

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER No. R2-2018-0041

ADOPTION OF SITE CLEANUP REQUIREMENTS for:

FRANK L. BURRELL, TRUSTEE of the FRANK L. BURRELL 1937 TRUST

for the property located at:

14440 BIG BASIN WAY
SARATOGA, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds that:

1. **Site Location:** Hillview Cleaners (Hillview) is a dry cleaner facility that occupies a tenant space at the east end of Saratoga Village Center, 14440 Big Basin Way, Saratoga. Saratoga Village Center is on a 1.38-acre parcel (Source Property). The Source Property is a short distance west of the intersection of Big Basin Way and Saratoga - Los Gatos Road. Saratoga Creek is about 650 feet north of the Source Property. The Site consists of the Source Property and the downgradient properties and locations that overlie a groundwater and soil gas pollutant plume extending from the Source Property to Saratoga Creek. The Site is located in a mixed commercial and residential district. Saratoga's zoning in the area of the Source Property is commercial-historic, which conditionally allows residential use as part of a mixed use.
2. **Site History:** The Source Property is a retail/commercial shopping center constructed in the 1950s. The Frank L. Burrell 1937 Trust has owned the Source Property since 2003. Hillview has operated at the Source Property from 1955 to the present. Hillview used tetrachloroethene (PCE), a solvent used in dry cleaning, from 1955 – 2011. Peter and Julia Zambetti operated Hillview from 1955 – 1983. Eugene Zambetti, the son of Peter and Julia Zambetti, operated Hillview from 1976 until the sale of the dry cleaner business in April 1983. Sang Lee and Suk Lee have operated Hillview Cleaners from April 1983 to the present. The evidence that Peter and Julia Zambetti, Eugene Zambetti, and Sang Lee and Suk Lee discharged PCE includes the history of solvent usage beginning in 1955, the physical evidence of PCE at the Site and downgradient from it, common industry-wide operational practices, and the inefficiencies of older dry cleaning equipment from the 1950s through the 1990s. The Response to Comments further discusses this evidence (see attachment).
3. **Named Discharger:** As described in more detail below, Frank L Burrell, as trustee of the Frank L. Burrell 1937 Trust, has assumed full responsibility for meeting all cleanup requirements. Frank L. Burrell, as trustee of the Frank L. Burrell 1937 Trust, is named as the Discharger because he is the current owner of the Source Property on which there is an ongoing discharge of pollutants, he has knowledge of the discharge or the activities that caused the discharge, and he has the legal ability to control the discharge.

The following current and past property owners and operators qualify as dischargers but are not named as dischargers at this time:

The estates of Peter and Julia Zambetti qualify as dischargers because of substantial evidence that the Zambettis owned and operated the dry cleaners and leased the Source Property between 1955 and 1976 (Peter) and 1955 and 1983 (Julia), a time when pollutants discharged to soil and groundwater at the Source Property, as evidenced by the use of PCE during operation of the dry cleaner, testimony concerning releases of PCE, the presence of PCE in soil beneath the Source Property, and the presence of PCE in soil gas and groundwater at and down-gradient of the Source Property.

Eugene Zambetti qualifies as a discharger because of substantial evidence that he owned the dry cleaners and leased the Source Property at a time between 1976 and 1983, a time when pollutants discharged to soil and groundwater at the Source Property, as evidenced by the use of PCE during operation of the dry cleaner, testimony concerning releases of PCE, the presence of PCE in soil beneath the Source Property, and the presence of PCE in soil gas and groundwater at and down-gradient of the Source Property.

Sang Lee and Suk Lee qualify as dischargers because of substantial evidence that they operated the dry cleaners and leased the Source Property after 1983, a time when pollutants discharged to soil and groundwater at the Source Property, as evidenced by the use of PCE during operation of the dry cleaner, the presence of PCE in soil beneath the Source Property, and the presence of PCE in soil gas and groundwater at and down-gradient of the Source Property.

The above-listed current and past property owners and operators are not named as dischargers because the Frank L. Burrell 1937 Trust, as administered by Frank Burrell, trustee, has adequate financial resources to comply with this Order and has requested that the above-listed current and past property owners and operators not be named as dischargers in this Order. However, the above-listed current and past property owners and/or operators may be named in the future if these circumstances change.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the state, the Regional Water Board will consider adding those parties' names to this Order.

