

## State Water Resources Control Board

### UST CASE AND NON-PETROLEUM CASE CLOSURE SUMMARY

#### Agency Information

Agency Name: North Coast Regional Water Quality Control Board (Regional Water Board)	Address: 5550 Skylane Boulevard, Suite A Santa Rosa, CA 95403
Agency Caseworker: Mr. Craig Hunt	Case Nos.: 1TMC005 (UST) 1NMC005 (Non-Petroleum)

#### Case Information

USTCF Claim No.: None	Global IDs: T0604500005 (UST) T10000004239 (Non-Petroleum)
Site Name: CDOT Ukiah Facility	Site Address: 90 West Lake Mendocino Drive Ukiah, CA 95482 (Site)
Petitioner: California Department of Transportation (CDOT) Attention: Mr. Arron Rambach	Address: P.O. Box 911 Marysville, CA 95901
USTCF Expenditures to Date: None	Number of Years Case Open: 26 (UST) 1 (Non-Petroleum)

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0604500005](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0604500005)

#### 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 Low-Threat Policy. This Site does **NOT** satisfy **GENERAL CRITERIA b** of the Policy, which requires the unauthorized release to consist only of petroleum. This Site meets all of the required criteria of the State Water Resources Control Board Resolution 92-49. A summary evaluation of compliance with the Resolution 92-49 is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model (CSM) upon which the evaluation of the cases has been made is described in **Attachment 2: Summary of Basic Site Information**. Highlights of the CSM upon which the evaluation of the cases has been made are as follows:

The Site consists of two parcels referred to as Ukiah East and Ukiah West. The release at Ukiah East consists of petroleum constituents which were discovered in 1987 during the removal of a 1,000-gallon gasoline underground storage tank (UST). Releases at Ukiah West consist of petroleum constituents and chlorinated solvents which were discovered during the removal of multiple USTs in 1997 and 1992. No known USTs remain on-Site.

CDOT Ukiah Facility  
90 West Lake Mendocino Drive, Ukiah, Mendocino County

The residual petroleum plume at Ukiah East is delineated by monitoring wells located near the former gasoline UST. Residual petroleum and chlorinated solvents plumes at Ukiah West were delineated by monitoring wells MW-2 and MW-3 prior to their approved destruction in 2010. These wells were located near a former UST pit, three former dry wells, a wash rack, and an oil water separator. All wells at Ukiah West were destroyed in 2010.

The petroleum and chlorinated solvent releases are limited to shallow soil and groundwater. Public supply wells are usually constructed with competent sanitary seals and intake screens that are in deeper more protected aquifers. Remaining petroleum and chlorinated solvents are limited and stable. Remedial actions have been implemented and further remediation is not necessary. Additional assessment/monitoring will not likely change the conceptual model. Any remaining petroleum constituents, or chlorinated solvents, do not pose significant risk to human health, safety or the environment.

### **Objections to Closure**

Regional Water Board staff objected to UST case closure because:

1. Total Petroleum Hydrocarbons as gasoline (TPHg) and benzene exist in groundwater above Water Quality Objectives (WQOs) and residual TPHg remains in soil at Ukiah East.  
RESPONSE: TPHg and benzene concentrations in groundwater at Ukiah East demonstrate stable to decreasing trends. 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 drinking water standards will be achieved within a reasonable time frame.

TPHg and benzene in soil at Ukiah East exists at depths greater than 10 feet bgs. The remaining TPHg and benzene concentrations in soil are less than levels that a Site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health.

2. TPHg and benzene in groundwater from monitoring wells MW-2 and MW-3 at Ukiah East do not demonstrate significant decreasing trends.  
RESPONSE: Time-concentration plots for MW-2 and MW-3 over the most recent 10-years (2002-2012) demonstrate that there are seasonal fluctuations of TPHg and benzene concentrations in groundwater. However, there are overall decreasing TPHg and benzene concentration trends. These decreasing trends demonstrate that TPHg and benzene in groundwater are stable to decreasing.

Regional Water Board staff objected to non-petroleum case closure because:

1. As of the most recent groundwater sampling event performed at Ukiah West in 2009, chlorinated solvents 2-chlorotoluene and trichloroethylene (TCE) existed in groundwater at concentrations above WQOs. However, since the concentrations did not greatly exceed WQOs and the extent and stability of contamination had been determined, a no-further action determination with a deed restriction was acceptable. CDOT requested and the Regional Water Board agreed informally that the deed restriction for Ukiah West would not be implemented until the Ukiah East area was also ready for closure, in case the deed restriction would also be needed for that area.  
RESPONSE: As of June 2009, 2-chlorotoluene and TCE were reported in groundwater from Ukiah West only from deep monitoring well DW-2.

