UST CASE CLOSURE SUMMARY

Agency Information

Agency Name: San Diego Regional Water Quality Control Board (Regional Water Board)	Address: 9174 Sky Park Court, Suite 100 San Diego, CA 92123-4353
Agency Caseworker: Sue J. Pease	Case No.: 9UT4171

Case Information

USTCF Claim No.: 17880	Global ID: T0606504561
Site Name: Rancho Car Wash	Address: 27378 Jefferson Avenue Temecula, CA 92590 Riverside County (Site)
Petitioner: Mr. Kirk Kuzmanic	Address: 27378 Jefferson Avenue Temecula, CA 92590 Riverside County
USTCF Expenditures to Date: $167,649	Number of Years Case Open: 11

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606504561

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 Policy. This Site 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 are summarized as follows.

The release at the Site was discovered when two underground storage tanks (USTs) were removed in 2002. The Site is currently operated as a car wash business. No known USTs remain at the Site. During the 2002 UST removal, an unknown quantity of petroleum impacted soil was excavated, over-excavated, and disposed offsite. Subsequent soil sampling results indicate that remaining petroleum-affected soils are delineated within an isolated area surrounding the former dispenser island at depths between 4 and 26 feet below ground surface (bgs). Methyl-tert Butyl Ether (MTBE) is the only reported petroleum constituent in groundwater remaining above Water Quality Objectives (WQOs). All other analyzed petroleum constituents have not been reported in groundwater since June 2009.

The petroleum release is limited to the shallow soil and groundwater. 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 site 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 5**. 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 WQOs will be achieved within a reasonable time frame.

- Petroleum Vapor Intrusion to Indoor Air –Site meets the criterion in **CLASS a SCENARIO 3.** As applicable, site-specific conditions at the release site satisfy all of the characteristics and criteria of scenario 3.

- Direct Contact and Outdoor Air Exposure – Site meets **CLASS a**. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 of the Policy. The estimated naphthalene concentrations in soil are less than the thresholds in Table1 of the Policy for direct contact. It is unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

Objections to Closure

Regional Water Board staff objected to UST case closure because:

1. The extent of the tert-Amyl Methyl Ether (TAME) and MTBE plumes have not been delineated to the southeast.

   Response: TAME was reported during one event in 2009 in grab groundwater from the Jack-in-the-Box property located approximately 200 feet southeast of the Site. However, because TAME has never been reported in groundwater at the Site, it is unlikely that TAME at the Jack-in-the-Box property originated from the Site. TAME, however, has been reported at elevated concentrations at the nearby ARCO #5500 property, 41555 Winchester Road, Temecula (Regional Water Board Case No. 9UT4169).

   Stable to decreasing MTBE concentrations have been reported in downgradient monitoring wells MW-3 and MW-5 and likely extends offsite to the east-southeast. However, based on the concentration gradient observed between the central portion of the plume and the lateral portions of the plume, it appears that the MTBE plume terminates beneath Winchester Avenue.

2. MTBE contamination in groundwater exceeds California Department of Public Health (CDPH) Maximum Contaminant Level (MCL) of 5.0 micrograms per liter (µg/L).

   Response: Recent groundwater monitoring data (December 2012) indicates that MTBE concentrations in monitoring well MW-4 along the western edge of the Site are at their highest concentrations and exceed the CDPH MCL for MTBE. However, monitoring well MW-4 is located crossgradient to upgradient of the former USTs and MTBE isoconcentration maps suggest that the MTBE plume extends from a source located west of the Site. Based on information from the aforementioned Regional Board Case No. 9UT4169, it is likely that MTBE-affected groundwater from the ARCO #5500 property is migrating onto the Site and is the source of increasing MTBE concentrations recently reported in MW-4. Based on an analysis of Site-specific conditions that under current and reasonably anticipated near-term future scenarios, concentrations of MTBE in groundwater from the Site are stable to decreasing is projected to reach water quality objectives in decades to hundreds of years.