4. **Regulatory Status:** This Site is currently not subject to a Regional Water Board order.
5. **Site Hydrogeology:** The Site is located at the eastern edge of the Santa Cruz Mountains at an elevation of about 480 – 490 feet above sea level. The area of the Site is about where the Santa Clara Valley meets the Santa Cruz Mountains. The Site is located in the area the Santa Clara Valley Water District identifies as the Santa Clara Plain sub-basin. The sub-basin is identified as a groundwater recharge area for the deep regional groundwater aquifer underlying the Santa Clara Valley. The Site's location in the transition area from plain to mountains results in a complex hydrogeology. Three groundwater bearing zones have been identified at the Site. The shallow zone consists of a number of discontinuous perched water bearing zones found at different intervals between about 5 – 21 feet below ground surface. The middle zone is present between about 30 – 60 feet below ground surface. The deep zone begins at about 60 feet below ground surface and has been investigated to a depth of about 95

feet. These zones are inter-connected in some places. Groundwater flows generally north from the Source Property toward Saratoga Creek, which is about 650 feet away.

- 6. Remedial Investigation:** A number of investigations have been performed since 1991 to investigate contamination at, adjacent to, and downgradient of the Source Property. The volatile organic compound (VOC) PCE has been detected in soil, groundwater, surface water, soil gas, and indoor air. PCE is the primary VOC detected. The PCE breakdown products trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride have also been detected in groundwater.

Soil Soil samples taken beneath the dry cleaner tenant space at 15 feet below ground surface (bgs) show PCE was found at levels near the ESLs for leaching to groundwater. Soil investigation in this area has been limited by access constraints for drilling equipment. Two deep samples (25 feet bgs and 40.5 feet bgs) in boring EA-1 located in the area of elevated groundwater PCE concentrations adjacent to the east side of the dry cleaner tenant space exceeded the ESL. At the 45 foot depth, the sample was taken in soil that is saturated with groundwater and it was not possible to differentiate between PCE adhering to soil particles or PCE dissolved in groundwater.

Groundwater A plume of VOC contaminated groundwater originates at the Source Property and flows north, passes beneath a number of properties and intersects Saratoga Creek about 650 feet away. The eastern edge of the groundwater contaminant plume is along Blaney Plaza and Saratoga Los Gatos Road. The western edge runs from the northwestern side of the Hillview tenant space through the parking lot in the front of the Source Property, across Big Basin Way, and along the west side of the Saratoga Village Center Shopping Center. Most of the contamination is in the middle groundwater zone in the interval between about 35 – 45 feet below ground surface. Very low levels of PCE (less than the drinking water standard) extend as deep as 85 – 95 feet below ground surface. Two areas of elevated PCE concentrations in middle zone groundwater are located beneath the parking lot at the front of the Source Property and beneath the parking lot to the east of the Source Property. PCE concentrations in samples from groundwater wells in these locations have been as high as 41,000 micrograms per liter ($\mu\text{g/L}$). The current maximum groundwater PCE concentration is around 1,000 $\mu\text{g/L}$. The PCE drinking water standard is 5 $\mu\text{g/L}$.

Surface Water Saratoga Creek intersects the groundwater contaminant plume and low levels of PCE (1 $\mu\text{g/L}$ – 30 $\mu\text{g/L}$) have been detected in the Creek. Most PCE detections in the creek have been from 1 – 5 $\mu\text{g/L}$. Cis-1,2-DCE has also been detected in the creek at levels from 0.5 – 6 $\mu\text{g/L}$.

Soil Gas A soil gas plume exists from the Source Property northward to about Big Basin Way. The soil gas plume underlies the parking lots at the front of and east of the Source Property and the two buildings immediately northeast of the Source Property. The current maximum soil gas concentration level is about 6,000 $\mu\text{g/m}^3$ of PCE, which is greater than the residential ESL of 240 $\mu\text{g/m}^3$ and commercial ESL of 2,100 $\mu\text{g/m}^3$.

