

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: County of Orange, Health Care Agency (County)	Address: 1241 East Dyer Road, Suite 120, Santa Ana, 92705
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Case Information

USTCF Claim No.: 14059	Global ID: T0605940476
Site Name: Automat Station	Site Address: 8505 Katella Avenue, Stanton, CA 90680
Responsible Party 1: APRO LLC Attention: Jeff Appel	Address: 17311 South Main Street, Gardena, CA 90248
Responsible Party 2: Robert Givens	Address: 19392 Big Range Road Canyon Lake, CA 92587
USTCF Expenditures to Date: \$846,269	Number of Years Case Open: 15

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605940476

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:

An unauthorized leak was reported in March 1997 following the modification of USTs. Contaminated soil was excavated and soil vapor extraction and ozone sparging have been conducted. Since 1987, 18 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 Golden State Water Company. 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:** 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. 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 can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the 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.

Objection to Closure and Response

The County objects to UST case closure for this case because onsite well MW-5 had one high measurement of tert butyl alcohol (TBA) in 2006-2007.

RESPONSE: The high TBA measurement in 2006 has not been below water quality objectives since 2007. Only one well, MW-1A, had reportable levels of TBA in the last sampling event (March 2013). As a result of five years of soil vapor extraction and subsequent ozone sparging, there is little residual petroleum hydrocarbon in soil at the Site.

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.

Fund Manager Recommendation for Closure

Based on available information, residual petroleum hydrocarbons at the Site do not pose significant risks 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. Orange County has the regulatory responsibility to supervise the abandonment of monitoring wells.

Lisa Babcock

Lisa Babcock, PG 3939, CEG 1235

5/30/13

Date

Prepared By: Kirk Larson, P.G. 6535

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 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>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this site? If so, was the corrective action performed consistent with any order?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <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 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <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><u>Media-Specific Criteria</u> 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 checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input 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>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 type="checkbox"/> 3 <input type="checkbox"/> 4</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>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 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 SITE INFORMATION (Conceptual Site Model)

Site Location/History

- The Site is a commercial petroleum fueling facility and is bounded by businesses across Dale Street to the west, businesses to the north and east, and businesses and residences across Katella Avenue to the south.
- Soil contamination was identified during UST modification in February 1997.
- Site maps showing the location of the current and removed USTs, monitoring wells, groundwater level contours, and tert-butyl alcohol (TBA) concentrations are provided at the end of this closure summary (Frey, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: March 1997.
- Status of Release: USTs active.
- Free Phase Hydrocarbons: None reported.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active
1,2	10,000	Gasoline	Active
3	10,000	Diesel	Active

Receptors

- GW Basin: Coastal Plain of Orange County.
- Beneficial Uses: Municipal and Domestic Supply.
- Land Use Designation: Commercial.
- Public Water System: Golden State Water Company.
- Water District: Metropolitan 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 clayey silts and fine-grained sands.
- Maximum Sample Depth: 50 feet below ground surface (bgs).
- Minimum Groundwater Depth: 16.79 feet bgs at monitoring well MW-9.
- Maximum Groundwater Depth: 25.74 feet bgs at monitoring well MW-13.
- Current Average Depth to Groundwater: Approximately 20 feet bgs.
- Saturated Zones(s) Studied: Approximately 17-55 bgs.
- Groundwater Flow Direction: Mounding near MW-1A, generally east southeast with an average gradient of 0.029 feet/foot (March 2013).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (03/05/13)
MW-1A	July 2003	10 - 35	18.72
MW-2A	July 2003	10 - 35	19.05
MW-3A	July 2003	10 - 35	18.40
MW-4	1991	? - 55	18.80
MW-5A	May 1987	20 - 55	19.20
MW-6	July 2002	10 - 35	19.18
MW-7	July 2002	10 - 35	NM
MW-8	July 2002	10 - 35	19.70
MW-9	July 2002	10 - 35	18.10
MW-10	March 2004	15 - 40	20.10
MW-11	March 2004	15 - 40	19.32
MW-12	March 2004	15 - 35	20.05
MW-13	August 2004	15 - 35	20.35
MW-14	August 2004	15 - 35	20.10
MW-15	November 2005	10 - 35	19.84
MW-16	November 2005	10 - 35	20.03
MW-16B	November 2005	45 - 50	20.38
MW-17	December 2007	10 - 30	18.97

