

STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING--DIVISION OF WATER QUALITY
SEPTEMBER 22, 2005

ITEM 6

SUBJECT

PETITION OF PURVES FAMILY TRUST FOR REVIEW OF DENIAL OF PETROLEUM UNDERGROUND STORAGE TANK SITE CLOSURE AT 707 VENTURA STREET, FILLMORE, CALIFORNIA

DISCUSSION

The Purves Family Trust (petitioner) seeks review of the decision of the Ventura County Resource Management Agency (County) to deny closure of the underground storage tank (UST) case located at 707 Ventura Street, Fillmore, California.

Corrective actions initiated in 1986 confirmed that a release occurred from one of three gasoline USTs at the site. In 1993, the USTs and associated piping were removed from the site. Implementation of an approved Corrective Action Plan in 1997 resulted in site groundwater achieving Basin Plan Water Quality Objectives in September 2003.

Petitioner requested that the County close the case citing the corrective actions completed and the absence of detectable petroleum hydrocarbons in site groundwater. The County denied the request citing petitioner's failure to comply with their request for the additional verification sampling, a health based risk assessment, and a revised site conceptual model. Petitioner appealed the County's action to the State Water Board in March 2005.

The proposed order finds that as a result of corrective actions conducted at the site, the site does not present risk to human health, safety, and the environment or threaten current or anticipated beneficial use of groundwater.

POLICY ISSUE

Should the State Water Board adopt the proposed order directing closure of the UST case?

FISCAL IMPACT

None.

RWQCB IMPACT

None.

STAFF RECOMMENDATION

That the State Water Board adopt the proposed order.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER: WQ __ - __ - UST

In The Matter Of The Petition Of
PURVES FAMILY TRUST

For Review of Denial of Petroleum Underground Storage Tank Site Closure
at 707 Ventura Street, Fillmore, California

BY THE BOARD:

The Purves Family Trust (petitioner) seeks review of the decision of the Ventura County Resource Management Agency (County) Local Oversight Program (LOP) not to close petitioner's case involving an unauthorized release of petroleum at its site located at 707 Ventura Street, Fillmore, California. For the reasons set forth below, this Order determines that petitioner's case should be closed and no further action related to the release should be required.

I. STATUTORY AND REGULATORY BACKGROUND

Owners and operators of underground storage tanks (USTs) and other responsible parties may petition the State Water Resources Control Board (State Water Board) for a review of their case if they feel the corrective action plan for their site has been satisfactorily implemented, but closure has not been granted. (Health and Saf. Code, § 25296.40, subd. (a)(1).) The State Water Board adopted regulations that govern the site closure petition process. (See California Code of Regulations, Title 23, Chapter 18, Article 6.) For cases under the jurisdiction of a Regional Water Quality Control Board (Regional Water Board) or a local agency implementing the LOP, the State Water Board may close the case or remand the case to the regulatory agency for action consistent with the State Water Board's decision. (Cal. Code Regs., tit. 23, § 2814.7, subdivision (d)(1).)

Several statutory and regulatory provisions provide the State Water Board, Regional Water Boards, and local agencies with broad authority to require responsible parties to clean up a release from a petroleum UST. (e.g., Health & Saf. Code, § 25296.10; Wat. Code, § 13304, subd. (a).) The State Water Board has promulgated regulations specifying corrective action requirements for petroleum UST cases (Cal. Code Regs., tit. 23, §§ 2720-2728). The regulations define corrective action as "any activity necessary to investigate and analyze the effects of an unauthorized release, propose a cost-effective plan to adequately protect human health, safety and the environment and to restore or protect current and potential beneficial uses of water, and implement and evaluate the effectiveness of the activity (ies)." (Cal. Code Regs., tit. 23, § 2720.) Corrective action consists of one or more of

the following phases: (1) preliminary site investigation, (2) soil and water investigation, (3) corrective action plan implementation, and (4) verification monitoring. (Cal. Code Regs., tit. 23, § 2722, subd. (a).)