Indoor Air Indoor air sampling shows PCE at concentrations greater than the environmental screening level in two buildings immediately to the northeast of the Source Property. The maximum indoor air PCE concentration detected was 18 µg/m³, which is greater than the residential ESL of 0.48 µg/m³ and commercial ESL of 2.1 µg/m³.

7. **Risk Assessment:**

- a. **Screening Levels:** A screening level evaluation was carried out to evaluate potential environmental concerns related to identified groundwater, soil, soil gas, indoor air, and surface water impacts. Chemicals evaluated in the risk assessment include PCE, TCE, cis-1,2-DCE, and vinyl chloride, the primary chemicals of concern identified at the Site.

As part of the assessment, Site data were compared to Environmental Screening Levels (ESLs) compiled by Regional Water Board staff for residential land use, which is allowed by Saratoga’s zoning in the area of the Source Property. The presence of chemicals at concentrations above the screening levels indicates that additional evaluation of potential threats to human health and the environment is warranted. Screening levels for groundwater address the following environmental concerns: 1) drinking water impacts (toxicity and taste and odor), 2) impacts to indoor air, and 3) migration and impacts to aquatic habitats. Screening levels for soil address: 1) direct exposure, 2) leaching to groundwater and 3) nuisance issues. Screening levels for soil gas address impacts to indoor air. Screening levels for surface water address impacts to the aquatic environment. Chemical-specific screening levels for other human health concerns (i.e., indoor air and direct exposure) are based on a target excess cancer risk of 1x10⁻⁶ for carcinogens and a target Hazard Quotient of 0.2 for noncarcinogens. Groundwater screening levels for the protection of aquatic habitats are based on promulgated surface water standards (or equivalent). Soil screening levels for potential leaching concerns are intended to prevent impacts to groundwater above target groundwater goals (e.g., drinking water standards). Soil screening levels for nuisance concerns are intended to address potential odor and other aesthetic issues.

- b. **Assessment Results:** Groundwater, soil, soil gas, indoor air, and surface water samples exceeded the ESLs. The soil gas and indoor air exceedances are due to volatilization of PCE and breakdown products from contaminated groundwater.

Media / Constituent	Human health - direct	Leaching to groundwater	Indoor air	Aquatic life	Drinking water
Soil:					
PCE		X			
Soil Gas:					
PCE			X		
TCE			X		
Groundwater:					
PCE			X		X
TCE					X
Cis-1,2-DCE					X

Indoor Air:					
PCE			X		
Surface Water:					
PCE					X

* Note: an "X" indicates that ESL for that particular concern was exceeded

- c. **Conclusion:** The Discharger should address these screening level exceedances using a combination of remediation and risk management.
8. **Adjacent Sites:** Former Chevron gas station #97398 at 20472 Saratoga-Los Gatos Road is located 200 feet east-southeast from the Source Property and is cross gradient and slightly upgradient from the Source Property. The Chevron site has a history of PCE detections in groundwater up to 500 µg/L (e.g., monitoring well CV-RP-5), which is a much lower concentration than those detected at the Site. Based on the available data, PCE was likely released at the Chevron site in the area of a former underground waste oil tank. The northwestern edge of the Chevron PCE groundwater plume commingles with the northeastern edge of the Site PCE groundwater plume. The Chevron site was redeveloped in 1998 and a dry cleaner business, Kerful Cleaners, has operated at the Chevron site since then. The PCE detections in groundwater at the Chevron site predate the redevelopment of the Chevron site. PCE was detected in groundwater at the Chevron site as early as 1996 (e.g., monitoring well CV-RP-5). Santa Clara County Environmental Health issued a closure letter for the Chevron gas station on January 30, 2017. The Regional Water Board plans to send Chevron a site history requirement letter for the former underground waste oil tank.
9. **Interim Remedial Measures:** In 2007, the Discharger implemented a pilot test of groundwater treatment using in-situ chemical oxidation with modified Fenton’s reagent. There were problems with getting the treatment solution into the ground and the solution surfaced through monitoring wells. VOC levels in groundwater declined initially but later rebounded to pre-injection levels.
- In 2012, a pilot test of enhanced in-situ bioremediation (EISB) was performed using emulsified 3-D microemulsion, hydrogen release compound, and a solution containing Dehalococcoides, a bacteria species capable of breaking down PCE to the non-toxic end product ethene. The pilot test results were good and there was significant reduction in PCE levels in groundwater. There has been some rebound of VOC concentrations, however, the reduction in VOC concentrations is still in the range of 83-97% below historic concentrations in the monitoring wells in the treatment area.
10. **Feasibility Study:** The Discharger’s Remedial Action Plan (RAP) dated December 15, 2015, contains a feasibility study that screened nine groundwater treatment technologies and one vapor intrusion mitigation technology. The technologies were evaluated for effectiveness, implementability, and cost.
11. **Remedial Action Plan:** The RAP selects the following technologies: in-situ bioaugmented enhanced reductive dechlorination (ERD) (also known as enhanced in-situ bioremediation),

