

## State Water Resources Control Board

### UST CASE CLOSURE REVIEW SUMMARY REPORT

#### Agency Information

Agency Name: Alameda County Water District (District)	Address: 43885 South Grimmer Blvd Fremont, CA 94538
Agency Caseworker: Selim Zeyrek	Case No: 0152

#### Case Information

USTCF Claim No.: 2609	Global ID: T0600101058
Site Name: Pen Bullet Express	Site Address: 1143 Pacific Street, Union City, CA 94587
Responsible Party: Pen Bullet Express	Address: 1143 Pacific Street, Union City, CA 94587
USTCF Expenditures to Date: \$559,090	Number of Years Case Open: 27

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0600101058](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600101058)

#### 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 does meet 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 and recommendations of the case review follow:

An unauthorized release was reported in September 1985. One 8,000-gallon gasoline UST was removed 1989. Groundwater extraction removed an estimated 500 pounds of total petroleum hydrocarbons as gasoline (TPHg) between 1992 and June 1997. In 1998, oxygen releasing compound filled socks were installed in the extraction wells. Between May and June 2011, 10,000 pounds of sodium persulfate was injected. Since 1989, nine monitoring wells have been installed and monitored regularly. According to groundwater data, water quality objectives have been achieved for all constituents except benzene in three near-source monitoring wells.

According to data available in GeoTracker, there are no California Department of Public Health regulated supply wells or 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 Alameda County Water District. 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: The case meets Policy Criterion 1 by Class 1. 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 or surface water body is greater than 250 feet from the defined plume boundary.
- Vapor Intrusion to Indoor Air: This case meets Policy Criterion 2b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from potential exposure to petroleum constituents as a result of vapor intrusion found there to be no significant risk of petroleum vapors adversely affecting human health. Remediation activities at the Site have included an unknown amount of soil being removed during the UST removal activities, groundwater extraction was conducted between 1992 and 1997, oxygen releasing socks were installed in 1998 and in 2011, 10,000 pounds of sodium persulfate was injected.
- Direct Contact and Outdoor Air Exposure: The case meets Policy Criterion 3b. Constituents in soil are less than levels that a site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health. The Site is paved and accidental access to site soils is prevented.

### **Objections to Closure and Responses**

In correspondence dated December 20, 2012, the District objected to UST case closure because:

- Additional soil and groundwater investigations to determine the extent of soil and groundwater contamination, including the installation of a downgradient well are needed.  
RESPONSE: Based on soil and groundwater samples taken in June 2005 and data from the additional groundwater monitoring wells installed in January 2011, the vertical and lateral extents of contamination are adequately defined by water quality objectives.
- Sensitive receptor survey, including a well survey is needed.  
RESPONSE: An additional query of the SWRCB-GAMA Database was conducted and failed to identify any water supply well(s) or surface water body within 1,000 feet of the Site.
- Continued semiannual monitoring and sampling of the existing wells is needed.  
RESPONSE: The USTs have been removed, and the residual soil contamination has been characterized. Although affected by declining groundwater elevations, the amount and extent of dissolved phase petroleum fuel contamination have been decreasing.
- Preparation of a Corrective Action Plan, including a verification monitoring plan to evaluate the effectiveness of the selected remedial alternative is needed.  
RESPONSE: No Corrective Action Plan or verification monitoring plan is needed. There are adequate data to support the conceptual site model that the case meets the Policy criteria.

**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. San Mateo County has the regulatory responsibility to supervise the abandonment of monitoring wells.

*Lisa Babcock*

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

*6/13/13*

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Date

Prepared by: Walter Bahm

**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.<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 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><b>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?</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></p>	
<p>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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Does the unauthorized release consist only of petroleum?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Has the unauthorized (“primary”) release from the UST system been stopped?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Has free product been removed to the maximum extent practicable?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</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>

<sup>1</sup> 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](http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf)

<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>Nuisance as defined by Water Code section 13050 does not 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 checked="" type="checkbox"/> Yes <input 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>                  If YES, check applicable class: <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5</p> <p><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><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</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><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 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>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 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

- The Site is a warehouse and is bounded by Western Avenue to the west, a commercial building to the north, an empty field across Pacific Street to the south, and industrial buildings to the east. The local land use is commercial/industrial.
- The Site is relatively flat and covered by asphalt pavement.
- Site maps showing the location of the former USTs, monitoring wells, site features, and groundwater concentrations are provided at the end of this review summary (Kenneth R. Henneman, Environmental Contractor, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date Reported: September 1985.
- Status of Release: USTs removed.
- Free Product: None noted since 1993.

### Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	8,000	Gasoline	Removed	1989

### Receptors

- GW Basin: Santa Clara Valley - Niles Cone.
- Beneficial Uses According to the San Francisco Regional Water Quality Control Board (Regional Water Board) Basin Plan: Municipal, Industrial Process Water and Domestic Supply.
- Land Use Designation: According to an aerial photo from GeoTracker, the land use is commercial in the vicinity of the Site.
- Public Water System: Alameda County Water District.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no California Department of Public Health water supply wells within 1,000 feet 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 gravel, sand, silt and clay, which is underlain by a very stiff clayey fine sandy silt zone at approximately 44 feet below ground surface (bgs).
- Maximum Sample Depth: 48 feet bgs.
- Minimum Groundwater Depth: 28.87 feet bgs at monitoring well W-4.
- Maximum Groundwater Depth: 36.73 feet bgs at monitoring well P-3.
- Current Average Depth to Groundwater: Approximately 33 feet bgs.
- Saturated Zones(s) Studied: Approximately 29 – 49 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Predominately to the west with an average gradient of 0.005 feet/foot.

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (4/19/12)
W-1	1989	37 - 47	33.20
W-2	1994	28 - 48	33.29
W-3	1994	28 - 48	32.40
W-4	1994	28 - 48	33.99
P-3	1994	33 - 43	34.58
P-11	1994	29 - 49	33.52
P-12	2012	27 - 42	34.10

Note: Five edge wells (3 installed in 1989 and 2 in 1994) sampled non-detect & were removed in 2003

**Remediation Summary**

- Free Product: Some free product was reported in W-1 when it was first installed. None noted since 1993.
- Soil Excavation: An unknown amount of soil was excavated when the tank was removed in 1989.
- In-Situ Soil/Groundwater Remediation: Groundwater extraction removed an estimated 500 pounds of TPHg between 1992 and June 1997. The final removal rate had decreased to 0.03 pounds/1000 gallon. In 1998, oxygen releasing compound socks were installed in the extraction wells. Between May and June 2011, 10,000 pounds of sodium persulfate was injected.

**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	NA	NA
Ethylbenzene	NA	NA
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**

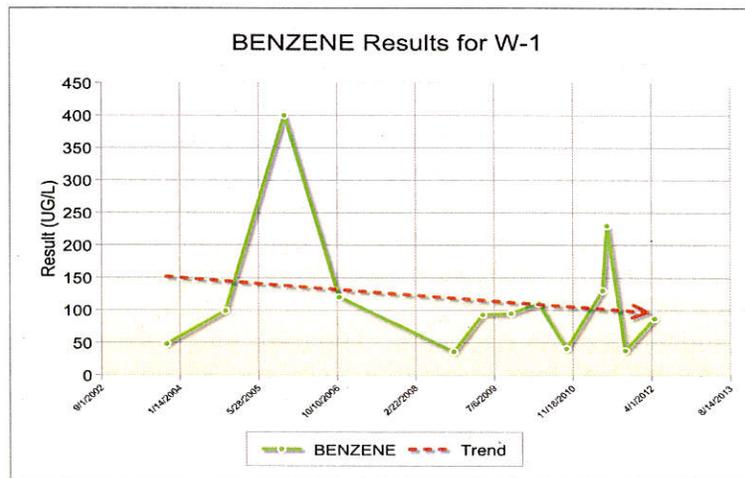
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl -Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
W-1	4/19/2012	3,900	87	<2.5	68	27	<2.5
W-2	4/19/2012	2,000	<2.5	<2.5	120	74	<2.5
W-3	4/19/2012	2,700	33	<2.5	140	45	<0.5
W-4	4/19/2012	5,600	210	<5	520	37	<0.5
P-3	4/19/2012	110	<2.5	<2.5	<2.5	<1	<2.5
P-11	4/19/2012	<250	<2.5	<2.5	<2.5	<1	<0.5
P-12	4/19/2012	3,000	<2.5	<2.5	14	<5	<2.5
<b>WQOs</b>	-	--	1	150	700	1,750	5

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, Regional Water Board Basin Plan  
 --: Regional Water Board Basin Plan has no numeric WQO for TPHg

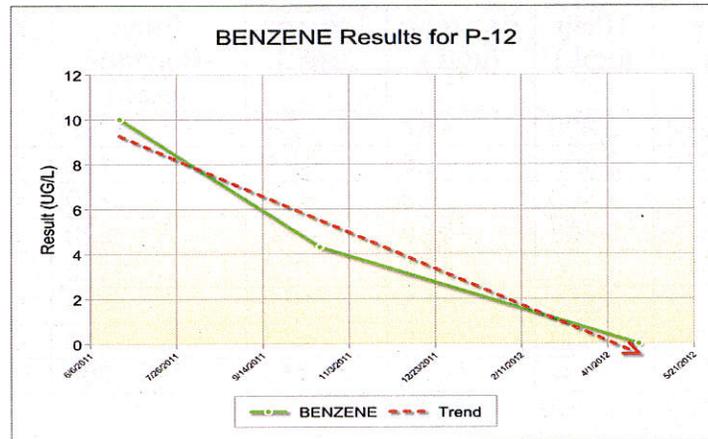
**Groundwater Trends**

- Groundwater monitoring has been conducted since 1989. Benzene trends are shown below: Source Area (W-1) and Downgradient (P-12).

