UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Santa Ana Regional Water Quality Control Board (Regional Water Board)	Address: 3737 Main Street, Suite 500, Riverside, CA 92501
Agency Caseworker: Tom Mbeke-Ekanem	Case No.: 083002662T

Case Information

USTCF Claim No.: 17126	GeoTracker Global ID: T0605901845
Site Name: G&M Oil Company #30	Site Address: 4505 West 1st Street, Santa Ana, CA 92703
Responsible Party: G&M Oil Company	Address: 15402 Electronic Lane Huntington Beach, CA 92649
USTCF Expenditures to Date: $556,330	Number of Years Case Open: 18

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901845

Summary

The Low-Threat Underground Storage Tank (UST) Case Closure Policy (Policy) contains general and media-specific criteria, and cases that meet those criteria are appropriate for closure pursuant to the Policy. This case meets all of the required criteria of the Policy. A summary evaluation of compliance with the Policy is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Case Information (Conceptual Site Model).** Highlights of the case follow:

This case is an active commercial petroleum fueling facility. An unauthorized release was reported in April 1995. Following the leak detection an environmental investigation was conducted and five USTs were removed. Approximately 390 cubic yards of impacted soil were excavated and disposed offsite. Soil vapor extraction was conducted between April 2008 and July 2011 for 6,707 hours, which removed approximately 3,027 pounds of total petroleum hydrocarbon as gasoline (TPHg). Groundwater extraction was conducted between June and December 2002, which removed approximately 14,898 gallons of contaminated groundwater. Since 1995, 18 groundwater monitoring wells have been installed and monitored regularly. According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents.

The petroleum release is limited to the soil and shallow groundwater. According to data available in GeoTracker, there are no supply wells regulated by the California Department of Public Health or surface water bodies within 250 feet of the defined plume boundary. No other water supply wells have been identified within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the City of Santa Ana, Public Works. 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 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: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility.
- Direct Contact and Outdoor Air Exposure: 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. As an active petroleum fueling facility, any construction worker working at the Site will be prepared for exposure in their normal daily work.

Objections to Closure and Responses

The Regional Water Board May 6, 2013, email stated they are waiting for confirmation of decreasing TBA trends prior to considering closure.
RESPONSE: The TBA concentrations have met water quality objectives for all wells except MW-6 which has a concentration of 1,220 micrograms per liter (µg/L) and exhibits a decreasing trend. The case meets all 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. Santa Ana County has the regulatory responsibility to supervise the abandonment of monitoring wells.

Lisa Babcock — 10/3/13

Lisa Babcock, P.G. 3939, C.E.G. 1235 — **Date**

Prepared by: Abdul Karim Yusufzai

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]

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.	☒ Yes ☐ No
Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?	☐ Yes ☒ No
If so, was the corrective action performed consistent with any order?	☐ Yes ☐ No ☒ NA
General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☒ Yes ☐ No ☐ NA
Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No

[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

Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?	☒ Yes ☐ No
Nuisance as defined by Water Code section 13050 does not exist at the Site?	☒ Yes ☐ No
Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
<u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria: **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:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?	☒ Yes ☐ No ☐ NA
If YES, check applicable class: ☒ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5** **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?**	☐ Yes ☐ No ☒ NA
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.	
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.	☒ Yes ☐ No
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: ☐ **1** ☐ **2** ☐ **3** ☐ **4**	☐Yes ☐ No ☒ NA

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?	☐ Yes ☐ No ☒ NA
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?	☐ Yes ☐ No ☒ NA
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).	
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)?	☐ Yes ☐ No ☒ NA
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?	☒ Yes ☐ No ☐ NA
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?	☐ Yes ☐ No ☒ NA

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

Site Location/History

- The Site is an active commercial fueling facility bounded by businesses across West First Street to the south, across North Newhope Street to the east, to the west, and by a church to the north.
- Site maps showing the location of the USTs, monitoring wells, and groundwater level contours are provided at the end of this closure review summary (Atlas, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: April 1995.
- Status of Release: USTs replaced.
- Free Product: No measurable free product noted since November 2004.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1-3	10,000	Gasoline/Diesel	Removed	April 1997
4-5	12,000	Gasoline/Diesel	Removed	April 1997
6-8	10,000	Gasoline/Diesel	Active	Current
9	5,000	Gasoline/Diesel	Active	Current

