Cohen, Matthew@Waterboards

From: Lockwood, George@Waterboards
Sent: Monday, March 13, 2017 6:44 AM
To: Bolin, David
Cc: Higgins, Geniece; Wozencraft, Julie; Cohen, Matthew@Waterboards; Marion, Jennifer@Waterboards; Newton, Daniel@Waterboards
Subject: Proposed UST Case Closure - CHEVRON #9-1202 (T0605901815), 9491 EDINGER, WESTMINSTER , CA 92683, ORANGE COUNTY - USTCF none

David, State Water Board has received your email below, thank you. The comment period for this closure ended Friday, January 6, 2017 at 12:00 noon. However highly irregular, State Water Board will consider your comments below concerning case closure of the subject facility. After consideration and presentation for management review, State Water Board will respond to OCWD.

Thank you for your interest

George W. Lockwood, MSCE, PE-Civil #59556
Chief, UST Cleanup Unit II
Underground Storage Tank (UST) Program
State Water Resources Control Board
1001 "I" Street, 15th Floor, Room 15-03
Sacramento, CA 95814
Email: George.Lockwood@waterboards.ca.gov
Web: http://www.waterboards.ca.gov/water_issues/programs/ust/
Petition page: http://www.waterboards.ca.gov/water_issues/programs/ust/cleanup/petitions.shtml
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Remember: Powerlessness is a learned behavior. People can make a difference where they are. You should be bold in your jobs.

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From: Bolin, David [mailto:DBolin@ocwd.com]
Sent: Friday, March 10, 2017 2:07 PM
To: Lockwood, George@Waterboards
Cc: Higgins, Geniece; Wozencraft, Julie
Subject: FW: COMMENT LETTER - Chevron #9-1202, Proposed UST Case Closure

Dear Mr. Lockwood. In regards to the Chevron #9-1202 station at 9491 Edinger Ave in Westminster, California, I submitted my email below in opposition to closing the Chevron site at this time. The subject of the Chevron #9-1202 site came up in a conversation again this week with the Orange County Health Care Agency (OCHCA). Upon further review, I saw Chevron's consultant GHD's March 25, 2016, letter to you titled *Petition for Review of Closure Denial* in which Chevron responds to OCHCA's statements opposing site closure. I had not seen GHD's letter prior to submitting my Dec-6, 2016 email below. Therefore, based in part on GHD's letter, I offer additional information for your consideration regarding closing the Chevron site.

Please refer to page two, Figures 2 and 3, and Table 1 of the GHD letter (attached). GHD discusses groundwater flow direction from the Chevron site and reports that MTBE was detected at up to 38,400 ug/L in site monitoring well MW-02, which is located on the southeast corner of the Chevron site, downgradient from the site MTBE release location. GDH reports that the groundwater flow direction beneath the site is "*... primarily to the southeast with minor seasonal fluctuations ...* " and refers to the *historical groundwater flow direction* rose diagram shown on Figure 2. Chevron installed a monitoring well MW-5 off site and about 150 feet south-southeast, downgradient of MW-2. Both MW-2 and MW-5 are shallow wells. MW-2 is screened 3 to 23 feet below ground surface (bgs), and MW-5 is screened 5 to 25 feet bgs. No MTBE has been detected in MW-5 although TBA has been detected in that well. There is a downward hydraulic gradient in this part of the basin, which has been confirmed by OCWD based on OCWD monitoring wells. However, no deeper wells have been installed on the Chevron site or off site to delineate the vertical extent of groundwater contamination beneath the site.

The orientation of groundwater flow beneath the site, which is described by Chevron's consultant and shown on the rose diagram, is directly toward a large system production well FV-11 in which MTBE was detected in 2008 and 2010. Well FV-11 is located on the west margin of Mile Square Park, approximately 4,400 feet from Chevron #9-1202. MTBE was detected at 0.06 ug/L in November 2008 and 0.095 ug/L in September 2010. There are no other gas stations located between the Chevron #9-1202 and well FV-11. Other nearest gas stations to well FV-11 consist of: (a) Exxon #7-3561 about 3,400 feet north of well FV-11 and about 2,800 feet east of the Chevron site; (b) several gas stations about 3,400 feet southwest and about 1,750 feet south of FV-11, all downgradient of the FV-11 well. There are no other petroleum sites, however, between Chevron #9-1202 and well FV-11, or in proximity to well FV-11 based on the Geotracker database.

While the MTBE concentrations detected in well FV-11 are below the state's maximum contaminant limit (MCL – 12 ug/L), the occurrence of MTBE in a major production well is disconcerting. These MTBE detections might be the early arrival of a larger contaminant plume. Therefore, because Chevron #9-1202 released MTBE from the site, significant MTBE was detected in a downgradient site margin well, there is a downward hydraulic gradient beneath the site, the vertical extent of MTBE from the site has not been determined, the groundwater flow direction and contamination from the site is directly toward a drinking water production well, and MTBE has been detected in that production well to groundwater, I encourage the Water Board to deny the Chevron 9-1202 site closure request at this time.

