

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING SEPTEMBER 4-5, 2008

ITEM NUMBER: 13

SUBJECT: Cleanup Cases, Closures, and Corrective Action Plan Approvals

**Recommended Case Closure**

**Shell (Former Texaco) Service Station, 12398 Los Osos Valley Road, San Luis Obispo, San Luis Obispo County [Corey Walsh 805-542-4781]**

Staff recommends closure of this underground storage tank (UST) case where groundwater sample results indicate pollution remains at concentrations slightly above Central Coast Water Board cleanup goals. Tributyl alcohol (TBA) was detected in three monitoring wells at 22 micrograms per liter ( $\mu\text{g/L}$ ), 24  $\mu\text{g/L}$ , and 27  $\mu\text{g/L}$ , respectively. Attachment 1, *TBA Isoconcentration Map*, shows concentrations for samples collected on May 14, 2008. In addition, methyl tertiary-butyl ether (MTBE) was detected in one off-site monitoring well at a concentration of 5  $\mu\text{g/L}$ . Other typical petroleum hydrocarbon constituents of concern (total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes, and other fuel oxygenates) are below cleanup goals or were not detected in groundwater samples.

The site is no longer an active fuel service station, but is used as an automobile dealership. Groundwater currently ranges in depth from approximately 2 to 5 feet (ft) below ground surface and generally flows to the south-southeast at an average gradient of 0.04 ft per foot. Three City of San Luis Obispo water supply wells are within 4,000 ft of the site. The inactive Denny's well is located approximately 430 ft east of the site; the active Pacific Beach #1 well is located approximately 2,500 ft northwest of the site; and the standby well at Fire Station No. 4 is located approximately 3,800 ft to the northwest of the site. In addition, the inactive Hysen Johnson Ford well is located approximately 1,100 ft to the northwest and the Toyota domestic well is located approximately 275 ft north of the site. The Toyota well was sampled on May 14, 2008. Petroleum hydrocarbon constituents of concern were not present in the samples. The nearest surface water body is Prefumo Creek, which is located approximately 320 ft southeast of the site. The remaining residual petroleum hydrocarbons are unlikely to impact these wells or surface waters considering the groundwater flow direction, area geology, well distances, and low remaining contaminant concentrations.

The site lies within the San Luis Obispo Creek Hydrologic Subarea (3-10.24) of the Estero Bay Hydrologic Unit. The "Water Quality Control Plan, Central Coast Region" (Basin Plan) designates groundwater beneficial uses for this Hydrologic Unit to be domestic, municipal, and agricultural supply. Therefore, the groundwater cleanup goals for common gasoline constituents are as follows: 1,000  $\mu\text{g/L}$  total petroleum hydrocarbons, 1  $\mu\text{g/L}$  benzene, 5  $\mu\text{g/L}$  MTBE, and 12  $\mu\text{g/L}$  TBA.

The extent of the groundwater plume has been adequately characterized and is contracting or declining in size and concentration. Historical monitoring data indicate the TBA concentrations will continue to decrease with time. Therefore, based on the information provided, we have no further requirements for groundwater monitoring, investigation or cleanup of the site. The property owner and adjacent property owners/tenants have also been notified of the proposed case closure.

Our recommendation for closure is based on the following:

- (1) Remaining groundwater pollution above cleanup goals is limited in extent and decreasing in concentration,
- (2) Remaining hydrocarbon constituents are unlikely to reach surface waters or drinking water supply wells, and
- (3) Closure is consistent with Section III.G. of State Board Resolution No. 92-49, allowing the 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 will not result in water quality less than that prescribed by the Basin Plan.

Unless the Water Board objects and pending monitoring well destruction, the Executive Officer will issue a case closure letter for this site pursuant to California Underground Storage Tank Regulations.

#### **Attachments**

1. *TBA Isoconcentration Map*

#### **Corrective Action Plan Approval**

##### **Corrective Action Plan Approval, Furtado Property, 445 Green Valley Road, Watsonville, Santa Cruz County [John Mijares 805/549-3696]**

On June 25, 2008, Central Coast Water Board staff approved a corrective action plan (CAP) submitted by Weber, Hayes & Associates (WHA) on behalf of Mr. Furtado (responsible party). The subject site is a 57,500 square foot residential parcel in a mixed residential/agricultural area. In February 2004, a site assessment for a property transfer transaction discovered petroleum hydrocarbons at the subject site. Investigators found an abandoned 350-gallon underground storage tank (UST) at the site in May 2004 which was subsequently removed in June 2004. Approximately 75 cubic yards of hydrocarbon-impacted soil were removed from around the former UST in September 2005. Soil and groundwater investigations have defined the lateral and vertical extent of the petroleum hydrocarbon plume in groundwater. Residual hydrocarbons in soil samples were detected in the saturated zone, approximately 13 to 18 feet below the ground surface (bgs), in an area extending from the former UST to approximately 25 feet downgradient.

Results of the August 2007 soil and groundwater investigation conducted by WHA detected the following maximum concentrations of petroleum hydrocarbons that exceeded groundwater cleanup goals: Total petroleum hydrocarbons as gasoline (TPHg) – 270,000 micrograms per

liter ( $\mu\text{g/L}$ ); benzene – 3,500  $\mu\text{g/L}$ ; toluene – 24,000  $\mu\text{g/L}$ ; ethylbenzene – 7,500  $\mu\text{g/L}$ ; and xylenes – 41,000  $\mu\text{g/L}$ .

WHA evaluated two alternatives for removing petroleum hydrocarbons at the site: (1) a combination of Dual Phase Extraction (DPE) and Air Sparging (AS) and (2) a combination of Soil Vapor Extraction (SVE) and Air Sparging. DPE is a combination of soil vapor extraction and groundwater extraction. Air sparging is a groundwater remediation technique that involves injecting contaminant-free air into the saturated zone. The injected air volatilizes and strips petroleum hydrocarbons from the groundwater to the unsaturated zone. The vaporized hydrocarbons are then removed by soil vapor extraction. WHA conducted DPE, SVE, and air sparging pilot tests at the site in January 2008. The pilot tests indicated that DPE and AS were feasible corrective action technologies for the site. Based on technical and economic evaluation, WHA recommends the combination of DPE/AS as the more technically efficient and cost effective corrective action to meet the proposed soil and groundwater cleanup goals.

The proposed CAP entails installing, operating, and monitoring a DPE/AS system, and conducting groundwater monitoring and reporting to assess progress towards attainment of cleanup goals. The treated groundwater will be aerated and re-injected at the former excavation area to flush contaminated soils, push hydrocarbon-contaminated groundwater through the sparge zone, and deliver extra oxygen to the saturated zone to enhance biodegradation of the groundwater plume. To complete the full-scale DPE/AS system, WHA proposes to install the following:

- One additional DPE well for a total of three DPE wells;
- Nine additional AS wells for a total of 11 AS wells; and
- Four treated and aerated groundwater re-injection wells.

Central Coast Water Board staff approved the CAP, notified neighboring property owners, tenants and other interested parties, and will require the responsible party to comply with the General Waiver for Specific Types of Discharges, Resolution R3-2008-0010 prior to the full implementation of the CAP. We have not received any comments from the public regarding the approval of the proposed CAP.