State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814
P.O. Box 944212 • Sacramento, California • 94244-2120
(800) 813-FUND (3863) ♦ FAX (916) 341-5806♦ www.waterboards.ca.gov/water_issues/programs/ustcf/

Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

December 7, 2009

Harleen & Harjap Ent. Inc., Assignee
Attn: Gurdarshan Singh
P.O. Box 3208
Clearlake, CA 95422

NOTIFICATION OF PUBLIC HEARING

UNDERGROUND STORAGE TANK (UST) CLEANUP FUND (FUND), MEETING NOTIFICATION FOR CASE CLOSURE RECOMMENDATION, PURSUANT TO HEALTH AND SAFETY CODE SECTION 25299.39.2: CLAIM NUMBER: 9987; SITE ADDRESS: 14091 LAKESHORE DRIVE, CLEARLAKE, CA

By this letter, as Fund Manager, I am informing you of the Fund's intent to recommend closure of your UST site cleanup case to the State Water Resources Control Board (State Water Board) at its January 19, 2010, Board meeting.

In the interim, any reasonable, necessary, and eligible costs that you incur and submit in a properly documented reimbursement request will continue to be reimbursed by the Fund, as monies are available.

Meeting Notice

The State Water Board is planning to consider closing your UST case at its meeting that will be held on January 19, 2010 commencing at 9:00 AM in the Coastal Hearing Room, Second Floor of the Cal/EPA Building, 1001 I Street, Sacramento, California.
Under separate cover at a later date, you will receive an agenda for this meeting.

Legal Authority

Health & Safety Code Section 25299.39.2(a) requires that the Fund Manager notify UST owners or operators who have a Letter of Commitment (LOC) that has been in active status for five or more years and to review the case history of these sites on an annual basis unless otherwise notified by the UST owner or operator. In addition, the H&SC section further states that the Fund Manager, with approval of the UST owner or operator, may recommend regulatory case closure to the State Water Board. This process is called the "5-Year Review." The State Water Board may close or require the closure of a UST case that is under the jurisdiction of a regional water quality control board (regional water board) or a local agency participating in the State Water Board's local oversight program.

Discussion

Having obtained your approval and pursuant to Health and Safety Code Section 25299.39.2(a) to recommend closure of your UST case to the State Water Board, enclosed is a copy of the UST Case Closure Summary for your UST case. The case closure summary contains information about your UST case and forms the basis for UST Cleanup Fund manager's recommendation to the State Water Board for UST case closure. A copy of the Case Closure Summary is also being provided to your environmental consultant and the regional water board that has been overseeing corrective action at your site. Other interested persons may obtain a copy of the Case Closure Summary by contacting Ms. Dennise Walker, at (916) 341-5789.

Comments

At the meeting, interested persons will be allowed to comment orally on the case closure recommendation (including the case closure summary), subject to the following time limits. The UST Cleanup Fund claimant and the regional water board overseeing corrective action at the site will be allowed five minutes for oral comment, with additional time for questions by the State Water Board members. Other interested persons will be allotted a lesser amount of time to address the State Water Board. At the meeting, the State Water Board may grant UST case closure, deny case closure, or may continue consideration until a later meeting.

Written comments on the case closure summary must be received by the State Water Board by 12:00 p.m. on December 31, 2009. Please provide the following information in the subject line: January 19, 2010 Board Meeting, UST Case Closure, and applicable site address and UST Cleanup Fund claim number. Comments must be addressed to:

Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor [95814]
P.O. Box 100
Sacramento, CA 95812-0100
(tel) 916-341-5600
(fax) 916-341-5620
(email) commentletters@waterboards.ca.gov

If you have any questions regarding this matter, please contact Mr. Robert Trommer at (916) 341-5684.

Sincerely,

Ronald M. Duff, P.E., Fund Manager
Underground Storage Tank Cleanup Fund

Enclosure

cc: see next page

cc: Mr. Stephen Knuttel. P.G. Santa Rosa, CA
Ms. Pamela Creedon, Executive Officer, RWQCB, Rancho Cordova
Mr. Brian Newman, UST Program Manager, RWQCB, Rancho Cordova
Mr. Glenn Meeks, UST Case Manager, RWQCB, Rancho Cordova
Mr. Donald A. Johnson, Clearlake, CA
Mr. Allan O. Johnson, Clearlake, CA
Mr. Thomas Carney, Clearlake, CA
Mr. Sam Polo, Clearlake, CA
Mr. & Mrs. Ray & Teresa Bridges, Clearlake, CA

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Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

Draft
UST Case Closure Summary

This underground storage tank (UST) Case Closure Summary has been prepared in support of a recommendation by the Petroleum Underground Storage Tank Cleanup Fund (Fund) to the State Water Resources Control Board (State Water Board) for closure of the UST case at 14091 Lakeshore Drive in Clearlake, CA (Site). All record owners of fee title for this site as well as adjacent property owners and other interested parties, as appropriate, have been notified of the recommendation for closure and were given an opportunity to provide comments.

Agency Information **Date:**

Agency Name: Central Valley Regional Water Quality Control Board – Sacramento (Regional Board)	Address: 11020 Sun Center Drive #200, Rancho Cordova, CA 95670-6114
Responsible staff person: Glenn Meeks	Title: Engineering Geologist

Case Information

RWQCB Case No: 170054	Global ID: T0603300034
Site Name: Food and Liquor # 177	Site Address: 14091 Lakeshore Drive, Clearlake, CA
Responsible Party: Harleen & Harjap Ent.	USTCF Expenditures to Date: $ 369,453
USTCF Claim No.: 9987	Number of Years Open: 17 years

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active?	Date
1	12,000	gasoline	removed	9/89
2	10,000	gasoline	removed	9/89
3	10,000	gasoline	active	
4	12,000	gasoline	active	

Release Information

- Source of Release: UST system.
- Date of Release: The reported date of the release is 10/30/92.
- Affected Media: Soil and groundwater.