NM: Not measured

Remediation Summary

- Free Product: None reported in GeoTracker.
- Soil Excavation: Unknown.
- In-Situ Soil/Groundwater Remediation: Soil vapor extraction and air sparging were conducted for two months in 2006. Ozone sparging, intermittently conducted from 2006 through present, injected 153 pounds of ozone into subsurface.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs. [mg/kg/ (Date)]	Maximum 5-10 feet bgs [mg/kg/ (Date)]
Benzene	<0.002 (2012)	<0.002 (2012)
Ethylbenzene	<0.002 (2012)	<0.002 (2012)
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-1A	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	2,200
MW-2A	03/08/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-3A	03/08/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-4	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-5A	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-6	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-7	03/08/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-8	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-9	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-10	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-11	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-12	03/05/13	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-13	03/07/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-14	03/07/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-15	03/07/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-16	03/07/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-16B	03/07/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
MW-17	03/08/12	<100	<0.5	<0.5	<0.5	<1	<2	<10
WQOs	-	--	1	150	300	1,750	5	1,200^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

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Santa Ana Regional Water Quality Control Board (Regional Water Board) Basin Plan

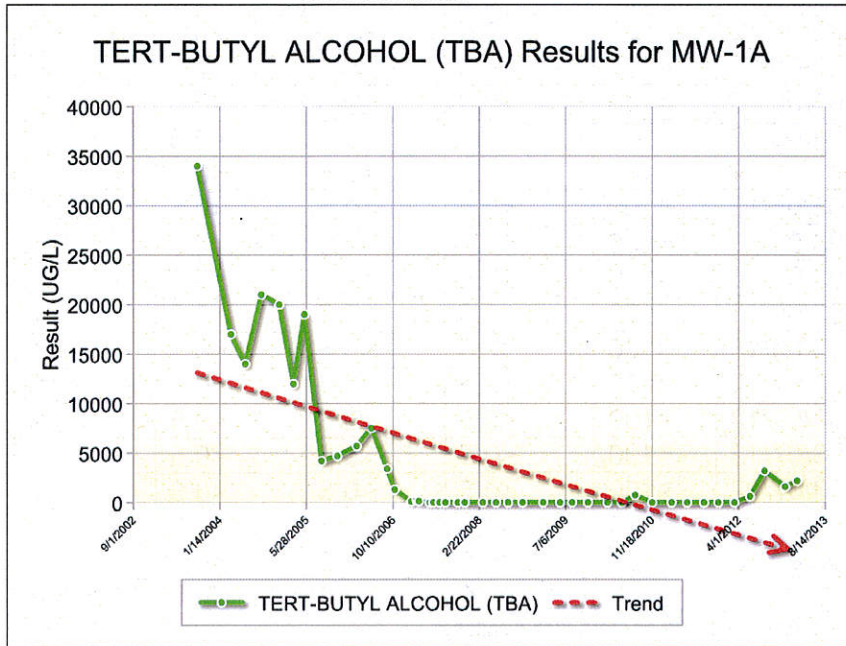
--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg

^a: California Department of Public Health, Response Level

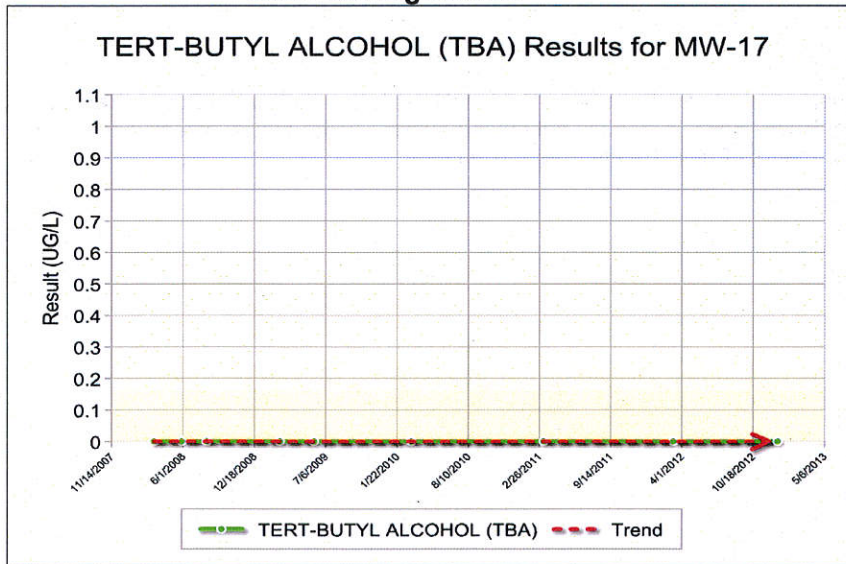
Groundwater Trends:

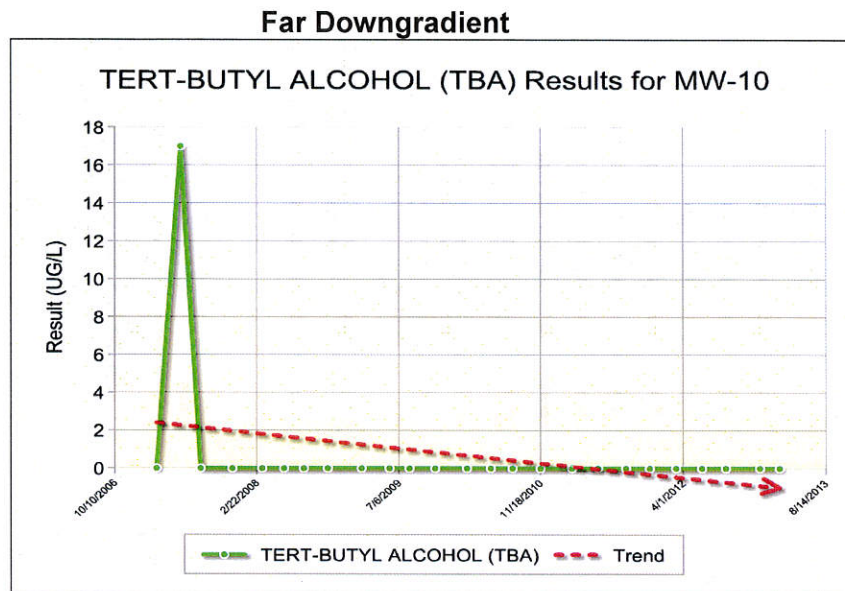
- There are 20 years of regular groundwater monitoring data for this Site. TBA trends are shown below: Source area monitoring well (MW-1A), near downgradient monitoring well (MW-17) and far downgradient monitoring well (MW-10).

