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State Water Resources Control Board

Division of Financial Assistance

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Arnold Schwarzenegger
Governor

EXHIBIT 4 UST Case Closure Summary

This Underground Storage Tank (UST) Case Closure Summary has been prepared in support of a recommendation by the Petroleum Underground Storage Tank Cleanup Fund (Fund) to the State Water Resources Control Board (State Water Board) for closure of the UST case at 5851 Fair Oaks Boulevard in Carmichael, California (Site).

Agency Information

Agency Name: Sacramento County Environmental Management Department (SCEMD)	Address: 10590 Armstrong Avenue, Suite A Mather, CA 95655
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Case Information

SCEMD Case No: A523	Global ID: T0606700242
Site Name: Harry Boyanjanian Abandoned Service Station	Site Address: 5851 Fair Oaks Boulevard Carmichael, CA 95608
Responsible Party: Harry Boyanjanian Revocable Trust of 1997	Address: 5841 Fair Oaks Blvd., # C Carmichael CA 95608
USTCF Claim No.: 7199	Number of Years Case Open: 22
USTCF Expenditures to Date: \$72,309	

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
T-1	2,000	Gasoline	Removed	Nov 88
T-2	2,000	Gasoline	Removed	Nov 88
T-3	1,000	Gasoline	Removed	Nov 88

Release Information

- Source of Release: UST System
- Date of Release: 11/30/1988 (leak reported)
- Affected Media: soil and groundwater

Site Information

- GW Basin: Sacramento Valley
- Beneficial Uses: Municipal and Domestic Water Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), and Industrial Process Supply (PRO)
- Land Use Designation: Commercial
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no Department of Public Health (DPH) water supply wells within ½ mile of the Site.
- Minimum Groundwater Depth: 60.27 feet below ground surface (bgs) at monitoring well MW-3.
- Maximum Groundwater Depth: 74.58 feet bgs at monitoring well MW-2.
- Groundwater Flow Direction: Predominately to the northwest.
- Soil Types: The Site is underlain by interbedded and intermixed sand, silt and clay.

California Environmental Protection Agency



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Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Most Recent Depth To Groundwater (Jun 08)
MW-1	Mar 99	?-72	67.94
MW-2	Mar 99	?-75	74.58
MW-3	Mar 99	?-72	60.83
E-1	Jan 91	13-73	-

Contaminant Concentration

Contaminant	Soil (mg/kg)		Water (ug/L)		WQOs (ug/L)
	Maximum	Latest	Maximum*	Latest (June 2008)	
TPHg	6,200	NA	8,511	<50	5
Benzene	NA	NA	696	<0.5	0.15
Toluene	NA	NA	1,125	<0.5	42
Ethylbenzene	NA	NA	142	<0.5	29
Xylenes	NA	NA	628	<0.5	17
MTBE	NA	NA	1.7	<0.5	5
TBA	NA	NA	NA	NA	12
1,2-DCA	NA	NA	2.2	NA	0.5

NA: Not Analyzed, Not Applicable or Data Not Available

mg/kg: milligrams per kilogram, parts per million

ug/L: micrograms per liter, parts per billion

WQOs: Water Quality Objectives

* Maximum values are from E-1.

Site Description

The Site is located at 5851 Fair Oaks Boulevard in Carmichael, California, approximately ½ mile north and east of the American River. The Site is comprised of a small business office, two auto service bays and a small parking area. The Site is bounded by a residential property to the west, Frontier Way to the north, Fair Oaks Boulevard to the east and a business to the south. The area surrounding the site is composed of mixed residential and commercial land use,