Site Information

- GW Basin: Lower Lake Valley
- Beneficial Uses: Municipal and Domestic (MUN), Agricultural (AGR), Industrial Service (IND), and Industrial Process (PRO)
- Land Use Designation: mixed commercial and residential
- Distance to Nearest Supply Well: According to Geotracker, no drinking supply wells are within ½ mile of the site.
- Minimum Groundwater Depth: 2.9 feet below ground surface

- Maximum Groundwater Depth: 13.8 feet below ground surface
- Flow Direction: fluctuates from NE to SW as lake water levels rise and fall
- Soil Types: intermixed and interbedded silt, sand, clay and gravel

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet below ground surface or bgs)	Most Recent Depth to Groundwater (DTW) 2/27/09
MW-1*	1993	5-20	9.89
MW-2	1989	4-18	10.47
MW-3	1989	4-18	10.18
MW-4	12/00	5-20	10.39
MW-5	12/00	5-20	10.23
MW-6D	1/01	20-30	10.48
MW-7	1/01	5-20	covered with asphalt
MW-8	6/02	5-20	8.77
MW-9	6/02	5-20	10.05
MW-10	6/02	5-20	9.94
MW-11	6/02	5-20	10.38
MW-12	12/04	5.5-20.5	8.23
MW-13	12/04	5.5-20.5	8.78

* Well was originally installed in 1989 but was destroyed during excavation of contaminated soil at the time the USTs were removed in 1989. Although reports state that this is a replacement well installed in 1993, earlier reports show that the location of the original and current wells are different. The original well installed in 1989 by Dames and Moore was installed approximately 65 feet west of Lakeshore Drive within the limits of excavation conducted in 1989. The current location is approximately 140 feet west of Lakeshore Drive.

Contaminant Concentration

Contaminant	Soil (mg/kg)		Water (ug/L or parts per billion [ppb])		WQOs (ug/L)
	Maximum	Latest	Maximum	Latest (2/09)	
TPH-g	830 (’89)	NA	280,000 (‘03)*	NA	5
TPH-d	NA	NA	4,600 (‘99)	NA	56
Benzene	0.12	NA	18 (‘96	NA	0.15
Toluene	0.028	NA	1.5 (’00)	NA	42
Ethylbenzene	0.46	NA	3,400 (’96)	NA	29
Xylenes	0.97	NA	2,500 (‘96)	NA	17
MTBE	0.35 (’04)	NA	280,000 (’03)**	5.0	5
TBA	0.60 (’04)	NA	37,000 (’04)**	160	12
1,2-DCA	NA	NA	NA	NA	0.4
Lead	NA	NA	NA	NA	2

* TPHg result consists primarily of MTBE and/or TBA.
** Maximum concentration detected in MW-10.
NA Not Analyzed, Not Applicable or Data Not Available

Site Description: The site is occupied by the Time to Shop convenience store and service station located approximately 100 feet east of Clear Lake. The site is on a gently sloping ground approximately 1,320 feet above mean sea level. The site is bounded by Lakeshore Drive to the east, a vacant lot to the west, residential property to the north and commercial buildings to the south. The site is graded and paved.

Site History/Assessment:

According to a 1993 Western Geo-Engineers report, a preliminary investigation of the UST area was conducted in January 1989 by Dames and Moore. The investigation found soil contamination in three soil borings with a maximum concentration of 930 parts per million (ppm) TPH. One soil boring was converted to a monitoring well. In April 1989, two USTS were removed and replaced. Approximately 900 cubic yards of contaminated soil surrounding the tank pit was over excavated. Four soil samples collected from the 11 to 12 foot depth beneath the original USTs were non-detects for TPH and BTEX. Field screening also indicated that soil contamination did not extend above the five-foot depth. The report also assumed that any soil contamination remaining after the over excavation was confined between the five and eleven foot depth intervals.

In October 1992, three hydro punch samples were collected. All samples were non-detects for TPH and BTEX. Between January 1993 and May 1993, a total of eight soil borings were drilled. Elevated petroleum hydrocarbon contamination was found southeast of the previously removed USTs. Three groundwater monitoring wells were also installed. The highest petroleum hydrocarbon concentration in groundwater was detected in MW-2. Well WMW1 (identified as MW-1 in later reports) was also installed at that time. MW-1 supposedly was a replacement for the well destroyed during soil excavation activities in April 1989. However, a comparison of older and recent site maps shows that the current location of MW-1 is approximately 85 feet from the well originally installed in 1989.

Four additional groundwater wells (MW-4 thru MW-7) were installed between December 2000 and January 2001. Except for the soil sample collected from MW-6D at 10 feet bgs which detected TPHg at 310 ppm, all other samples showed minor or no petroleum hydrocarbon contamination.

In June 2002, wells MW-8 through MW-11 were installed. Soil samples collected were below laboratory detection limits for all the requested analytes except for TBA at 0.04 mg/kg detected at 10 ft bgs in MW-10.

Two additional groundwater monitoring wells (MW-12 and MW-13) were installed in December 2004. Of the six soil samples collected during well installation, only two samples showed detections for petroleum hydrocarbons. The soil sample collected at 21 feet bgs from MW-12 showed MTBE and TBA at 0.35 and 0.60 mg/kg respectively. The soil sample collected at 11 feet bgs from MW-13 was detected at the reporting limit of 0.002 mg/kg for MTBE.

