

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

STAFF REPORT FOR REGULAR MEETING OF AUGUST 31, 2009
Prepared August 4, 2009

ITEM NUMBER: 8

SUBJECT: Recommended Case Closures

Background:

This staff report provides summaries for cleanup sites that Central Coast Water Board staff has recommended for closure, although the groundwater beneath these sites has not attained water quality goals for one or more constituents. Staff's closure recommendations are 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. Based on site-specific information provided below, these sites are appropriate for closure.

Former Chevron 9-0796, 4991 Carpinteria Avenue, Carpinteria, Santa Barbara County [John Mijares, (805) 549-3696]

Central Coast Water Board staff and the Santa Barbara County Fire Prevention Division (FPD) staff recommend closure of this underground storage tank (UST) case where groundwater sample results show groundwater contamination remains at a concentration greater than Central Coast Water Board cleanup goals. Results of groundwater samples collected in September 2003 showed total petroleum hydrocarbons (TPH) at a maximum concentration of 5,500 micrograms per liter ($\mu\text{g/L}$) and naphthalene at 45 $\mu\text{g/L}$. Central Coast Water Board cleanup goals for TPH and naphthalene are 1,000 $\mu\text{g/L}$ and 17 $\mu\text{g/L}$, respectively. The 1,000 $\mu\text{g/L}$ cleanup goal for TPH is based on taste and odor threshold, and the 17 $\mu\text{g/L}$ for naphthalene is based on the California Department of Public Health (CDPH) notification level.

The property was developed and operated as a Chevron Products Company (Chevron) service station prior to 1998 and is currently the site of a multistory, mixed-use structure. FPD opened this UST case in September 2003 when developers discovered two USTs during grading activities for a redevelopment project. Chevron removed approximately 83 tons of petroleum contaminated soil (containing 900 pounds of gasoline, 590 pounds of diesel, and 345 pounds of oil) during remedial activities. Chevron did not conduct any groundwater remediation at the site other than natural attenuation, due to the relatively low remaining concentrations in groundwater following the soil removal. Based upon soil sample results, residual hydrocarbons in soil remain in place between 8 and 14 feet below ground surface (bgs). The mass of residual hydrocarbons was calculated to be 118 kilograms of total petroleum hydrocarbons as gasoline (TPHg) (equivalent to approximately 31 gallons). Soil vapor sampling and a human health risk assessment for the site indicated that the lifetime excess carcinogenic risk and non-carcinogenic Hazard Index were both below action levels. The property owners and the responsible party have agreed to place a Deed Notice regarding the presence of residual soil contamination (8-14 feet bgs) at the site as a condition for closing this case. The Deed Notice requires the FPD be notified prior to future site development activities such as site grading, excavation, or de-watering.

The site lies within the Carpinteria Groundwater Basin (3-18). The "Water Quality Control Plan, Central Coast Region" (Basin Plan) designates groundwater beneficial uses in this Basin to be domestic and municipal supply, agricultural supply, and industrial supply. Groundwater at the site is at approximately 8 to 11 feet bgs and generally flows to the northwest. Carpinteria Creek is located approximately 2,300 feet south of the site. The nearest drinking water supply well (El Carro Well operated by Carpinteria Valley Water District) is located approximately 3,500 feet northeast of the site. Based on the limited extent and low concentrations of hydrocarbons, we do not consider either the creek or the supply well at risk from this source.

Central Coast Water Board staff and Santa Barbara County FPD staff recommend closure of this case based on the following:

1. The extent of TPH and naphthalene groundwater contamination is limited and is not expected to impact surface water or the drinking water supply well;
2. Natural attenuation processes are expected to eventually reduce the TPH and naphthalene to below the groundwater cleanup goals;
3. Results of soil vapor sampling and a human health risk assessment for the site indicated that the lifetime excess carcinogenic risk and non-carcinogenic Hazard Index were both below action levels;
4. The property owners and the responsible party have agreed to a Deed Notice regarding the presence of residual soil contamination at the site and;
5. 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 will not result in water quality less than that prescribed by the Basin Plan.

The recommended case closure is consistent with closure of similar low-risk 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 pursuant to California Underground Storage Tank Regulations.

Former Pillsbury Green Giant Facility, 735 West Beach Street, Watsonville, Santa Cruz County [John Mijares, (805) 549-3696]

Central Coast Water Board staff recommends closure of this UST case where groundwater sample results showed concentrations of benzene greater than the Central Coast Water Board cleanup goal of 1 microgram per liter ($\mu\text{g/L}$). Other petroleum hydrocarbon constituents were either not detected or were below their respective cleanup goals in monitoring wells MW-1 through MW-3. Benzene was detected in one monitoring well (MW-4) at a concentration of 7.1 $\mu\text{g/L}$ in October 2005 when the last monitoring was conducted. The last monitoring was conducted in 2005 to verify that the site had met the Water Board's low-threat closure criteria. Closure activities were delayed because the responsible party was not able to submit requested documents. The attached site map (Attachment 1) shows the location of the monitoring wells.

