

State Water Resources Control Board

REVIEW SUMMARY REPORT – CLOSURE FOURTH REVIEW – FEBRUARY 2016

Agency Information

Agency Name: Humboldt County Division of Environmental Health (County)	Address: 1001H Street, Suite 200 Eureka, CA 95501-0461
Agency Caseworker: Mark Verhey	Case No.: 12093

Case Information

Cleanup Fund (Fund) Claim No.: 767	GeoTracker Global ID: T0602300085
Site Name: Humboldt Petroleum	Site Address: 390 South Fortuna Boulevard Fortuna, CA 95540
Responsible Party: M.J. Castelo Humboldt Petroleum, Incorporated	Address: P.O. Box 131 Eureka, CA 95502
Fund Expenditures to Date: \$1,447,562	Number of Years Case Open: 27

To view all public documents for this case available on GeoTracker use the following URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0602300085

Summary

The Low-Threat Underground Storage Tank (UST) Case Closure Policy (Policy) contains general and media-specific criteria, and cases that meet those criteria are appropriate for closure pursuant to the Policy. This case meets all of the required criteria of the Policy. Highlights of the case follow:

This case is an active commercial petroleum fueling facility. An unauthorized release was reported in March 1989 following the removal of four 4,000-gallon gasoline USTs. Approximately 1,517 gallons of free product were removed by hand bailing and a product skimmer system between 1989 and 2007. Approximately 1,250 cubic yards of impacted soil and 9,500 gallons of impacted groundwater were removed and disposed offsite in 2001. Groundwater extraction was conducted between 2002 and 2007, removing approximately 5,260,000 gallons of impacted groundwater and removing an estimated 403 pounds of petroleum hydrocarbons. A high vacuum dual-phase extraction (HVDPE) pilot test was conducted in February through March 2006, and removed an estimated 240 pounds of petroleum hydrocarbons. HVDPE was conducted from August 2009 through December 2010 and again from August 2011 through November 2011, removing an estimated 6,500 pounds of petroleum hydrocarbons. The recovery rate at shutdown was 2.0 pounds per day. Active remediation has not been conducted at the Site for the past four years. Since 1990, 36 groundwater monitoring wells and 10 groundwater remediation wells have been installed and regularly monitored; 21 wells have been destroyed. According to groundwater data, water quality objectives have been achieved or nearly achieved except in the source area.

The petroleum release is limited to the soil and shallow groundwater. According to data available in GeoTracker, there are no public water supply wells or surface water bodies within 1,000 feet of

the projected plume boundary. At least four domestic water supply wells have been identified at estimated distances ranging from 280 to 900 feet west and southwest (downgradient) of the projected plume boundary in files reviewed. The unauthorized release is located within the service area of a public water system, as defined in the Policy. Remaining petroleum hydrocarbon constituents are limited and stable, and concentrations are decreasing. Corrective actions have been implemented and additional corrective actions are not necessary. Any remaining petroleum hydrocarbon constituents do not pose a significant risk to human health, safety or the environment.

Rationale for Closure under the Policy

- **General Criteria:** The case meets all eight Policy general criteria.
- **Groundwater Specific Criteria:** The case meets Policy Criterion 1 by Class 5: There are at least four domestic water supply wells located between 280 and 900 feet west and southwest (downgradient) from the projected plume boundary. If not for these domestic water supply wells this case would satisfy Policy Criterion 1 by Class 2. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The dissolved benzene concentration is less than 3,000 micrograms per liter ($\mu\text{g/L}$). The dissolved concentration of methyl tertiary butyl ether (MTBE) is less than 1,000 $\mu\text{g/L}$. The nearest surface water body is greater than 1,000 feet from the projected plume boundary. Furthermore, monitoring wells MW-21B, MW-13B, and MW-5B, located generally downgradient of the plume have shown decreasing concentration trends or nondetectable concentrations of petroleum constituents for at least the past three years. The State Water Board staff has determined, based on an analysis of site specific conditions under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.
- **Vapor Intrusion to Indoor Air:** This active fueling facility meets the Active Commercial Petroleum Fueling Facility Exception. Exposure to petroleum vapors associated with historical fuel system releases is comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. However, the dissolved plume extends offsite in the downgradient direction. Offsite land use in the downgradient direction is a residence, and a fire station. The off-site properties associated with the case meet Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in offsite groundwater is less than 100 micrograms per liter ($\mu\text{g/L}$). The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons (TPH).
- The maximum benzene concentration in groundwater is less than 1,000 micrograms per liter ($\mu\text{g/L}$). The minimum depth to groundwater is greater than 10 feet, overlain by soil containing less than 100 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons (TPH).
- **Direct Contact and Outdoor Air Exposure:** The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial use, and the concentration limits for a Utility Worker are not exceeded. There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene concentrations can be used as a surrogate for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Table 1 of the Policy. Therefore, estimated naphthalene concentrations meet the

thresholds in Table 1 and the Policy criteria for direct contact with a safety factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