Years of groundwater monitoring data indicate that the remaining petroleum hydrocarbon contamination is localized around MW-3 and MW-10. Data from well MW-12 which is closest to Clear Lake show petroleum hydrocarbons in groundwater attenuate with distance from the source.

In September 2009, a soil vapor survey was conducted in response to the Regional Board's request for a health risk assessment. Vapor samples were collected at depths of 4.5 to 5 feet from ten different locations around the former USTs and onsite buildings. Results for MTBE, benzene, toluene, and xylenes were non-detects or below the published commercial and residential California Human Health Screening Levels for shallow soil gas.

Remediation Summary

- **Free Product Removal:** None conducted due to absence of free product.
- **Soil Excavation:** Approximately 900 cubic yards of soil were excavated as part of the tank removal/replacement activities in 1989. Further excavation was not feasible due the proximity of the foundation of an existing building, underground utilities and the street.

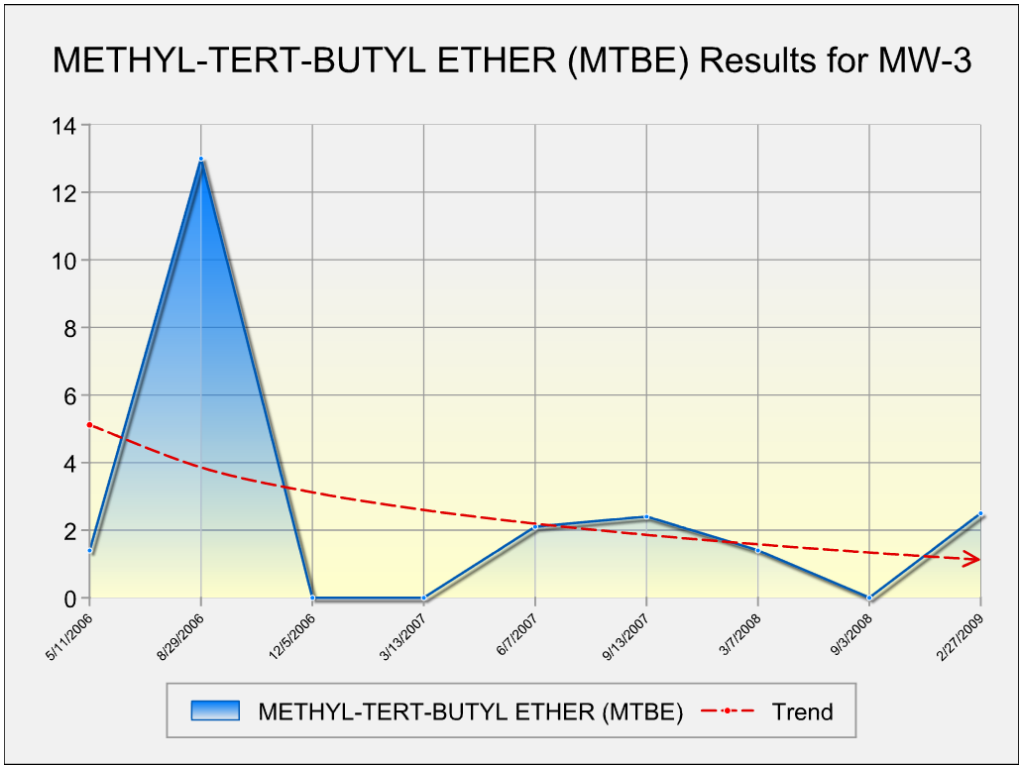
- **In-Situ Soil Remediation/Groundwater Remediation**: Between October 16 and October 19, 2006, oxygen releasing compound (ORC) slurry was injected through 42 points in the vicinity of MW-1, MW-3, MW-10 and MW-13. The injection tip was advanced to 20 feet bgs and retracted at 2-foot intervals to approximately eight feet below ground surface while pumping the ORC slurry.

