

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: North Coast Regional Water Quality Control Board (Regional Water Board)	Address: 5550 Skylane Boulevard, Ste. A Santa Rosa, CA 95403
Agency Caseworker: Kasey Ashley	Case No.: 1TSR335

Case Information

USTCF Claim No.: 13088, 18648	GeoTracker Global ID: T0609700756
Site Name: Gem Jak Enterprises	Site Address: 3323 Sebastopol Road Santa Rosa, CA 95407
Responsible Party: Gem Jak Attn: John Paulsen	Address: P.O. Box 7945 Santa Rosa, CA 95407
USTCF Expenditures to Date: \$ 469,362	Number of Years Case Open: 15

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0609700756

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:

The Site was previously operated as a service station and an auto repair facility. Two gasoline USTs were closed in place in 1977. In 1998, a 750-gallon UST and 180 cubic yards of petroleum hydrocarbon contaminated soil were removed. In 2005, approximately 2,100 cubic yards of petroleum hydrocarbon contaminated soil and 40,000 gallons of excavation water were removed. Tank excavation sidewall samples showed low to non-detect concentrations remained. Since 1999, 23 borings have been installed at the Site, and a total of nine monitoring wells have been installed and monitored. All petroleum hydrocarbon constituents are reported below water quality objectives for the last three years.

The petroleum release is limited to the soil and shallow groundwater. 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. A sensitive receptor survey reported a total of 24 domestic wells within a half mile radius of the Site (SCS Engineers, 2004). The nearest reported water supply wells are approximately 120 feet east (upgradient) from the defined plume boundary and 150 feet northwest (downgradient) from the defined plume boundary. No surface water bodies have been identified within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the City of Santa Rosa. 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 case would have met Policy Criterion 1 by Class 1 in all regards except the distance to the nearest water supply well. 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 in the downgradient direction is approximately 150 feet from the defined plume boundary. No surface water bodies have been identified within 250 feet of the defined plume boundary. All petroleum hydrocarbon constituents are reported below water quality objectives and have been for three years.
- Vapor Intrusion to Indoor Air: The case meets Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in groundwater is less than 100 micrograms per liter ($\mu\text{g/L}$). The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons (TPH).
- 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. Contaminated soil at the Site was excavated and removed to a depth of 10 feet below ground surface (bgs) in 2005 (SCS Engineers, 2005).

Objections to Closure and Responses

The Regional Water Board does not object to UST case closure (April 29, 2013 email).

Determination

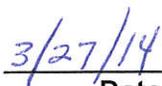
Based on the review performed in accordance with Health & Safety Code Section 25299.39.2 subdivision (a), the Fund Manager has determined that closure of the case is appropriate.

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



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



Date

Prepared by: Roger Hoffmore, P.G. 7660

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>Media-Specific Criteria 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 type="checkbox"/> Yes <input checked="" 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 checked="" 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 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>
<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 was previously operated as a service station (approximately circa 1949 to 1974) and later as an auto-repair facility (1976 to 1988) prior to ownership by the current property owners, GEM JAK Enterprises.
- This Site is located on the north side of Sebastopol Road between Mattson Road and Brittain Lane. The former source area is located on the vacant southwest corner of a parcel that also includes a residence (unoccupied as of 2011). Adjacent to the Site to the west is a small strip mall that includes a retail store and a martial arts academy, to the east is a sales yard for concrete products, approximately 700 feet from the former source area to the north is Highway 12, and to the south across Sebastopol Road is a parking lot and office complex.
- Two gasoline USTs were reported as closed in place by the former property owners in 1977.
- A review of Sonoma County Assessor's Office files reported a record of a total of three USTs (SCS Engineers, 2005).
- In 1998, a 750-gallon UST containing waste oil was removed; it is suspected to have been formerly used as a gasoline and/or diesel tank during the operation of the station.
- A total of 23 soil borings and nine monitoring wells have been installed at the Site.
- A Site map showing the location of the UST excavation, monitoring wells, and groundwater flow direction is provided at the end of this closure review summary (Brunsing Associates, Inc., 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: April 1998.
- Status of Release: Two USTs closed in place, one UST removed.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	750	Waste Oil*	Removed	1998
2	unknown	Gasoline	Closed in Place**	1977
3	unknown	Gasoline	Closed in Place**	1977

* Found with waste oil inside, but it is reported that the station did not have a waste oil tank while active. Believed to have contained gasoline and/or diesel during station operation; adjacent soil contamination consistent with a gasoline release.