The preliminary site assessment phase includes initial site investigation, initial abatement actions, initial site characterization and any interim remedial action. (Cal. Code Regs., tit. 23, § 2723, subd. (a).) Corrective action is complete at the conclusion of the preliminary site assessment phase, unless conditions warrant a soil and water investigation. A soil and water investigation is required if any of the following conditions exists: (1) There is evidence that surface water or groundwater has been or may be affected by the unauthorized release; (2) Free product is found at the site where the unauthorized release occurred or in the surrounding area; (3) There is evidence that contaminated soils are, or may be in contact with surface water or groundwater; or (4) The regulatory agency requests an investigation based on the actual or potential effects of contaminated soil or groundwater on nearby surface water or groundwater resources, or based on the increased risk of fire or explosion. (Cal. Code Regs., tit. 23, § 2724) The purpose of a soil and water investigation is “to assess the nature and vertical and lateral extent of the unauthorized release and to determine a cost-effective method of cleanup.” (Cal. Code Regs., tit. 23, § 2725, subd. (a).)

State Water Board Resolution No. 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code §13304* also applies to petroleum UST cases. State Water Board Resolution No. 92-49 directs that water affected by an unauthorized release attain either background water quality or the best water quality that is reasonable if background water quality cannot be restored. (State Water Board Resolution No. 92-49, Section III.G.) Any alternative level of water quality less stringent than background must be consistent with the maximum benefit to the people of the state, not unreasonably affect current and anticipated beneficial use of affected water, and not result in water quality less than that prescribed in the water quality control plan for the basin within which the site is located. (*Ibid.*)

The Los Angeles Regional Water Board’s Water Quality Control Plan (Basin Plan) designates existing and potential beneficial uses of groundwater in the Santa Clara River Hydrologic Unit as municipal and domestic supply (MUN), agricultural supply (AGR), industrial process supply (PROC), and industrial service supply (IND) (Los Angeles Water Board & State Water Board, Water Quality Control Plan for the Los Angeles Region (1994) at p.2-16). The Basin Plan specifies a narrative taste and odor water quality objective (WQO) for groundwater with an MUN beneficial use designation as follows: "Waters shall not contain taste- or odor-producing substances in concentrations that ... cause nuisance or adversely affect beneficial uses" (*Id.* at p. 3-16.). The Basin Plan also contains the following narrative WQO for “Chemical Constituents”: "Water designated for use as Domestic or Municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the limits specified in the following provisions of Title 22 of the California Code of Regulations which are incorporated by reference into this plan: ...Table 64444-A of Section 64444 (Organic Chemicals)." (*Id.* at p. 3-8.)

With regard to the WQOs for “Chemical Constituents”, the Basin Plan has set Maximum Contaminant Levels for MUN beneficial use waters for benzene, toluene, ethylbenzene, and xylene (BTEX) at 1 ppb, 150 part per billion (ppb), 700 ppb, and 1,750 ppb, respectively (*Id.* at p. 3-10). The threshold odor concentration of three common petroleum constituents, ethylbenzene, toluene, and xylene are 29 ppb, 42 ppb, and 17 ppb respectively. (U.S. EPA, Federal Register, Volume 54, No.97, May 1989.) The threshold odor concentration of commercial gasoline (measured as total petroleum hydrocarbon gasoline, or TPH-g) is commonly accepted to be 5 ppb, with 10 ppb giving a strong odor. (State Water Board, Water Quality Criteria (2d ed. 1963) p. 230.)

II. FACTUAL BACKGROUND

A. Site Setting

Petitioner’s site is a drive-up automotive lubrication and oil change facility at the northwest corner of the intersection of A Street and Ventura Street (State Highway 126), in the city of Fillmore (Figure 1, Site Location Map). There are two gasoline service stations across the intersection to the south and southeast where corrective actions are currently underway for suspected or confirmed releases. There are no municipal supply wells located within 2,000 feet of the site and the nearest perennial surface water feature, the Santa Clara River, is located about 1,500 feet to the south.