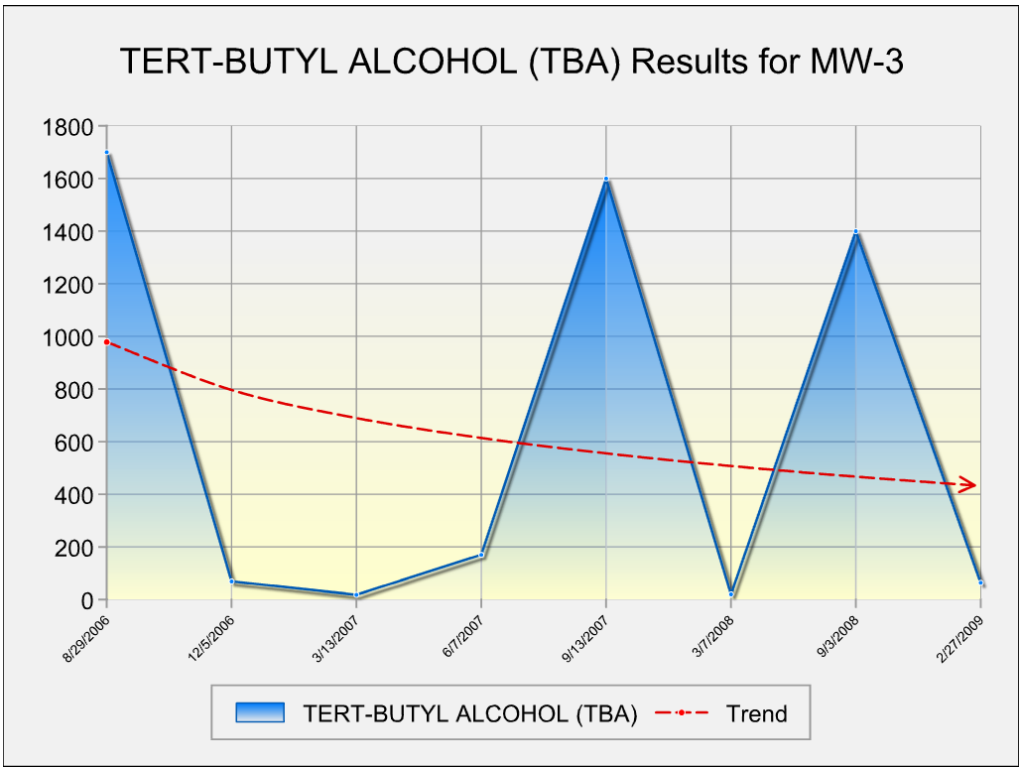
General Site Conditions

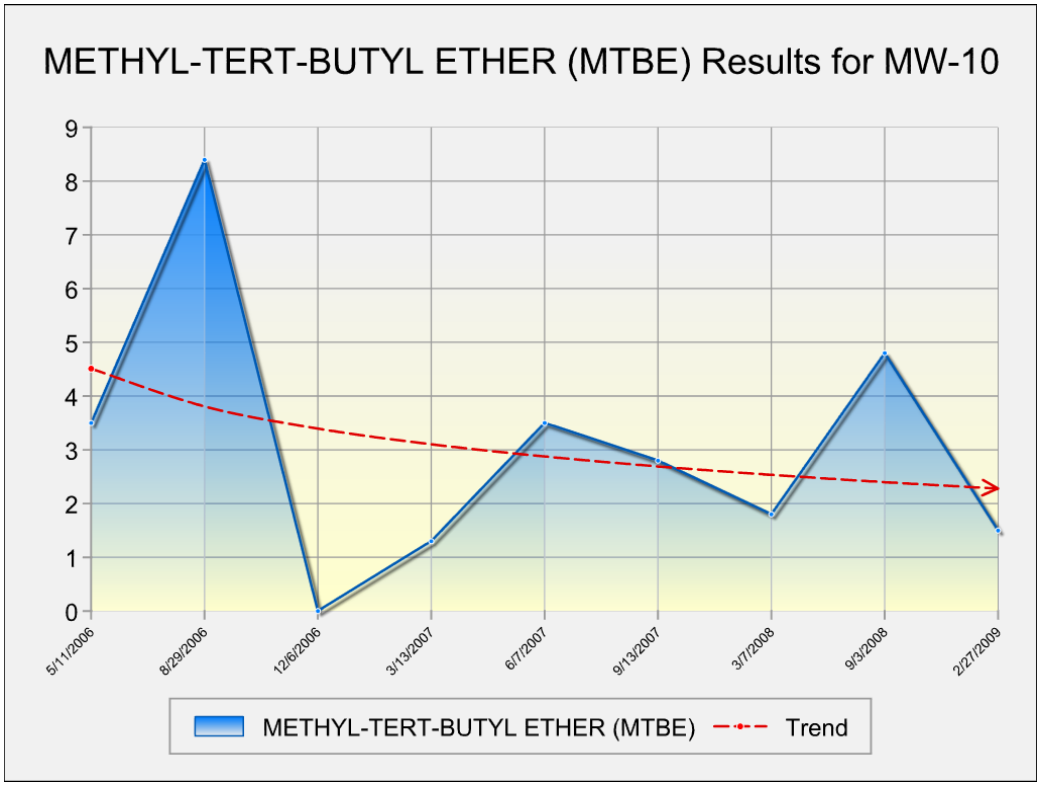
- Hydrogeology: Potential water-bearing units include Quarternary alluvium deposits and Pleistocene lake, floodplain and terrace deposits. Regional groundwater generally flows to the southeast towards Clear Lake. Sources of groundwater recharge include seepage from Herndon Creek and Clear Lake and precipitation. Annual precipitation in the Lower Lake basin is approximately 27 inches. Groundwater elevations and gradients at the site appear to be greatly influenced by lake levels. Groundwater levels fluctuate seasonally with lows generally occurring in the latter part of summer through fall (August-September) and highs occurring in the early part of the year (January-April).
- Geology: The site is located in the southeast shore of Clear Lake, a large natural body of water within the Coast Range of Northern California. The sediments encountered at the site during site investigations consisted of several feet of fill and dark brown clay and silt from the surface, grading to sand and fine gravel at seven feet below ground surface. A layer of gray clay with a “biological odor” was encountered at a depth of seven to eight feet in the eastern portion of the site. Bedrock formations in the nearby mountain areas are primarily composed of meta-volcanic and meta-sedimentary rocks. Volcanic rocks are also present locally.
- Groundwater Trends:

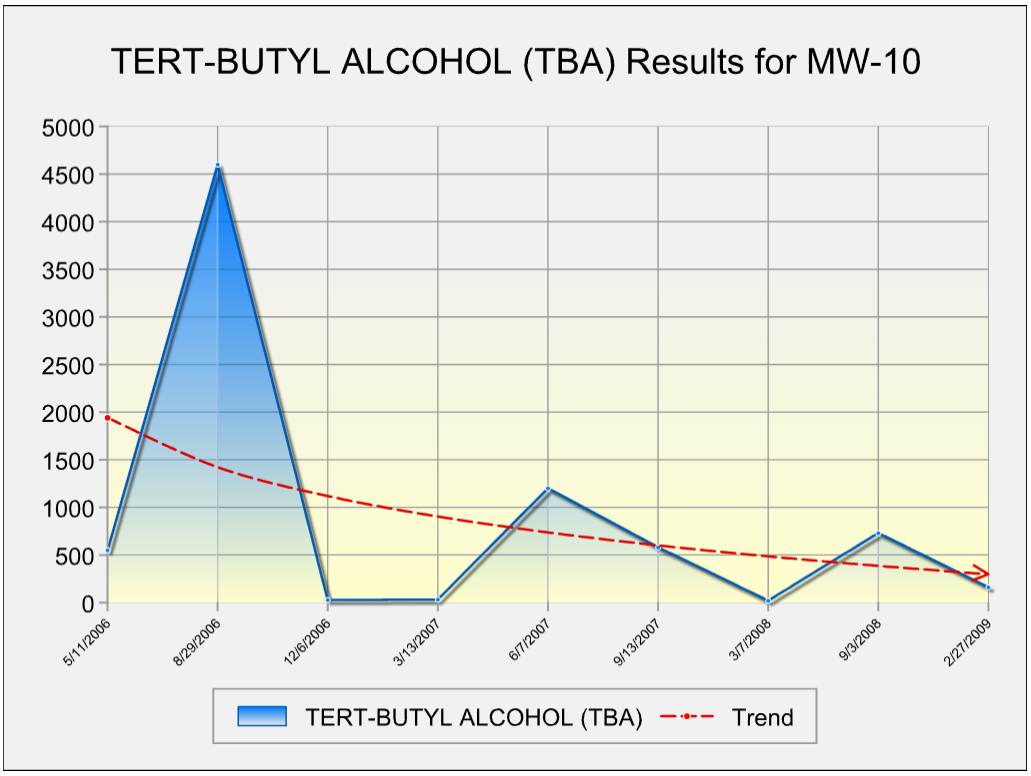
  Note: Concentrations are in units of ug/l or parts per billion [ppb].

  MW-3 and MW-10 are wells with significant MTBE and TBA concentrations (near source area)

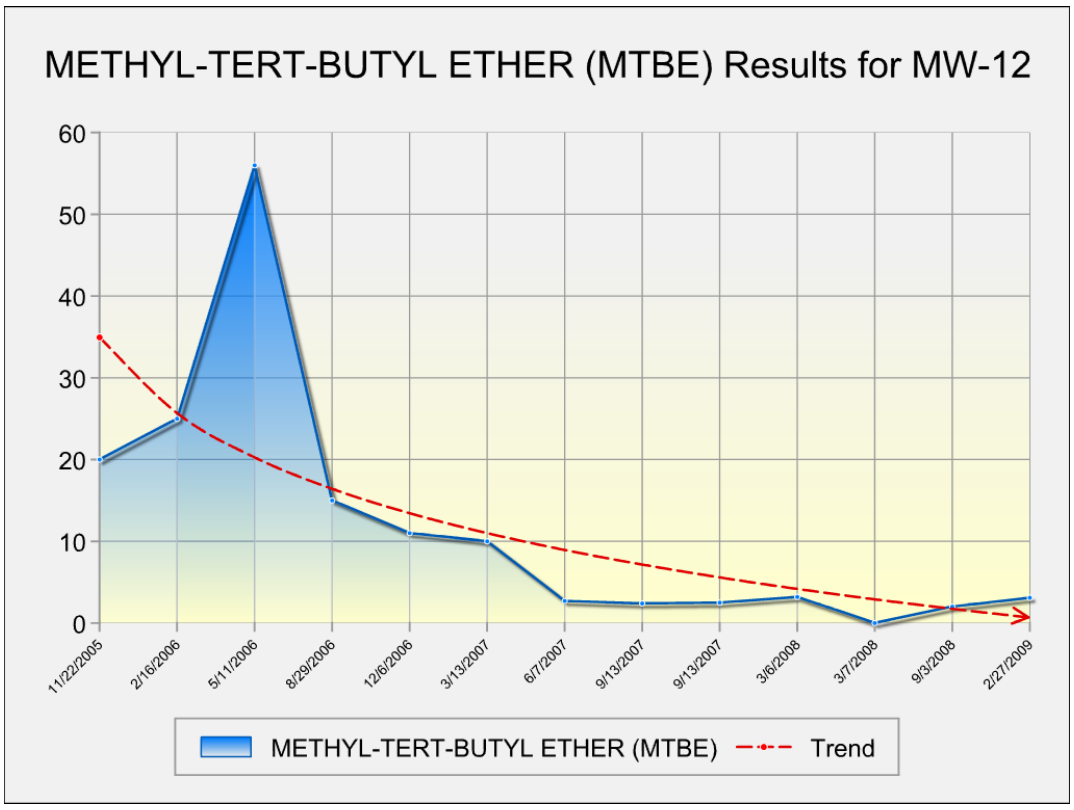

METHYL-TERT-BUTYL ETHER (MTBE) Results for MW-3
14
12
10
8
6
4
2
0
5/11/2006
8/29/2006
12/5/2006
3/13/2007
6/7/2007
9/13/2007
3/7/2008
9/3/2008
2/27/2009
METHYL-TERT-BUTYL ETHER (MTBE)
Trend

