UST CASE CLOSURE SUMMARY

Agency Information

Agency Name: Central Valley Regional Water Quality Control Board	Address: 1685 E Street Fresno, CA 93706
Agency Caseworker: Mr. Jeffrey Hannel	Case No.: 5T20000200

Case Information

USTCF Claim No.: 14449	Global ID: T0603900194
Site Name: Yosemite Lakes Trading Post	Site Address: 29580 Yosemite Springs Parkway Coarsegold , Madera County (Site)
Petitioner: Edward Schiller	Address: P.O, Box 337 Central City, IA 52214
USTCF Expenditures to Date: $1,430,641	Number of Years Case Open: 13

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603900194

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 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 Site Information.** Highlights of the Conceptual Site Model of the Case are as follows:

The unauthorized release was discovered in March of 1999, following the removal and replacement of the three Underground Storage Tanks (USTs), associated piping, and pump island. During the removal activities, residual petroleum constituents were identified beneath the dispenser island and one of the USTs. Subsequent Site characterization indicated petroleum constituents in the soil and limited shallow perched water. It was later discovered that methyl tert-butyl ether (MTBE) and tert-butyl alcohol (TBA) had impacted the deep groundwater aquifer. The Site has remained operational as an active fueling facility.

A soil vapor extraction system (SVE), groundwater remediation system, and a limited pumping program were implemented. The SVE system effectively removed petroleum constituents from the soil and perched water. The groundwater remediation system and the limited pumping program have reduced deep onsite MTBE concentrations to near the primary maximum contaminant level (MCL). Normal drinking water production has removed residual petroleum constituents from the aquifer and will continue to remove the remaining residual petroleum constituents.

The release has affected the production aquifer used by the Yosemite Springs Park Utility Company (YSPUC). MTBE was detected in YSPUC wells above MCLs and as a result the Central Valley Regional Water Quality Control Board (Regional Water Board) requested production to be discontinued in four of the YSPUC wells. A California Department of Public Health (CDPH) funded MTBE treatment plant was installed to treat MTBE impacted drinking water from two of the YSPUC wells. It has been 7 years since the installation of the MTBE treatment plant and MTBE has not been detected in the influent water samples above the primary MCL since the installation of the treatment plant. Nearly 450 million gallons of water have been produced and delivered to customers from the impacted wells since the installation of the treatment plant in 2005. CDPH has indicated it will accept an application from YSPUC to discontinue the use of the MTBE treatment plant because the influent concentrations of MTBE have been below the secondary MCL since 2008.

The remaining petroleum constituents are limited, stable, and declining. Remedial actions have been implemented and the only effective remediation option available is to remove residual contamination through aquifer production. Additional assessment/monitoring will not likely change the conceptual model. Any remaining petroleum constituents do not pose significant risk to human health, safety, or the environment. The Regional Water Board concurred with the responsible party's recommendation for closure. However, the YSPUC has expressed objections to closure of this case.

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 water quality objectives (WQOs) will be achieved within a reasonable time frame. Lab data was provided by YSPUC for the two previously impacted production wells. MTBE was not detected above WQOs in 148 samples collected since 2008. The extensive analytical data indicates that the corrective actions have significantly reduced the plume and the production wells are no longer threatened.

- Petroleum Vapor Intrusion to Indoor Air – Site meets the **ACTIVE FUELING FACILITY** exception for vapor intrusion to indoor air, and has no release characteristics that can be reasonably believed to pose an unacceptable health risk.

- Direct Contact and Outdoor Air Exposure – Site meets **CRITERIA (3) a**. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1. The estimated naphthalene concentrations in soil 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.

Objections to Closure

The Regional Water Board staff does not object to UST case closure. However, YSPUC staff objected to UST case closure because:

1. In 2003, MTBE was detected in wells 11A and 18A above the MCL.
   RESPONSE: This was nearly 10 years ago and MTBE concentrations have been significantly reduced by active remediation and natural attenuation. These wells are not currently in use and

they have unaddressed coliform contamination issues due their shallow sanitary seals and proximity to private septic disposal systems.

