



California Regional Water Quality Control Board
North Coast Region
Geoffrey M. Hales, Chairman



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Secretary for
Environmental Protection

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INTEROFFICE COMMUNICATION

To: State Water Board
C/o Ms. Jeanine Townsend
Clerk to the Board

From: Catherine Kuhlman
Executive Officer

Subject: UST Case Closure, Petition of Jed Wallach Trust at 12750 Bodega Highway, Sebastopol

Files: Former Rocco's Freestone Corners (Jed Wallach Trust), 12750 Bodega Highway, Sebastopol, CA. Case No. 1TSO260

Date: March 23, 2010

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Underground Storage Tank Program File

I reviewed the February 25, 2010 *Notification of Opportunity For Public Comment* including the *Draft UST Case Closure Summary* and the *Revised Draft UST Case Closure Summary* (Revised Draft Summary), prepared by Mr. Benjamin Henningburg, Engineering Geologist, of the State Water Resources Control Board (SWRCB), Underground Storage Tank Program for the site known as Former Rocco's Freestone Corners (Jed Wallach Trust), 12750 Bodega Highway, in Sebastopol. The Revised Draft Summary was received by Regional Water Board staff on March 16, 2010. These comments are provided to reiterate the Regional Water Board staff's primary objections to the case closure recommendation at this time, to correct the record, and to ensure that current and anticipated future property owners/residents of this site are protected from exposure to contaminants in soil and groundwater.

Background

The Sonoma County Department of Health Services Environmental Health Division (LOP) submitted a recommendation for case closure of the Jed Wallach Trust to Regional Water Board staff for concurrence on October 30, 2008. On January 2, 2009, Regional Water Board staff did not concur with the recommendation, primarily due to increasing high levels of petroleum hydrocarbon contamination in groundwater following shutdown of the remediation system, the source of contamination remaining in soils, and the current and future impacts to the beneficial uses of water. Representatives for the Jed Wallach Trust subsequently submitted a petition to close the site to the State

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Water Resources Control Board (SWRCB) on January 28, 2009. On March 26, 2009, Regional Water Board staff submitted a response to the petition to Mr. George Lockwood of the SWRCB Underground Storage Tank (UST) Program. Regional Water Board staff's response reiterated concerns for the increasing trend of high levels of petroleum hydrocarbons in groundwater, the flawed trend analysis projecting when Water Quality Objectives (WQOs) will be reached, the source of contaminants remaining in soil, and the need to protect current and future beneficial uses of water. Regional Water Board staff also recommended that should the SWRCB close the site, a deed restriction should be placed on the property due to the remaining contamination in soil and groundwater and the threat to sensitive receptors.

Comments on the Revised Draft Summary

1. The Revised Draft Summary states: *The affected shallow groundwater (less than 10 feet) is not used as a source of water supply nor is it likely to be used as a source of water supply in the future.*

We disagree. There are numerous domestic water supply wells that have screen lengths intercepting the shallow groundwater (less than 10 feet) in Sonoma County which are currently in use. As an example, ACR Environmental Services (ACR) prepared a sensitive receptor survey (SRS) for this site in September 1997. In that survey, ACR found a property owner with a domestic well that "... receives its water from the 'perched water' on the granite rock...".¹ Perched water is typically found in the upper 10-20 feet below ground surface in the North Coast Region. During the last year, the Sonoma County Permits and Resource Management Department processed permit applications for approximately 300 new water supply wells. For new domestic wells, a sanitary seal of only 20 feet remains commonplace. For existing domestic wells, the screen lengths and depth of sanitary seals are variable, but are found less than 10 feet. In Sonoma County, the low permeability zones underlying shallow groundwater are often discontinuous, and shallow groundwater is hydraulically connected to lower water bearing zones. As water supply becomes scarcer and additional restrictions are imposed on water users in Sonoma County, more and more residents are using existing domestic wells and installing new wells that tap both shallow and deeper water bearing zones.

In the Freestone area, where this site is located, the ACR SRS reportedly found four domestic wells within 750 feet of the site in 1997. Two of the wells are located downgradient of the release area, including the on-site domestic well, and another domestic well located south of the site.² The Revised Draft Summary states that the shallow groundwater is currently not used as a source of water supply, nor is shallow groundwater likely to be used in the future. This is not correct. The on-site well has

¹ ACR Environmental Services, 1997, *Results of Phase II Site Characterization, Rocco's Freestone Corner, September 1997*

² Ibid (1).

been identified as an irrigation well, and the off-site well has been identified as a domestic water well. The Revised Draft Summary also states that many residential properties in the area have individual drinking water wells. The record does not provide construction details for any of the wells to evaluate screened intervals and hydraulic communication between the upper and lower water bearing zones. For the record, the monitoring wells on site extend to depths up to 21.5 feet below ground surface. Given the water shortages in Sonoma County, it is our expectation that this source of water is likely to continue to be used into the foreseeable future, prior to contaminant levels in groundwater achieving compliance with the relevant North Coast Region Water Quality Control Plan (Basin Plan) WQOs, estimated as "several decades".³ Furthermore, in the Basin Plan, the designated beneficial uses of all groundwater in the Region are required to be protected, and restored when impaired, for present and potential uses, including municipal and domestic supply, agricultural supply, and industrial service and process supply.

