000-gallon	Gasoline and/or Diesel	Removed	1999
10	280-gallon	Gasoline and/or Diesel	Removed	1999
11	280-gallon	Gasoline and/or Diesel	Removed	1999
12	360-gallon	Gasoline and/or Diesel	Removed	1999
13	580-gallon	Gasoline and/or Diesel	Removed	1999
1	12,000-gallon	Diesel	Active	-
2	10,000-gallon	Gasoline	Active	-
3	10,000-gallon	Gasoline	Active	-

**Receptors**

- Groundwater Basin: Santa Clara Valley
- Groundwater Beneficial Uses: Municipal and domestic water supply (MUN), industrial service water supply (IND), industrial process water supply (PRO), and agricultural water supply (AGR)
- Designated Land Use: Light Industrial (LI)
- Public Water System: San Jose Water Company
- Distance to Nearest Surface Waters: Guadalupe River ~4,800 feet southwest

<sup>2</sup> "Petroleum" means crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means at 60 degrees Fahrenheit and 14.7 pounds per square inch absolute. (Health & Safety Code, § 25299.2)

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- Distance to Nearest Supply Wells: Public supply well ~2,900 feet southwest

**Geology/ Hydrogeology**

- Average Groundwater Depth: ~8.4 feet
- Minimum Groundwater Depth: ~5.3 feet
- Groundwater Flow Direction: Southwest
- Geology: Silty clay with interbedded layers of clayey silt to approximately 20 feet below ground surface (bgs), medium stiff to stiff clay to approximately 37 feet bgs, clayey silt with interbedded layer of silty clay to 50 feet bgs.
- Hydrogeology: Semi-confined zones from ~7 to ~27 feet bgs. The average groundwater flow velocity was determined ~0.019 feet per day (7.1 feet per year).

**Corrective Actions**

- Thirteen USTs were removed in 1998 and 1999 and replaced with three USTs.
- During the 1998 and 1999 USTs removal and over-excavation, approximately 2,080 cubic yards of soil, 28 gallons of free product, and 40,000 gallons of impacted groundwater were removed from the excavations, and disposed off-Site.
- A DPE remediation system operated from 2005 to 2006; approximately 346 pounds of TPHg, 6 pounds of benzene, and 3 pounds of MTBE was removed. The system was shut down because contaminant levels decreased to below cleanup goals.
- A Tier 2 RBCA closure evaluation was completed in 2008. The report concluded that residual contaminant concentrations in soil and groundwater at the Site pose no significant risk to human health or the environment.

**Table B: Concentrations of Petroleum Constituents in Soil**

Constituent	Maximum 0-5 ft. bgs (mg/kg)	Maximum 5-10 ft. bgs (mg/kg)
Benzene	<0.005	0.83
Ethylbenzene	<0.005	0.51
Naphthalene	Not Analyzed	Not Analyzed
PAHs*	Not Analyzed	Not Analyzed

mg/kg – milligram per kilogram

\*Poly-aromatic hydrocarbons as benzo(a)pyrene toxicity equivalent

**Table C: Concentrations of Petroleum Constituents of Concern in Groundwater**

Sample	Sample Date	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	2/21/13	<b>790</b>	<b>780</b>	<b>16</b>	5.5	<0.5	1.9	<b>20</b>	<b>46</b>
MW-2	2/22/13	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
MW-3	2/21/13	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
MW-4	2/21/13	<b>120</b>	<b>150</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
MW-5	2/21/13	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
MW-6	2/22/13	<b>1,400</b>	<b>1,200</b>	<b>20</b>	5.0	0.72	2.7	<b>22</b>	<b>39</b>
MW-7	2/22/13	<b>69</b>	<b>110</b>	<0.5	0.73	<0.5	<0.5	3.3	<b>130</b>
MW-8	2/8/11	<50	<50	<0.5	<0.5	<0.5	<0.5	1.2	<2.0
MW-9	2/21/13	<50	<50	<0.5	<0.5	<0.5	<0.5	2.8	<2.0
MW-10	2/21/13	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
MW-11	6/22/07	<50	<50	<0.5	<0.5	<0.5	<0.5	<b>5.3</b>	<b>62</b>
WQOs	-	<b>50</b>	<b>50</b>	<b>1</b>	<b>42</b>	<b>3.2</b>	<b>17</b>	<b>5</b>	<b>12</b>

Notes:

**bold** indicates that sample result exceeds WQOs  
 TPHg - total petroleum hydrocarbons as gasoline  
 TPHd - total petroleum hydrocarbons as diesel  
 MTBE - methyl tert-butyl ether

TBA - tert-butyl alcohol  
 µg/L - micrograms per liter  
 WQOs - water quality objectives

**Evaluation of Risk Criteria**

- Maximum Petroleum Constituent Plume Length above WQOs: MTBE plume is ~300 feet in length.
- Petroleum Constituent Plume Determined Stable or Decreasing: Yes
- Soil/Groundwater Sampled for MTBE: Yes, see Table C above.
- Residual Petroleum Constituents Pose Significant Risk to the Environment: No
- Residual Petroleum Constituents Pose Significant Vapor Intrusion Risk to Human Health: No – Site-specific conditions satisfy the Policy criteria for vapor intrusion to indoor air. Petroleum constituents most likely to pose a threat for vapor intrusion were removed during soil excavation and over-excavation. Site conditions demonstrate that the residual petroleum constituents in soil and groundwater are protective of human health.
- Residual Petroleum Constituents Pose a Nuisance<sup>3</sup> at the Site: No
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No – A Site-specific risk assessment from exposure shows that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No – Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 of the Policy. 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 concentrations can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Table 1 of the Policy. Therefore, 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.

<sup>3</sup> Nuisance as defined in California Water Code, section 13050, subdivision (m).

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