2. YSPUC is unable to rehabilitate some of the wells within the well field due to the presence of the MTBE plume.
   RESPONSE: The Regional Water Board, in a letter dated August 17 2012, stated that, pending approval from the CDPH, the wells in question could be placed back in service. CDPH has indicated it does not object to placing the wells in question back in service.

3. Recent results from the previously unaffected well 47A indicated 2 ppb (parts per billion) TBA.
   RESPONSE: This data has not been provided to State Water Board, however there is no MCL for TBA, the TBA action level is 12 ppb, and taste and odor threshold for TBA is 290,000 ppb.

4. Wells 37A and 40A continue to contain MTBE and TBA.
   RESPONSE: MTBE concentrations have been below secondary MCL since 2008 and YSPUC has extracted over 266 million gallons from the affected wells since that time. MTBE concentrations have been less than 1 ppb for over a year.

   Data provided by YSPUC indicates that, TBA has only been detected in approximately 2% of influent water samples collected since 2005 and has not been detected in influent samples since 2010.

5. Groundwater treatment was discontinued due to system breakage not scientific findings.
   RESPONSE: At the time of equipment breakage continued groundwater remediation had become cost prohibitive and technically ineffective.

6. The extent of the plume not defined.
   RESPONSE : Plume definition in a fractured rock aquifer is difficult due to random preferential pathways created by the fracturing. The installation of additional wells in excess of 200 feet deep would not reduce/remove any significant residual petroleum and would be extremely expensive. Given the low concentrations proximal to the source and hydrological nature of fractured rock, this would not be an effective use of resources.

7. The TBA detection limit used is too high and TBA is consistently detected in the YSPUC's system.
   RESPONSE: According to data provided by YSPUC, TBA has been detected in YSPUC wells on 4 separate occasions and hasn't been detected above the action level since 2009.

8. The responsibility for cleanup is left to the YSPUC "the victim".
   RESPONSE: MTBE concentrations in YSPUC wells have been below primary and secondary MCLs since 2003 and 2008 respectively and CDPH provided YSPUC with a $3,000,000 granular activated carbon (GAC) treatment facility. MTBE treatment is no longer required or necessary. Continued production from the aquifer will reduce/remove any remaining residual petroleum constituents from the aquifer and is technically the only effective form of continued treatment and the most economical.

9. YSPUC has a requirement in their plant to reduce MTBE in the water they deliver to zero.
   RESPONSE: Laboratory methods are not available to achieve such a requirement and the secondary MCL is 5 ppb. This is a requirement of the CDPH treatment plant operation plan. However, the treatment plant is unnecessary since the MTBE concentrations have been below the secondary MCL for several years. YSPUC can request to discontinue the treatment plant operation plan.

10. The bailers used by BSK for sampling were not the correct type and samples may be blended (not representative).
    RESPONSE: The Regional Water Board and YSPUC's consultants sampled the monitoring wells. MTBE concentrations in these samples were lower than those from samples obtained by the consultant, BSK.

11. Reports do not address the effects of precipitation or pumping rate changes on MTBE fate and transport.
    RESPONSE: Comparison of analytical data from influent samples collected at the YSPUC treatment plant to precipitation and pumping data does not indicate a correlation between MTBE concentrations and precipitation or pumping rates. MTBE concentrations have consistently been decreasing in the YSPUC wells since MTBE was first identified.

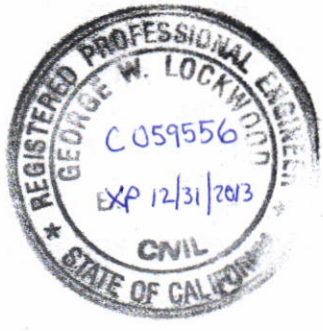
12. A consultant that is hired by the RP has a conflict of interest.
    RESPONSE: State Water Board staff has independently and thoroughly reviewed all data as part of the petition process and has determined that case closure is appropriate.