The Revised Draft Summary also states that Salmon Creek is located approximately 370 feet downgradient from the former USTs. Beneficial uses of Salmon Creek include "Rare", due to the presence of both federal and state listed 'threatened' and 'endangered' species of salmonids. The Revised Draft Summary is deficient in acknowledging this Basin Plan designated beneficial use of Salmon Creek, and evaluating the potential future impacts to Salmon Creek over the projected timeframe to reach WQOs. In addition, there is no fate and transport modeling data presented to determine if contaminated groundwater will reach the creek before WQOs are met.

In general, no fate and transport modeling has been provided as a science-based evaluation of potential future impacts to sensitive receptors, including domestic wells and Salmon Creek, during the timeframe projected to reach WQOs. Potential impacts to water wells and the creek need to be evaluated under the existing groundwater pumping conditions and continued groundwater pumping during the timeframe predicted to reach WQOs.

2. The Revised Draft Summary states: *Monitoring well MW-8, which is located approximately 90 feet down gradient of the source area, has reported the highest post-remedial contaminant concentrations. The following graph shows that this well has consistently shown overall decreasing concentrations of petroleum constituents in groundwater, despite seasonal fluctuations.*

We disagree with the trend analysis. To the contrary, the post remediation data for MW-8 collected during two dry seasons showed a significant increase from 2,200 parts per billion (ppb) total petroleum hydrocarbons as gasoline (TPH-g) to 6,100 ppb TPH-g (September 14, 2006 and August 1, 2007), indicating potential rebound of contaminants of concern. Also, benzene was detected during the latter sampling event at 7.7 ppb, which exceeds the maximum contaminant level (MCL) of 1 ppb.

³ SWRCB, 2010, *Draft UST Case Closure Summary, Former Rocco's Freestone Corner*, February 25, 2010

Burleson Consulting, Inc. noted that benzene concentrations have generally increased in MW-8 as depth to groundwater increases...⁴ The Revised Draft Summary graph displays the concentrations and trends in MW-8, but it includes data from both pre- and post remedial monitoring, beginning in 1998. This approach for evaluating the trend for natural attenuation of contaminants upon which to determine that WQOs will be reached in a reasonable period of time is flawed. The analysis does not recognize the increasing trend since treatment system shutdown. Section 2727 of Title 23, Division 3, Chapter 16 of the California Code of Regulations (UST Regulations) requires that the responsible party verify the effectiveness of corrective actions. Accordingly, the analysis of the concentration trends should be based solely on post remediation monitoring data collected under passive conditions to provide confirming evidence that the contamination will naturally attenuate. This has not been done.

The four data points from post-remediation sampling data are insufficient to establish trends and therefore, it is not possible to determine if the corrective action was effective, and to validate the conclusion that remaining contamination will naturally attenuate. If it cannot be demonstrated that contamination will degrade under passive conditions before it reaches a sensitive receptor, then the process described in the UST Regulations to assess feasible alternatives should be followed. As stated in the Regional Water Board's March 26, 2009 response to the petition (Attachment 1), additional verification monitoring is needed to reliably ascertain whether the concentration trends of contaminants in groundwater are decreasing, or whether rebound of contamination continued to occur following remediation. Without a reliable trend analysis, it is not possible to reliably estimate the timeframe for achieving WQOs.

When contamination is left in place, the risk to human health must be addressed. At this site, groundwater fluctuates from approximately 0.5 foot below ground surface (bgs) to approximately 9.98 feet bgs.⁵ Soil contamination in the vicinity of the former USTs also remains at the site. This property has the reasonable potential to be sold before reaching WQOs and for future owners to use the existing on-site water supply well. In addition, the current owner may continue to use the well for irrigation supply as water shortages increase in Sonoma County over the next decade. The likelihood for human exposure from the contaminated soil and groundwater during repairs or replacement of the septic system, leachlines, gardening activities, construction, other subsurface work at the site, and use of the domestic well will remain during the time it takes to reach WQOs and will continue to pose a potential human health risk. Safeguards are needed to address the potential health risks due to the remaining contamination in soil and groundwater at the site.

⁴ Burleson consulting, Inc., 2004, Ozone Sparging System Performance and Groundwater Monitoring Report, October 2004

⁵ Burleson consulting, Inc., 2008, Submittal of January 2008 Groundwater Monitoring Report, January 22, 2008

Section 13260 of the Porter–Cologne Water Quality Control Act requires that dischargers file a report of waste discharge with the Regional Water Board for discharges that could affect the quality of waters of the state. The Regional Water Board adopts permits to insure that the discharge is controlled and does not impact the present and future beneficial uses of water. Title 27, Section 20400 of the California Code of Regulations describes the requirements for leaving waste in place, including evaluation of the potential for health risks caused by human exposure to waste constituents, evaluation of the proximity and withdrawal rates of groundwater users, and post-corrective action monitoring to ensure protection of groundwater and surface waters. At this site, institutional controls, including a deed restriction, are necessary throughout the time it takes for WQOs to be met. These issues have not been addressed in the Revised Draft Summary.

Closure and State Water Board Resolution 92-49

On pages 6, 7, and 8 of the Revised Draft Summary, there is a list of questions followed by answers that discuss whether the site is in compliance with State Board Resolution 92-49. Based upon a flawed trend analysis, and an inadequate assessment of potential impacts to sensitive receptors, the statements made to support case closure are not sound. Therefore, these statements cannot be relied upon to determine compliance with State Board Resolution 92-49 without additional verification monitoring during the dry season, a reliable trend analysis, and fate and transport modeling to assess contaminant movement to sensitive receptors during the time frame projected to reach WQOs.