CDOT Ukiah Facility  
90 West Lake Mendocino Drive, Ukiah, Mendocino County


During 2009, a concentration of 2-chlorotoluene was reported in DW-2 at 49 micrograms per liter ( $\mu\text{g/L}$ ) which is above the WQO of  $6.9 \mu\text{g/L}$ . This WQO was based on Taste and Odor Threshold. However, 2-chlorotoluene in DW-2 did not exceed the California Department of Public Health Notification Level of  $140 \mu\text{g/L}$ . Notification Levels are published for constituents where no drinking water Maximum Contaminant Levels (MCLs) exist and are based health risks and advisory levels for water suppliers. In addition, the nearest supply well is located approximately 0.7 miles southeast of the Site.

During 2009, a concentration of TCE was reported in groundwater from DW-2 at  $2.4 \mu\text{g/L}$  which exceeds the WQO of  $1.7 \mu\text{g/L}$ . This WQO was based on California Public Health Goals (PHGs). Where PHGs were developed solely on scientific and public health considerations without regard to economic considerations, drinking water MCLs consider economic factors and technical feasibility. In 2009, the TCE concentration reported in DW-2 was below the California Primary MCL of  $5 \mu\text{g/L}$ .

Neither 2-chlorotoluene nor TCE have been reported in groundwater from deep monitoring wells DW-3 through DW-5 located at Ukiah West. This indicates that the contaminant plume is less than 100 feet in length. Chlorinated solvents in groundwater at Ukiah West exist above WQOs, however concentrations are below California drinking water standards. Requiring that the WQOs for chlorinated solvents in groundwater be significantly less than drinking water standards is overly conservative. Based on a Site-specific assessment, a deed restriction would not be necessary for the case closure at Ukiah West.

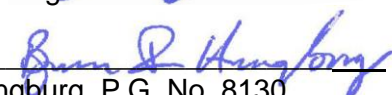
### Recommendation for Closure

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 UST and non-petroleum case closures are recommended.

Prepared By:   
Eric Morita, P.G. No. 8534  
Engineering Geologist

9/13/2013

\_\_\_\_\_  
Date

Reviewed By:   
Benjamin Heningburg, P.G. No. 8130  
Senior Engineering Geologist

9/13/2013

\_\_\_\_\_  
Date

**ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW**

The Site complies with State Water 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 Resolution 92-49 as described below.**

<p><b>Will corrective action performed ensure the protection of human health, safety, and the environment?</b>          The information included in this UST Case and Non-Petroleum Case Closure Summary supports a determination that corrective action performed at this Site will ensure the protection of human health, safety, and the environment.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<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 Case and Non-Petroleum 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 Site 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 Site?</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>Are corrective action and UST Case and Non-Petroleum Case closure consistent with State Water Board Resolution 92-49?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Is achieving background water quality feasible?</b>          To remove all traces of residual petroleum constituents at the Site would require significant effort and cost. Removal of all traces of residual petroleum hydrocarbon constituents (if present) that contribute to detectable concentrations in shallow groundwater can be accomplished, but would require excavation of additional soil as well as additional remediation of shallow groundwater. If complete removal of all detectable traces of petroleum constituents becomes the standard for UST corrective actions, the statewide technical and economic implications will be enormous. Because of the high costs involved and minimal benefit of attaining further reductions in concentrations of petroleum constituents at this Site, and the fact that beneficial uses are not threatened, attaining background water quality at this Site is not feasible.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

