

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF FEBRUARY 3, 2011  
Prepared January 5, 2011

ITEM NUMBER: 9

SUBJECT: Recommended Case Closures

**Background:**

This staff report provides summaries of recommended case closures for four Underground Storage Tank (UST) sites. For these sites, soil and/or groundwater beneath these site has not attained water quality or soil cleanup goals for one or more constituents. Staff's closure recommendation is premised on the knowledge that: 1) the remaining constituent concentrations are sufficiently low so as to not pose a threat to surrounding existing beneficial uses of the water (e.g., supply wells, surface waters, etc.); 2) the constituent sources have been removed; 3) monitoring has indicated that the groundwater plumes are contracting in size and concentration; and 4) continued monitoring at these sites would not provide additional benefit for the staff resources invested. These sites are appropriate for closure, based on the site-specific information provided below for each of these cases.

**UNDERGROUND STORAGE TANK CASE CLOSURE**

**The Corner Store, 398 Lighthouse Avenue, Monterey, Monterey County**  
**[Wei Liu 805-542-4648]**

Staff recommends closure of this underground storage tank (UST) case where groundwater sample results indicate contamination remains in groundwater at a concentration slightly greater than the Central Coast Water Board's cleanup goal for methyl tertiary butyl ether (MTBE). Second quarter 2010 monitoring results show MTBE at 9.2 and 15 micrograms per liter ( $\mu\text{g/L}$ ) respectively in two on-site monitoring wells. The groundwater cleanup goal for MTBE is 5  $\mu\text{g/L}$ . All other petroleum hydrocarbon constituents, including benzene and other fuel oxygenates, are below detection limits or the Central Coast Water Board's cleanup goals.

The site is currently used as a fuel service station and convenience store. In 1995, the responsible party found leaks from the USTs located at the site; these leaks degraded soil and groundwater. The leaking tanks were replaced in 1996. The responsible party performed an initial soil and groundwater investigation in 1997, collecting soil and groundwater samples from nine temporary soil borings at the site. Soil samples showed total petroleum hydrocarbons as gasoline (TPH-g), benzene, and MTBE at concentrations up to 350 milligram per kilogram (mg/kg), 0.05 mg/kg, and 12 mg/kg, respectively. Groundwater samples showed TPH-g, benzene, and MTBE at concentrations as high as 130,000  $\mu\text{g/L}$ , 910  $\mu\text{g/L}$ , and 110,000  $\mu\text{g/L}$ , respectively.

The Central Coast Water Board required a quarterly groundwater monitoring program in 1999. The responsible party implemented a Corrective Action Plan (CAP) in 2003. Several remedial technologies were applied during the remediation, including enhanced bioremediation and groundwater pump and treat. Approximately 42,150 gallons of contaminated groundwater were removed between June 2000 and February 2009. MTBE concentrations have attenuated from a maximum of 130,000  $\mu\text{g/L}$  to 15  $\mu\text{g/L}$ . In April 2009, all on-site remedial operations were suspended for a contaminant concentration rebound test. Based on the groundwater

confirmation monitoring results during the past year, MTBE concentrations have been declining or have remained low and are stable. Other petroleum hydrocarbon constituents have been below detection limits or below the Central Coast Water Board's cleanup goals since May 2007.

The site lies within the Monterey Peninsula Subarea of the Salinas Hydrologic Unit. The "Water Quality Control Plan, Central Coast Region" (Basin Plan) designates groundwater in this subarea as having beneficial uses for domestic and municipal supply, agricultural supply, and industrial supply.

Depth to underlying groundwater is approximately 1 to 8 feet below ground surface. Groundwater flows primarily to the north-northeast. The nearest water body is Monterey Bay located approximately 600 feet northeast of the site. There are no water supply wells downgradient from the site. The MTBE plume is not expected to impact Monterey Bay because of its distance, low residual concentration, and localized extent.

Our recommendation for closure is based on the following:

1. The contamination mass was removed by groundwater extraction and treatment, as well as enhanced bioremediation between 2003 and 2009;
2. The extent of the residual MTBE plume has been fully delineated. The plume is localized in a small area in the vicinity of two on-site wells and the detected maximum concentration of 15 µg/L is slightly above the cleanup goal of 5 µg/L;
3. Groundwater data indicate that on-site remediation was effective and has significantly reduced contaminant concentrations in groundwater. Natural attenuation is expected to continue; and
4. Case closure is consistent with State Board Resolution No. 92-49, Section III.G., which allows consideration of cost-effective abatement measures where attainment of reasonable objectives, less stringent than background water quality, does not unreasonably affect present or anticipated beneficial uses of groundwater, and ultimately will not result in water quality less than that prescribed by the Basin Plan.