The site is underlain by beds and lenses of silty, sandy, and gravelly fluvial sediments. Water level data collected at the site since 1986 show that the water table has varied from about 23 feet to 35 feet below ground surface (bgs) with a seasonal variation of about three to four feet. Site groundwater flows in a general westerly direction.

B. UST Case History

An inventory discrepancy noted in March 1986 indicated that one of three USTs at the site was leaking. In June 1986, three borings were drilled within 10 feet north, south, and east of the identified UST to depths of 20 to 25 feet bgs. Four soil samples were collected at 15 feet, 20 feet, and 25 feet bgs and analyzed for BTX and TPH. The sample from 15 feet bgs tested nondetect for BTX but had a reported TPH-g concentration of 16 parts per million (ppm). The reported BTX concentrations in the two samples collected at 20-feet ranged from 0.2 ppm to 1.1 ppm; TPH-g in one of these samples was about 60 ppm. The sample from 25 feet bgs had reported BTX concentrations of 0.2 ppm, 7.8 ppm, and 6.6 ppm, respectively; the reported TPH-g concentration was about 1,200 ppm.

In September 1986, two more borings drilled about 15 feet east and southeast of the UST to depths of 20 feet bgs and three monitor wells (GW-1, GW-2, and GW-4) were installed to assess groundwater conditions. A soil sample collected from 15 feet bgs tested nondetect for all gasoline constituents. One of two samples from 20 feet bgs had reported toluene and xylene concentrations of 0.7 ppm and 1.1 ppm, respectively; TPH-g was reported at 40 ppm. In March 1987, a fourth monitor well (GW-3) was installed.

Data obtained from this phase of corrective actions indicated:

- Unconfined groundwater is present at about 25 feet bgs and flows in a general westerly direction.
- Groundwater samples from the down-gradient monitor well (GW-2) near the western property boundary had high concentrations of dissolved phase gasoline constituents (e.g., 1,200 ppb benzene). Benzene and TPH-g concentrations in groundwater samples collected from this well in 1996 before the implementation of the Corrective Action Plan (CAP) ranged from 120 ppb to 590 ppb and 1,900 ppb to 3,400 ppb, respectively.

In March 1993, the USTs, dispensers, and piping were removed. Between November 1993 and October 1994, additional monitor wells (GW-5, GW-6, GW-7 and GW-8) and vapor extraction wells, air sparge wells, and combination vapor extraction/sparge wells were installed. Data generated from these phases of corrective action culminated in a September 1995 CAP proposing soil vapor extraction (SVE) and air sparging as the preferred remedial alternative.

In August 1997, the SVE/sparge system became operational¹. After about four months of operation, inlet vapor concentrations decreased to non-detect and the system was turned off in February 1998. The SVE system was restarted in July 1998, operated for about five more months, and recovered an estimated three pounds (about a half gallon) of additional hydrocarbons.

Dissolved-phase gasoline constituents in groundwater samples from down-gradient well GW-2 abruptly declined to non-detect soon after initiation of SVE in August 1997. Well GW-2 has consistently produced nondetect groundwater samples since June 2000.

Concentrations of constituents in groundwater samples from well GW-6, positioned adjacent to the location of the former USTs, also responded to the SVE. Concentrations of benzene and TPH-g decreased from 4,900 ppb and 12,000 ppb to 980 ppb and 8,700 ppb, respectively, between August 1997 and August 1998. Well GW-6 has produced, with one exception², non-detect groundwater samples since September 2003. In addition to the response to the SVE at wells GW-2 and GW-6, groundwater samples from well GW-4, located about 20 feet southeast of the UST and the only other site well that had produced groundwater samples with significant concentrations of gasoline constituents, has provided groundwater samples with less than 1 ppb of benzene and toluene since April 1995.

In May 1999, petitioner prepared a workplan to collect verification soil samples at five-foot intervals from five borings. Four of the borings were to be drilled to near the water table (about 28 feet bgs) and the fifth boring, near the southwest corner of the former UST excavation, to a depth of 55 feet bgs.