Summary and Recommendations

In summary, we do not concur with the recommendation for case closure due to the flawed and deficient trend analysis for the high levels of petroleum hydrocarbon constituents in groundwater, the unreliable projection of the timeframe to reach WQOs, the impacts to current and foreseeable future uses of areal groundwater, including the many domestic water supply wells, and the potential for human exposure to contaminants in soil and groundwater during repairs or replacement of the septic system, leachlines, gardening, other subsurface site activities, and domestic well usage on- and off-site.

Prior to case closure, Regional Water Board staff recommend additional verification monitoring to develop a reliable trend analysis that demonstrates that the contamination will naturally attenuate, the impaired groundwater will be restored to its existing beneficial uses, and WQOs will be reached within a reasonable period of time. Regional Water Board staff also recommend that safeguards are established to address the likelihood for human exposure to remaining contamination in soil and groundwater until WQOs are met.

Attachment 1: Regional Water Board's Response to Petition, Rocco's Freestone
Corner's, March 26, 2009

032310_CW-S_SWRCB_Roccosmemo

Cc: Mr. George Lockwood, SWRCB UST Program
Mr. Ben Henningburg, SWRCB UST Program
Jed Wallach Trust, Attn: Mr. Jed Wallach, 160 Bohemian Highway,
Freestone, CA 95472
Ms. Leslye Choate, Sonoma County Environmental Health Division, 475 Aviation
Blvd., Suite 200, Santa Rosa, CA 95403
Mr. Cliff Ives, Sonoma County Environmental Health Division, 475 Aviation Blvd.,
Suite 200, Santa Rosa, CA 95403
Resident, 12950 El Camino Bodega, Freestone, CA 95472
Ms. Nadia Burlson, Burlson Consulting, 950 Glen Drive, Suite 135
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**California Regional Water Quality Control Board
North Coast Region
Bob Anderson, Chairman**



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Arnold
Schwarzenegger
Governor

March 26, 2009

Mr. George Lockwood
State Water Resources Control Board
UST Cleanup Unit
1001 I Street, 15th Floor
Sacramento, CA 95814

Dear Mr. Lockwood:

**Subject: Regional Water Board Response to Petition for Case Closure of
Underground Storage Tank Site**

**File: Rocco's Freestone Corners, 12750 Bodega Highway, Sebastopol
LOP Case No. 00001518, NCRWQCB Case No. 1TSO260**

In a letter dated October 30, 2008, the Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD) submitted a request to the North Coast Regional Water Quality Control Board (Regional Water Board) for review of the Rocco's Freestone Corners (Former) request for case closure. In a letter dated January 2, 2009 to SCDHS-EHD, Regional Water Board staff non-concurred with SCDHS-EHD's recommendation for case closure and provided rationale for its decision, and set out recommendations for additional requirements.

On March 11, 2009, Regional Water Board staff received a copy of the petition to the State Water Resources Control Board submitted by Burleson Consulting, Inc, requesting a review of the denial of case closure, and a copy of your letter, also dated March 11, 2009, requesting the SCDHS-EHD to provide a response to the petition.

Although you did not specifically request a response to the petition from the Regional Water Board, I believe that it is important for you to have the information and understand the Regional Water Board's rationale in denying case closure. Enclosed is the Regional Water Board's response to the petition.

In summary, staff concluded additional monitoring is needed during lower groundwater conditions to provide additional data to assess post-remedial concentration trends and remedial effectiveness. Regional Water Board staff do not support closure of this case until seasonal, post-remedial data is available that supports a decreasing trend that is

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Attachment 1

projected to reach Water Quality Objectives within a reasonable time frame, and that will protect the current and future beneficial uses of water.

If you have any questions, please contact me at (707) 576-2703.

Sincerely,



Catherine Kuhlman
Executive Officer

Enclosure: Regional Water Board's Response to Petition

cc: Ms. Christine Sosko, County of Sonoma, Environmental Health Division, 475 Aviation Blvd., Suite 200, Santa Rosa, CA 95403-2097
Mr. Cliff Ives, County of Sonoma, Environmental Health Division, 475 Aviation Blvd., Suite 200, Santa Rosa, CA 95403-2097
Jed Wallach Trust, Attn: Mr. Jed Wallach, 160 Bohemian Hwy, Freestone, CA 95472

**Regional Water Board's Response to Petition
Rocco's Freestone Corner's, 12750 Bodega Highway, Sebastopol,
Regional Water Board Case No. 1TSO260**

The Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD) is the lead agency for oversight of soil and groundwater investigation and cleanup activities at the Rocco's Freestone Corner's site, located at 12750 Bodega Highway, in Sebastopol. SCDHS-EHD determined that no additional monitoring, investigation or remedial actions were necessary at the site and requested that the North Coast Regional Water Quality Control Board (Regional Water Board) review the site data and information and concur with case closure.

The Regional Water Board staff has reviewed the case record, data, and information and does not concur with case closure of the Rocco's Freestone Corners site. Staff has concluded that additional monitoring is needed during lower groundwater conditions to provide additional data to assess post-remedial concentration trends and remedial effectiveness. SCDHS-EHD denied case closure based on the Regional Water Board's nonconcurrency.

The responsible party has filed a petition to the State Water Resource's Control Board (State Water Board) asking the State Water Board to review the Regional Water Board's nonconcurrency with case closure. The following information provides a summary of the Regional Water Boards determination to non-concur with case closure.