Residual soil and groundwater contamination may exist on-site that could pose an unacceptable risk under certain site development activities such as site grading, excavation, or de-watering. The Central Coast Water Board, Monterey County Health Department, and the appropriate local planning and building departments must be notified prior to any changes in land use, grading activities, excavation, or dewatering. This notification must include a statement that residual soil and groundwater contamination underlie the property and nearby properties. The levels of residual contamination and any associated risks are expected to reduce with time. Additionally, Monterey County Health Department may require a Health Risk Assessment be conducted should this site be redeveloped.

Based on the above, there is no longer a threat to groundwater quality and no further groundwater investigation or cleanup is necessary. Monterey County Health Department staff agrees with this determination. The responsible party has been notified of this proposed case closure. Unless the Central Coast Water Board objects and pending proper monitoring well destruction, the Executive Officer will issue a formal case closure letter.

**Chevron Station, 3645 Rio Road, Carmel, Monterey County – [John Goni 805-542-4628]**

Central Coast Water Board staff recommends closure of this leaking UST case where groundwater monitoring sampling detected MTBE at nine micrograms per liter (µg/L) in one monitoring well. The Central Coast Water Board's cleanup goal for MTBE is 5 µg/L. All other constituents of concern are below the Central Coast Water Board's cleanup goals.

The site is an active Chevron Station located at 3645 Rio Road in Carmel Valley. The station has been in operation since at least 1966. In 1998 the station was remodeled, and soil and groundwater samples obtained during excavation of dispenser piping showed high concentrations of gasoline contaminants. Approximately 500 cubic yards of soil was removed at that time.

Subsequent groundwater monitoring in April 2000 found the highest concentration of MTBE in groundwater was 11,000 µg/L immediately adjacent to, and downgradient of, the UST facilities. The MTBE degraded quickly, as evidence by the consistently lower concentrations at downgradient wells. MTBE attenuated to 4 µg/L by October 2002. Subsequent soil and groundwater investigations have confirmed soil contamination was limited to the area around the original piping leak and groundwater contaminants continued to degrade naturally. The most recent groundwater sampling data from April 29, 2010, confirmed the only detection of contaminants greater than the cleanup goal is MTBE at 9 µg/L at one on-site monitoring well.

The groundwater beneath the site flows towards the west. Shallow groundwater depth varies between 5 to 30 feet below ground surface. The Carmel River is approximately 1,500 feet south of the site and Carmel Bay is approximately 6,000 feet to the west. Drinking water in this area is supplied by the California American Water Company, and there are no drinking water wells within a mile of the subject case. Two currently inactive wells are approximately 225 and 380 feet upgradient of this site. These may be used for supply in the future if the vacant parcel on which they are located is developed. A hydraulic study and pump testing on the two wells indicate there is not hydraulic continuity between the wells and groundwater underlying this site. Contaminants associated with this case will not affect the two wells.

The site lies within the Carmel River Hydrologic Unit (307.00). The Basin Plan designates groundwater in the Carmel River Hydrologic Unit as having beneficial uses for domestic and municipal supply, agricultural supply, and industrial supply.

Our recommendation for closure is based on the following:

1. The extent of the release has been adequately characterized,
2. The soil contaminant source was removed from the site to the extent practical and the remaining soil contaminants above the cleanup goal are limited in extent,
3. The remaining groundwater constituent of concern is limited to MTBE and the plume is declining in size and concentration,
4. MTBE concentrations in groundwater have been reduced from a maximum of 11,000 µg/L to 9 µg/L,
5. Monitoring data indicate favorable conditions for natural attenuation of petroleum hydrocarbons, as demonstrated by contaminant concentration reductions to date in groundwater, and concentrations are expected to continue to decrease with time,
6. No drinking water supply wells are within one mile of the site, and remaining contamination is unlikely to reach water supply wells,
7. We have notified the Monterey County Health Department and current fee titleholders of the subject property and adjacent properties and have not received any objections to the case closure
8. Closure is consistent with Section III.G. State Board Resolution No. 92-49, allowing consideration of cost-effective abatement measures for a site where attainment of reasonable objectives less stringent than background water quality does not unreasonably affect present or anticipated beneficial uses of groundwater, and ultimately will not result in water quality less than that prescribed by the Basin Plan.

Residual soil and groundwater contamination may exist on-site that could pose an unacceptable risk under certain site development activities such as site grading, excavation, or de-watering. The Central Coast Water Board, Monterey County Health Department, and the appropriate local planning and building departments must be notified prior to any changes in land use, grading activities, excavation, or dewatering. This notification must include a statement that residual soil and groundwater contamination underlie the property and nearby properties. The levels of residual contamination and any associated risks are expected to reduce with time.