<p><b>If achieving background water quality is not feasible:          Is the alternative cleanup level consistent with the maximum benefit to the people of the State?</b></p> <p>It is impossible to determine the precise level of water quality that will be attained given the uncertainties about the rates of dissolution and degradation. In light of all the factors discussed above and the fact that the residual petroleum constituents will not unreasonably affect present and anticipated beneficial uses of groundwater, an acceptable level of water quality will be attained that is consistent with the maximum benefit to the people of the State.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Will the alternative cleanup level unreasonably affect present and anticipated beneficial uses of water?</b> The aquifer beneath the Site is at or near WQOs and the surrounding aquifer is below WQOs. Groundwater concentrations will continue to reduce through natural attenuation.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b>Will the alternative level of water quality result in water quality less than that prescribed in applicable Basin Plan?</b></p> <p>The final step in determining whether cleanup to a level of water quality less stringent than background is appropriate for this Site requires a determination that the alternative level of water quality will not result in water quality less than that prescribed in the relevant basin plan. Pursuant to State Water Board Resolution 92-49, a site may be closed if the basin plan requirements will be met within a reasonable time frame.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b>Have factors contained in title 23 of the California Code of Regulations, section 2550.4 been considered?</b></p> <p>In approving an alternative level of water quality less stringent than background, the State Water Board considers the factors contained in California Code of Regulations, title 23, section 2550.4, subdivision (d).</p> <p>The adverse effect on shallow groundwater will be minimal and localized, and there will be little adverse effect on the groundwater contained in deeper aquifers, given the physical and chemical characteristics of petroleum constituents, the hydrogeological characteristics of the Site and surrounding land. In addition, the potential for adverse effects on beneficial uses of groundwater is low, in light of the proximity of the groundwater supply wells, the current and potential future uses of groundwater in the area, the existing quality of groundwater, the potential for health risks caused by human exposure, the potential damage to wildlife, crops, vegetation, and physical structures, and the persistence and permanence of potential effects.</p> <p>Finally, a level of water quality less stringent than background is unlikely to have any impact on surface water quality, in light of the volume and physical and chemical characteristics of petroleum constituents; the hydrogeological characteristics of the Site and surrounding land; the quantity and quality of groundwater and direction of groundwater flow, the patterns of precipitation in the region, and the proximity of residual petroleum to surface waters.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

<p><b>Will the requisite level of water quality be met within a reasonable time?</b> Although WQOs may not have been met at the Site, the approximate time period in which the requisite level of water quality will be met for constituents of concern is decades to hundreds of years. This is a reasonable period in which to meet the requisite level of water quality because current and future beneficial uses are not impaired. Impacted groundwater is not currently being used as a source of drinking water and it is highly unlikely that impacted groundwater will be used as a source of drinking water in the future. Public supply wells are constructed with competent sanitary seals and intake screens that are in deeper more protected aquifers. The Site conditions do not represent a substantial threat to human health, safety, or the environment, and case closure is appropriate.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
---	--

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

**Site Location/ History**

- Location: The Site is located near the intersection of Lake Mendocino Drive and North State Street in Ukiah. The Site is a CDOT maintenance yard with office and storage buildings. The Site is bounded by properties zoned as industrial land use in all directions.
- Nature of Contaminants of Concern: Petroleum<sup>1</sup> constituents and chlorinated solvents.
- Primary Source of Release: UST system.
- Discovery Date: 1987.
- Release Type: Petroleum constituents and chlorinated solvents.
- Free Product: Not reported.

**Table A: USTs**

Tank No.	Size (in gallons)	Contents	Status	Date	Location
1	285	Unknown Fuel	Removed	1987	Ukiah West
2	20,000	Diesel	Removed	1987	Ukiah West
3	1,000	Waste Oil	Removed	1987	Ukiah West
4	550	Unknown Fuel	Removed	1987	Ukiah West
5	1,000	Unleaded Gasoline	Removed	1987	Ukiah East
6	6,000	Gasoline	Removed	1992	Ukiah West
7	3,000	Gasoline	Removed	1992	Ukiah West
8	3,000	Diesel	Removed	1992	Ukiah West

**Receptors**

- Groundwater Basin: Ukiah Valley (1-52).
- Groundwater Beneficial Uses: Municipal (MUN), Agricultural Supply (AGR), Industrial Supply (IND), and Groundwater Recharge (GWR).
- Designated Land Use: Industrial land use. Adjoining properties are zoned for industrial land-use. CDOT indicates that the adjoining properties to the immediate north and south of Ukiah East are being used as residences.
- Public Water System: Mendocino County Water District
- Distance to Nearest Supply Wells: State Well #2310006-004 is approximately 0.7 miles to the southeast and is on the opposite side (east) of the Russian River.
- Distance to Nearest Surface Waters: The Russian River is approximately 0.6 miles to the east.