¹ The SVE/sparge system was comprised to two vapor recovery wells, two combination vapor recovery/sparge wells, and two sparge wells.

In January and February 2000, seven confirmation soil borings and two additional monitor wells (MW-9 and MW-10) were installed. Soil samples from eight of the borings were collected for analyses from depths of 20, 25, and 30 feet bgs. The ninth boring, drilled through the center of the former UST excavation, provided five-foot interval soil samples from 20 to 50 feet bgs. All soil samples from 20 feet bgs tested nondetect for all constituents. Three samples from 25 feet bgs and six samples from 30 feet bgs had detectable concentrations of gasoline constituents. Trace concentrations of toluene, ethylbenzene, and xylene were reported for the soil samples from 35, 40, 45, and 50 feet bgs from the boring drilled through the former UST excavation. Wells MW-9 and MW-10 were located about 30 feet and 60 feet northwesterly of the UST location. Groundwater samples collected from these wells have tested nondetect for all constituents since their installation.

The air sparge system operated throughout most of 2001 at a combined flow rate of about 30 to 35 cfm.

In May 2003, petitioner submitted a Site Conceptual Model (SCM) report to the county, which is the lead regulatory agency overseeing UST cases. The SCM report presented maps and cross-sections that showed residual petroleum hydrocarbons in soil were present within 10 to 15 feet of the former UST excavation in the depth range of about 25 to 30 feet bgs and explained that groundwater from all site wells tested nondetect for all gasoline constituents, including MTBE. The SCM report concluded with a request for site closure.

In a September 29, 2003 letter responding to the request for closure, County staff commented that the SCM report was deficient. County staff also specified that a request for closure had to be in the form of a Health Based Risk Assessment (HBRA).

Petitioner submitted a revised SCM report on January 14, 2004 and again concluded by requesting site closure. In a letter dated February 3, 2005 responding to this latest request for closure, County staff commented that: (1) the SCM report did not meet the minimum requirements for such a document; (2) an HBRA in support of closure had not been submitted; and (3) the verification sampling conducted in January and February 2000 was inadequate. County staff also requested a workplan for additional soil verification sampling and postponed the submittal of the HBRA until the results of the soil confirmation sampling work was complete.

By letter dated March 10, 2005, petitioner requested closure from the State Water Board.

² The groundwater sample collected in May 2004 had a reported toluene concentration of 1.2 ppb. The LA Regional Water Board's Basin Plan WQO for toluene is 150 ppb.

III. CONTENTIONS AND RESPONSES

A. CONTENTIONS

Petitioner contends that the CAP was successfully implemented and the subsequent verification monitoring demonstrates that residual petroleum hydrocarbons in site soil do not present a threat to public health and safety or the environment.

The County's response to the petition objects to site closure on the same grounds articulated in the County's letter dated February 3, 2005.

B. RESPONSES

~~Petitioner's contentions have merit. Implementation of the CAP reduced impacts to site groundwater to the point where that water has met Basin Plan WQOs since September 2003. Further, the low concentrations of residual petroleum hydrocarbon constituents remaining in soil do not pose a threat to human health and safety, and the environment, and do not adversely affect current or anticipated beneficial uses of water. The level of water quality is consistent with the maximum benefit to the people of the state and does not unreasonably affect current and anticipated beneficial use of affected water.~~

~~The County asserts that the petitioner's SCM report dated January 14, 2004, does not meet the minimum requirements of such a document and references requirements dated March 27, 2000, that are posted on the Los Angeles Regional Water Board's website. The County is referring to a final draft document entitled "Guidelines for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates" dated March 27, 2000. The Guidelines contain a suggested format for an SCM report, but does not establish a regulatory requirement to comply with that format. The Guidelines state that the goals of an SCM are to: (1) Identify how the distribution of chemicals is changing in space and time, (2) Identify potential current and future receptors, and (3) Identify environmental issues that need to be addressed.~~