Receptors

- GW Basin: Coastal Plain of Orange County.
- Beneficial Uses: Regional Water Board Basin Plan lists agricultural supply, municipal and domestic supply, industrial service supply and industrial 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 Santa Ana, Public Works Department.
- Water District: Municipal Water District of Southern California
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by the California Department of Public Health within 250 feet of the defined plume boundary. No other water supply wells were identified within 250 feet of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: 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 gravel, sand, silt and clay.
- Maximum Sample Depth: 30 feet below ground surface (bgs).
- Minimum Groundwater Depth: 5.55 feet bgs at monitoring well MW-5.
- Maximum Groundwater Depth: 11.58 feet bgs at monitoring well MW-15.
- Current Average Depth to Groundwater: Approximately 10 feet bgs.
- Saturated Zones(s) Studied: Approximately 6 - 31 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Southwest at 0.009 foot/feet (Atlas, 2012)

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (12/12/2012)
MW-1	August 2002	?-28	8.66
MW-2	December 2001	?-30	10.27
MW-3	December 2001	?-29	9.72
MW-4	August 2002	?-27	8.09
MW-5	December 2001	?-29	9.52
MW-6	December 2001	?-28	9.51
MW-7	December 2001	?-29	9.37
MW-8	August 2002	?-31	9.30
MW-9	August 2002	?-30	9.74
MW-10	December 2003	?-29	10.05
MW-11	August 2004	?-27	10.04
MW-12	December 2003	?-30	9.71
MW-13	December 2004	?-29	10.02
MW-14	December 2004	?-30	10.05
MW-15	April 2005	?-29	11.04
MW-16	April 2005	?-27	9.42
MW-17	April 2005	?-28	9.15
MW-18	April 2005	-	8.36

NM: Not measured

Remediation Summary

- Free Product: Free product noted in MW-8 (0.30 feet) and MW-11 (0.14 feet). No measurable free product noted since November 2004.
- Soil Excavation: Approximately 390 cubic yards of soil were excavated and transported off site.
- In-Situ Soil Remediation: Soil vapor extraction was conducted between April 2008 and July 2011 for a total of 6,707 hours, which removed approximately 3,027 pounds of TPHg.
- Groundwater Remediation: Groundwater extraction was conducted between June and December 2002, which removed approximately 14,898 gallons of contaminated groundwater.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg, (date), sample name]	Maximum 5-10 feet bgs [mg/kg, (date), sample name]
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