**Geology/ Hydrogeology**

- Average Groundwater Depth: Approximately 10 feet below ground surface (bgs) in the shallow water-bearing zone and approximately 11 feet bgs in the deep water-bearing zone.
- Minimum Groundwater Depth: 0.88 feet bgs in the shallow water-bearing zone (MW-5 on 3/6/06) and 3.16 feet bgs (DW-2 on 3/3/09) in the deep water-bearing zone.

<sup>1</sup> "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 & Safety Code, § 25299.2)

- **Geology:** Two groundwater-bearing zones exist at the Site. The shallow water-bearing zone is unconfined, consists of interbedded of sand and gravel and is approximately 25 feet thick at Ukiah East and 15 feet at Ukiah West. Clay and silt underlies the shallow water bearing zone and is approximately 8 feet thick at Ukiah East and 17 feet thick at Ukiah West. The deep groundwater bearing zone underlies the clay and silt layers and is approximately 8 feet thick at both Ukiah East and Ukiah West to a maximum explored depth of 50 feet bgs.
- **Hydrogeology:** Groundwater beneath the Site is unconfined to semi-confined.

**Corrective Actions**

- 1987 – Four USTs from Ukiah West and one UST from Ukiah East were removed and over-excavated soil was disposed off-Site.
- 1992 – Three USTs from Ukiah West were removed and over-excavated soil was disposed off-Site. Approximately 40 cubic yards of over-excavated soil from the wash rack area was removed off-Site.

**Table B: Concentrations of Petroleum Constituents in Soil**

<b>Constituent</b>	<b>Maximum 0-5 ft. bgs (mg/kg)</b>	<b>Maximum 5-10 ft. bgs (mg/kg)</b>
Benzene	<0.5	<0.5
Ethylbenzene	<0.5	<0.5
Naphthalene	ND	ND
PAHs*	ND	Bis(2-ethylhexyl)phthalate = 3.7 All others = ND

< = Less than the indicated laboratory method reporting limit.

\* = Poly-aromatic hydrocarbons (PAH) as benzo(a)pyrene toxicity equivalent

ND = Non-Detect. Not detected or not reported above laboratory method reporting limits for multiple constituents. Refer to laboratory analytical reports for details.

VOC = Volatile Organic Compounds



**Table C: Most Recent Concentrations of Constituents in Groundwater at Ukiah East**

ID	SAMPLE DATE	TPHg	TPHd	B	T	E	X	MTBE	TCE	cis-1,2 DCE	2-chloro toluene	
		Concentrations in micrograms per liter (µg/L)										
UKIAH EAST	MW-1	09/21/11	<50	ND* (11/1/92)	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (11/1/92)	---	---
	MW-2	02/07/12	<b>80</b>	ND* (11/1/92)	<0.5	<0.5	0.53	3.2	<0.5* (3/16/00)	ND* (11/1/92)	---	---
	MW-3	02/07/12	<b>410</b>	<0.5* (3/20/07)	<b>2.3</b>	1.8	<b>4.4</b>	10	1.4*	ND* (11/1/92)	---	---
	MW-14	09/21/11	<50	ND* (11/1/92)	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (11/1/92)	---	---
	MW-15	09/21/11	<50	ND* (11/1/92)	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (11/1/92)	---	---
	MW-16A	09/21/11	<50	---	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (11/1/92)	---	---
	MW-17	09/21/11	<50	ND* (11/1/92)	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	<b>1.4* (11/1/92)</b>	---	---
	MW-18	09/21/11	<50	<50* (11/1/92)	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (11/1/92)	---	---
	MW-19	02/07/12	<50	---	<0.5	<0.5	<0.5	<1.0	---	---	---	---
	DW-1	09/21/11	<50	<50* (3/20/07)	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	<0.5	---	---
Primary MCL		--	--	1	150	300	1,750	12	5	6	--	
Secondary MCL		--	--	--	--	--	--	5	--	--	--	
Public Health Goal		--	--	0.15	150	300	1,800	13	1.7	100	--	
Notification Level		--	--	--	--	--	--	--	--	--	140	
Taste and Odor		--	100	170	42	29	17	20	310	--	6.9	
Cancer Potency Factor		21	--	0.35	--	3.2	--	19	5.9	--	--	
<b>Water Quality Objective</b>		<b>5</b>	<b>100</b>	<b>0.15</b>	<b>42</b>	<b>3.2</b>	<b>17</b>	<b>5</b>	<b>1.7</b>	<b>6</b>	<b>6.9</b>	

**Notes**

Chemical constituents listed above consist of Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPHg), TPH quantified as diesel (TPHd), benzene (B), toluene (T), ethylbenzene (E), total xylenes (X), methyl tert-Butyl ether (MTBE), trichloroethene (TCE), cis-1,2-Dichloroethene (cis-1,2-DCE), and 2-chlorotoluene. Detected concentrations that exceed WQOs are shown in **bold**.

