

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

**STAFF REPORT FOR REGULAR MEETING OF SEPTEMBER 1, 2011**  
Prepared August 10, 2011

**ITEM NUMBER: 9**

**SUBJECT: Recommended Case Closures**

**Background:**

This staff report provides summaries of recommended case closures for two 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 benefits relative to the additional cost to the responsible party and the additional expenditure of Water Board staff resources necessary to oversee this now low-priority site. These sites are appropriate for closure, based on the site-specific information provided below for each of these cases.

**UNDERGROUND STORAGE TANK CASE CLOSURE**

**Former ARCO Service Station No. 759, 6700 El Camino Real, Atascadero,  
San Luis Obispo County [Corey Walsh (805) 542-4781]**

Central Coast Regional Water Quality Control Board (Central Coast Water Board) staff recommend closure of this underground storage tank (UST) case where groundwater sample results show groundwater concentrations remain greater than Central Coast Water Board cleanup goals. Results of groundwater samples collected in March 2011 showed methyl tertiary-butyl ether (MTBE) at a maximum concentration of 25 micrograms per liter ( $\mu\text{g/L}$ ), and tertiary butyl alcohol (TBA) at 25  $\mu\text{g/L}$  in one monitoring well. Central Coast Water Board cleanup goals for MTBE and TBA are 5  $\mu\text{g/L}$ , and 12  $\mu\text{g/L}$ , respectively. Other common contaminants associated with gasoline and fuel oxygenates have been analyzed for in groundwater, and are below cleanup goals or below laboratory detection limits. Central Coast Water Board staff expects these residual levels of contamination to degrade naturally over time.

Historic groundwater analytical results show the primary constituents of concern were total petroleum hydrocarbon as gasoline (TPH-g), benzene, MTBE and TBA. Attachment 1, *Site Map Showing Groundwater Contour and Hydrocarbon Concentrations*, presents groundwater flow direction, hydrocarbon concentrations and monitoring well locations.

Former Arco Service Station No. 759 is located at 6700 El Camino Real near the intersection of East Mall Road and in Atascadero. The subject property was operated as an Arco service station from 1966 until 1983. The property is currently owned by Mr. Jim Shores, and is an active retail gasoline service station. The surrounding land uses include commercial and open space.

The Water Quality Control Plan, Central Coast Region (Basin Plan) designates groundwater beneficial uses underlying the site as suitable for municipal and domestic water supply, agricultural water supply, and industrial use. The average depth to groundwater at the site ranges from 10 to 22 feet below ground surface (bgs) depending on the season, and groundwater generally flows to the northeast.

There are no domestic or municipal water supply wells within one mile of the site. The nearest water well is an Atascadero Unified School District irrigation well located approximately 1,700 feet north-northeast of the site. Atascadero Creek is approximately 150 feet east of site. Any residual petroleum hydrocarbons are unlikely to impact this well or surface water considering the area geology, distance to the well and to surface water, low remaining soil contaminant concentrations, and limited extent of dissolved petroleum hydrocarbons (limited to the immediate vicinity of MW-63).

Contractors first discovered the release of petroleum hydrocarbons in June 1989 during station upgrade work. Contractors excavated approximately 50 cubic yards of contaminated soil and disposed off-site. Initial assessment indicated elevated Total Petroleum Hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (collectively BTEX) in soil and groundwater samples.

Central Coast Water Board staff notified the site property owner (Mr. Jim Shores), neighboring property owners, and other interested parties that we intended to recommend this UST case for closure. We have not received any comments or objections to the planned closure of this case. The San Luis Obispo County Environmental Health Services (EHS) agrees with our proposed closure of the case.

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 constituent of concern is limited to MTBE and TBA, and the groundwater plume is declining in size and concentration, and is contained in only one on-site well,
5. MTBE concentrations in groundwater have been reduced from a maximum of 550 to 25  $\mu\text{g/L}$ ,
6. TBA concentrations in groundwater have been reduced from a maximum of 100 to 25  $\mu\text{g/L}$ ,
7. Monitoring data indicate favorable conditions for natural attenuation of petroleum hydrocarbons and concentrations are expected to continue to decrease with time,
8. The nearest water supply well (irrigation well) is located approximately 1,700 feet north-northeast of the site, and it is extremely unlikely that remaining contamination will reach this well,
9. 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
10. 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.

Localized residual soil and groundwater contamination still underlies the 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, San Luis Obispo County EHS, City of Atascadero City Fire 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 should include a statement that residual soil and groundwater contamination underlie the property and may underlie nearby properties, and a description of the mitigation actions necessary (if any) to ensure that any possibly contaminated soils or groundwater brought to the surface by these activities are managed appropriately. Future site disturbance could require worker health and safety protection, and restrictions on the disposal of soil and groundwater. San Luis Obispo County EHS may require additional site assessment if the property is proposed to be redeveloped. Additional actions required by the EHS may include, but are not limited to, a case review, further remedial action, soil gas analysis, and a human health risk assessment.

This 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 1: Site Map Showing Groundwater Contour and Hydrocarbon Concentrations*

**Downtown Shell, 1101 Monterey Street, San Luis Obispo, 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 benzene, MTBE, TBA, and di-isopropyl ether (DIPE) remain at concentrations greater than Central Coast Water Board cleanup goals. Sample results from one on-site monitoring well (MW-4) show groundwater contaminant levels of benzene, MTBE, TBA, and DIPE of 18.4 micrograms per liter ( $\mu\text{g/L}$ ), 24.4  $\mu\text{g/L}$ , 65.1  $\mu\text{g/L}$ , and 58.6  $\mu\text{g/L}$ , respectively. Central Coast Water Board cleanup goals for benzene, MTBE, TBA and DIPE are 1  $\mu\text{g/L}$ , 5  $\mu\text{g/L}$ , 12  $\mu\text{g/L}$ , and 0.8  $\mu\text{g/L}$ , respectively. Other common groundwater contaminants associated with gasoline and fuel oxygenates are below cleanup goals.