Groundwater investigation and remediation was conducted at 12750 Bodega Highway, in Sebastopol (site) because of unauthorized release(s) of petroleum hydrocarbons from underground storage tanks. The highest levels reported during monitoring events that took place during the groundwater investigation are as follows:

- Total petroleum hydrocarbons as gasoline: 23,000 parts per billion (ppb),
- Benzene: 310 ppb,
- Toluene: 30 ppb,
- Ethylbenzene: 3100 ppb,
- Xylenes: 4,100 ppb,
- MTBE: 80 ppb,
- di-isopropyl ether: 2 ppb, and
- 1,2-dichloroethane: 7.9 ppb.

Beginning in July 2002, the petitioners operated an in-situ ozone remedial system to cleanup groundwater contaminated by petroleum hydrocarbons. The system was shut down in December 2004, and post-remedial verification monitoring was initiated thereafter.

Post-remedial verification monitoring is generally conducted following the shut down of a remedial system to monitor concentration trends following remedial activities. The intent of post-remedial verification monitoring is to confirm concentrations levels will not rebound under natural conditions which are not influenced by continuous remedial actions. Regional Water Board staff generally recommend conducting a minimum of four consecutive quarterly sampling events to monitor conditions over a full hydrogeologic cycle. This allows data to be collected over seasonal variations. In the event post-remedial monitoring does not provide necessary data to determine remediation was effective, collection of additional data may be needed to establish decreasing trends to demonstrate Water Quality Objectives will be reached in a reasonable time frame. For this site, four consecutive quarters of post-remedial monitoring was insufficient to establish a decreasing trend during the post-remedial verification monitoring.

Beginning in second quarter of 2005 and ending the first quarter of 2008, five quarters of post remedial verification monitoring were conducted for monitoring wells MW-1, MW-2, MW-3, MW-5, and MW-7 and six quarters of monitoring was conducted for MW-4, MW-6, and MW-8. Sampling events were conducted in 2005 only during the 2nd quarter, in 2006 only during the 3rd quarter, 2nd, 3rd, and 4th quarters of 2007, and 1st quarter 2008 (for MW-4, MW-6, and MW-8).

During post-remedial verification monitoring, low levels of iso-propyl ether was reported up to 3.7 ppb in MW-1 and MW-5. All other results from MW-1, MW-2, MW-3, MW-5, MW-6 and MW-7 were generally below detection limits during post remedial verification monitoring. Results for MW-4 reported TPH-g up to 240 ppb, benzene up to 2.5 ppb, ethylbenzene up to 57 ppb, xylenes up to 3.3 ppb, and 1,2-DCA up to 7.1 ppb. Results for MW-8 reported TPH-g up to 6,100 ppb, benzene up to 7.7 ppb, ethylbenzene up to 780 ppb, and xylenes up to 71.1 ppb.

Attachment 1 provides a site map showing monitoring well locations, Attachment 2 provides historical groundwater elevation data and Attachment 3 provides historical groundwater monitoring analytical results.

During the 3rd quarter 2007, concentrations of petroleum hydrocarbons in MW-8 were reported at elevated levels. The depth to water measurement of 6.3 feet below the top of casing was the lowest recorded for the four consecutive quarters of monitoring. Historical groundwater monitoring data indicate a strong correlation between higher contaminant concentrations and low levels of groundwater, as measured by the depth to water from the top of the casing of the monitoring well. (See Attachments 2 and 3) As the groundwater table lowers, contaminant concentrations increase. During times of higher groundwater table measurements, contaminant concentrations are lower. This correlation is present during post-remedial verification monitoring as shown in the table below:

Data Collected During Verification Monitoring For MW-8

Quarter, Year	Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	Depth to Water
2, 2005	5/5/2005	<50	<0.5	<0.5	<0.5	<0.5	0.61
3, 2006	9/14/2006	2200	<0.5	0.88	82	150	7.4
2, 2007	4/19/07	100	<0.5	<0.5	10	2.2	1.33
3, 2007	8/1/07	6,100	7.7	<0.5	780	71.1	6.3
4, 2007	12/20/07	<50	<0.5	<0.5	1.9	<1.0	0.66
1, 2008	3/26/08	<50	<0.5	<0.5	0.8	<1.0	1.7

While monitoring results for MW-8 were generally below detection limits for the 4th quarter 2007 and the 1st quarter 2008 monitoring events, these events were conducted during higher groundwater conditions. Due to the seasonal variability of groundwater levels observed at this site, contaminant trends during post-remedial verification monitoring are inconclusive. Additional data is needed, especially during lower groundwater conditions, to be able to evaluate whether the data is clearly showing that levels of contamination are demonstrating a decreasing trend post remediation and to verify that concentrations of contaminants will reach Water Quality Objectives in a reasonable time frame.

Potential Sources of Contamination In Soil

The *Case Closure Summary* provided by the SCDHS-EHD to the Regional Water Board indicates that up to 2000 parts per million TPH gasoline was reported in soil. The *Case Closure Summary* also states that the "...effects of remediation in soil have not been directly verified." The *Case Closure Summary* also indicated that "No water supply wells should be constructed without consultation with a California Professional Engineer or Geologist. Contingency planning is required for worker safety and waste material handling if excavating or trenching in the area of the fuel release." Therefore, it is unknown whether a source of petroleum hydrocarbons remains in soil. The potential remaining source of petroleum hydrocarbons may be relevant to the elevated levels of contaminants that continue to be seen since shutdown of the remediation system.

Regional Water Board Staff Conclusions and Recommendations

During lower groundwater conditions, MW-8 showed high levels of contamination significantly above Water Quality Objectives. The last two monitoring events were conducted during high water conditions. Historical monitoring data has shown contaminant concentrations are significantly lower during these seasonal high water events. This data, therefore, does not clearly represent a decreasing trend. Based upon the historical record for this site, trend analysis must be based on post-remedial monitoring results reported during lower groundwater conditions. Multiple low groundwater post-remedial verification monitoring events

are needed in order to establish a reliable decreasing trend for the constituents of concern.