**Source Area Well**

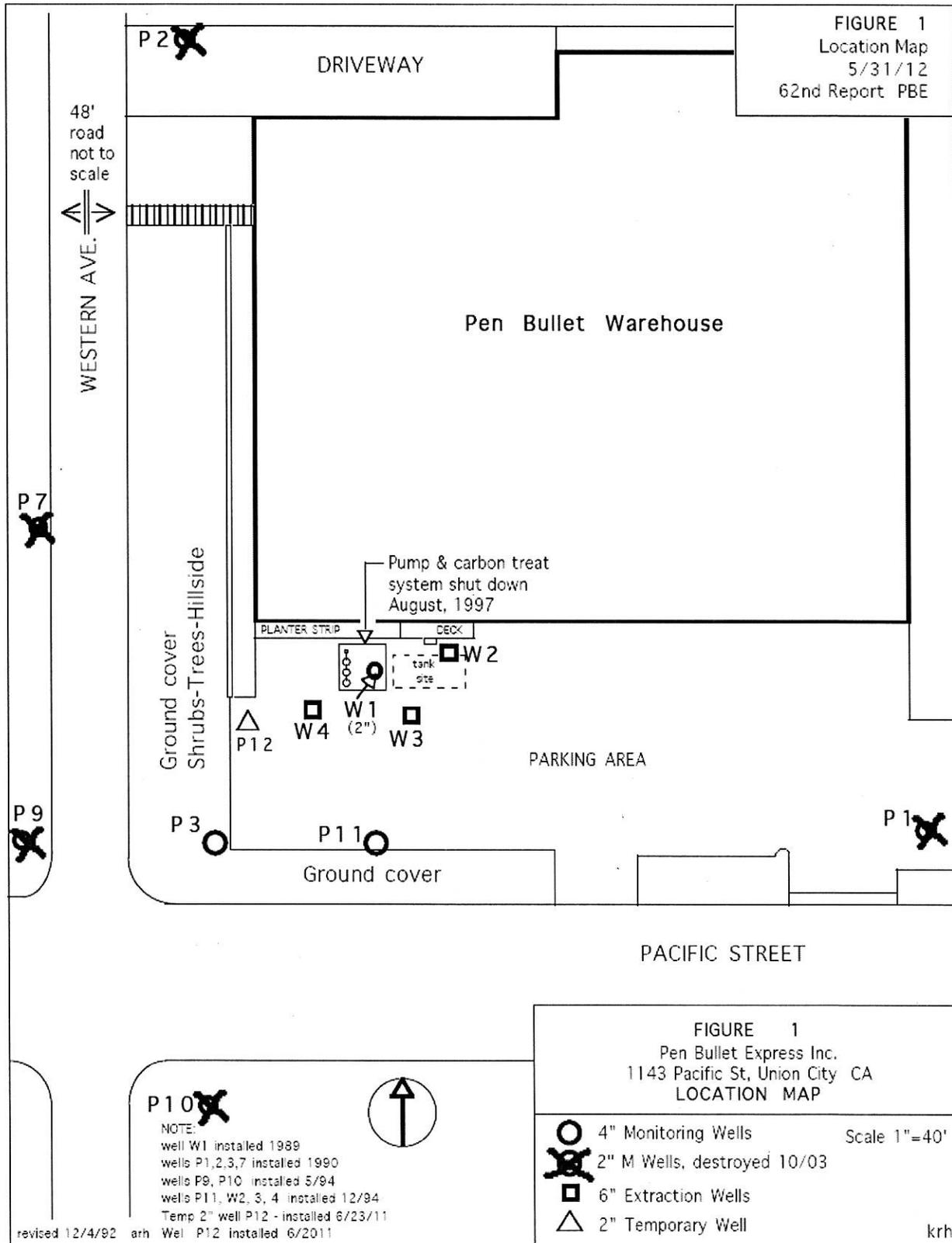


### Downgradient Well



### Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: No recent data.
- Soil/Groundwater tested for MTBE: Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <250 feet long.
- Plume Stable or Decreasing: Yes
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater: The case meets Policy Criterion 1 by Class 1. 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 or surface water body is greater than 250 feet from the defined plume boundary.
- Vapor Intrusion to Indoor Air: This case meets Policy Criterion 2b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from potential exposure to petroleum constituents as a result of vapor intrusion found there to be no significant risk of petroleum vapors adversely affecting human health. Remediation activities at the Site have included an unknown amount of soil being removed during the UST removal activities, groundwater extraction was conducted between 1992 and 1997, oxygen releasing socks were installed in 1998 and in 2011, 10,000 pounds of sodium persulfate was injected.
- Direct Contact and Outdoor Air Exposure: The case meets Policy Criterion 3b. Constituents in soil are less than levels that a site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health. The Site is paved and accidental access to site soils is prevented.



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