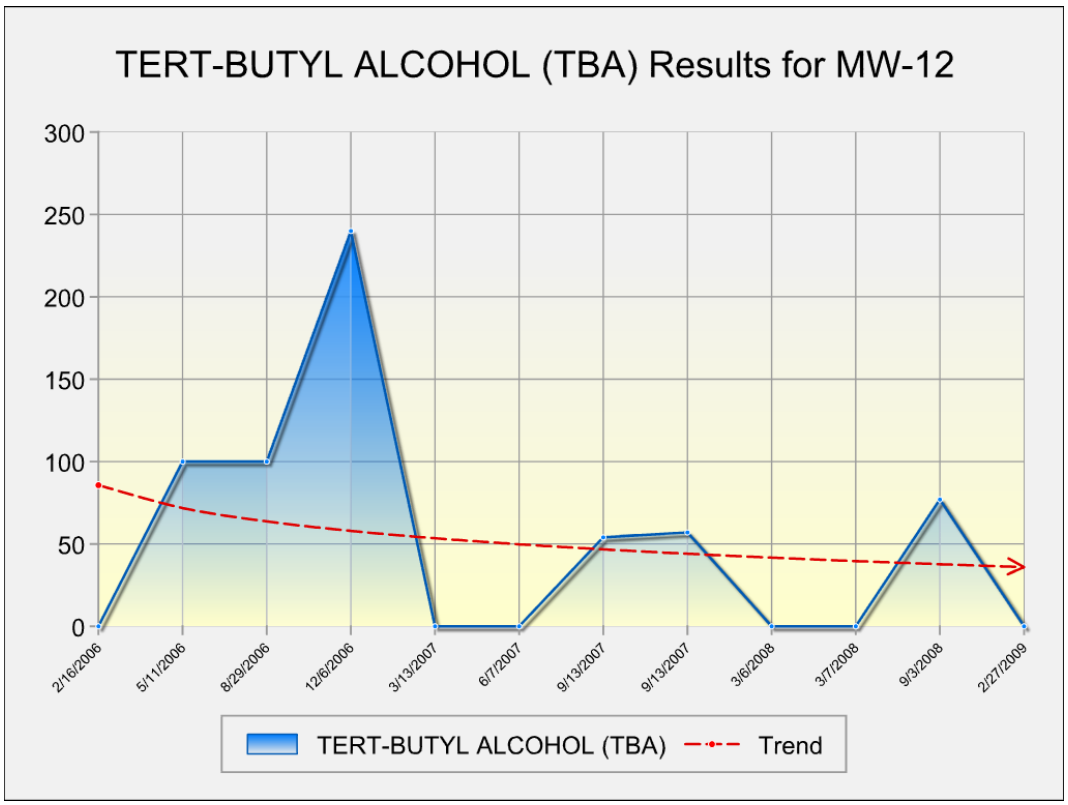

TERT-BUTYL ALCOHOL (TBA) Results for MW-3
1800
1600
1400
1200
1000
800
600
400
200
0
8/29/2006
12/5/2006
3/13/2007
6/7/2007
9/13/2007
3/7/2008
9/3/2008
2/27/2009
TERT-BUTYL ALCOHOL (TBA)
Trend

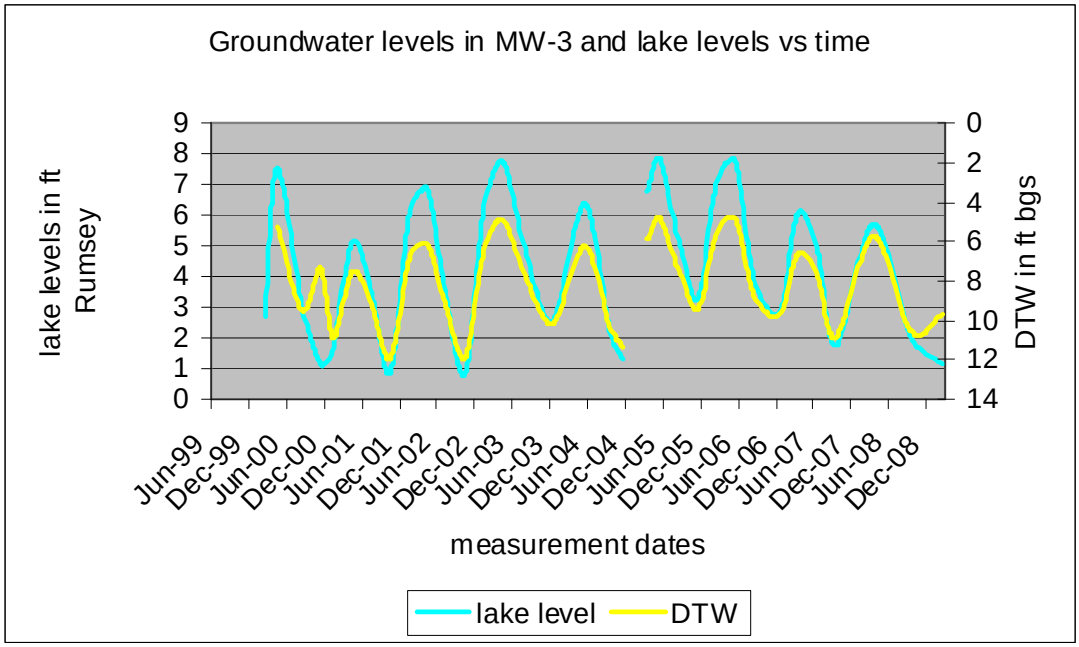




MW-12 is well closest to Clear Lake


METHYL-TERT-BUTYL ETHER (MTBE) Results for MW-12
60
50
40
30
20
10
0
11/22/2005
2/16/2006
5/11/2006
8/29/2006
12/6/2006
3/13/2007
6/7/2007
9/13/2007
9/13/2007
3/6/2008
3/7/2008
9/3/2008
2/27/2009
METHYL-TERT-BUTYL ETHER (MTBE)
Trend


TERT-BUTYL ALCOHOL (TBA) Results for MW-12
300
250
200
150
100
50
0
2/16/2006
5/11/2006
8/29/2006
12/6/2006
3/13/2007
6/7/2007
9/13/2007
9/13/2007
3/6/2008
3/7/2008
9/3/2008
2/27/2009
TERT-BUTYL ALCOHOL (TBA)
Trend



Sensitive Receptor Survey

A receptor survey conducted in March 2001 found one domestic well for agricultural purposes and one abandoned domestic well within a 1,000-foot radius of the site.