"\*" = The most recent results were collected during a different sampling event (sampled date in parentheses).

"--" = Not Analyzed

"<" = Less than the laboratory method reporting limit.

"ND" = Non-detect for multiple constituents. Refer to the laboratory report for the individual reporting limits.

**Table D. Most Recent Concentrations of Constituents in Groundwater at Ukiah West**

ID	SAMPLE DATE	TPHg	TPHd	B	T	E	X	MTBE	TCE	cis-1,2 DCE	2-chloro toluene	
		Concentrations in micrograms per liter (µg/L)										
UKIAH WEST	MW-4	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/3/99)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-5	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/3/99)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-6	03/25/09	<b>50</b>	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/3/99)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-7	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-8	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-9	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-10	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-12	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	MW-13	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5* (3/16/00)	ND* (10/14/98)	ND* (10/14/98)	ND* (10/14/98)
	DW-2	03/25/09	<b>120</b>	<50	<0.5	<0.5	<0.5	3.9	<0.5* (3/16/00)	<b>2.4</b>	4.3	<b>49</b>
	DW-3	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	---	<0.5	<0.5	<0.5
	DW-4	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	---	<0.5	<0.5	<0.5
	DW-5	03/25/09	<50	<50	<0.5	<0.5	<0.5	<1.0	---	<0.5	<0.5	<0.5
Primary MCL		--	--	1	150	300	1,750	12	5	6	--	
Secondary MCL		--	--	--	--	--	--	5	--	--	--	
Public Health Goal		--	--	0.15	150	300	1,800	13	1.7	100	--	
Notification Level		--	--	--	--	--	--	--	--	--	140	
Taste and Odor		--	100	170	42	29	17	20	310	--	6.9	
Cancer Potency Factor		21	--	0.35	--	3.2	--	19	5.9	--	--	
<b>Water Quality Objective</b>		<b>5</b>	<b>100</b>	<b>0.15</b>	<b>42</b>	<b>3.2</b>	<b>17</b>	<b>5</b>	<b>1.7</b>	<b>6</b>	<b>6.9</b>	

**Notes**

Chemical constituents listed above consist of Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPHg), TPH quantified as diesel (TPHd), benzene (B), toluene (T), ethylbenzene (E), total xylenes (X), methyl tert-Butyl ether (MTBE), trichloroethene (TCE), cis-1,2-Dichloroethene (cis-1,2-DCE), and 2-chlorotoluene. Detected concentrations that exceed WQOs are shown in **bold**.

"\*" = The most recent results were collected during a different sampling event (sampled date in parentheses).

"—" = Not Analyzed

"<" = Less than the laboratory method reporting limit.

"ND" = Non-detect for multiple constituents. Refer to the laboratory report for the individual reporting limits.