The Petitioner's Consultant, Burleson Consulting, Inc, presents in the petition that there is an overall decreasing trend in MW-8 and concludes Water Quality Objectives will be reached in a reasonable time frame. These trends were established based on data over the entire history of monitoring, and does not assess the trends specific to post-remedial monitoring. Trend analysis must be based on post-remedial monitoring during low groundwater conditions.

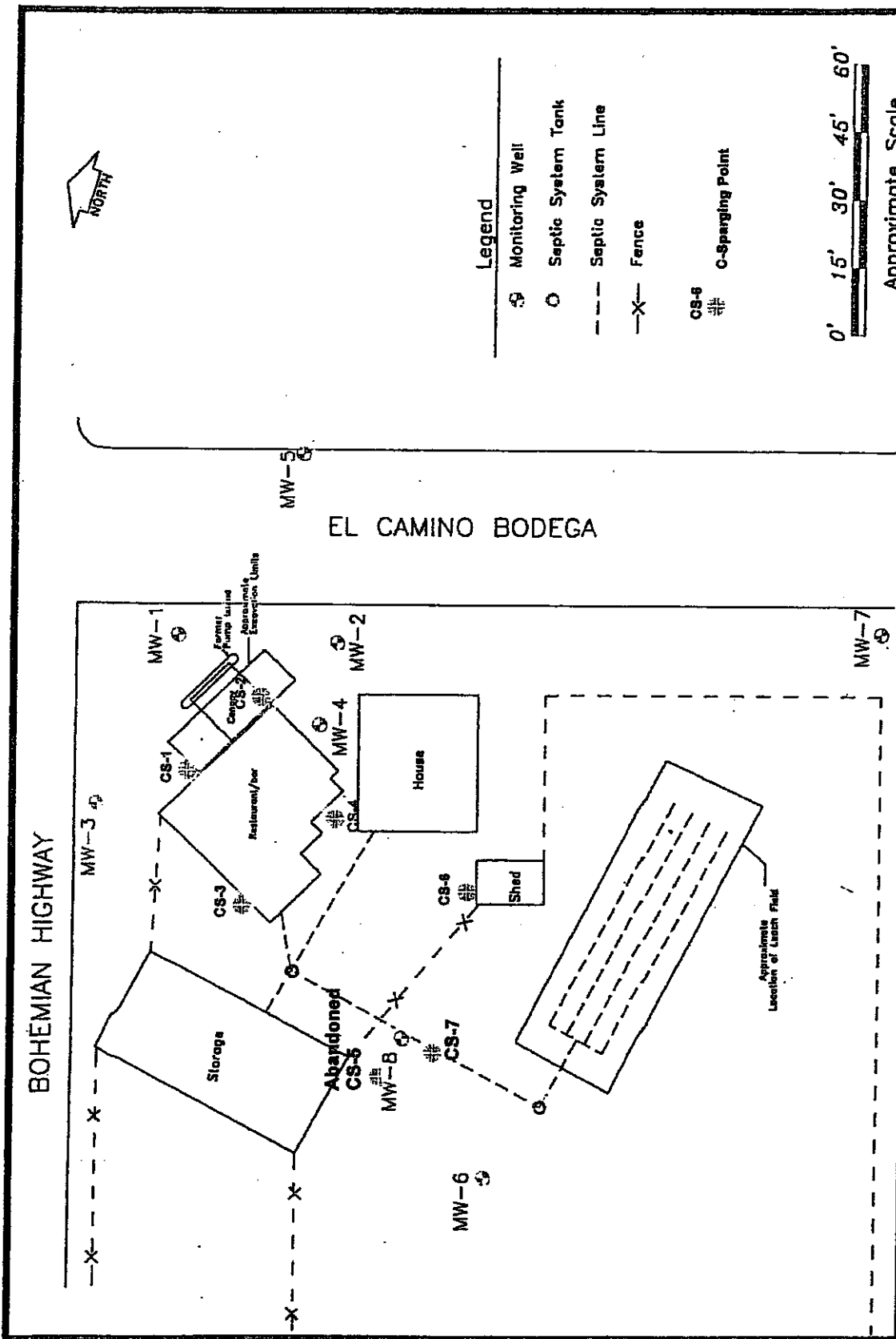
The Water Quality Objectives for the constituents of concern are 50 ppb for TPH-g, 0.15 ppb for benzene, 29 ppb for ethylbenzene, and 17 ppb for xylenes. The beneficial uses of water both on-site and in the vicinity of the site include, but are not limited to, domestic and irrigation supply and Salmon Creek, which is an anadromous salmonid fish-bearing stream.


Regional Water Board staff does not recommend case closure. Regional Water Board staff recommends conducting additional groundwater monitoring during low groundwater conditions to provide sufficient data to assess trends during low groundwater conditions. Additional monitoring data is necessary to ensure that Water Quality Objectives will be reached within a reasonable period of time and the current and future beneficial uses of water will be protected.

If there are any remaining potential source areas contributing to the elevated concentrations of petroleum hydrocarbons in groundwater, this information should be evaluated in determining the timeframe for groundwater to reach Water Quality Objectives.

In the event the State Water Board determines case closure is appropriate, Regional Water Board staff recommend closing the site contingent upon a deed restriction.