3. The RP has not provided an estimated quantity of mass remaining onsite.

   Response: Based on data available within the record, mass remaining onsite represents a low-threat to human health and the environment under the current land use scenarios. Additional source removal would require remedial excavation beneath existing roadways, be cost prohibitive, and would be unnecessary for groundwater to reach WQOs within a reasonable time frame.

4. Information about the depth to drinking water aquifer relative to groundwater pollution has not been provided. Specifically, concern was expressed for the potential impact of MTBE from the Site to two supply wells (#106 and #205) located east of the Site. Direction and distance to nearest water supply has not been provided.

   Response: The report "Semi-Annual Groundwater Monitoring Report – January 2012, Rancho Car Wash, 27378 Jefferson Avenue, Temecula, California 92590", dated February 16, 2012 indicates that supply wells #106 and #205 are greater than 0.5 miles to the east and are screened at various intervals ranging between 130 and 985 feet. Petroleum affected groundwater at the Site has been reported in wells screened from 15 to 40 feet bgs. According to the Rancho California Water District (RCWD), the Site is not within the capture zones of these wells. According to records available from the CDPH, petroleum constituents have never been reported in supply wells #106 or #206.

5. Plume stability information has not been provided.

   Response: Time-concentration plots provided within the record from all 21 monitoring events performed at the Site between 2004 and 2012 assess plume stability and demonstrate that the plume has been stable and decreasing.

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.

Prepared By: _____ 4/25/13
Eric T. Morita, PG No. 8534 Date
Engineering Geologist

Reviewed By: _____ 4/25/13
Benjamin Heningburg, PG No. 8130 Date
Senior Engineering Geologist

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.[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 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.	☒ Yes ☐ No
Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this site?	☐ Yes ☒ No
If so, was the corrective action performed consistent with any order? There was an order issued for this site. The corrective action performed in the past is consistent with that order. Since this case meets applicable case-closure requirements, further corrective action under the order that is not necessary, unless the activity is necessary for case closure.	☐ 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

[1] Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No
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 (WQOs) 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 WQOs stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds WQOs meet all of the additional characteristics of one of the five classes of sites? If YES, check applicable class: ☐ **1** ☐ **2** ☐ **3** ☐ **4** ☒ **5**	☒ Yes ☐ No ☐ NA
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 of the Policy 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 INFORMATION (Conceptual Site Model)

Site Location/History

- The Site is located on the northern corner of the intersection of Jefferson Avenue and Winchester Road, approximately 600 feet west of the Interstate-15 freeway.
- The Site is a car wash business. No known USTs remain onsite.
- Nature of Contaminants of Concern: Petroleum hydrocarbons and fuel oxygenates.
- Primary Source of Release: UST System.
- Discovery Date: 2002
- Release Type: Petroleum[2].
- Free Product: None reported.

Table A: USTs

Tank No.	Size	Contents	Status	Date
1	10,000-gallon	Gasoline	Removed	2002
2	10,000-gallon	Gasoline	Removed	2002

Receptors

- Groundwater Basin: Temecula Valley (9-5)
- Groundwater Beneficial Uses: Municipal and domestic water supply (MUN), agricultural water supply (AGR), industrial service water supply (IND), and industrial process water supply (PRO).
- Designated Land Use: General Commercial (GC)
- Public Water System: Rancho California Water District (RCWD)
- Distance to Nearest Surface Water: The nearest surface water body is Santa Gertrudis Creek located approximately 900 feet north of the Site.
- Distance to Nearest Supply Wells: RCWD public supply well #106 is located approximately 2,800 feet to the northeast. RCWD public supply well #205 is located approximately 3,500 feet to the east.

Geology/Hydrogeology

- Average Groundwater Depth: Approximately 23 feet below ground surface (bgs).
- Minimum Groundwater Depth: 22.13 feet bgs.
- Groundwater flow direction: Southeast
- Geology: The Site is located within the Elsinore-Temecula Trough and is within the northwest-southeast striking Elsinore fault zone that extends beneath the northwest-southeast trending Temecula Valley. Holocene alluvium deposits that regionally fill the valley consist of unconsolidated gravel, sand, silt and clay. Geology observed at the Site consists of asphalt/concrete underlain by silt and clay to approximately 15 feet bgs and interbedded silt and sand from approximately 15 to a maximum explored depth of 40 feet bgs.