** Former owner reported two USTs closed in place (and gasoline pumped from them during abandonment). Sonoma County records mentioned a total of three USTs on the property historically. Size and location of tanks are unknown.

Receptors

- GW Basin: Santa Rosa Valley – Santa Rosa Plain.
- Beneficial Uses: The Regional Water Board Basin Plan lists agricultural supply, industrial service supply, and freshwater replenishment as existing beneficial uses of groundwater and municipal and domestic supply and industrial process supply as potential beneficial uses.
- Land Use Designation: Aerial photograph available on GeoTracker indicates that land use appears to be commercial adjacent to the site, with residential land uses approximately 1,000 feet to the west and east and north of the highway.
- Public Water System: City of Santa Rosa.

- 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. A sensitive receptor survey reported a total of 24 domestic wells within a ½ mile radius of the Site (SCS Engineers, 2004). The nearest reported water supply wells are approximately 120 feet east (upgradient) from the defined plume boundary and 150 feet northwest (downgradient) from the defined plume boundary. No detectable concentrations of petroleum hydrocarbons have been reported in the last three years of groundwater sampling.
- Distance to Nearest Surface Water: There is no identified surface water within 250 feet of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded and intermixed sand, silt, and clay.
- Maximum Sample Depth: 20 feet below ground surface (bgs).
- Minimum Groundwater Depth: 0.95 feet bgs at monitoring well MW-3.
- Maximum Groundwater Depth: 10.40 feet bgs at monitoring well MW-6.
- Current Average Depth to Groundwater: Approximately 5.5 feet bgs.
- Saturated Zones(s) Studied: Approximately 5 - 20 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Northwest at 0.009 feet per foot (November 2012).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (11/12/2012)
MW-1	June 2000	5 – 20	8.82
MW-2	June 2000	5 – 20	8.70
MW-3	June 2000	5 – 20	8.80
MW-4	June 2000	5 – 20	8.53
MW-5	June 2000	5 – 20	8.91
MW-6	January 2004	5 – 20	10.11
MW-7	January 2006	5 – 20	9.67
MW-8	April 2011	5 – 20	10.02
MW-9	April 2011	5 – 20	9.32*

* Depth to water measurement collected on 11/13/2012

Remediation Summary

- Free Product: None reported.
- Soil Excavation: In 1998, approximately 180 cubic yards of petroleum hydrocarbon impacted soil was removed. In 2005, approximately 2,100 cubic yards of petroleum hydrocarbon impacted soil was removed to a depth of 10 feet bgs (resulting in a removal of an estimated 3,428 pounds of petroleum hydrocarbons) (SCS Engineers, 2005).
- In-Situ Soil Remediation: None reported.
- Groundwater Remediation: In 1998, approximately 9,000 gallons of water were removed from the excavation during tank removal activities. In 2005, approximately 40,000 gallons of water were removed during over-excavation activities.

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	Clean Fill* (2005)	Clean Fill* (2005)
Ethylbenzene	Clean Fill* (2005)	Clean Fill* (2005)
Naphthalene	Clean Fill* (2005)	Clean Fill* (2005)
PAHs	Clean Fill* (2005)	Clean Fill* (2005)

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

*: Contaminated soil at the Site was excavated and removed to a depth of 10 feet bgs in 2005
 (SCS Engineers, 2005)

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)
MW-1	6/12/08	<50	<1	<1	<1	<1	<1
MW-2	2/21/06	<50	<1	<1	<1	<1	<1
MW-3	2/21/06	<50	<1	<1	<1	<1	<1
MW-4	4/12/11	<50	<0.5	<0.5	<0.5	<0.5	<1
MW-5	11/12/12	8,500	2.37	27.4	61.6	761	<1
MW-6	11/12/12	<50	<0.5	<0.5	<0.5	<0.5	<1
MW-7	11/12/12	<50	<0.5	<0.5	<0.5	<0.5	<1
MW-8	11/12/12	<50	<0.5	<0.5	<0.5	<0.5	<1
MW-9	11/13/12	<50	<0.5	<0.5	<0.5	<0.5	<1
WQOs		--	1	150	680	1,750	5 ^a

