

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING MARCH 23, 2007

Prepared February 14, 2007

ITEM NUMBER: 7

SUBJECT: Underground Tank Program and MTBE Priority Sites

DISCUSSION

New information is shown in italics.

Water Board staff members are working on numerous petroleum underground storage tank (UST) cleanup cases involving MTBE. Some high profile sites or "worst case" problems are discussed below. Also attached to this report is a list of sites with MTBE in groundwater that gives an overall perspective of the regionwide problem.

The next Central Coast Water Board-hosted local implementing agency/local oversight program roundtable will be at our offices in San Luis Obispo on March 1, 2007. Leaking underground storage tank regulators are expected from the Santa Barbara County Fire Department and Santa Clara County Department of Environmental Health local oversight program agencies, the Santa Cruz, Monterey, San Benito, and San Luis Obispo County environmental health agencies, the City of San Luis Obispo Fire Department, and the Water Board. The agenda includes discussions on evaluating environmental risk assessments, implementing post-closure site management requirements, selecting cost-effective remediation technologies, and using GeoTracker.

The list shows site names and addresses as well as the priority listing (Rank A, B, or C) based on State Board MTBE guidelines. Staff has required accelerated cleanup at some higher priority Rank A sites. Interim cleanup action is required as

soon as technically feasible until full-scale cleanup activity can begin.

MTBE cleanup goals are typically set at the secondary maximum contaminant level (MCL) for drinking water of 5 micrograms per liter ($\mu\text{g/L}$), which is a taste and odor threshold. The primary MCL, based on threat to public health, is 13 $\mu\text{g/L}$.

The Regionwide MTBE Listing and High Priority Sites list, included as Attachment 1, contains the latest information provided by Santa Barbara County as of February 14, 2007.

HIGH PRIORITY SITES STATUS

Chevron Service Station, 2194 Main Street, Cambria, San Luis Obispo County [John Mijares 805/549-3696]

Chevron Cambria service station, located on the corner of Main Street and Burton Drive in Cambria, has been a Regional Board-lead groundwater investigation and cleanup case since December 1993.

In 1995 the underground storage tank (UST) system was removed and service station ownership/operation was transferred from Chevron Products Company (Chevron) to an independent owner/operator who installed a new UST system.

Chevron is cleaning up a petroleum hydrocarbon discharge, including the fuel

additive methyl tertiary-butyl ether (MTBE), from the original UST system. The discharge threatened groundwater in two Cambria Community Service District (CCSD) Wells, Nos. 1 and 3, which provide supplemental water to the Community of Cambria.

As part of interim corrective action beginning in May 2000, Chevron continuously pumped MTBE contaminated water from four onsite wells. Currently, there are 15 shallow groundwater extraction wells. Beginning in November 2000, Chevron began full operation of a groundwater extraction and high vacuum dual phase extraction system. Both systems operate continuously, except for periodic system upgrade, mechanical breakdowns, and system maintenance activities. Extracted and treated groundwater is stored in an onsite 15,000-gallon tank until being trucked offsite for disposal at the Santa Maria Wastewater Treatment Plant.

During the November 2001 technical work group meeting (with Regional Board staff, CCSD representatives, and Chevron representatives), the CCSD indicated the new temporary high school well was connected to the municipal drinking water supply. The CCSD's high school well is needed as an alternative water supply and the wellhead treatment system CCSD installed on their Santa Rosa Creek wells will enable their use in the event of an emergency.

On May 18, 2004, the Regional Board's Executive Officer rescinded Cleanup or Abatement Order (CAO) No. 00-28. The CAO required Chevron to provide CCSD with alternative water supply due to loss of CCSD's Well Nos. 1 and 3. The settlement agreement between CCSD and Chevron explicitly resolves all of CCSD's claims against Chevron, including claims for an alternative water supply.