Source Area



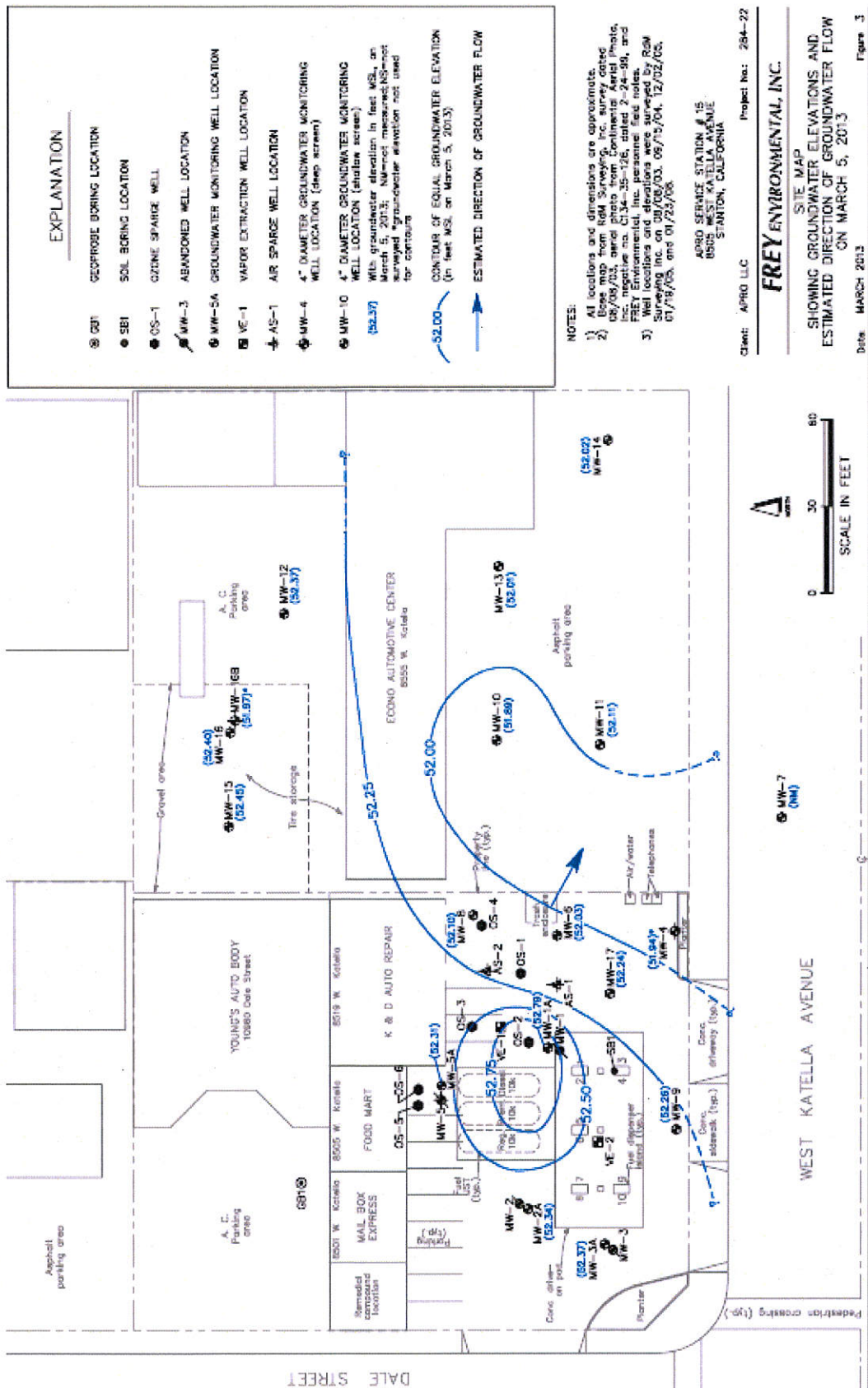
Near Downgradient

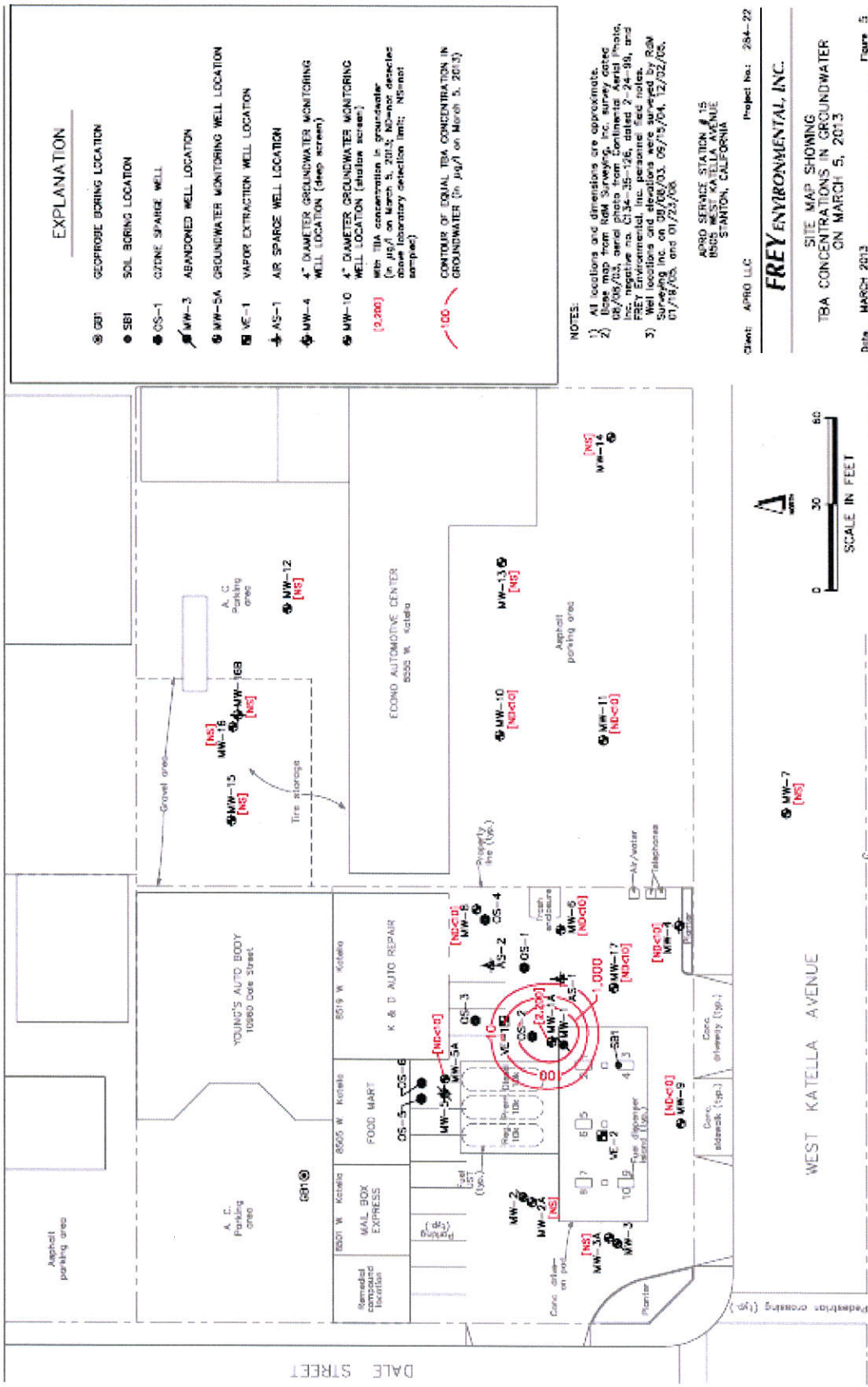




Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, see table below.
- Oxygen Concentration in Soil Vapor: No data.
- 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 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.
- 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: 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. 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 can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the 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.





EXPLANATION

- ⊙ GBT GEOPROBE BORING LOCATION
 - SBI SOIL BORING LOCATION
 - ⊙ CS-1 CYLINE SPANNE WELLS
 - ⊙ MW-3 ABANDONED WELL LOCATION
 - ⊙ MW-5A GROUNDWATER MONITORING WELL LOCATION
 - ⊙ VE-1 VAPOR EXTRACTION WELL LOCATION
 - ⊙ AS-1 AIR SPARGE WELL LOCATION