Attachment 1



 <p>Burleson Consulting</p>	<p>Description</p> <p>Monitoring Well and Spargepoint Locations</p>		<p>Figure</p> <p>2</p>	<p>Project Number</p> <p>BC200</p>
	<p>Project/Location</p> <p>Rocco's Freestone Corners 12760 Bodega Highway Sebastopol, California</p>		<p>Project Manager</p> <p>NB</p>	<p>File Name</p> <p>Fig2BC200</p>
		<p>Drawing Date</p> <p>11/03/04</p>	<p>Drawn By</p> <p>A. Martin</p>	

Attachment 3

GROUNDWATER SAMPLE ANALYTICAL RESULTS (µg/L) 12750 Bodega Highway, Sebastopol, California

Well or Boring	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	di-Isopropyl Ether	1,2-DCA	1,2-DBA
MCL		NA	1	150	700	1,750	13	NA	0.5	NA
MW-1	6/14/1995	<50	<0.5	0.7	<0.5	<1.0	<5.0		NA	NA
	9/28/1995	<50	<0.5	0.62	<0.5	<1.0	<5.0		NA	NA
	1/4/1996	<50	<0.5	<0.5	<0.5	<0.5	NA		NA	NA
	10/2/1996	110	3.6	6.5	2.1	10	<5.0		NA	NA
	2/5/1997	<50	<0.5	<0.5	<0.5	<0.5	<30		NA	NA
	4/16/1997	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	8/31/1997	<20	<0.5	<0.5	<0.5	<0.5	<4.0		NA	NA
	12/20/1997	<20	<0.5	<0.5	<0.5	<0.5	<4.0		NA	NA
	3/13/1998	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	7/25/1998	<50	<1.0	<1.0	<1.0	<1.0	<1.0		NA	NA
	11/6/1998	NA	NA	NA	NA	NA	NA		NA	NA
	6/3/1999	NA	NA	NA	NA	NA	NA		NA	NA
	9/6/2001	<50	6	20	7.9	25.8	3.2		<5.0	<5.0
	1/29/2002	<50	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	5/29/2002	<50	<0.3	<0.3	<0.3	<0.6	<0.5		2	NA
	8/6/2002	NA	<1.0	<1.0	<1.0	<1.0	<2.0	NA	<1.0	<2.0
	9/8/2002	<500	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<0.5	<0.5
	10/10/2002	<500	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	11/10/2002	54	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	1/16/2003	<50	<0.5	<0.5	<0.5	<1.0	<0.5	1.1	<0.5	<0.5
2/17/2003	<50	<0.5	<0.5	<0.5	<1.0	<0.5	1.6	<0.5	<5.0	
3/17/2003	<500	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0	<0.5	<5.0	
5/21/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	2	<0.5	<1.0	
11/4/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	NA	<0.5	NA	
5/5/2005	<50	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	NA	<0.5	
9/14/2006	<50	<0.5	<0.5	<0.5	<1.0	<0.5	1.5	<0.5	<0.5	
4/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0	
8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0	
12/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<0.5	0.98	<0.5	<0.5	
MW-2	6/14/1995	3,300	8.7	6.2	44	6.3	18		NA	NA
	9/28/1995	59	<0.5	0.86	1.2	<1.0	<5.0		NA	NA
	1/4/1996	450	4.7	0.63	7.2	0.66	NA		NA	NA
	10/2/1996	68	1.6	3	1.1	5.2	<5.0		NA	NA
	2/5/1997	110	<0.5	<0.5	1	<0.5	<30		NA	NA
	4/16/1997	300	0.76	0.92	3.3	1.2	<5.3		NA	NA
	8/31/1997	240	3	1.6	13	0.62	<4.0		NA	NA
	12/20/1997	150	0.57	0.92	1.1	<0.5	<4.0		NA	NA
	3/13/1998	210	<0.5	1.1	0.8	<0.5	<5.0		NA	NA
	7/25/1998	140	<1.0	<1.0	1.02	<1.0	<1.0		NA	NA
	11/6/1998	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	6/3/1999	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	9/6/2001	<50	<5.0	5.3	2.3	7.9	<5.0		<5.0	<5.0
	1/29/2002	<50	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	5/29/2002	<50	<0.3	<0.3	<0.3	<0.6	<0.5	<0.5	NA	<0.5
	8/6/2002	NA	<1.0	<1.0	<1.0	<1.0	<2.0	NA	<1.0	<2.0
	9/8/2002	<500	<0.5	<0.5	<0.5	<1.0	<5	<5	<0.5	<0.5
	10/10/2002	<500	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	1/16/2003	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	2.9	<0.5
	3/17/2003	<500	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0	<0.5	<5.0
5/21/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0	
11/4/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	NA	<0.5	NA	
5/5/2005	<50	<0.5	<0.5	<0.5	1.3	<0.5	NA	<0.5	<0.5	
9/14/2006	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	
4/19/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0	
8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0	
12/20/2007	<50	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	

TABLE 5
GROUNDWATER SAMPLE ANALYTICAL RESULTS (µg/L)
12750 Bodega Highway, Sebastopol, California