Since the Last Staff Report:

The Fourth Quarter 2006 Groundwater Monitoring and Remediation Status Report indicates the following:

- *The monitoring wells within the plume boundaries continue to exhibit MTBE concentrations exceeding the cleanup goal of 5 micrograms per liter ($\mu\text{g/L}$); however, current concentrations have decreased significantly compared to historical maximum values. The fourth quarter 2006 maximum MTBE concentration was 1,400 $\mu\text{g/L}$. The shallow-zone MTBE isoconcentration map is shown on Attachment 2.*
- *Monitoring wells historically known to be located beyond the plume boundaries continue to exhibit non-detectable concentrations of MTBE.*
- *Neither petroleum hydrocarbons nor fuel oxygenates were detected in any of the samples collected from Santa Rosa Creek (three sampling stations) and shallow groundwater samples from the northern bank of Santa Rosa Creek (three sampling stations) during this quarter.*
- *The high-vacuum dual phase extraction system and the groundwater extraction and treatment system were operated briefly during the reporting quarter for sample collection. Investigation results of the vacuum truck roll-over incident in August 2006 identified driver fatigue and nighttime driving as primary contributing factors in the roll-over incident. Chevron is in the process of qualifying a local transporter to resume hauling of treated groundwater to the City of Santa Maria wastewater plant. Chevron anticipates resumption of the treatment systems' operation in February 2007.*

California Water Service Company Supply Wells, Pajaro Street and Bridge Street, Salinas, Monterey County [John Goni 805/542-4628]

Water Board staff was notified by a Salinas water purveyor, California Water Service Company (CWSC), that two supply wells in the Salinas area showed detections of the fuel oxygenate MTBE. Water Board staff's review of known leaking underground tank cases near the wells indicated that there are no active cases with high concentrations of MTBE. Further investigation revealed a gasoline distributor (with 100,000 gallons of fuel products storage) close to the well, but a subsequent site investigation showed no evidence of a fuel release in underlying groundwater. Staff continued its investigation and directed other permitted underground tank facilities without previously reported leaks to perform groundwater investigations. These investigations failed to find a release of MTBE of significant size to account for the contaminant in the supply wells.

Surface water samples from the Salinas Reclamation Ditch, collected by Water Board staff, near the CWSC supply wells showed non-detectable concentrations of gasoline constituents or MTBE. As suggested by Water Board members, staff investigated a former packing plant near the CWSC supply wells. A joint investigation by the Monterey County Environmental Health Department (MCEHD) and Water Board staff concluded former packing houses in this area are not likely the source of MTBE contamination because (1) of the small tank sizes, (2) the dates of tank closures precedes significant use of MTBE, and (3) hydrocarbons were not found in soil beneath the removed tanks.

Water Board staff continued to coordinate the investigation with other agencies in search of the source of MTBE. A review of the State Water Resources Control Board's implementation of enhanced leak detection testing requirements for all

underground tank facilities within 1000 feet of water supply wells did not identify any new potential sources of MTBE. The MCEHD agreed to increase inspections of all nearby permitted underground and aboveground tank facilities to ensure compliance; no operational violations were found. The Monterey County Water Resources Agency performed additional groundwater analytical testing from nearby production wells up and crossgradient of the CWSC wells, and did not detect any MTBE. CWSC information and Water Board staff inspections confirmed that gasoline has not been stored at their supply well locations. CWSC performed depth discrete sampling of Well Station 13-02 in December 2004. The sampling results indicate that the shallower/180-foot aquifer contains the highest concentrations of MTBE.

In an effort to expand the investigation, Water Board staff assisted the Monterey County Water Resources Agency in applying to the State Water Resources Control Board for Cleanup and Abatement Account money to fund additional groundwater sampling. The Water Board adopted Resolution Number R3-2005-0118 supporting the Monterey County Water Resources Agency's application for Cleanup and Abatement Account funds on October 21, 2005. At that time State Board staff indicated that all other sources of possible funding had to be exhausted first, and that the California Department of Health Services (DHS) has money in the Drinking Water Treatment and Research Fund specifically for water purveyors to investigate drinking water sources impacted by MTBE releases.