in-situ chemical reduction (ISCR) using zero valent iron, and subslab depressurization. The RAP includes the following elements:

- Remedial design implementation report to provide detailed design for the RAP elements
- Bioaugmented ERD combined with ISCR in selected areas south of Big Basin Way
- Contingency plan for a re-injection event over approximately 50% of the original injection area if needed based on post-injection monitoring results and performance criteria
- Methane vent pipes in each ERD injection area
- Vapor intrusion mitigation using subslab depressurization or related technologies
- Vapor barriers and passive ventilation for new buildings over the plume (as needed)
- Risk management plan
- Institutional controls
- Monitored natural attenuation for areas north of Big Basin Way
- Groundwater monitoring until regulatory approval for no further monitoring is obtained

The contingency plan in the RAP may be insufficient to reach case closure because additional ERD/ISCR injections may be needed. Therefore this Order requires additional re-injections or other measures beyond those proposed in the RAP if post-injection monitoring results show that the current contingency plan is insufficient to reach case closure. The commercial cleanup levels in the RAP are inadequate to protect residential uses. Therefore, this Order contains residential cleanup levels.

12. **Basis for Cleanup Levels**

- a. **General:** State Water Resources Control Board (State Water Board) Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge. It requires maintenance of background levels of water quality unless a lesser water quality is consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in exceedance of applicable water quality objectives. This Order and its requirements are consistent with Resolution No. 68-16.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. It directs the Regional Water Boards to set cleanup levels equal to background water quality or the best water quality which is reasonable, if background levels cannot be restored. In this instance, background levels cannot be restored, based on the nature of the contamination, the limitations of available cleanup methods, and the Regional Water Board's experience with many other similarly-impacted sites. The cleanup levels established in this Order are consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in exceedance of applicable water quality objectives. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

- b. **Beneficial Uses:** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State,

including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, where required.

Regional Water Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the Site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Site:

- o Municipal and domestic water supply
- o Industrial process water supply
- o Industrial service water supply
- o Agricultural water supply
- o Freshwater replenishment to surface waters

The Santa Clara Valley Water District releases water from the State Water Project into Saratoga Creek about 1.75 miles downstream from the Site so that it can percolate into the creek bed for groundwater recharge. The nearest Santa Clara Valley Water District groundwater extraction well is over a mile away from the Site.

The existing and potential beneficial uses of Saratoga Creek in the vicinity of the Site include:

- o Municipal and domestic supply *
- o Agricultural supply *
- o Industrial process water supply *
- o Industrial service water supply *
- o Groundwater recharge
- o Water contact and non-contact recreation
- o Wildlife habitat
- o Cold freshwater and warm freshwater habitat
- o Fish migration and spawning
- o Preservation of rare and endangered species

*based on groundwater recharge

- c. **Basis for Groundwater Cleanup Levels:** The groundwater cleanup levels for the Site are based on applicable water quality objectives and are the more stringent of EPA and California primary maximum contaminant levels (MCLs). Cleanup to this level will protect beneficial uses of groundwater and will result in acceptable residual risk to humans.