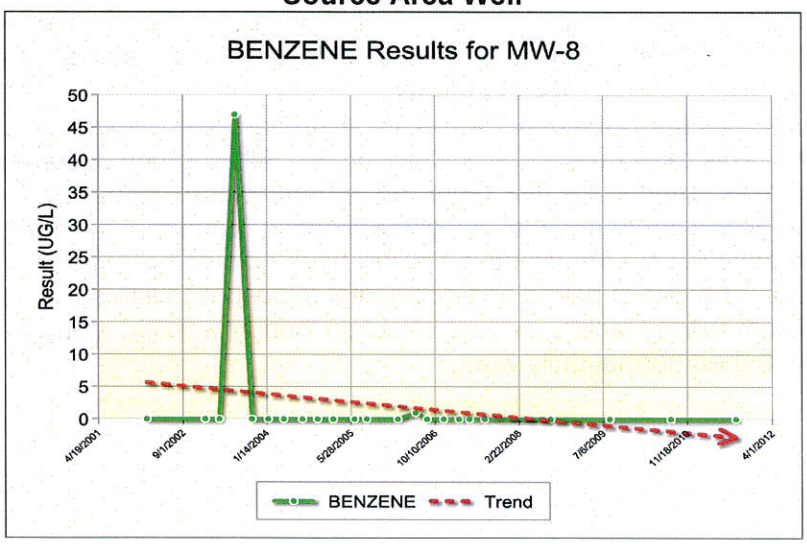
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	12/12/2012	<100	<1	<1	2.1	1.4	<2	<20
MW-2	12/12/2012	<100	<1	<1	3.7	<2	<2	22.7
MW-3	12/12/2012	<100	<1	<1	2.0	1.3	<2	<20
MW-4	12/12/2012	<100	<1	<1	0.90	<2	<2	<20
MW-5	12/12/2012	<100	<1	<1	1.7	1.1	<2	<20
MW-6	12/12/2012	190	**9.8**	<1	7.0	<2	<2	**1,220**
MW-7	12/12/2012	<100	<1	<1	1.7	<2	<2	56
MW-8R	12/12/2012	<100	<1	<1	1.8	1.5	1.7	260
MW-9	12/12/2012	<100	<1	<1	<1	<2	<2	<20
MW-10	12/12/2012	<100	<1	<1	<1	<2	<2	<20
MW-11	12/12/2012	3,310	**4.7**	12.4	156	28.5	<2	<20
MW-12	12/12/2012	2,870	<1	<1	18.8	2.3	<2	<20
MW-13	12/12/2012	268	0.7	1.1	17.2	2.2	<2	<20
MW-14	12/12/2012	<100	<1	<1	<1	<2	<2	103
MW-15	12/12/2012	<100	<1	<1	<1	<2	<2	<20
MW-16	12/12/2012	<100	<1	<1	<1	<2	<2	<20
MW-17	12/12/2012	<100	<1	<1	<1	<2	<2	<20
MW-18	12/12/2012	<100	<1	<1	<1	<2	<2	<20
WQO	-	--	**1**	**150**	**300**	**1,750**	**5[a]**	**1,200[b]**

NA: Not Analyzed, Not Applicable or Data Not Available
µg/L: Micrograms per liter, parts per billion
<: Not detected at or above stated reporting limit
TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl ether
TBA: Tert-butyl alcohol
WQOs: Water Quality Objectives, 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

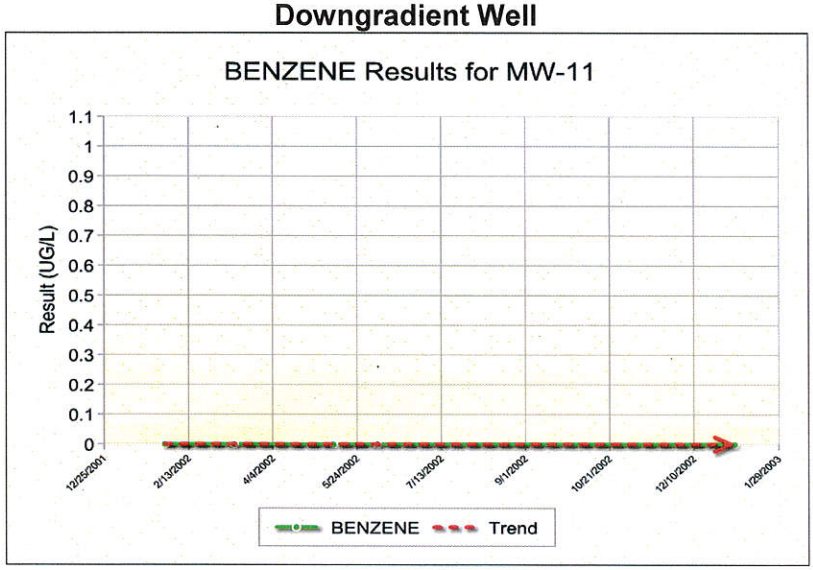
Groundwater Trends

- Since 2001, eighteen groundwater monitoring wells have been installed and monitored regularly. Benzene trends of are shown below: Source Area (MW-8) and Downgradient (MW-11).