---

[2] "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 & Saf. Code, § 25299.2.)

- Hydrology: The Site is located in the Santa Margarita Watershed. Santa Gertrudis Creek flows to the southwest to Murrieta Creek, hence flows to the southeast to Temecula Creek, hence flows to the west to Santa Margarita River and continues to the southwest to the Pacific Ocean.
- Hydrogeology: Groundwater beneath the Site is unconfined.

Corrective Action

- In 2002, two USTs were removed. An unknown quantity of petroleum impacted soil was over-excavated and disposed off-site at the time of the UST removal.

Table B: Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 ft. bgs (mg/kg)	Maximum 5-10 ft. bgs (mg/kg)
Benzene	< 2.5	< 0.005
Ethylbenzene	3.52	<0.005
Naphthalene	NA	NA
Polyaromatic Hydrocarbons (PAHs)	NA	NA

bgs = below ground surface
ppm = parts per million
PAHs = Poly-aromatic hydrocarbons as benzo (a) pyrene toxicity equivalent
< = less than the indicated reporting limit
NA = Not analyzed

Table C: Most Recent Groundwater Sampling Results

Sample	Last Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TAME (µg/L)
MW-1	12/12/12	< 50	< 0.5	< 0.5	< 0.5	< 0.6	< 1	< 1
MW-2	12/20/12	< 50	< 0.5	< 0.5	< 0.5	< 0.6	< 1	< 1
MW-3	12/20/12	< 50	< 0.5	< 0.5	< 0.5	< 1.0	**14**	< 1
MW-4	12/20/12	< 50	< 0.5	< 0.5	< 0.5	< 0.6	**76**	< 1
MW-5	12/20/12	< 50	< 0.5	< 0.5	< 0.5	< 0.6	<1	< 1
DP-1*	11/13/08	< 100	< 0.5	< 0.5	< 0.5	< 0.5	**26**	< 1
WQOs		--	**1**	**150**	**300**	**1,750**	**5**	--

µg/L= micrograms per liter
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
MTBE = methyl tert-Butyl ether
TAME = tert-Amyl methyl ether
< = less than the indicated reporting limit
Bolded concentrations exceed the WQO.

Groundwater Trends:

- Reported concentrations of petroleum hydrocarbons at the Site have demonstrated stable to decreasing trends over time.

Evaluation of Risk Criteria

- Maximum Petroleum Constituent Plume Length above WQOs: Approximately 170 to 200 feet.
- 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 – 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[3] at the Site: No.
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No. Site-specific conditions satisfy all applicable characteristics and criteria for petroleum vapor intrusion to indoor-air under class a. scenario 3.
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No. Maximum concentrations of petroleum constituents in soil (since 2009) are less than or equal to those listed in Table 1. 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% benzene and 0.25% 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 Table1 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.

[3] Nuisance as defined in California Water Code, section 13050, subdivision (m).