The CWSC informed Water Board staff on July 24, 2006, that they do not have the staff resources necessary to pursue the DHS funding. Water Board staff then re-contacted State Board staff to determine if the Monterey County Water Resources Agency could resubmit its application for Cleanup and Abatement Account funding. On September 5, 2006, State Board staff advised that it would be appropriate for

the Monterey County Water Resources Agency to resubmit their application. The Monterey County Water Resources Agency resubmitted their application on October 2, 2006.

The State Board, at its January 18, 2007 meeting, approved the allocation of cleanup and abatement funds to perform additional sampling. The paperwork to establish a contract between the Central Coast Water Board and Monterey County Water Resources Agency has been submitted to the State Water Board's contracts office. We anticipate that it will take about two months to get the contract out. Field work will start shortly after.

Camp Evers Combined Site (Four Gasoline Service Stations) Mount Hermon Road at Scotts Valley Drive, Scotts Valley, Santa Cruz County [Wei Liu 805/ 542-4648]

Petroleum hydrocarbons including benzene, 1,2-DCA and MTBE have been detected in groundwater beneath the Tosco, Shell, BP, and Chevron service stations located at the intersection of Mount Hermon Road and Scotts Valley Drive. An expanded site plan is illustrated on Attachment 3.

Previous onsite corrective actions at the Tosco, Shell, and BP sites included soil vapor extraction, air sparging, dual phase extraction, and/or groundwater extraction to remediate the MTBE plume. Chevron continued remediation of the benzene plume. The onsite corrective actions have successfully removed MTBE and other gasoline constituents from groundwater directly beneath the four service station sites; therefore, onsite remediation has been discontinued at all four sites.

The MTBE plume mass appears to have "detached" from the original plume, and migrated to a downgradient offsite location beneath the King's Village Shopping Center with a maximum concentration of 38,300 micrograms per liter ($\mu\text{g/L}$) detected in well CEMW-6 in May 1999. In

addition, the Manana Woods water supply well was impacted by benzene and MTBE and extracted water is being treated using a wellhead treatment facility to remove the contaminants.

The responsible parties installed a permanent groundwater pumping and treatment system at the King's Village Shopping Center in November 2002, to remediate and hydraulically control the detached plume. Treated groundwater is discharged to surface water under the General NPDES Permit for highly treated groundwater.

Fourth Quarter 2006 groundwater samples collected on November 3, 2006, indicate maximum MTBE concentrations of 26 $\mu\text{g/L}$ in onsite monitoring well Shell MW-2, and 62 $\mu\text{g/L}$ in offsite monitoring well CEMW-19B. A maximum concentration of 620 $\mu\text{g/L}$ TBA was detected in offsite monitoring well CEMW-6. MTBE concentrations in downgradient offsite well CEMW-6 have been reduced from a maximum of 38,300 $\mu\text{g/L}$ in May 1999 to 0.53 $\mu\text{g/L}$ in October 2006. In addition, MTBE concentrations in downgradient offsite well CEMW-16, which is near the groundwater pumping and treatment system, were reduced from 4,710 $\mu\text{g/L}$ in January 2001 to 3.2 $\mu\text{g/L}$ currently. These results suggest that the downgradient remediation system is effective in removing the contaminants.

The downgradient offsite remediation system has removed approximately 22 million gallons of water, 333 pounds (lbs) of TPH, 11 lbs of benzene, 67 lbs of MTBE, and 27 lbs of TBA since November 26, 2002.

Quik Stop Market No. 78, 5505 Soquel Drive, Soquel, Santa Cruz County [Tom Sayles 805-542-4640]

Quik Stop Market No. 78 (Quik Stop) is an operating gasoline service station located on the corner of Soquel Drive and Hardin Way in Soquel. The site has been a Regional Board lead groundwater

investigation and cleanup case since June 1999.