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

WQOs: Water Quality Objectives, Regional Water Board Basin Plan

--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg

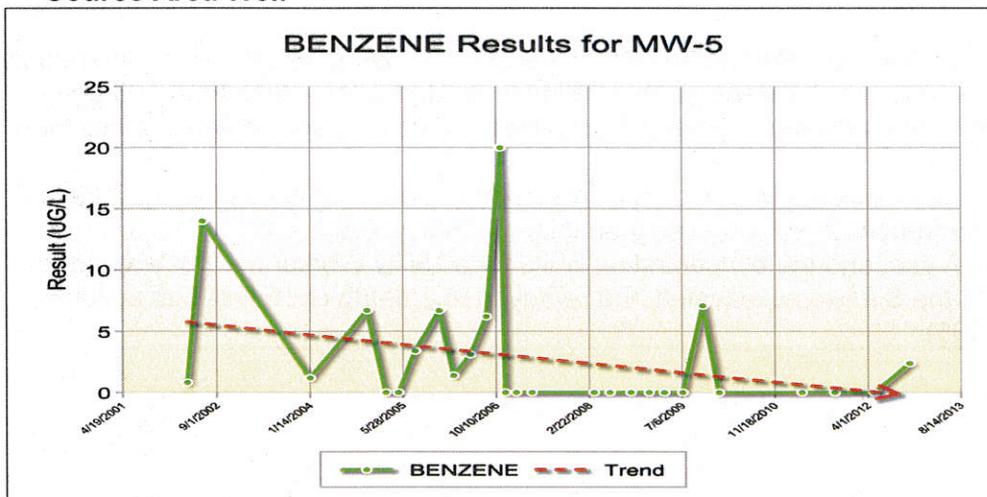
^a: Secondary maximum contaminant level (MCL)

^b: California Department of Public Health, Response Level

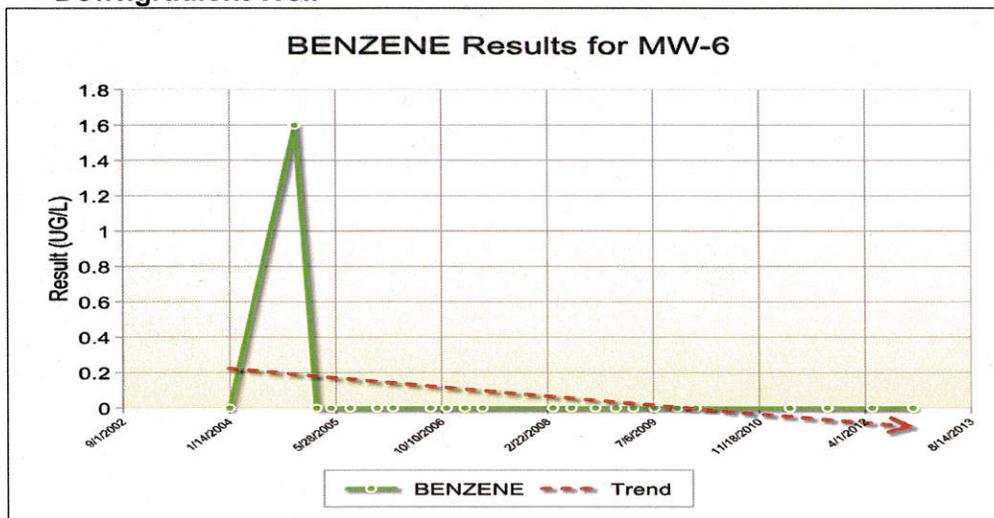
Groundwater Trends

- Groundwater has been monitored for a total of approximately 13 years at the Site. The following graphs show benzene analytical data for groundwater monitoring well MW-5, located immediately to the west (downgradient) of source area, and well MW-6, located approximately 50 feet to the west (downgradient) of MW-5:

Source Area Well



Downgradient Well

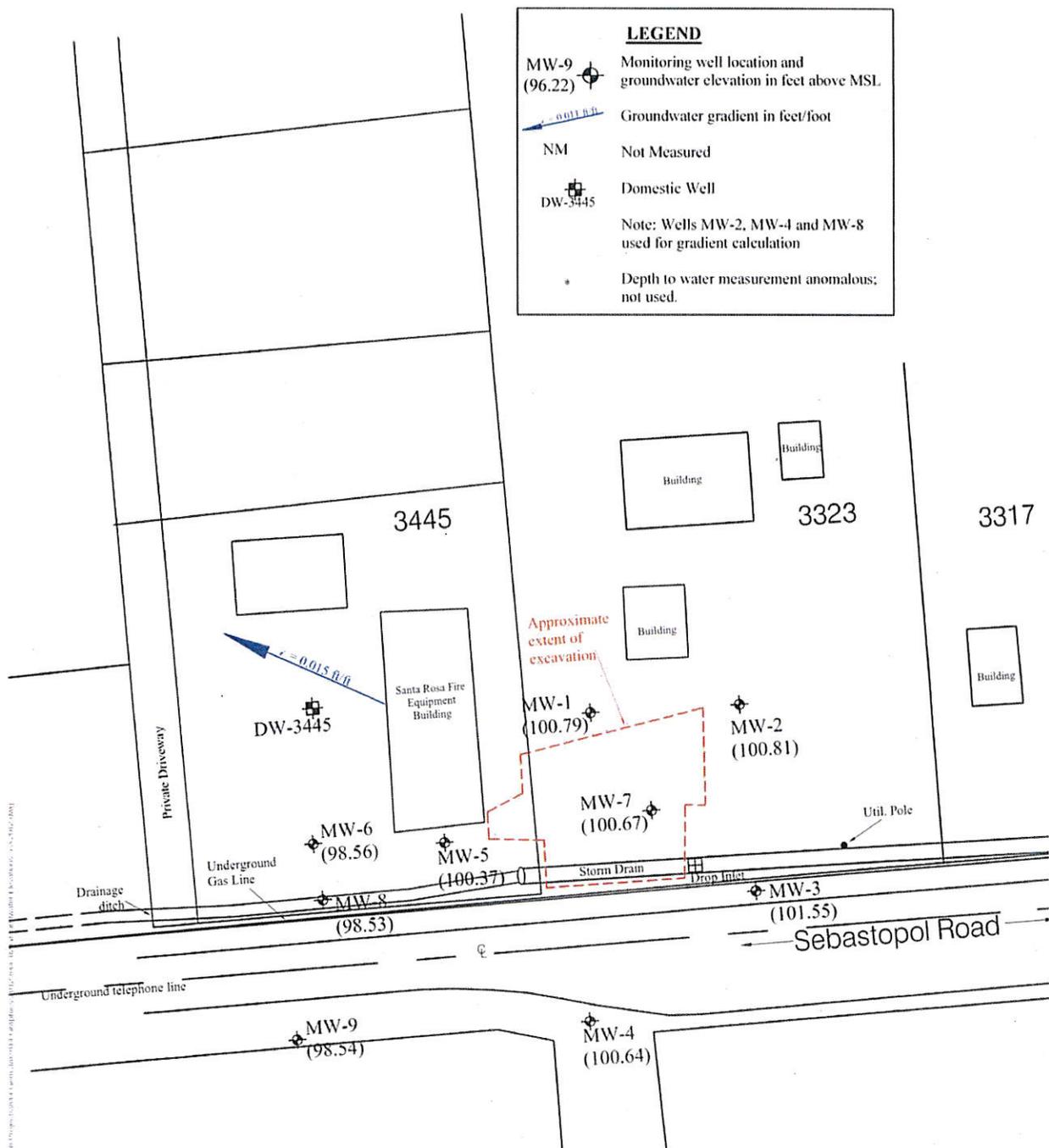


Evaluation of Current Risk

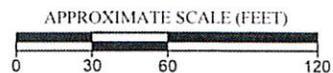
- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <100 feet long. All petroleum hydrocarbon constituents are reported below Water Quality Objectives and have been for three years.
- 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 case would have met Policy Criterion 1 by Class 1 in all regards except the distance to the nearest water supply well. 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 in the downgradient direction is approximately 150 feet from the defined plume boundary. No surface water bodies have been identified within 250 feet of the defined plume boundary.

All petroleum hydrocarbon constituents are reported below water quality objectives and have been for three years.

- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by scenario 3a. The maximum benzene concentration in groundwater is less than 100 µg/L. The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 mg/kg of TPH.
- 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. Contaminated soil at the Site was excavated and removed to a depth of 10 feet bgs in 2005 (SCS Engineers, 2005).



Reference:
 SCS Engineers, Figure 2, Results of 2nd Quarter 2007 Groundwater Monitoring Event, dated June 21, 2007. City of Santa Rosa. GIS Air Photograph, May 5, 2008. Phelps and Associates, May 2011.



 <p>Brusing Associates, Inc. 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 838-3027</p>	Job No. 844 Appr. <i>[Signature]</i> Date: 09/07/12	<p align="center">GROUNDWATER ELEVATIONS MAY 3, 2012 GEM JAK ENTERPRISES 3323 Sebastopol Road Santa Rosa, California</p>	<p align="center">PLATE 2</p>
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