Determination

The Fund Manager has prepared this review summary report summarizing the reasons for this determination, provided the Review Summary Report to the applicable Regional Water Board and Local Oversight Agency Program, as appropriate, with an opportunity for comment on the Review Summary Report.

Pursuant to Health and Safety Code as of the date of the signature of the Fund Manager below, neither the Regional Water Board or the Local Oversight Program shall issue a corrective action directive or enforce an existing corrective action directive for the tank case until the board issues a decision on the closure of the tank case, unless one of the following applies:

- (A) The Regional Water Board or Local Oversight Program agency demonstrates to the satisfaction of the Fund Manager that there is an imminent threat to human health, safety, or the environment;
- (B) The Regional Water Board or Local Oversight Program agency demonstrates to the satisfaction of the Fund Manager that other site-specific needs warrant additional directives during the period that the State Board is considering case closure;
- (C) After considering responses to the Review Summary Report and other relevant information, the Fund Manager determines that case closure is not appropriate; or
- (D) The Regional Water Board or Local Oversight Program agency closes the tank case but the directives are necessary to carry out case-closure activities.



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Fund Manager

Date

Objections to Closure and Responses
Regarding Humboldt Petroleum, 390 South Fortuna Boulevard, Fortuna
Claim No: 767, February 2016

According to the Low Threat Closure Policy Checklist in GeoTracker, finalized on July 30, 2015, the County staff objects to UST case closure for the following reasons:

Comment: Free product has not been removed to the maximum extent practicable.

Response: Approximately 1,517 gallons of free product were removed by hand bailing and a product skimmer system between 1989 and 2007. In addition, measureable free product has not been observed in monitoring wells since 2009. As such, it appears that free product has been removed to the maximum extent practicable.

Comment: Secondary source has not been removed to the extent practicable. The remaining mass of hydrocarbons is largely submerged and is persistent. Even though HVDPE removed roughly 6,000 lbs TPHg, concentrations remain high. HVDPE was turned off in Nov 2011 due to diminishing recovery. Monitoring events since shutdown do not support an interpretation that natural attenuation is a feasible remedy for the remainder.

Response: The Policy defines "secondary source removal to the extent practicable" as corrective action which removes or destroys in-place the most readily recoverable fraction of source area mass. Substantial soil and groundwater remediation has been performed at the Site. Remedial activities included excavation of approximately 1,250 cubic yards of impacted soil, removing over 6,000,000 gallons of impacted groundwater, and removing approximately 7,200 pounds of petroleum hydrocarbons as vapor. Vapor recovery reduced to asymptotic levels, which indicate that the remediation system reached its practical limit of effectiveness. As a result of the remediation activities maximum benzene concentrations in groundwater are well below 3,000 micrograms per liter ($\mu\text{g/L}$) and maximum methyl tertiary butyl ether (MTBE) concentrations are well below 1,000 $\mu\text{g/L}$. Concentrations are decreasing and the plume is shrinking in areal extent.

Comment: Groundwater media specific criteria are not met at the site due to plume length longer than 100 feet, benzene concentration greater than 1,000 $\mu\text{g/L}$, nearest supply well less than 250 feet and nearest surface water body less than 1,000 feet.

Response: There are at least four domestic water supply wells located between 280 and 900 feet from the projected plume boundary. If not for the presence of these domestic supply wells, the site would meet the criteria by Class 2. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The dissolved concentration of benzene is less than 3,000 micrograms per liter ($\mu\text{g/L}$), and the dissolved concentration of methyl tertiary butyl ether (MTBE) is less than 1,000 $\mu\text{g/L}$. The historical data for downgradient wells MW-7, MW-8, MW-13 and DW-2 indicate that the extent of the plume can be reasonably projected and is primarily limited to the Site and the adjacent property to the west. The plume is stable and decreasing in areal extent. Therefore the Site meets groundwater criteria by Class 5. The State Water Board staff has determined, based on an analysis of site specific conditions under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.