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: _____ 5/10/2013
Matthew Cohen — Date
Engineering Geologist

Reviewed By: _____ 5/10/2013
George Lockwood, PE No. 59556 — Date
Senior Water Resource Control Engineer



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
Does nuisance as defined by Water Code, section 13050 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? 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 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

- Location: The Site is located at the Yosemite Springs Parkway and Long Hollow Drive in Coarsegold. The Site is an active fueling facility.
- Surrounding Land Usage: The Site is bounded by commercial and rural residential properties.
- Contaminants of Concern: Petroleum hydrocarbons only.
- Primary Source of Release: UST system.
- Discovery Date: 1999.
- Release Type: Petroleum[2].
- Investigation: Sixteen monitoring wells have been installed.
- Free Product: Not identified since 2002.

Table A. USTs:

Tank No.	Size	Contents	Status	Date
1	3,600 gallon	Gasoline	Removed	3/17/1999
2	1,900 gallon	Gasoline	Removed	3/17/1999
3	1,700 gallon	Gasoline	Removed	3/17/1999

Receptors

- Groundwater Basin: Tributary to San Joaquin Valley.
- Groundwater Beneficial Uses: Municipal (MUN), Agricultural Supply (AGR), Industrial Supply (IND), and Industrial Process Supply (PRO).
- Designated Land Use: Commercial, Rural, Median District.
- Public Water System: Yosemite Springs Park Utility Company.
- Distance to Nearest Surface Waters: Unnamed ephemeral stream approximately 200 feet southwest.
- Distance to Nearest Supply Wells: Yosemite Springs Park Utility Company Well 37A is located approximately 500 feet south of the site.

Geology/ Hydrogeology

- Average Groundwater Depth: ~72 feet bgs.
- Minimum Groundwater Depth: ~2 feet bgs.
- Groundwater Flow Direction: Southwesterly.
- Geology: Sandy alluvium over weathered granitic rock that grades into fresh/fractured granitic rock.
- Hydrogeology: Groundwater is contained in and controlled by a network of preferential fractures within the granitic bedrock and is influenced by extraction from the nearby production and remediation wells.

[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 & Safety Code, § 25299.2)

Corrective Actions

- 1999 March – Removal of three USTs and adjacent soil.
- 2000 January – Soil vapor extraction pilot test.
- 2001 April through 2004 March – Soil vapor extraction.
- 2001 June through 2006 October – Groundwater extraction and treatment.
- 2002 August through 2008 May– limited groundwater extraction and treatment.
- 2005 through present – Municipal well head pump and treatment of the fractured rock aquifer..

Table B. Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs (mg/kg)	Maximum 5-10 feet bgs (mg/kg)
Benzene	**0.1** (March 1999)	**12** (October 2000)
Ethylbenzene	**0.064** (March 1999)	**20** (October 2000)
Naphthalene	Not Analyzed	Not Analyzed
PAHs*	Not Analyzed	Not Analyzed