The recommended case closure is consistent with closure of similar low-risk petroleum hydrocarbon cases by the Central Coast Water Board in the past. We have notified interested parties of our plan to close this case. Unless the Water Board directs staff otherwise, and pending proper monitoring well destruction, the Executive Officer will issue a case closure letter pursuant to California Underground Storage Tank Regulations

**Former Exxon Service Station No. 7-0281, 2501 South Main Street, Soquel, Santa Cruz County, Case No. (3049) [Tom Sayles 805-542-4640]**

Central Coast Water Board staff recommends closure of this UST case where groundwater sample results indicate MTBE remains at concentrations slightly greater than Water Board's cleanup goal of five micrograms per liter ( $\mu\text{g/L}$ ). The most recent groundwater monitoring results collected on October 20, 2010 showed MTBE at 6.6  $\mu\text{g/L}$ . All other constituents of concern were below Water Board cleanup goals. Analytical results of soil samples collected during a 2008 confirmation soil boring assessment were below environmental screening levels for residential land use.

The site is located at 2501 South Main Street in Soquel and currently operates as a privately owned, Valero-branded retail service station dispensing unleaded gasoline and diesel fuels.

In August 1990, two 10,000 gallon single-walled gasoline tanks and one 6,000 gallon gasoline tank and their associated piping were removed from the eastern portion of the site. In addition, the owners commissioned the excavation of soil from the base of the tank cavity. Consultants removed and disposed of 250 cubic yards of contaminated soil. Three 12,000 gallon double-walled fiberglass USTs were installed in a new tank basin to the west of the dispenser islands.

The responsible party installed groundwater monitoring wells in February 1991 and sampled the wells in March and June of 1991. The results indicated that dissolved-phase petroleum hydrocarbons were not present in the groundwater samples collected from these wells. In August 1991, Santa Cruz County Environmental Health Services (SCCEHS) closed the case and the on-site monitoring wells were destroyed.

Analytical results from a Phase II investigation in 1997 showed elevated concentrations of total petroleum hydrocarbons as gasoline (TPH-g), MTBE and tertiary-butyl alcohol (TBA) in groundwater beneath the site. The Central Coast Water Board re-opened the case at that time based on the discovery of residual contamination in the soil and groundwater. The responsible party monitored the contamination as it attenuated naturally to its current levels.

ERI (a consultant) conducted sensitive receptor surveys which included the identification of water supply wells in the site vicinity. The survey showed that the Soquel Creek Water District operates four municipal wells within 4,500 feet of the site. The closest well is 2,400 feet from the site. Site characterization shows that the groundwater gradient is towards the southeast. Soquel Creek, located approximately 150 feet northwest of the site, is the nearest surface water body. Water supply wells or surface water are unlikely to be impacted by residual contamination due to its low concentration and limited extent.

The site lies within the Big Basin Hydrologic Unit (304.00). The Basin Plan designates groundwater in the Big Basin Hydrologic Unit as having beneficial uses for domestic and municipal supply, agricultural supply, and industrial supply.

Our recommendation for closure is based on the following:

1. The extent of the release has been adequately characterized,
2. The contaminant source was removed from the site to the extent practical and the remaining contaminants above our cleanup goals are limited in extent,
3. The remaining groundwater constituent of concern is limited to MTBE and the plume is declining in size and concentration,
4. MTBE concentrations in groundwater have been reduced from a maximum of 2,600 µg/L to 6.6 µg/L,
5. Monitoring data indicate favorable conditions for natural attenuation of petroleum hydrocarbons and concentrations are expected to continue to decrease with time,
6. The distance to the closest water supply well is 2,400 feet, and the nearest surface water body is approximately 150 feet upgradient of the site, and remaining contamination is unlikely to reach water supply wells or surface water due to its low concentration and limited extent,
7. We have notified the Santa Cruz County Environmental Health Services and current fee titleholders of the subject property and adjacent properties and have not received any objections to the case closure
8. Closure is consistent with Section III.G. State Board Resolution No. 92-49, allowing consideration of cost effective abatement measures for a site where attainment of reasonable objectives less stringent than background water quality does not unreasonably affect present or anticipated beneficial uses of groundwater, and ultimately will not result in water quality less than that prescribed by the Basin Plan.