The approved corrective action plan consisting of a permanent dual-phase (soil vapor and groundwater) treatment system has been operating since July 5, 2002. The treated groundwater is discharged to the sanitary sewer under a County of Santa Cruz Permit (No. 00002829) and the catalytic oxidizer treatment system operates under a Monterey Bay Unified Pollution Control District air permit (No. 11054).

Three additional vapor extraction wells were installed in December 2003, in the vicinity of MW-3, to enhance cleanup system effectiveness. In addition, MW-3 was overdrilled and converted into a 4-inch diameter well to enhance groundwater extraction efficiency. The highest concentration of MTBE was 230,000 µg/L in monitoring well MW-4 (near the source area) on March 2, 2000.

Fourth Quarter 2006 groundwater samples were collected on December 7, 2006. A maximum concentration of 23 µg/L MTBE and 3,600 µg/L tert-butyl alcohol (TBA) was detected in onsite extraction well RW-2. A maximum concentration of 3.2 µg/L MTBE was detected in offsite monitoring well MW-6. The total petroleum hydrocarbons as gasoline, benzene, and MTBE concentration contour maps show the highest concentrations to be near the fuel tank complex which is consistent with past quarters, and a comparison with past concentration contour maps shows that the plume continues to decrease in size. Quik Stop continues to sample Nobel Creek on a monthly basis at four downgradient locations. MTBE and TBA were not detected in any creek samples collected on December 7, 2006.

Groundwater extraction pumps continue to operate in extraction wells RW-2, RW-3, and MW-4R and cleanup is ongoing.

Los Osos Valley Garage, Former Bear Valley Chevron Service Station, 1099 Los Osos Valley Road, Los Osos, San Luis Obispo County, [Corey Walsh 805/542-4781]

Southern California Water Company (Los Olivos No. 3) and the Los Osos Community Services District (10th Street) municipal water wells are located near the site. Los Olivos No. 3 continues to be sampled monthly, while the 10th Street well is sampled once every three years.

The offsite treatment system was shut down in June 2005, and post treatment verification monitoring was conducted in January 2006 and July 2006. The July 2006 sampling event included sampling of key multi-level monitoring well chambers and sample results indicated maximum contaminant levels of 180 micrograms per liter (µg/L) total petroleum hydrocarbons as gasoline, 12 µg/L benzene, 14 µg/L methyl tertiary-butyl ether (MTBE), and 13 µg/L tertiary-butyl alcohol (TBA). The next verification groundwater monitoring event is scheduled for April 2007.

The groundwater monitoring data continue to indicate declining concentrations of MTBE, and stable or declining concentrations of other petroleum constituents when compared with previous sampling events. The groundwater monitoring data support that contaminant concentrations are low, and are below or are approaching cleanup goals.

Water production from the Los Olivos No. 3 and 10th Street wells continues to run at normal production rates. Monitoring results for the Los Olivos No. 3 well continue to be less than 0.5 µg/L for MTBE (last sampled December 6, 2006); MTBE has not been detected since June 2003. Sample results for the 10th Street well (last sampled February 7, 2006) continue to remain below detection limits (<0.2 µg/L) for MTBE and (<2.0 µg/L) for TBA.

Given the low groundwater contaminant concentrations and the observation that contaminant levels are attenuating to near cleanup goals, Water Board staff anticipates evaluating the case for closure after receipt of the April groundwater monitoring data, which are due on May 31, 2007. After review of that information, Water Board staff expects to provide written requirements for additional groundwater monitoring, or case closure. If the data support a recommendation for case closure, Water Board staff will provide the Water Board with a written recommendation for case closure at its July 6, 2007 meeting in Watsonville, or at

the September 7, 2007 meeting in San Luis Obispo.

ATTACHMENTS

1. Region wide MTBE Listing and High Priority Sites
2. MTBE Plume Map, Cambria Chevron
3. Expanded Site Plan; Camp Evers Scotts Valley

S:\Shared\UST\UST Program\MTBE Board Items\MTBE ITEM 032307.doc