Contaminant concentrations have been decreasing since monitoring began in October 2002. Figure 2, *Groundwater Hydrocarbon Distribution Map*, presents groundwater flow direction, analytical data, and well locations. The depth to groundwater is between approximately 7 feet and 23 feet below ground surface (bgs) and generally flows toward the south-southeast. The *Water Quality Control Plan, Central Coast Region* (Basin Plan) designates groundwater beneficial uses beneath this site as domestic and municipal supply, agricultural supply, and industrial supply.

The subject site is an open retail fuel service station located on the southeastern corner of the intersection of Monterey Street and Santa Rosa Street in San Luis Obispo. The property is currently proposed for redevelopment to include a carwash with remodeling of the existing service station and convenience store. The surrounding land is mixed use retail commercial and residential. San Luis Obispo Creek is located approximately 700 ft southeast of the site. Mr. and Mrs. Raffy Arsene, and SLO Monterey, LLC are the current property owners. Shell Oil Products US (Shell) is the party responsible for cleanup of the site.

During facility upgrade activities in February 2002, soil sample results showed petroleum hydrocarbon contamination beneath five of the six fuel dispensers. The identified constituents of concern were gasoline and associated constituents including: benzene, toluene, ethylbenzene, and xylenes (collectively BTEX), MTBE, TBA, and DIPE. Contractors conducted a limited excavation to remove impacted soil below fuel dispensers and disposed of approximately 115 tons of contaminated pea gravel and soil. Soil analytical results from samples collected between four and six feet bgs indicated the vertical and lateral extent of impacted soils was not fully removed or delineated. Contaminated soils were excavated to the extent practicable; however soil contamination was left in place at levels greater than typical cleanup goals.

In February 2003, contractors installed two groundwater monitoring wells, one upgradient and one downgradient of the discharge. In February 2005, two additional groundwater monitoring wells were installed downgradient of the discharge. In May 2005, contractors drilled six soil borings to further delineate the extent of soil and groundwater impacts. In August 2008, four soil vapor extraction wells and four air sparging wells were installed. Remedial actions taken at the site include soil excavation and disposal, groundwater pump-out events, and soil vapor/air sparging extraction. Soil sample analytical results showed contamination above cleanup goals at various locations across the site. Central Coast Water Board staff expects these residual levels of soil and groundwater contamination to degrade naturally over time.

The closest water supply well is an inactive San Luis Obispo City Water Department municipal water supply well (Mitchell Park Well) located approximately 1,500 ft southeast of the site. Three irrigation (Tiger Water Supply) wells are located approximately 2,100 ft northeast of the site which provide irrigation water to the San Luis Obispo High School. Residual petroleum hydrocarbons are very unlikely to impact these wells considering the area geology, groundwater flow direction, well distances, and low remaining contaminant concentration.

Our recommendation for case 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 constituents of concern are limited to benzene, MTBE, TBA, and DIPE, and are declining in size and concentration,
5. Benzene concentrations in MW-4 groundwater have been reduced from a maximum of 440 µg/L to 18 µg/L, MTBE from 11,000 µg/L to 24 µg/L, TBA from 220,000 µg/L to 65 µg/L, and DIPE from 400 µg/L to 58 µg/L,
6. The remaining groundwater constituents of concern are limited to one on-site monitoring well (MW-4) located down and cross-gradient of the fuel dispensers,
7. Monitoring data indicate favorable conditions for natural attenuation of petroleum hydrocarbons and concentrations are expected to continue to decrease with time,
8. The nearest water supply well is located approximately 1,500 ft southeast of the site, and remaining contamination is unlikely to reach any water supply wells, and
9. 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.

Localized residual soil and groundwater contamination still underlies the site and could pose an unacceptable risk under certain site redevelopment activities such as site grading, excavation, or de-watering. The Central Coast Water Board, San Luis Obispo County EHS, City of San Luis

Obispo Fire Department (City Fire), 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 and may underlie nearby properties, and a description of the mitigation actions necessary (if any) to ensure that any possibly contaminated soils or groundwater brought to the surface by these activities are managed appropriately. Future site disturbance could require worker health and safety protection, and restrictions on the disposal of soil and groundwater. City Fire may require additional assessment if the property is proposed to be redeveloped. Additional actions required by City Fire may include, but are not limited to, a case review, further remedial action, soil gas analysis, and a human health risk assessment.

Central Coast Water Board staff notified the property owner, adjacent owners and other interested parties of the proposed case closure. City Fire agrees with the proposed case closure. The site property owners (Mr. and Mrs. Raffy Arsene, and partners of SLO Monterey, LLC) submitted objections to case closure, indicating commenting on the contaminants remaining on-site. Central Coast Water Board staff responded to the property owners comments and participated in efforts to resolve their concerns. The site property owners negotiated a settlement with Shell, and withdrew their objections to case closure. We have also received one letter in support of case closure from an adjacent property owner, whose property is also an ongoing investigation and cleanup 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.

*Attachment 2: Groundwater Hydrocarbon Distribution Map*