Well or Boring	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	di-Isopropyl Ether	1,2-DCA	1,2-DBA
MCL		NA	1	150	700	1,750	13	NA	0.5	NA
MW-3	6/14/1995	210	1.7	2.2	1.2	2.4	<5.0		NA	NA
	9/28/1995	260	<0.5	3.6	0.87	5.4	<5.0		NA	NA
	1/4/1996	260	1.2	0.67	2.7	1.3	NA		NA	NA
	10/2/1996	200	<0.5	<0.5	1.4	1.1	<5.0		NA	NA
	2/5/1997	160	<0.5	<0.5	<0.5	1.7	<30		NA	NA
	4/16/1997	130	<0.5	0.55	1.1	1	<5.0		NA	NA
	8/31/1997	120	<0.5	0.83	<0.5	1.8	<4.0		NA	NA
	12/20/1997	110	<0.5	1	0.62	1.6	18		NA	NA
	3/13/1998	210	<0.5	3.3	0.7	2.4	<5.0		NA	NA
	7/25/1998	230	<1.0	<1.0	<1.0	<1.0	<1.0		NA	NA
	11/6/1998	170	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	6/3/1999	230	<0.5	4.8	0.62	1.9	<5.0		NA	NA
	9/6/2001	170	<5.0	2.6	4.6	2.7	<5.0		<5.0	<5.0
	1/29/2002	160	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	5/29/2002	101	<0.3	<0.3	<0.3	<0.6	<0.5	<0.5	NA	<0.5
	10/10/2002	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	11/10/2002	74	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	2/17/2003	100	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0	<0.5	<5.0
	5/21/2004	90	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	11/3/2004	110	<0.5	<0.5	<0.5	<1.0	<1.0	NA	<0.5	NA
	5/5/2005	<50	<0.5	<0.5	<0.5	<1.0	<0.5	NA	<0.5	<0.5
	9/14/2006	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
	4/19/2007	96	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	12/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
MW-4/	10/2/1996	900	170	11	41	49	10		NA	NA
MW-4A ^a	2/5/1997	920	310	5.9	46	37	<30		NA	NA
	4/16/1997	910	170	3.7	57	32	<5.2		NA	NA
	8/31/1997	1,100	210	5.4	110	22	80		NA	NA
	12/20/1997	180	13	0.54	14	10	<4.0		NA	NA
	3/13/1998	80	2.5	0.7	2.6	2	<5.0		NA	NA
	7/25/1998	1,500	1,400	1.94	786	22.6	<1.0		NA	NA
	11/6/1998	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	6/3/1999	750	140	7.7	100	43	<5.0		NA	NA
	9/6/2001	620	84	2.2	270	47	<5.0		6.8	<5.0
	1/29/2002	80	3.6	<0.5	5.1	<0.5	<0.5		<0.5	<0.5
	5/29/2002	NA	NA	NA	NA	NA	NA	NA		NA
	8/6/2002	NA	3.6	<1.0	8.4	4.8	<2.0	NA	6	<2.0
	9/8/2002	<500	3.8	<0.5	15	5.5	<5	<5	7.9	<0.5
	10/10/2002	<500	<0.5	<0.5	1.7	<1.0	<1.0	<1.0	5.4	<1.0
	11/10/2002	130	4.1	1.0	5.4	13.9	<1.0	<1.0	6.4	<1.0
	1/16/2003	<50	1.7	0.59	1.7	<1.0	<0.5	<0.5	2.9	<0.5
	2/17/2003	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0	3.0	<5.0
	3/17/2003	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0	<0.5	<5.0
	6/6/2003	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0	<0.5	<5.0
	5/21/2004	370	3.9	0.94	51	19	<1.0	<2.0	<0.5	<1.0
	11/3/2004	88	<0.5	<0.5	6.3	1.2	<1.0	NA	<0.5	NA
	5/5/2005	240	2.5	<0.5	57	3.3	<0.5	NA	2.9	<0.5
	9/14/2006	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	7.1	<0.5
	4/19/2007	180	0.5	<0.5	39	2.2	<1.0	<2.0	1.8	<1.0
	8/1/2007	65	<0.5	<0.5	11	<1.0	<1.0	<2.0	1.6	<1.0
	12/20/2007	130	0.55	<0.5	32	<1.0	<0.5	<0.5	1.9	<0.5
	3/26/2008	150	0.54	<0.5	30	1.2	<0.5	<0.5	2.4	<0.5

TABLE 5
GROUNDWATER SAMPLE ANALYTICAL RESULTS (µg/L)
12750 Bodega Highway, Sebastopol, California