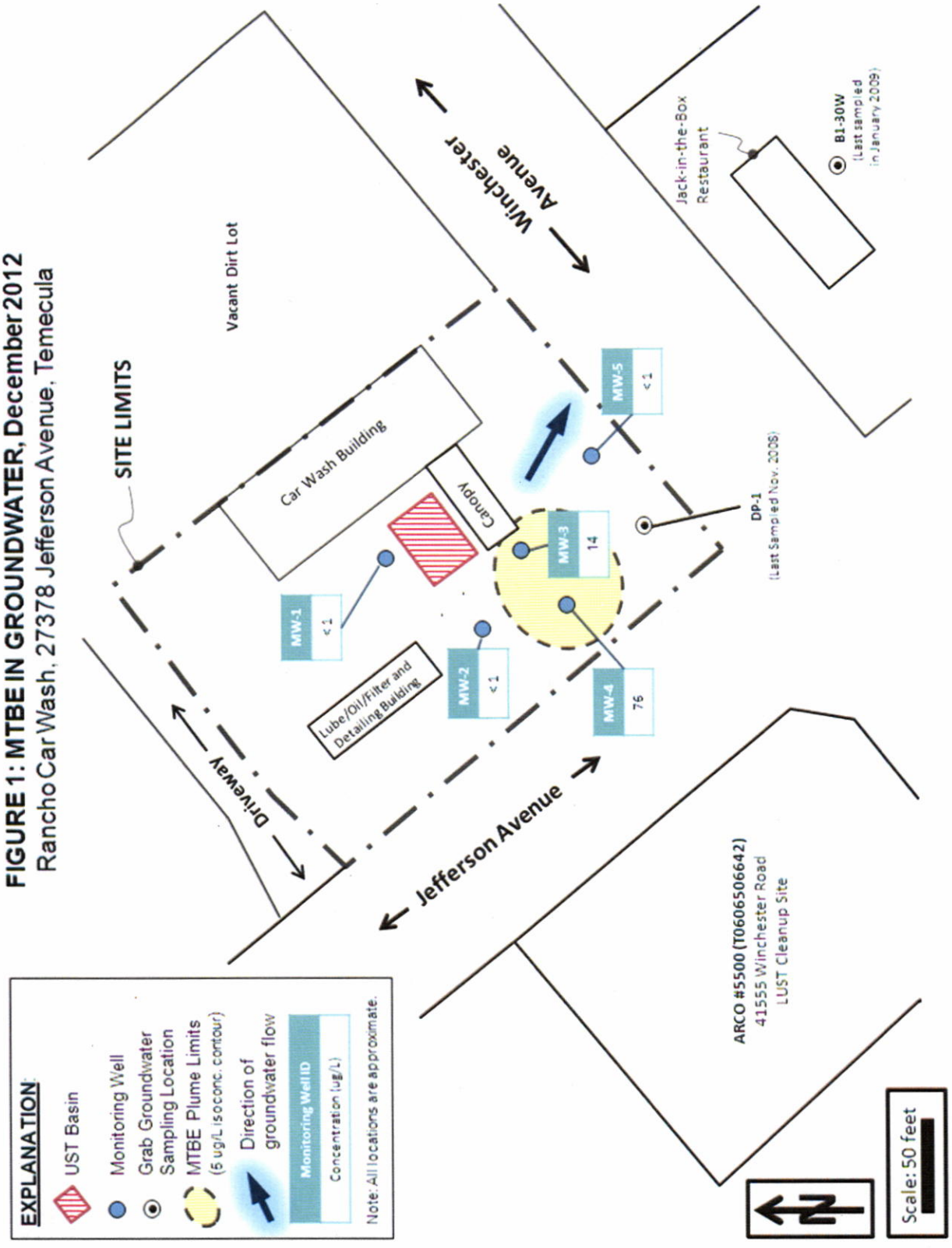
FIGURE 1: MTBE IN GROUNDWATER, December 2012
Rancho Car Wash, 27378 Jefferson Avenue, Temecula
EXPLANATION
UST Basin
Monitoring Well
Grab Groundwater Sampling Location
MTBE Plume Limits (5 ug/L isoconc. contour)
Direction of groundwater flow
Monitoring Well ID
Concentration (ug/L)
Note: All locations are approximate.
SITE LIMITS
Vacant Dirt Lot
Car Wash Building
Canopy
Lube/Oil/Filter and Detailing Building
Driveway
Winchester Avenue
Jefferson Avenue
MW-1 < 1
MW-2 < 1
MW-3 14
MW-4 76
MW-5 < 1
DP-1
(Last Sampled Nov. 2006)
Jack-in-the-Box Restaurant
B1-30W
(Last sampled in January 2009)
ARCO #5500 (T0606506642)
41555 Winchester Road
LUST Cleanup Site
N
Scale: 50 feet