Site History/Assessments

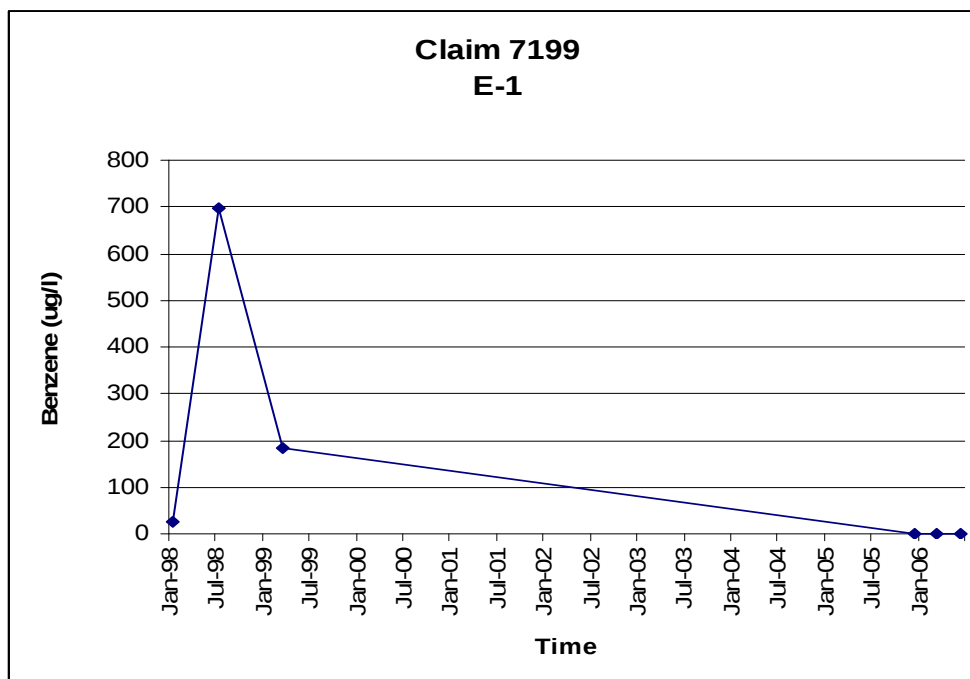
In November 1988, a hole was identified in a UST during removal and fuel hydrocarbons were detected in soil around the tanks. To date, four monitoring wells have been installed and monitored since 1999. A Site map showing the location of the former USTs, general site features and monitoring wells is provided at the end of this case closure summary.

Remediation Summary

- Free Product: No free product was documented throughout the life of this case.
- Soil Excavation: An unknown volume of impacted soil was removed in 1988.
- In-Situ Soil Remediation: Soil vapor extraction (SVE) was conducted for five days in March 2005. No analytical samples were collected and the effectiveness of the pilot test is unknown.
- Groundwater Remediation: No groundwater remediation has been conducted.

General Site Conditions

- **Geology and Hydrogeology:** The Site is underlain by interbedded and intermixed sand, silt, and clay. The depth to groundwater varies seasonally between 60 and 75 feet bgs and the groundwater gradient is to the northwest. The closest surface water (American River) is approximately ½ mile to the south and east.
- **Groundwater Trends:** There are nine years of groundwater monitoring data for this Site. The following graph shows benzene analytical trends for source area monitoring well (E-1), installed beneath the former tanks.



- **Water Quality Objectives (WQO):** WQOs have been achieved for all constituents of concern in all monitoring wells, with the possible exception of TPHg and benzene. TPHg was not detected above the reporting limit (RL) of 50 ug/L. The WQO for TPHg of 5 ug/L will be met within a reasonable period of time, if it is not currently met. Similarly, benzene was not detected above the RL of 0.5 ug/L. The WQO for benzene of 0.15 ug/L will be met within a reasonable period of time, if it is not currently met.

Risk Evaluation

As a result of natural attenuation, there is little residual petroleum hydrocarbon in soil at the Site that would pose a threat to groundwater resources, human health, or the environment. Constituents of concern are below applicable WQO or RLs. Since residual concentrations are low, the Site and public areas are paved with thick concrete, and the Site is currently an auto smog business, there is little potential for hydrocarbon vapors to migrate or pose a threat to human health or the environment. There are no DPH listed water supply wells or surface water receptors present within ½ mile of the Site. Drinking water at and near the Site is currently supplied by the Carmichael Water District.

Closure

Does corrective action performed ensure the protection of human health, safety and the environment? Yes.

Is corrective action and UST case closure consistent with State Water Board Resolution 92-49? Yes.

Is achieving background water quality feasible? No.

To remove all traces of residual petroleum constituents at the Site would require significant effort and cost. Removal of all traces of residual petroleum hydrocarbon constituents that contribute to detectable concentrations in shallow groundwater can be accomplished, but would require excavation of additional soil as well as additional remediation of shallow groundwater. The soil excavation would also entail demolition of the existing building and the temporary closure of the existing business. If complete removal of detectable traces of petroleum constituents becomes the standard for UST corrective actions, the statewide technical and economic implications will be enormous. Because of the high costs involved and minimal benefit of attaining further reductions in concentrations of TPHg and benzene at this Site, and the fact that beneficial uses are not threatened, attaining background water quality at this Site is not feasible.

If achieving background water quality is not feasible:

Is the alternative cleanup level consistent with the maximum benefit to the people of the State? Yes.

It is impossible to determine the precise level of water quality that will be attained given the limited residual petroleum hydrocarbons that remain at the Site. In light of all the factors discussed above, and the fact that the residual petroleum constituents will not unreasonably affect present and anticipated beneficial uses of groundwater, a level of water quality will be attained that is consistent with the maximum benefit to the people of the state.