Pillsbury Green Giant (Pillsbury) owned and operated a food processing and refrigerated warehousing facility at the subject site from 1983 to 1994. Martinelli and Sons purchased the property in 1994 and currently operates an apple processing facility at the site. General Mills purchased Pillsbury Green Giant in 2001 and is currently the responsible party for this UST case. In 1988, Pillsbury commissioned the removal of a 1,000-gallon gasoline UST under the supervision of the City of Watsonville Fire Department. Analytical results of a groundwater sample collected from the UST excavation pit indicated gasoline total petroleum hydrocarbons at 12,000 micrograms per liter ($\mu\text{g/L}$), benzene at 59 $\mu\text{g/L}$, and xylenes at 2,600 $\mu\text{g/L}$. These concentrations exceeded the

groundwater cleanup goals of 1,000 µg/L for gasoline hydrocarbons, 1 µg/L for benzene, and 1,750 µg/L for total xylenes. No soil data were reported from the excavation pit; however, analytical result of a 1985 soil sample collected from an exploratory boring near the tank, at approximately six feet below ground surface, showed no evidence of gasoline hydrocarbons. The Responsible Party did not conduct any groundwater remediation at the site other than natural attenuation, due to the relatively low remaining concentrations in groundwater following the soil removal. In addition, no gasoline hydrocarbons were detected in soil from borings of the three monitoring wells (MW-1 through MW-3), which were within 35 feet of the former UST. Results of long-term groundwater (1990 through 2005) monitoring in wells MW-1 through MW-3 indicate that gasoline hydrocarbons, benzene, toluene, ethylbenzene, and xylenes are not present above laboratory reporting limits. Methyl tertiary-butyl ether (MTBE) was detected once in MW-1 at 1.1 µg/L in 2002 and once in MW-3 at 8.7 µg/L also in 2002. The groundwater cleanup goal for MTBE is 5 µg/L. MTBE has not been detected in subsequent groundwater monitoring.

The Responsible party installed MW-4 in the UST excavation pit in 1989 and monitored the well until 2005. During this monitoring period, the concentrations of benzene fluctuated from a high of 140 µg/L, to below the laboratory detection limit. Investigations showed that MW-4 was placed in the tank backfill without a sanitary seal. As discussed above, the last groundwater monitoring was conducted in 2005. Benzene concentrations have decreased in MW-4 from a high of 140 µg/L in 1989 to 7.1 µg/L in October 2005. MW-4 was installed to depth of five feet bgs and is located at a low spot in the parking lot where surface runoff collects and creates the potential for the infiltration of petroleum-contaminated parking lot runoff. As an added benefit of closure, Water Board staff believes the destruction of MW-4 will eliminate the potential of shallow groundwater contamination from parking lot runoff.

The City of Watsonville has two water supply wells in the greater vicinity of the site. One is approximately 1,500 feet northeast and the other is approximately 1,500 southeast of the site. The benzene plume is not expected to impact these wells because of the distance, low benzene concentration, and its limited and localized extent. The depth to groundwater varies from four to seven feet below ground surface. The shallow regional groundwater flows to the south-southeast towards the Pajaro River.

We recommend closure of this case based on the following:

1. The primary source of contamination was removed with the UST removal in 1988;
2. The extent of the benzene plume has been fully delineated, is localized and limited in a small area in the vicinity of well MW-4;
3. The proper destruction of MW-4, prior to case closure, will eliminate the potential of shallow groundwater contamination from the parking lot runoff;
4. Groundwater data indicate that natural attenuation processes have significantly reduced concentrations of contaminants in groundwater and Water Board staff expect that natural attenuation will continue; and
5. 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 will not result in water quality less than that prescribed by the Basin Plan.

On May 8, 2009 Central Coast Water Board staff notified the site's property owner (current fee title holder) regarding the proposed case closure, pursuant to Section 13307.1 of the Porter Cologne Water Quality Control Act and Section 25296.20 of the California Health and Safety Code. In addition, as part of our effort to increase public participation, we also notified the Santa Cruz County Health Services Agency, and the landowners, businesses, and residents within 200 feet of site regarding the proposed case closure. We have not received any comments or objections to the proposed case closure from any of the parties mentioned above.

The recommended case closure is consistent with closure of similar low-risk petroleum hydrocarbon cases by the Central Coast Water Board in the past. Unless the Water Board directs staff otherwise, the Executive Officer will direct the responsible party to proceed with case closure activities including destruction of the monitoring wells. The Executive Officer will issue a final case closure letter upon receipt of a well destruction report documenting the proper destruction of all monitoring wells.