Well or Boring	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	di-Isopropyl Ether	1,2-DCA	1,2-DBA
MCL		NA	1	150	700	1,750	13	NA	0.5	NA
MW-5	8/31/1997	<20	0.62	0.69	<0.5	1.1	<4.0		NA	NA
	12/20/1997	<20	<0.5	<0.5	<0.5	<0.5	<4.0		NA	NA
	3/13/1998	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	7/28/1998	<50	<1.0	<1.0	<1.0	<1.0	<1.0		NA	NA
	11/6/1998	NA	NA	NA	NA	NA	NA		NA	NA
	6/3/1999	NA	NA	NA	NA	NA	NA		NA	NA
	9/6/2001	<50	<5.0	<5.0	<5.0	<5.0	<5.0		<5.0	<5.0
	1/29/2002	<50	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	5/29/2002	<50	<0.3	<0.3	<0.3	<0.6	<0.5	<0.5	NA	<0.5
	10/10/2002	<500	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	5/21/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	11/3/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	NA	<0.5	NA
	5/5/2005	<50	<0.5	<0.5	<0.5	1.3	<0.5	NA	<0.5	<0.5
	9/14/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/19/2007	<50	<0.5	<0.5	<1.0	<1.0	<1.0	<2.0	<0.5	<1.0
	8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	3.7	<0.5	<1.0
	12/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
MW-6	8/31/1997	<20	0.63	1	<0.5	1.8	<4.0		NA	NA
	12/20/1997	<20	<0.5	<0.5	<0.5	<0.5	<4.0		NA	NA
	3/13/1998	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	7/25/1998	<50	<1.0	<1.0	<1.0	<1.0	<1.0		NA	NA
	11/6/1998	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	6/3/1999	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	9/6/2001	NA	NA	NA	NA	NA	NA		NA	NA
	7/25/1998	<50	<1.0	<1.0	<1.0	<1.0	<1.0		NA	NA
	1/29/2002	<50	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	5/29/2002	<50	<0.3	<0.3	<0.3	<0.6	<0.5	<0.5	NA	<0.5
	10/10/2002	<500	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	5/21/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
Dup	5/21/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	11/3/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	NA	<0.5	NA
	5/5/2005	<50	<0.5	<0.5	<0.5	<1.0	<0.5	NA	<0.5	<0.5
	9/14/2006	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
	4/19/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	12/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
	3/26/2008	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
MW-7	11/6/1998	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	6/3/1999	<50	<0.5	<0.5	<0.5	<0.5	<5.0		NA	NA
	9/6/2001	<50	<5.0	<5.0	<5.0	<5.0	<5.0		<5.0	<5.0
	1/29/2002	<50	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	5/29/2002	<50	<0.3	<0.3	<0.3	<0.6	<0.5	<0.5	NA	<0.5
	10/10/2002	<500	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0
	5/21/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	11/3/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	NA	<0.5	NA
	5/5/2005	<50	<0.5	<0.5	<0.5	<1.0	<0.5	NA	<0.5	<0.5
	9/14/2006	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
	4/19/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	12/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5

TABLE 5
GROUNDWATER SAMPLE ANALYTICAL RESULTS (µg/L)
12750 Bodega Highway, Sebastopol, California

Well or Boring	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	di-Isopropyl Ether	1,2-DCA	1,2-DBA
MCL		NA	1	150	700	1,750	13	NA	0.5	NA
MW-8	9/29/1998	23,000	220	21	3,100	4,100	<5.0		NA	NA
	11/6/1998	19,000	150	30	920	3,100	<5.0		NA	NA
	6/3/1999	22,000	140	30	2,200	2,800	<5.0		NA	NA
	9/6/2001	5,000	58	<5.0	1,700	611	<5.0		<5.0	<5.0
Dup	9/6/2001	5,100	51	<5.0	1,600	549	<5.0		<5.0	<5.0
	1/29/2002	2,000	11	<0.5	77	59	<0.5		<0.5	<0.5
Dup	1/29/2002	2,500	12	<0.5	100	63	<0.5		<0.5	<0.5
	5/29/2002	8,470	31	6	590	463	<5	<5	NA	<5
	8/6/2002	NA	44	<50	1900	930	<100	<100	<50	<100
	9/8/2002	18,000	67	<2.5	1,800	1,210	<25	<25	<2.5	<2.5
	10/10/2002	20,000	70	1.5	1,800	907.8	<1.0	<1.0	<0.5	<1.0
	11/10/2002	3,300	12	<0.5	240	172.3	<1.0	<1.0	<0.5	<1.0
	1/16/2003	1,700	3	0.52	83	54.8	<0.5	<0.5	<0.5	<0.5
	2/17/2003	520	2.4	0.62	61	40.58	<0.5	<1.0	<0.5	<5.0
	3/17/2003	590	<0.5	<0.5	3.5	7.9	<0.5	<1.0	<0.5	<5.0
	6/6/2003	3800	16	<0.5	310	282.7	<0.5	<1.0	<0.5	<5.0
PRE-PURG	11/5/2003	10,000	15	<0.5	600	410	NA	NA	NA	NA
PURGED	11/5/2003	17,000	87	<0.5	1,500	710	NA	NA	NA	NA
	12/4/2003	210	1	<0.5	5.2	11	NA	NA	NA	NA
	5/21/2004	490	3	<0.5	1.7	22.55	<1.0	<2.0	<0.5	<1.0
	7/24/2004	1,400	1.3	<0.5	96	42	<1.0	<2.0	<0.5	<1.0
	9/8/2004	12,000	38	<1.0	1,100	350	NA	NA	NA	NA
	11/3/2004	730	2.2	<0.5	56	33	<1.0	NA	<0.5	NA
	5/5/2005	<50	<0.5	<0.5	<0.5	<1.0	<0.5	NA	<0.5	<0.5
	9/14/2006	2,200	<0.5	0.88	82	150	<0.5	<0.5	<0.5	<0.5
	4/19/2007	100	<0.5	<0.5	10	2.2	<1.0	<2.0	<0.5	<1.0
	8/1/2007	6,100	7.7	<0.5	780	71.1	<1.0	<2.0	<0.5	<1.0
	12/20/2007	<50	<0.5	<0.5	1.9	<1.0	<0.5	<0.5	<0.5	<0.5
	3/28/2008	<50	<0.5	<0.5	0.8	<1.0	<0.5	<0.5	<0.5	<0.5
On-Site Irrigation	11/5/2003	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA
	4/19/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	12/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
12950 Bodega	7/24/2004	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	4/19/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	8/1/2007	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<2.0	<0.5	<1.0
	12/20/2007	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
All results are reported in micrograms per liter (µg/L)										
1,2-DBA = 1,2-Dibromoethane or EDB										
1,2-DCA = 1,2-Dichloroethane										
MCL = Maximum Contaminant Level for Drinking Water (California Dept. of Health Services)										
MTBE = Methyl tert-butyl ether										
NA = Not available										