### **Groundwater Trends**

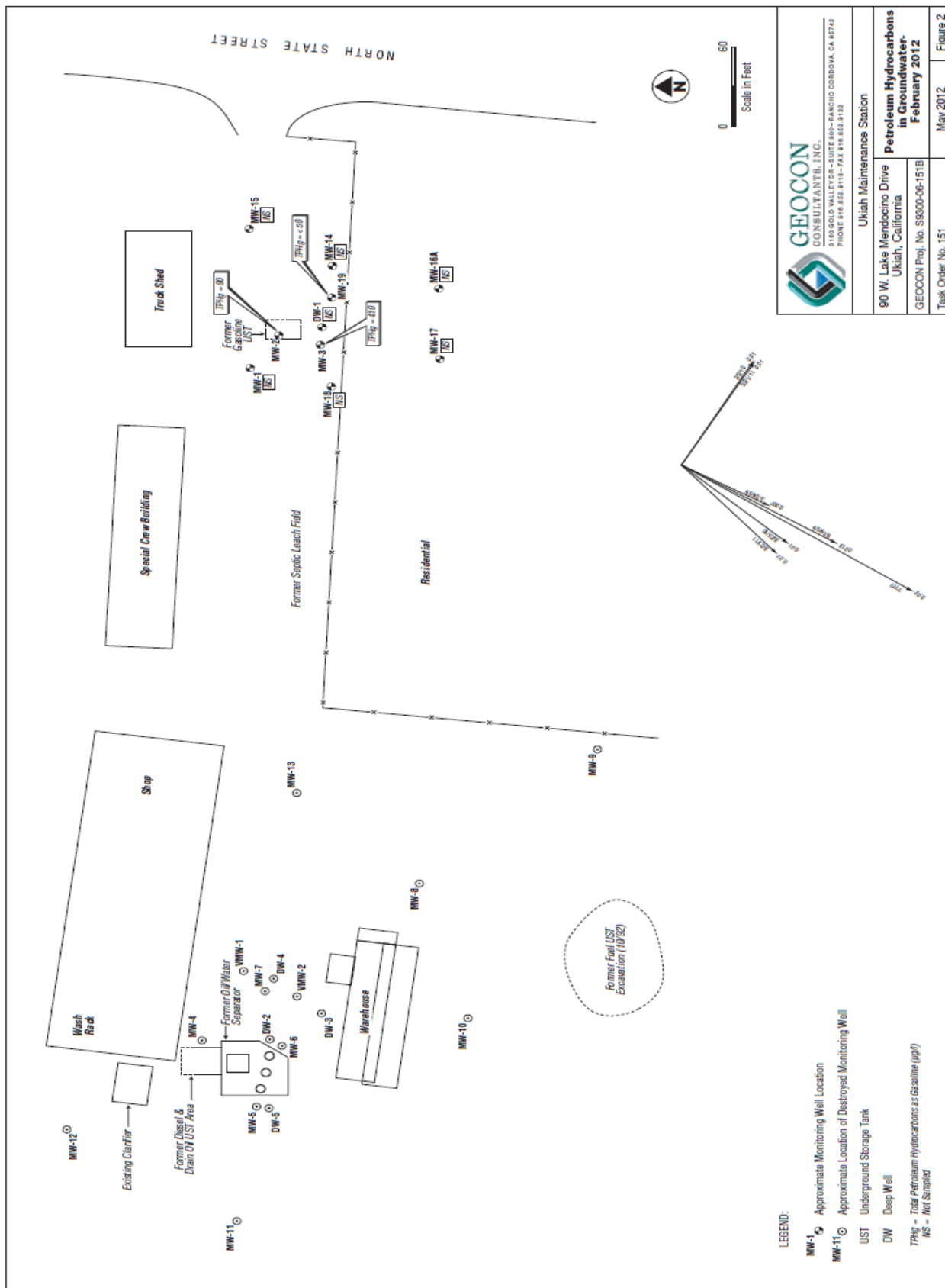
Reported concentrations of TPHg and benzene at the Site have demonstrated stable or decreasing trends over time since remediation was ceased.

### **Evaluation of Risk Criteria**

- Maximum Petroleum Constituent Plume Length above WQOs: The groundwater plume is approximately 100 feet in length.
- Petroleum Constituent Plume Determined Stable or Decreasing: Yes
- Soil/Groundwater Sampled for MTBE: Yes, see Tables B, C, and D 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<sup>2</sup> at the Site: No
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No. Site-specific conditions satisfy all of the applicable characteristics and criteria for petroleum vapor intrusion to indoor-air under class a. scenario 3 of the Policy.
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No – Concentrations in soil meet Table 1 of the Policy.

---

<sup>2</sup> Nuisance as defined in California Water Code, section 13050, subdivision (m).



**GEOCON**  
 CONSULTANTS, INC.  
 24400 WALTONS - SUITE 600 - RANCHO CORONA, CA 92712  
 PHONE 919.822.4115 - FAX 919.822.4132

Ukiah Maintenance Station

90 W. Lake Mendocino Drive  
 Ukiah, California

petroleum Hydrocarbons  
 in Groundwater  
 February 2012

GEOCON Proj. No. S9000-06-151B  
 Task Order No. 151

May 2012

Figure 2

LEGEND:

- MW-1 ⊕ Approximate Monitoring Well Location
- MW-11 ⊙ Approximate Location of Destroyed Monitoring Well
- UST Underground Storage Tank
- DW Deep Well
- TPHg - Total Petroleum Hydrocarbons as Gasoline (ppg)
- NS - Not Sampled