Will the alternative cleanup level unreasonably affect present and anticipated beneficial uses of water? No.

Impacted groundwater is not used as a source of drinking water or any other beneficial use currently. It is highly unlikely that the impacted groundwater will be used as a source of drinking water or any other beneficial use in the foreseeable future.

Will the alternative level of water quality exceed water quality prescribed in applicable Basin Plan? No.

The final step in determining whether cleanup to a level of water quality less stringent than background is appropriate for this Site requires a determination that the alternative level of water quality will not result in water quality less than that prescribed in the relevant basin plan. Pursuant to State Water Board Resolution 92-49, a Site may be closed if the basin plan requirements will be met within a reasonable time frame.

Have factors contained in Title 23 of the California Code of Regulations, Section 2550.4 been considered? Yes.

In approving an alternative level of water quality less stringent than background, the State Water Board considers the factors contained in California Code of Regulations, title 23, section 2550.4, subdivision (d). As discussed earlier, the adverse effect on shallow groundwater will be minimal and localized, and there will be no adverse effect on the groundwater contained in deeper aquifers, given the physical and chemical characteristics of petroleum constituents, the hydrogeological characteristics of the Site and surrounding land, and the quantity of the groundwater and direction of the groundwater flow. In addition, the potential for adverse effects on beneficial uses of groundwater is low, in light of the proximity of the groundwater supply wells, the current and potential future uses of groundwater in the area, the existing quality of groundwater, the potential for health risks caused by human exposure, the potential damage to wildlife, crops, vegetation, and physical structures, and the persistence and permanence of potential effects.

Finally, a level of water quality less stringent than background is unlikely to have any impact on surface water quality, in light of the volume and physical and chemical characteristics of petroleum constituents; the hydrogeologic characteristics of the Site and surrounding land; the quantity and quality of groundwater and direction of groundwater flow, the patterns of precipitation in the region, and the proximity of residual petroleum to surface waters.

Has the requisite level of water quality been met? Yes, with the possible exception of benzene and TPHg. TPHg was not detected above the reporting limits of 50 ug/L. The WQO for TPHg of 5 ug/L will be met within a reasonable period of time, if it is not currently met. Similarly, benzene was not detected above the reporting limit of 0.5 ug/L. The WQO for benzene of 0.15 ug/L will be met within a reasonable period of time, if it is not currently met.

Objections to Closure and Response

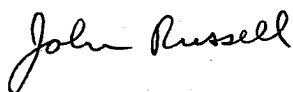
The SCEMD objects to UST case closure for this case because the SCEMD believes two additional soil borings must be advanced to assess the extent or existence of contamination. However, according to the GeoTracker document page, the SCEMD has issued no directive requesting the Responsible Party to perform this investigation.

The Fund Manager does not believe that any potential residual petroleum hydrocarbons at this Site represent a significant risk to human health and safety, and the environment. There is little residual petroleum hydrocarbon in soil at the Site. Any residual petroleum hydrocarbons, if present in the groundwater at the Site, would be at very low concentrations and will continue to attenuate. Impacted groundwater is not currently being used as a source of drinking water or other beneficial uses and water is provided to water users near the Site by the City of Sacramento Public Works Department. It is highly unlikely that any impacted groundwater will be used as a source of drinking water or other beneficial use in the foreseeable future. In addition, in the unlikely event that a water supply well is drilled in the future, that standard construction practices and requirements would prevent impacts from the contaminated area. Water in the vicinity of the Site is provided to water users by the Carmichael Water Department.

The Fund is conducting public notification and the SCEMD has the regulatory responsibility to supervise the abandonment of monitoring wells.

Summary and Conclusion

A leak was identified in November 1988 during the removal of three USTs. Since January 1991, four monitoring wells have been installed, an unknown volume of contaminated soil was excavated and SVE was conducted for five days. WQOs at this Site have been achieved, with the possible exception of benzene and TPHg, as explained above. To date, \$72,309 in corrective action costs have been reimbursed by the Fund. The nearest DPH listed water supply wells are more than ½ mile from the Site. Any impacted groundwater is not currently being used as a source of drinking water or other beneficial uses and water is provided to water users near the Site by the Carmichael Water District. It is unlikely that any impacted groundwater will be used as a source of drinking water or other beneficial use in the foreseeable future. In addition, in the unlikely event that a water supply well is drilled in the future, standard construction practices and requirements would prevent impacts from any residual petroleum contamination. Based on available information, the residual petroleum hydrocarbons at the Site do not pose significant risks to human health, safety, and the environment, and the Fund Manager recommends that the case be closed.



John Russell PG No. 8396

December 15, 2010

Date