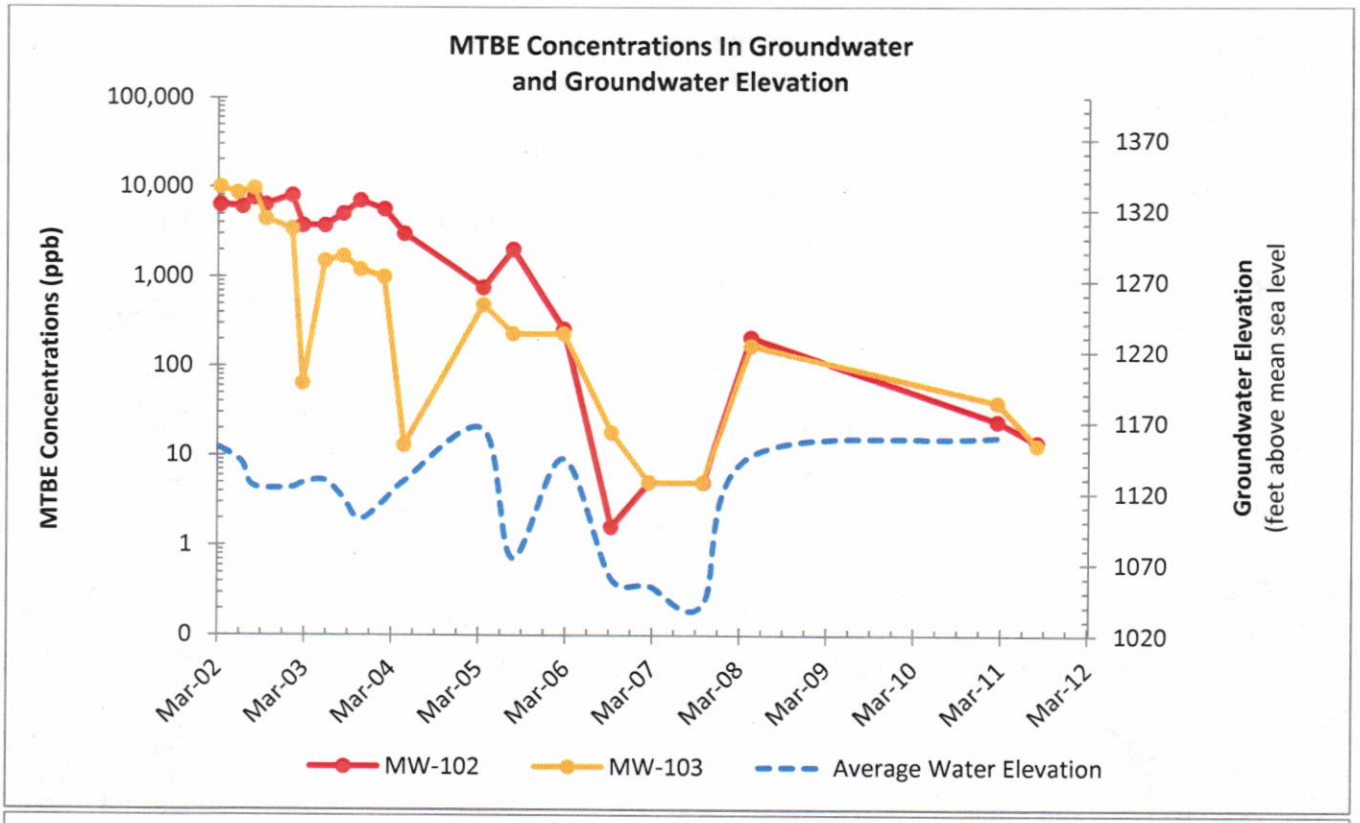
*Poly-aromatic hydrocarbons as benzo(a)pyrene toxicity equivalent