- d. **Basis for Soil Cleanup Levels:** The soil sampling depth beneath the Hillview tenant space was limited by constraints on the equipment that could be used inside the building. Soil cleanup levels are included in this Order in the event that additional soil sampling finds areas of elevated PCE in vadose zone soil under the building. The soil cleanup levels for the Site are intended to prevent leaching of contaminants to groundwater and will result in acceptable residual risk to humans in a residential-use scenario.
 - e. **Basis for Soil Gas Cleanup Levels:** The soil gas cleanup levels for the Site are intended to prevent vapor intrusion into occupied buildings and will result in acceptable residual risk to humans in a residential-use scenario.
 - f. **Basis for Indoor Air Cleanup Levels:** The indoor air cleanup levels for the Site are intended to prevent unhealthy levels of VOCs in indoor air as a result of vapor intrusion and will result in acceptable residual risk to humans in a residential-use scenario.
13. **Future Changes to Cleanup Levels:** If new technical information indicates that the established cleanup levels are significantly over-protective or under-protective, the Regional Water Board will consider revising those cleanup levels.
14. **Risk Management:** The Regional Water Board considers the following human health risks to be acceptable at remediation Sites: a cumulative hazard index of 1.0 or less for non-carcinogens and a cumulative excess cancer risk of 10^{-6} to 10^{-4} or less for carcinogens. The screening level evaluation for this Site found contamination-related risks in excess of these acceptable levels. Active remediation will reduce these risks over time. However, risk management measures are needed at this Site during and after active remediation to assure protection of human health. Risk management measures include engineering controls (such as vapor intrusion mitigation) and institutional controls (such as deed restrictions that prohibit certain land uses).

The following risk management measures are needed at this Site:

- a. A deed restriction that notifies future owners of sub-surface contamination at the Source Property, prohibits the use of shallow groundwater beneath the Source Property as a source of drinking water until cleanup levels are met, and requires that all uses and development of the Source Property shall be consistent with any applicable Board order or risk management plan;
 - b. Vapor intrusion mitigation; and
 - c. Risk management plan for soil for the Source Property.
15. **Reuse or Disposal of Extracted Groundwater:** Regional Water Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from Site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.
16. **Basis for 13304 Order:** Water Code section 13304 authorizes the Regional Water Board to issue orders requiring the Discharger to cleanup and abate waste where the Discharger has

caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

17. **Basis for 13267 Technical Reports:** Water Code section 13267 authorizes the Regional Water Board to require the Discharger to provide technical or monitoring reports. The burden of these reports, including costs, bears a reasonable relationship to the need for the report and the benefits to be obtained from the reports. Specifically, the reports required herein are necessary to ensure the protection of human health and the environment.
18. **Cost Recovery:** Pursuant to Water Code section 13304, the Discharger is hereby notified that the Regional Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.
19. **California Safe Drinking Water Policy:** It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
20. **CEQA:** This action is an order to enforce the laws and regulations administered by the Regional Water Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to section 15321 of the Resources Agency Guidelines.
21. **Notification:** The Regional Water Board has notified the Discharger and all interested agencies and persons of its intent under Water Code section 13304 to prescribe Site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.
22. **Public Hearing:** The Regional Water Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to sections 13304 and 13267 of the Water Code, that the Discharger (or its agents, successors, or assigns) shall clean up and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

- Activities associated with the subsurface investigation and cleanup that will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. REMEDIAL ACTION PLAN AND CLEANUP LEVELS

- Implement Remedial Action Plan:** The Discharger shall implement the remedial action plan described in Finding 11. Implementation of the RAP also includes development and implementation of vapor intrusion mitigation measures and a risk management plan and implementation.
- Groundwater Cleanup Levels:** The following groundwater cleanup levels shall be met in all wells identified in the attached Self-Monitoring Program:

Constituent	Level (ug/l)	Basis
PCE	5	MCL
TCE	5	MCL
Cis-1,2-DCE	6	MCL
Vinyl Chloride	0.5	MCL

MCL = maximum contaminant level

- Soil Cleanup Levels:** The following soil cleanup levels shall be met in vadose-zone soils:

Constituent	Level (mg/kg)	Basis
PCE	0.42	Leaching to groundwater
TCE	0.46	Leaching to groundwater
Cis-1,2-DCE	0.19	Leaching to groundwater
Vinyl chloride	0.001	Leaching to groundwater

- Soil Gas Cleanup Levels:** The following soil gas cleanup levels shall be met in vadose-zone soils:

Constituent	Level (ug/m ³)	Basis
PCE	240	Human health – vapor intrusion

TCE	240	Human health – vapor intrusion
Cis-1,2-DCE	4,200	Human health – vapor intrusion
Vinyl Chloride	4.7	Human health – vapor intrusion