Attachment 1: Site Map

Arco Service Station No. 5562, 6100 San Anselmo Road, Atascadero, San Luis Obispo County [Corey Walsh (805) 542-4781]

Central Coast Water Board staff recommends closure of this UST case where recent groundwater sample results indicate MTBE and di-isopropyl ether (DIPE) remain at concentrations slightly greater than Central Coast Water Board cleanup goals. Groundwater samples collected from one onsite and one offsite monitoring well continue to exceed the cleanup goals of 5 micrograms per liter ($\mu\text{g/L}$) for MTBE, and of 0.8 $\mu\text{g/L}$ for DIPE. During the most recent quarterly groundwater sampling event, samples showed MTBE in MW-1 and MW-4 at 7 $\mu\text{g/L}$ and 8 $\mu\text{g/L}$, respectively, and DIPE in MW-3 at a laboratory estimated value of 1.1 $\mu\text{g/L}$. Other common contaminants associated with gasoline and fuel oxygenates have been analyzed and are below cleanup goals, or are below laboratory detection limits. Historic groundwater analytical results show the primary constituents of concern were MTBE and tributyl alcohol (TBA). Attachment 2, *MTBE Isoconcentration Map*, presents concentrations for samples collected on October 28, 2008. The Basin Plan designates groundwater beneficial uses beneath this site as domestic and municipal supply, agricultural supply, and industrial supply.

Sample analysis from June 12, 2003 indicated residual soil contamination at concentrations greater than the Central Coast Water Board cleanup goals for MTBE and TBA. Samples from depths of 4 to 6 ft bgs underlying dispenser islands D-1 and D-2 exceeded cleanup goals. Final samples after additional excavation showed concentrations of MTBE from 0.10 milligrams per kilogram (mg/kg) to 1.9 mg/kg and TBA at 2.6 mg/kg beneath dispenser D-2. Generally, the most conservative cleanup goals for MTBE and TBA in soil are 0.023 mg/kg and 0.073 mg/kg respectively. These cleanup goals are based on environmental screening levels (ESL) for leaching of contaminants

The subject site is an active retail gasoline service station and is located at the northwestern corner of the intersection of San Anselmo Road and Highway 101 in Atascadero. Contractors first discovered the release of petroleum hydrocarbons in May 2003 during fuel piping and dispenser upgrade work. The contractor excavated impacted soil (147.3 tons) to the extent practical and disposed of this soil appropriately. The responsible party (ARCO) commissioned several phases of soil and groundwater investigation. There were no other active remedial activities considering the low concentrations of the residual hydrocarbons. Central Coast Water Board staff expects these residuals to degrade naturally over a reasonable time.

Central Coast Water Board staff notified the site property owner (Neena Enterprises Inc.), neighboring property owners, and other interested parties that we intended to recommend the UST case for closure. We have not received any comments to date. The San Luis Obispo County Division of Environmental Health Services agrees with the proposed case closure.

Groundwater currently ranges in depth from approximately 32 to 38 feet (ft) below ground surface (bgs) and generally flows to the north to northwest at average gradient of 0.08 ft per ft. There are no municipal supply wells within a one-mile radius of the site. The nearest water supply well is a domestic/irrigation (Willard/Morris) well located approximately 1,300 ft north of the site. The residual petroleum hydrocarbons remaining are unlikely to affect this well or surface waters considering area geology, well distance, and low remaining contaminant concentrations.

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,
3. The remaining soil pollution above the cleanup goal is limited in extent,
4. The remaining groundwater plume constituents of concern are limited to MTBE and DIPE, and the plume is declining in size and concentration,
5. MTBE concentrations in groundwater have been reduced from a maximum of 200 µg/L to between non-detect and 8 µg/L,
6. DIPE concentrations in groundwater have been reduced from a maximum of 2.6 µg/L to between non-detect and a laboratory estimated value of 1.1 µg/L,
7. TBA concentrations in groundwater have been reduced from a maximum of 270 µg/L to non-detect,
8. The remaining groundwater pollution above the MTBE cleanup goal is limited to one onsite monitoring well and one offsite monitoring well located down gradient of the dispensers. MTBE concentrations in both of these wells are slightly above the cleanup goal of 5 µg/L,
9. The remaining groundwater pollution above the DIPE cleanup goal is limited to one onsite monitoring well, and DIPE concentrations in that well are only slightly above the cleanup goal of 0.8 µg/L,
10. Monitoring data indicate favorable conditions for natural attenuation of petroleum hydrocarbons and concentrations are expected to continue to decrease with time,
11. No municipal supply wells are within one mile of the site, and remaining contamination is unlikely to reach these supply wells,
12. The current fee titleholders of the subject property and adjacent properties have been notified of the proposed case closure and have no objections to case closure, and
13. 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.

Residual soil and groundwater contamination still exists that could pose an unacceptable risk under certain site development activities such as site grading, excavation, or de-watering. The Central Coast Water Board, San Luis Obispo County Environmental Health Services (EHS), 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 should include a statement that residual soil and groundwater contamination underlie the property. The levels of residual contamination and any associated risks are expected to reduce with time. Additionally, San Luis Obispo County EHS may also 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. 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.

Attachment 2: MTBE Isoconcentration Map