Clear Lake is approximately 100 feet west of the site. Clear Lake is on the 303d list of impaired waterbodies due to mercury and algal blooms.

Closure

Has corrective action ensured the protection of human health, safety and the environment? Yes

Is corrective action and UST case closure consistent with State Water Board Resolution 92-49? Yes

Is achieving background water quality feasible? No.
To remove all traces of residual petroleum constituents at the site would require significant additional effort and cost. If complete removal of detectable traces of petroleum constituents becomes the standard for UST corrective actions, however, the statewide technical and economic implications will be enormous. For example, disposal of soils from comparable areas of excavation throughout the state would greatly impact already limited landfill space. In light of the precedent that would be set by requiring additional excavation at this site and the fact that beneficial uses are not threatened, attaining background water quality at this site is not feasible.

If achieving background water quality is not feasible,

(i) **Is the alternative cleanup level consistent with the maximum benefit to the people of the state?** Yes.
It is impossible to determine the precise level of water quality that will be attained given the limited residual petroleum hydrocarbons that remain at the site, but 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, a level of water quality will be attained that is consistent with the maximum benefit to the people of the state.

(ii) **Will the alternative cleanup level unreasonably affect present and anticipated beneficial uses of water?** No.
Impacted groundwater is not used as a source of drinking water currently and it is highly unlikely that the impacted groundwater will be used as a source of drinking water in the foreseeable future. Other beneficial uses are not affected and are not likely to be affected by the remaining contamination at this site.

(iii) **Will the alternative level of water quality exceed water quality prescribed in applicable Basin Plans?** No.
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 SWRCB Resolution 92-49, a site may be closed if the basin plan requirements will be met within a reasonable time frame.

(iv) **Have factors contained in Title 23 of the California Code of Regulations, Section 2550.4 been considered?** Yes.
In approving an alternative level of water quality less stringent than background, the State Water Board has also considered the factors contained in California Code of Regulations, title 23, section 2550.4, subdivision (d). As discussed earlier, the adverse effect on shallow groundwater will be minimal and localized, and there will be no 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, and the quantity of the groundwater and direction of the groundwater flow. 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.

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.

Has the requisite level of water quality been met? No.
The approximate time period in which the requisite level of water quality will be met for TBA is estimated to be approximately 10 years.

This is a reasonable period in which to meet the requisite level of water quality because the groundwater plume is stable and degrading, neither current nor anticipated beneficial uses of water are or will be affected, and the remaining petroleum hydrocarbons at the site do not threaten human health, safety or the environment.

Objections to Closure and Response

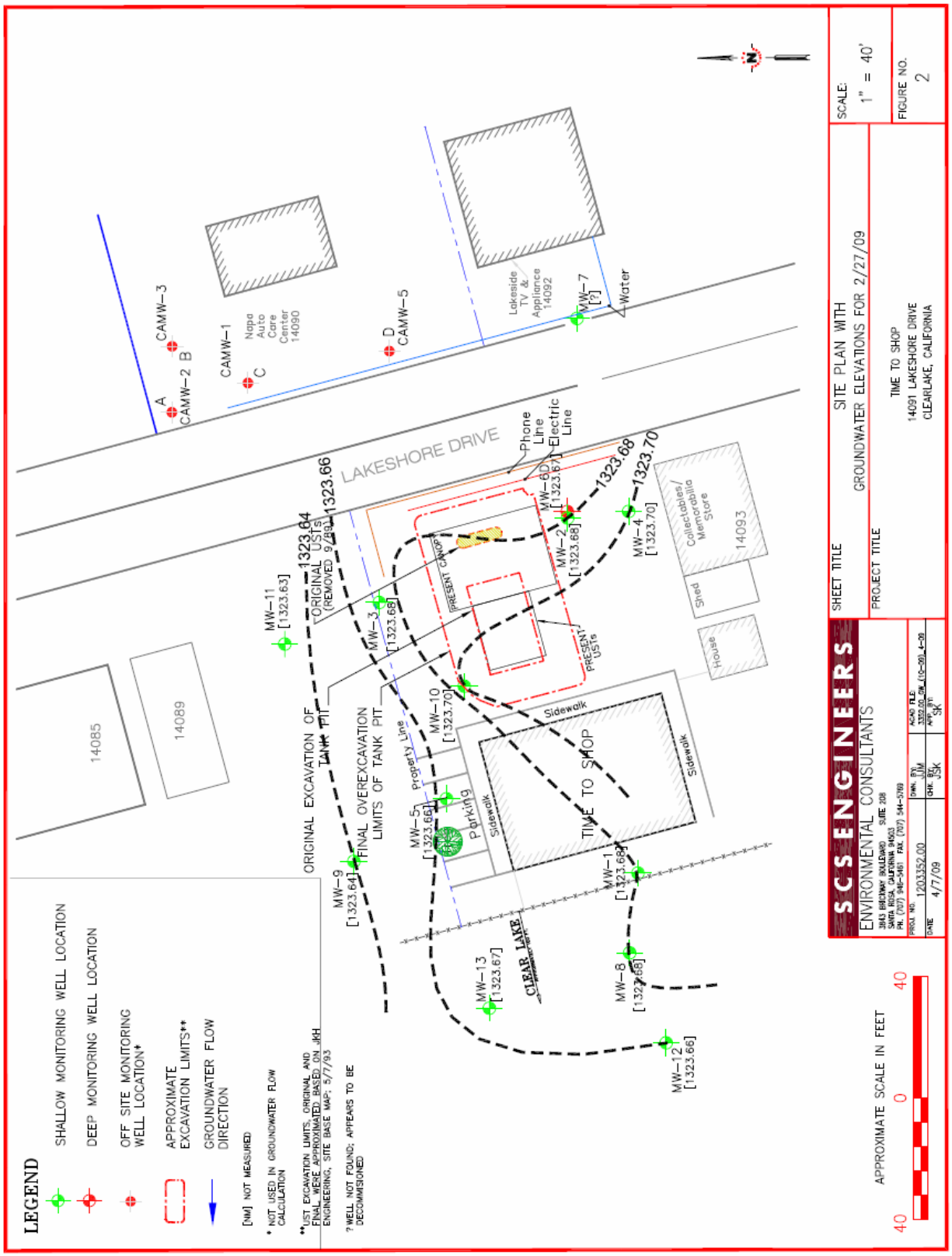
In their May 11, 2009 correspondence, the Regional Board concurred that low risk closure review for this site may be appropriate. However, before considering closure, the Regional Board requested that a human health risk assessment relating to soil vapor intrusion and potential subsurface worker dermal exposure to soil contamination be performed. If the health risk assessment passes, the Regional Board will require public participation and proper well abandonment prior to case closure.