Residual soil and groundwater contamination may exist on-site and could pose an unacceptable risk under certain site development activities such as site grading, excavation, or de-watering. The Central Coast Water Board, SCCEHS, and the appropriate local planning and building departments must be notified prior to any changes in land use, grading activities, excavation, or dewatering. This notification must include a statement that residual soil and groundwater contamination underlie the property and nearby properties. The levels of residual contamination and any associated risks are expected to reduce with time. Additionally, SCCEHS may require a Health Risk Assessment be conducted should this site be redeveloped.

The recommended case closure is consistent with closure of similar low-risk petroleum hydrocarbon cases by the Central Coast Water Board in the past, and appropriate based on the information above. SCCEHS staff agrees with this determination. We have notified interested parties of our plan to close this case. Unless the Water Board objects and pending destruction of monitoring wells, the Executive Officer will issue a case closure letter for this site pursuant to California Underground Storage Tank Regulations.

**Former Mobil Service Station 04GL, 1097 South Main Street, Salinas, Monterey County**  
**[John Goni, (805) 542-4628]**

Central Coast Water Board staff recommends closure of this leaking UST case where groundwater sample results show the concentration of benzene is greater than the Central Coast Water Board's cleanup goal. Sample results from the most recent groundwater monitoring event show benzene at 1.2 micrograms per liter (µg/L) on June 8, 2010. The Central Coast Water Board Cleanup goal for benzene is 1 µg/L. Other petroleum hydrocarbon constituents associated with

this case were either not detected or below their respective cleanup goals. Staff recommends closure because the benzene concentration is very close to the cleanup goal and we expect the concentration to attenuate to below our cleanup goals in a reasonable time frame. The nearest water well is approximately 1100 feet west of this site. The groundwater in the shallow zone flows toward the northeast.

Service station operations at this location ceased in 1984 and the underground tanks and appurtenances were removed at that time. The tank removals and soil and groundwater investigation for this case resulted in removal of approximately 300 cubic yards of material from the former UST area. The responsible party commissioned a total of 24 monitoring and treatment wells over the life of this case. Consultants operated a soil vapor extraction system between October 2000 and February 2002. Air sparging was added to the system and operated from January 2003 to December 2005. Remedial activities resulted in removal of approximately 2,229 pounds of total petroleum hydrocarbons as gasoline, 16.6 pounds of benzene, and 4.89 pounds of MTBE.

This site lies within the Salinas Hydrologic Unit, Chular Hydrologic Area (309.20). The Basin Plan designates groundwater in this area as having beneficial uses for domestic and municipal supply, agricultural supply, and industrial supply. The nearest surface waters are Alisal Slough approximately 1½ miles north of the site, and the Salinas River approximately two miles south of the site. The nearest water supply well is approximately 1,100 feet to the west and cross-gradient of the site. Based on the extent and concentrations of benzene in groundwater associated with this case, Central Coast Water Board staff does not consider the surface water or supply well at risk.

Our recommendation for closure of the case is based on the following:

1. The underground tanks were removed from this site in 1984;
2. The extent of the release of gasoline associated with this case has been adequately characterized;
3. Wastes in soil and groundwater have been remediated to the maximum extent practical.
4. The remaining groundwater pollution associated with this case is very limited in extent and is attenuating;
5. The nearest water supply well is approximately 1,100 feet west and cross gradient from the site;
6. The Monterey County Health Department and current fee titleholders of the subject property and adjacent properties have been notified and have not expressed objections to the case closure; and
7. Closure is consistent with Section III.G. State Water Resources Control Board Resolution No. 92-49, allowing consideration of cost-effective abatement measures for a site where attainment of reasonable objectives less stringent than background water quality does not unreasonably affect present or anticipated beneficial uses of groundwater, and ultimately will not result in water quality less than that prescribed by the Basin Plan.

Residual soil and groundwater contamination may exist on-site that could pose an unacceptable risk under certain site development activities such as site grading, excavation, or de-watering. The Central Coast Water Board, Monterey County Health Department, and the appropriate local planning and building departments must be notified prior to any changes in land use, grading activities, excavation, or dewatering. This notification must include a statement that residual soil and groundwater contamination underlie the property and nearby properties. The levels of residual contamination and any associated risks are expected to reduce with time. Additionally,

Monterey County Health Department may require a Health Risk Assessment be conducted should this site be redeveloped.

Based on the above, there is no longer a threat to groundwater quality and no further groundwater investigation or cleanup is necessary. Monterey County Health Department staff agrees with this determination. The recommended case closure is consistent with closure of similar petroleum hydrocarbon cases by the Central Coast Water Board in the past. Unless the Water Board directs staff otherwise, the Executive Officer will issue a case closure letter, pending proper monitoring well destruction.