Source Area Well



Downgradient Well

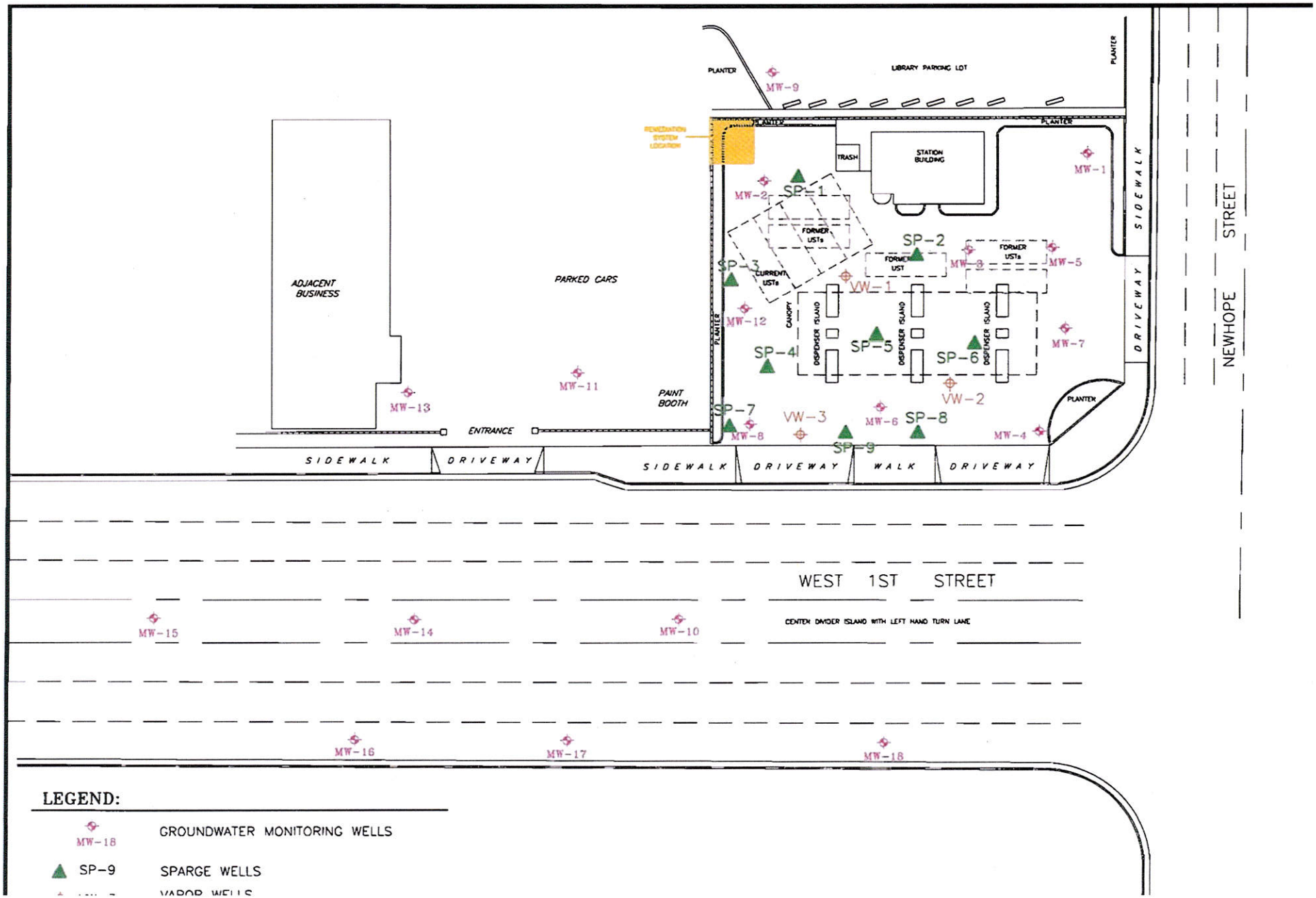
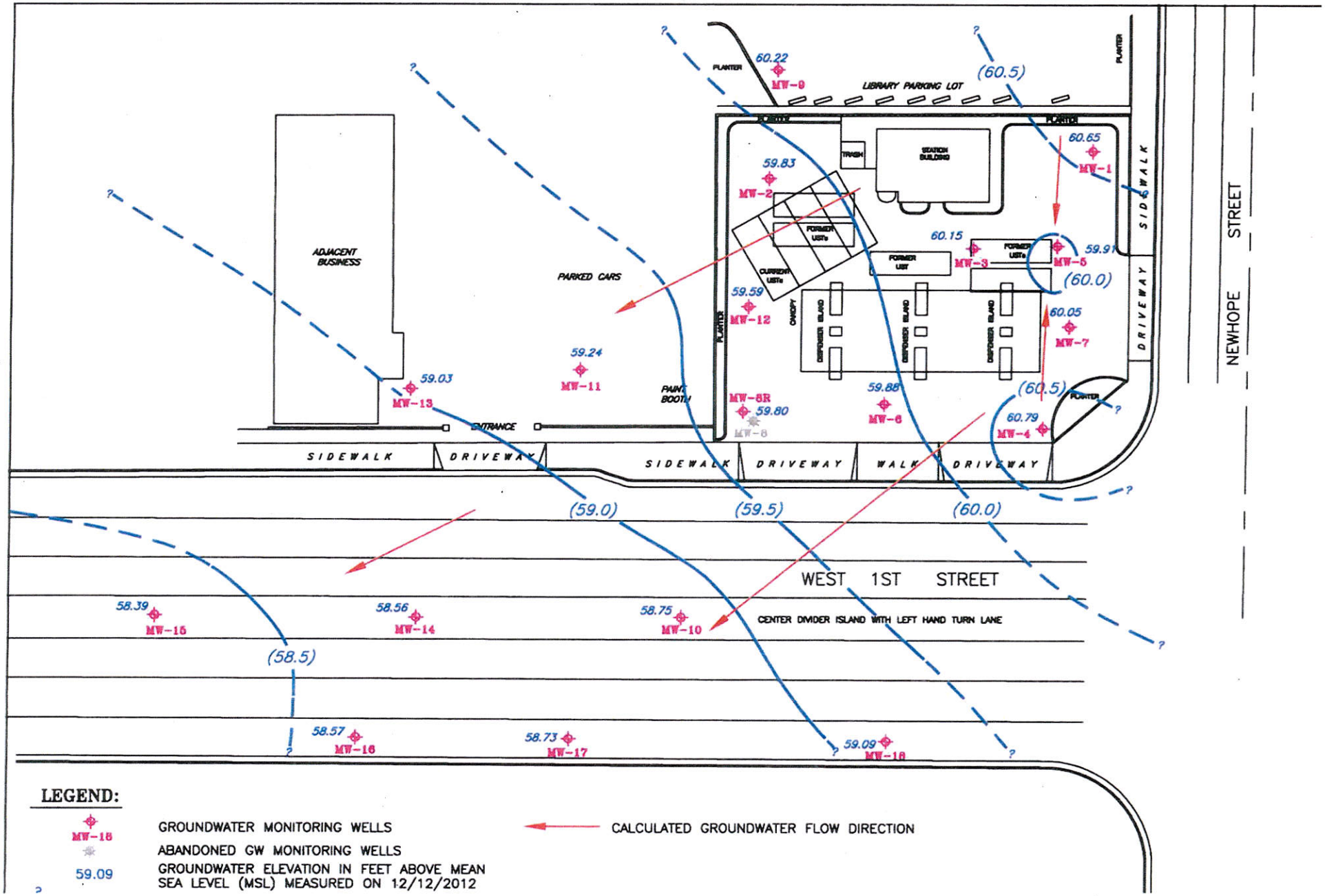


Evaluation of Current Risk

- 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.
- 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 1. The 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.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility.
- Direct Contact Risk from Residual Petroleum Hydrocarbons: 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. The Site is paved and accidental exposure to site soils is prevented. As an active petroleum fueling facility, any construction worker working at the Site will be prepared for exposure in their normal daily work.

G&M Oil Company Station # 30
4504 West 1st Street, Santa Ana
Claim No: 17126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