Sincerely,

David Bolin

From: Bolin, David
Sent: Tuesday, December 06, 2016 3:58 PM
To: UST Closure Comments (USTClosuresComments@waterboards.ca.gov)
Subject: COMMENT LETTER - Chevron #9-1202, Proposed UST Case Closure

In response to the State Water Resources Control Board's Notice of Opportunity for Public Comment dated October 27, 2016, I offer the following comments in opposition to the proposed UST case closure for OCHCA case number 94UT039, also identified as Chevron Station #9-1202, located at 9491 Edinger Avenue in Westminster, California.

TBA is a toxic chemical that poses an unacceptable risk to human health and the environment at elevated concentrations.

The California Office of Environmental Health Hazard Assessment (OEHHA) has established a regulatory level of 12 ug/L as a working safe limit for TBA in groundwater. TBA has been detected at up to 27,000 ug/L, well over 1,000 times the safe limit for TBA in groundwater (well MW-02, 11/15/2002). Concentrations beneath the site have persisted at more than 100 times the safe limit for more than 14 years, the latest detection being 3,000 ug/L (MW-02, 8/5/2016). The volatility (40 to 42 mm Hg), miscibility, toxicity (LD50 = 3,500 mg/kg), and relative mobility of TBA form the basis for such a low safe limit in groundwater and necessary protection against exposure to TBA concentrations that persist at the site.

High concentrations of TBA that persist at the downgradient margin of the site and extend off site have not been delineated laterally or vertically.

A total of four wells have been constructed on the site to investigate groundwater contamination caused by gasoline releases from the on-site gasoline fueling system (leaking USTs, piping, pumps, etc.). The well depths range depth from 19 to 23.1 feet below ground surface (bgs). The elevated TBA concentrations have been detected in one of the site monitoring wells, MW-02 located on the downgradient southeast margin of the site. It is reasonable to infer from the reported data that elevated TBA concentrations extend downgradient from the site margin well in the lateral direction and possibly in the vertical direction.

One well (MW-05) has been installed off site, further south-southeast, approximately 150 feet from well MW-02. The well depth for MW-05 is 25 feet bgs. Groundwater flow beneath the site flows in a southerly direction based on site groundwater elevation data and OCWD's knowledge and understanding of groundwater flow in the Orange County Basin. However, it is not certain that well MW-05 is in a location that provides representative analytical data to show that groundwater petroleum contamination from the Chevron site has not and is not continuing to escape the site.

There is a pervasive downward gradient throughout the Orange County Basin, including in the area of the Chevron site. While there are localized areas where downward and even lateral groundwater flow is inconsistent and erratic, in part owing to seasonal flow, nested and clustered well sets routinely show a downward flow gradient. There is no report of any investigation of the Chevron site, either on site or off site, that is deeper than the zone is which the five wells are screened. Therefore, the question of whether elevated TBA has migrated deeper than 20 to 25 feet bgs remains unaddressed.

Therefore, based on the reported data and the absence of lateral and vertical delineation of the elevation TBA contamination, the TBA groundwater plume is deemed undelineated and poses the threat of continued migration from the site.

Large System Production Well FV-9 is approximately 3,400 feet south of the Chevron site and is at risk from groundwater contamination that has escaped the site.

Drinking water production well FV-9 was drilled in 2009 to about 1,114 feet bgs. FV-9 is a 20-in diameter well that produces water at 4,000 gpm from a perforated zone between 415 and 1070 feet bgs. Groundwater contamination that has escaped the Chevron site and migrated downward and downgradient to within the FV-9 capture zone will likely contaminate the well. Although other groundwater contaminants have been detected in well FV-9 (namely 1,4-dioxane), TBA has not been detected as yet. Notwithstanding, TBA from the Chevron site remains a threat to well FV-9 until the TBA plume is delineated and it can be shown that Chevron TBA contamination will not impact well FV-9.

Lateral and vertical delineation of the Chevron TBA groundwater plume will address the potential of TBA contamination in well FV-9.

Existing analytical data shows that groundwater contaminants can and have entered the well (see 1,4-dioxane mentioned above). Additional investigation and delineation of the Chevron TBA contamination is necessary to show that TBA will not likely impact the nearest drinking water production well, FV-9. Installing and testing one or more complimentary, deeper cluster wells adjacent to existing shallow wells is needed to determine the vertical gradient beneath the site and off site. Lateral testing within 100 feet south *and* southeast of MW-02 is needed to determine whether the existing TBA plume has migrated laterally downgradient of the site in the direction of production well FV-9.

Please contact me if you have any questions. Thank you for your consideration.

David Bolin

David Bolin
Principal Hydrogeologist
Orange County Water District

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