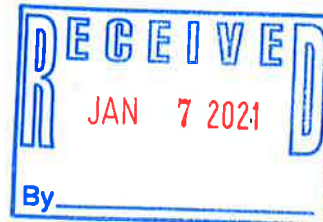




Central Valley Regional Water Quality Control Board

31 December 2020

Ajitpal Singh & Rajinder Kaur
7444 South Kenneth Avenue
Fowler, CA 93625



REVIEW – THIRD QUARTER SOIL VAPOR EXTRACTION PROGRESS REPORT, UNDERGROUND STORAGE TANK RELEASE, VALLEY GAS, 2139 SOUTH ELM AVENUE, FRESNO, FRESNO COUNTY, RB CASE 5T10000773

The *Third Quarter Soil Vapor Extraction Progress Report* (Report) dated 21 December 2020, was uploaded to the State Water Resources Control Board GeoTracker database by the consultant, HerSchy Environmental, Inc. (HerSchy). The Report summarizes soil vapor extraction (SVE) system operation from March through early December 2020 at the underground storage tank (UST) site (Site). Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff (Staff) concurred with SVE system installation and operation by letter dated 7 March 2018, and most recently with continued operation by letter of 18 September 2020. The SVE system is expected to satisfy criteria contained in the State Water Resources Control Board's *Low-Threat Underground Storage Tank Case Closure Policy* (Policy). This letter includes a summary of the Report, Staff comments, and directs that SVE system operations continue.

Summary

The SVE system removes volatile petroleum hydrocarbons, including motor fuel additives with two dual-casing extraction wells, screened from 10-45 feet below ground surface (bgs) and 50-95 feet bgs. Extracted volatile vapor is conveyed by underground piping to a secure equipment compound, and destroyed in a thermal/catalytic oxidizer equipped with a 10 horsepower blower. Operation began on 26 March 2020 with a startup test required by the San Joaquin Valley Unified Air Pollution Control District. The system continues to operate in thermal mode with an oxidizer temperature of 1,450 degrees Fahrenheit or greater, due to elevated contaminant concentrations.

KARL E. LONGLEY ScD, P.E., CHAIR | PATRICK PULUPA, ESQ., EXECUTIVE OFFICER

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From startup through 7 December 2020, the system removed 145,310 pounds (lbs.) or 23,513 gallons of volatile fuel constituents. Approximately 21,000 lbs. were removed during the third quarter 2020. Removal rates up to approximately 75 lbs.-per-hour (1,800 lbs.-per-day) were estimated at the beginning of operation and remained from approximately 45-61 lbs.-per-hour (1,080-1,464 lbs.-per-day) through June 2020. Removal rate decreased to approximately 7-21 lbs.- per -hour (168-504 lbs.-per-day) during July and August 2020. Removal rates of approximately 12-19 lbs.-per-hour (288-456 lbs.-per-day) were calculated from September to early December 2020.

The influent dilution air valve was closed on 1 June when concentrations had decreased sufficiently. The system was not operating during one site visit in July 2020, one site visit during August 2020 and four site visits from October through early December.

After startup testing, influent and effluent vapor samples were collected for laboratory analysis on 22 April, 8 June and 24 August 2020. Total petroleum hydrocarbons as gasoline (TPHg) concentrations were 12,000, 14,000 and 5,500 parts per million by volume (ppmv) respectively, on these dates. Benzene removal rates calculated from these analyses decreased from 0.3748 lbs.-per-hour (8.99 lbs.-per-day) to 0.1553 lbs.-per-hour (3.72 lbs.-per-day). Methyl tertiary butyl ether (MTBE) removal rates decreased from 7.46 lbs.-per-hour (179 lbs.-per-day) to 3.17 lbs.-per-hour (76 lbs. per-day).

HerSchy will continue system operations and maintenance (O&M) visits every two weeks, and will optimize removal rate by extracting from screened intervals with the greatest field volatile vapor concentrations. When influent concentrations decrease to 4,000 ppmv, conversion to catalytic mode will be considered for cost efficiency. Influent vapor samples will be collected quarterly and analyzed volatile organic compounds (VOCs) by EPA Method 8260 as requested by Staff.

Comments

Staff concurs with continued full-time SVE system operation with periodic adjustments to optimize removal rates. TPHg removal rates have decreased but remain relatively high. Benzene is being removed at greater than one-lb.-per day and MTBE continues at much greater rates, based on the August 2020 influent vapor analytical data. System performance needs to be reported in quarterly operation reports.

Staff concurs with HerSchy's O&M schedule.

By Staff letter dated 18 September 2020, we requested that SVE system performance data include system specifications, cumulative SVE operation data in tables, a discussion of SVE system operations and recommendations for or against continued operation and for modifications, if appropriate. Operations data tables were to include: wells operated, operating hours, vacuums, flow rates, oxidizer temperatures, field and laboratory influent volatile organic vapor and individual gasoline constituent concentrations and removal rates. **Not all the requested parameters were included in the cumulative operation data table in the Report. Please ensure that these parameters are included in future reports in the operation data table or as separate tables or matrices.**

The cumulative data table indicates that the SVE system was not operating during several of HerSchy's O&M site visits during the third and fourth quarters 2020. Field data sheets for the third quarter 2020 were included in the Report and indicated that in some cases the system had run out of supplemental fuel (propane). On other dates the propane tank contained fuel, but there was no discussion in the Report of the cause of shut off.

You are requested to notify Staff promptly when the SVE system is not operating.

Please make every effort to identify and repair problems preventing continuous SVE system operation, and include a discussion of these activities in quarterly progress reports. Field data sheets for the fourth quarter should be included in the *Fourth Quarter Soil Vapor Extraction Progress Report*.

By the 18 September 2020 Staff letter, Staff requested an evaluation of the vacuum radius of influence (ROI) and proposed SVE system modifications for a final system to reduce the full extent of source mass and decrease project duration. HerSchy submitted *Work Plan for Installation of Vapor and Air Sparge Wells and Pilot Test (Work Plan)* dated 23 October 2020. Staff responded and requested an air sparging (AS) pilot test work plan and other information prior to final review by a letter dated 3 December 2020.

We requested by an email of 17 December 2020, that the next influent vapor sample be analyzed for VOCs to determine if the chlorinated solvents tetrachloroethylene (PCE) and trichloroethylene (TCE) were present in soil vapor captured by the SVE system. These contaminants are apparently present at the adjacent Former Imperial Laundry site at 2165 South Elm Avenue. The property is currently used as the Maxie Parks Community Center. By a 21 December 2020 email to Staff, HerSchy concurred that the analysis would be conducted.

By 3 February 2021, please submit:

- The fourth quarter 2020 SVE system progress report; and
- The AS pilot test work plan, and other information requested by the 3 December 2020 Staff letter.

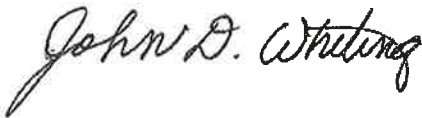
All submittals need to be uploaded to the GeoTracker database. Paper copies are not normally required, but Central Valley Water Board staff may request copies of a report, data tables, or maps and figures, in certain instances.

Ajitpal Singh & Rajinder Kaur
Valley Gas
Fresno, Fresno County

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Please notify Central Valley Water Board staff at least 48 hours prior to implementing fieldwork and if the SVE system operation status changes. If there are any questions regarding this matter, please contact John Whiting at (559) 445-5504 or by email at jwhiting@waterboards.ca.gov.



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