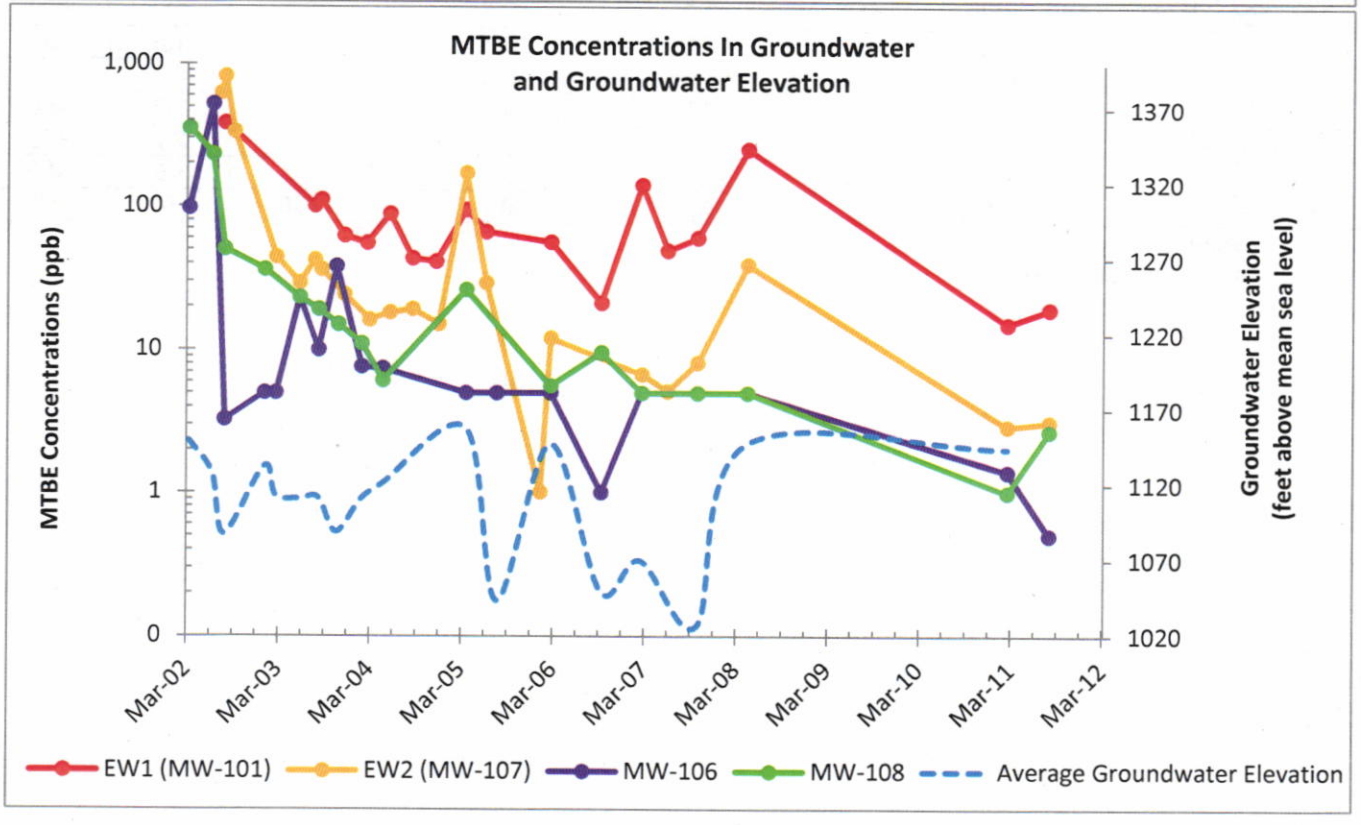
Table C. Concentrations of Petroleum Constituents in Groundwater (June 2012)

Sample	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TBA (ppb)
EW1 (101)	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	**19**	<50
EW2 (107)	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	**3.1**	<50
MW-102	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	**14**	<50
MW-103	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	**13**	<50
MW-104	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	<0.5	<50
MW-105	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	**1.9**	<50
MW-106	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	<0.5	<50
MW-108	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	**2.7**	<50
MW-109	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	**2.7**	<50
MW-110	8/23/11	<50	<0.3	<0.3	<0.3	<0.3	<5	<50
WQOs	-	**50**	**1**	**150**	**300**	**1750**	**5**	**12***

WQOs - Water Quality Objectives
* California Notification Level

Groundwater Trends:

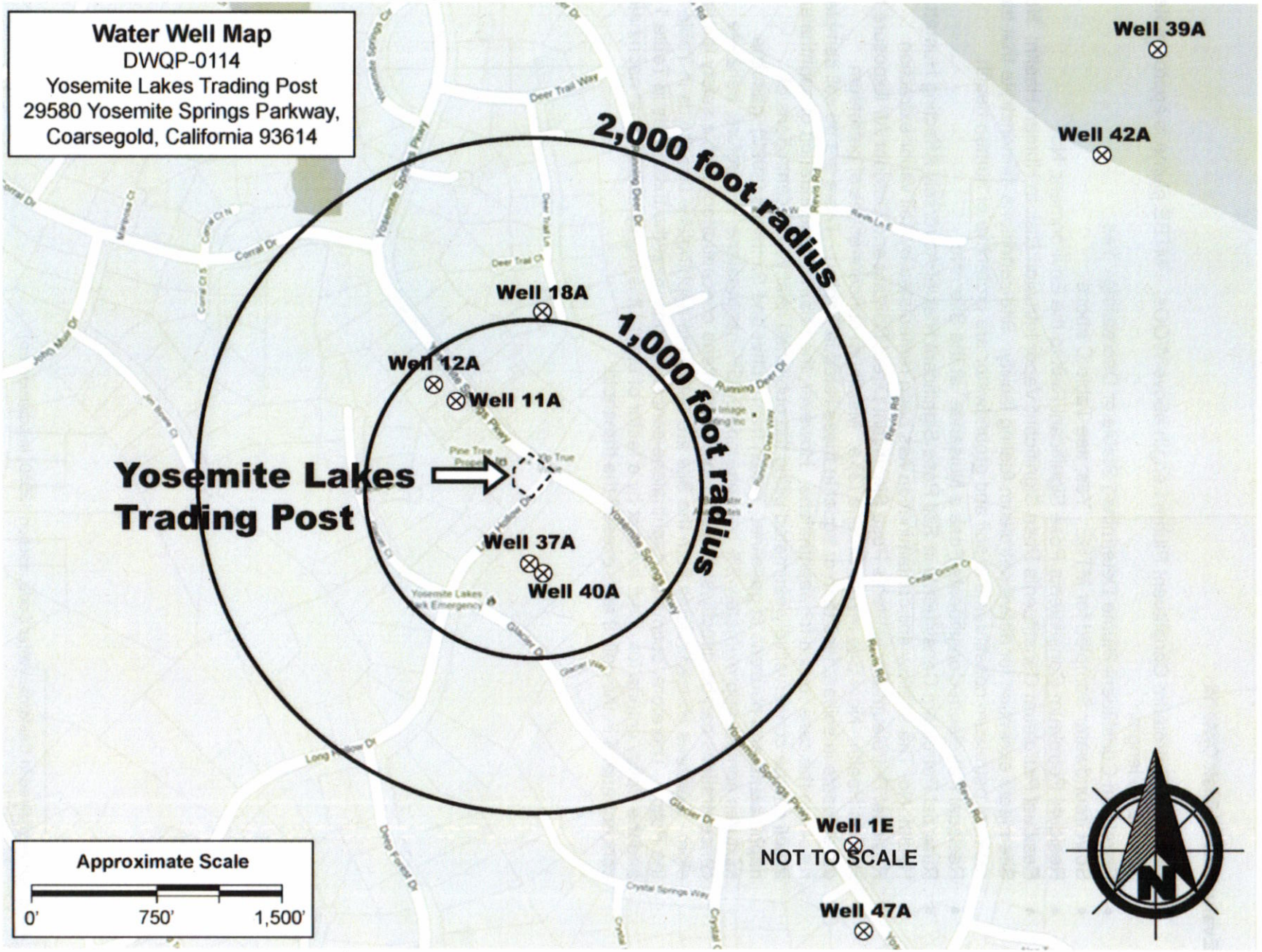




Evaluation of Risk Criteria

- Maximum Petroleum Constituent Plume Length above WQOs: : MTBE plume is approximately 175 feet in length.
- 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 – Site meets exception for active petroleum fueling facility. 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. The shallow soil contamination has been remediated by soil vapor extraction
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No – Site meets Criteria (3) a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1. There are no soil samples 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 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.

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


Water Well Map
DWQP-0114
Yosemite Lakes Trading Post
29580 Yosemite Springs Parkway,
Coarsegold, California 93614
Well 39A
Well 42A
2,000 foot radius
1,000 foot radius
Well 18A
Well 12A
Well 11A
Yosemite Lakes
Trading Post
Well 37A
Well 40A
Well 1E
NOT TO SCALE
Well 47A
Approximate Scale
0'
750'
1,500'
N