The Underground Storage Tank (UST) Cleanup Fund manager disagrees that the case cannot be closed at this time. The Soil Vapor Survey Report of Investigation dated November 13, 2009, concluded that the remaining petroleum hydrocarbons in the subsurface do not pose significant risks to public health and safety. With regards to the continued detection of TBA in groundwater above the water quality objective, the impacted groundwater is not used as a source of drinking water currently and it is highly unlikely that the impacted groundwater will be used as a source of drinking water in the foreseeable future. Other beneficial uses are not affected and are not likely to be affected by the remaining contamination at this site.

The Fund has conducted public notification and the Lake County Environmental Health Department has the regulatory responsibility to supervise the abandonment of monitoring wells.

Summary and Conclusion

A convenience store and a service station currently occupy the site. Two underground storage tanks were removed and replaced in 1989. Approximately 900 cubic yards of soil were excavated during tank removal/replacement. In late 2006, injection of oxygen reducing compounds was performed to treat the residual petroleum hydrocarbon contamination. The significant decrease of MTBE and TBA and the overall decreasing trends in groundwater concentrations after the injection of oxygen reducing chemicals, indicate that the source has been removed and the remaining mass is minimal. Other beneficial uses are not affected and are not likely to be affected by the remaining contamination at this site. Based on available information, the residual petroleum hydrocarbon contamination at the site does not pose significant risks to public health and safety and the environment and the Underground Storage Tank Cleanup Fund manager recommends that the case be closed.


LEGEND
SHALLOW MONITORING WELL LOCATION
DEEP MONITORING WELL LOCATION
OFF SITE MONITORING WELL LOCATION*
APPROXIMATE EXCAVATION LIMITS**
GROUNDWATER FLOW DIRECTION
[NM] NOT MEASURED
* NOT USED IN GROUNDWATER FLOW CALCULATION
**UST EXCAVATION LIMITS, ORIGINAL AND FINAL, WERE APPROXIMATED BASED ON JKH ENGINEERING, SITE BASE MAP: 5/7/93
? WELL NOT FOUND; APPEARS TO BE DECOMMISSIONED
APPROXIMATE SCALE IN FEET
0
40
LAKESHORE DRIVE
TIME TO SHOP
ORIGINAL EXCAVATION OF TANK PIT
FINAL OVEREXCAVATION LIMITS OF TANK PIT
ORIGINAL USTs (REMOVED 9/89)
PRESENT USTs
PRESENT CANOPY
Property Line
Phone Line
Electric Line
Water
Sidewalk
Parking
CLEAR LAKE
Napa Auto Care Center 14090
Lakeside TV & Appliance 14092
Collectables/ Memorabilia Store
14093
14089
14085
Shed
House
CAMW-1
CAMW-2
CAMW-3
CAMW-5
MW-1 [1323.68]
MW-2 [1323.68]
MW-3 [1323.68]
MW-4 [1323.70]
MW-5 [1323.66]
MW-6D [1323.67]
MW-7 [?]
MW-8 [1323.68]
MW-9 [1323.64]
MW-10 [1323.70]
MW-11 [1323.63]
MW-12 [1323.66]
MW-13 [1323.67]
1323.64
1323.66
1323.68
1323.70
SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
3840 ROSEVILLE BOULEVARD, SUITE 208
SANTA ROSA, CALIFORNIA 95403
PH. (707) 545-3401 FAX. (707) 544-5769
PROJ. NO. 1203352.00
DATE 4/7/09
DWN. BY JM
CHK. BY JSK
ACAD FILE
APP. BY SK
SHEET TITLE
SITE PLAN WITH GROUNDWATER ELEVATIONS FOR 2/27/09
PROJECT TITLE
TIME TO SHOP
14091 LAKESHORE DRIVE
CLEARLAKE, CALIFORNIA
SCALE: 1" = 40'
FIGURE NO. 2