 - ⊙ MW-4 4" DIAMETER GROUNDWATER MONITORING WELL LOCATION (slump screen)
 - ⊙ MW-10 4" DIAMETER GROUNDWATER MONITORING WELL LOCATION (station screen)
- With TBA concentration in groundwater
 (in µg/l) on March 5, 2013; NS-not detected
 above laboratory detection limit; ND-not
 sampled
- 100 ---
 CONTOUR OF EQUAL TBA CONCENTRATION IN
 GROUNDWATER (in µg/l) on March 5, 2013

NOTES:

- 1) All locations and dimensions are approximate.
- 2) US/08/03 and photo from Continental Aerial Photo, Inc., negative no. C134-35-126, dated 2-24-84, and FREY Environmental, Inc. personnel field notes.
- 3) Well locations and elevations were surveyed by RSM Surveying Inc. on 09/08/03, 05/15/04, 12/02/05, 01/18/05, and 01/23/06.

Client: APRIO LLC Project No.: 284-22
 APRIO SERVICE STATION # 15
 8505 WEST KATELLA AVENUE
 STANTON, CALIFORNIA

FREY ENVIRONMENTAL, INC.

SITE MAP SHOWING
 TBA CONCENTRATIONS IN GROUNDWATER
 ON MARCH 5, 2013

Date: MARCH 2013 Figure 5