~~In a letter dated August 28, 2002, the County requested that petitioner submit an SCM report that addressed ten elements:³ Petitioner submitted an SCM report on May 22, 2003, and the County subsequently identified deficiencies in the SCM report. Petitioner submitted a revised SCM report on January 14, 2004, that addressed the deficiencies and requested site closure. The revised SCM report adequately addresses the elements identified by the County, satisfies the goals of a conceptual model, as articulated in the Guidelines, and supports petitioner's position that the unauthorized release does not pose a threat to human health, safety and the environment.~~

The County asserts that an HBRA was necessary in order for it to determine whether site closure was appropriate. An HBRA is appropriate when public exposure to contaminants remaining at a site is likely through dermal contact, inhalation, or ingestion. In this particular case, the record shows that these exposure scenarios are highly unlikely. Residual petroleum hydrocarbons that can be directly attributed to the release are present only in a localized area greater than 20 feet bgs, precluding both dermal contact and inhalation as possible exposure scenarios. Furthermore, the groundwater meets drinking water standards, meaning that exposure via the ingestion pathway is not an issue. Thus, given the facts of this case, the submission of an HBRA is not necessary.

By letter dated June 19, 2000, regarding the verification soil sampling conducted in January and February 2000, the County stated that "...none of the samples collected at 5, 10, and 15 feet were submitted for analysis" and asked petitioner to "discuss the rationale for the omission of these samples from the analytical program and submit the discussion in a report by July 31, 2000." In a workplan dated July 26, 2000, proposing four additional borings to further delineate remaining residual hydrocarbons in site soil, petitioner included the rationale for omitting the analyses of samples collected at 5, 10, and 15 feet during the earlier corrective action:

- The release occurred in the bottom of the UST that was 10 to 12 feet bgs.
- There was a consensus with the two prior County case managers that the vertical distribution of contamination was restricted to 20 feet bgs and deeper.
- No directive specifying the analyses of all samples was forthcoming from the County staff.
- County staff was present at the site at the time of the sampling, was informed that there were no indications of contamination in the 5 to 20 foot depth interval, and expressed no objection to the sampling protocols at that time

By letter dated September 1, 2000, responding to the workplan and the rationale for omitting the sample analyses, County staff "...agrees that the approximately 40 borings that have been drilled onsite have

³ 1) Physical conditions at the site 2) Geologic characteristics 3) Hydrologic conditions 4) Historical soil analytical data 5) Maps and cross-sections 6) Plume maps 7) Groundwater surface maps 8) Sensitive receptors 9) Evidence

adequately assessed the extent of the contamination. In addition, three of the four proposed borings are directly adjacent to the recently installed verification borings. Therefore, the proposal to drill additional borings is not approved.” Four and a half years later, in response to petitioner’s request for site closure, County staff, without explanation, reversed its finding of site assessment adequacy and required a workplan for additional verification soil sampling. We find that the record shows that the site is adequately assessed.

IV. SUMMARY AND CONCLUSIONS

1. Active remedial measures conducted at petitioner’s site between 1997 and 2002 contributed to the site groundwater achieving Basin Plan WQOs by September 2003.
2. Available data indicate that there is no MTBE originating at this site.
3. Low residual concentrations of petroleum hydrocarbons detected in soil samples collected in 2000 have degraded, and will continue to degrade, due to natural attenuation, and do not pose a threat to human health, safety and the environment.
4. Petitioners’ site is currently a commercial auto repair facility.
5. No active water supply wells have been identified within 2,000 feet of the site, and the nearest surface water body is 1,500 feet away.
6. The level of site cleanup is consistent with the maximum benefit to the people of the state.
7. Therefore, no further corrective action is necessary.
8. The above conclusions are based on the site-specific information relative to this case.

V. ORDER

IT IS THEREFORE ORDERED that petitioner’s case be closed and no further action related to the UST be required. The Chief of the Division of Water Quality is directed to issue petitioner a closure letter consistent with Health and Safety Code, section 25296.10, subd. (g)

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 22, 2005.

August 22, 2005

AYE:

NO:

ABSENT:

ABSTAIN:

Debbie Irvin
Clerk to the Board