5. **Indoor Air Cleanup Levels:** The following indoor air cleanup levels shall be met in occupied residential buildings:

Constituent	Level (ug/m ³)	Basis
PCE	0.48	Human health – inhalation
TCE	0.48	Human health – inhalation
Cis-1,2-DCE	8.3	Human health – inhalation
Vinyl Chloride	0.0095	Human health – inhalation

The following indoor air cleanup levels shall be met in occupied commercial buildings:

Constituent	Level (ug/m ³)	Basis
PCE	2.1	Human health – inhalation
TCE	3.0	Human health – inhalation
Cis-1,2-DCE	35	Human health – inhalation
Vinyl Chloride	0.16	Human health – inhalation

C. TASKS

1. **REMEDIAL DESIGN IMPLEMENTATION REPORT**

COMPLIANCE DATE: September 28, 2018

Submit a technical report acceptable to the Executive Officer containing a remedial design implementation report. The report shall specify a detailed design for all RAP elements in Finding 11.

2. **COMPLETION OF REMEDIAL ACTIONS**

COMPLIANCE DATE: January 31, 2019

Complete tasks in the Task 1 report and submit a technical report acceptable to the Executive Officer documenting their completion. For ongoing actions, such as ERD/ISCR injections and vapor intrusion mitigation, the report shall document start-up as opposed to completion.

3. **WORKPLAN FOR ADDITIONAL RE-INJECTIONS AND/OR EXPANDED REMEDIATION SYSTEM (IF NEEDED)**

COMPLIANCE DATE: 60 days after workplan required by the Executive Officer

Submit a workplan acceptable to the Executive Officer for additional in-situ groundwater treatment that will substantially move the case towards case closure. The workplan shall describe all significant implementation steps and shall include an implementation schedule. The Executive Officer will require this workplan if post-injection monitoring results show that injections to date are insufficient to reach case closure in a reasonable timeframe.

4. **IMPLEMENTATION OF ADDITIONAL RE-INJECTIONS AND/OR EXPANDED REMEDIATION SYSTEM (IF NEEDED)**

COMPLIANCE DATE: 90 days after Executive Officer approval of the Task 3 workplan

Complete tasks in the Task 3 workplan and submit a technical report acceptable to the Executive Officer documenting their completion. For ongoing actions, such as ERD/ISCR injections, the report shall document system start-up as opposed to completion.

5. **OPERATION AND MAINTENANCE PLAN FOR ALL VAPOR INTRUSION MITIGATION ELEMENTS OF THE RAP**

COMPLIANCE DATE: November 30, 2018

Submit a technical report acceptable to the Executive Officer containing an operation and maintenance plan for all vapor intrusion mitigation elements of the RAP. The plan shall apply to all structures that are affected by vapor intrusion due to Hillview PCE discharges. The plan shall include responsible entities, performance goals and measures, operation and maintenance activities, monitoring, sampling and analysis, inspections, contingency plan, and reporting. The plan shall consider the guidelines in the Regional Water Board's October 2014 Interim Framework for Assessment of Vapor Intrusion at TCE-Contaminated Sites in the San Francisco Bay Region.

6. **OPERATION AND MAINTENANCE PLAN IMPLEMENTATION REPORT**

COMPLIANCE DATE: February 28, 2019, and every year thereafter

Implement the approved operation and maintenance plan for all vapor intrusion mitigation elements of the RAP and submit a technical report acceptable to the Executive Officer documenting its implementation over the previous 12-month period ending. The report may be combined with a self-monitoring report, provided that the report title clearly indicates its scope. The report may propose changes to the operation and maintenance plan, although those changes shall not take effect until approved by the Regional Water Board or the Executive Officer.

7. **RISK MANAGEMENT PLAN**

COMPLIANCE DATE: October 31, 2018

Submit a technical report acceptable to the Executive Officer containing a risk management plan for demolition, soil excavation, disposal activities, and redevelopment at the Source Property.

8. **PROPOSED DEED RESTRICTION**

COMPLIANCE DATE: 60 days prior to the Discharger requesting case closure

Submit a proposed deed restriction acceptable to the Executive Officer whose goal is to limit Source Property occupants' exposure to Site contaminants to acceptable levels. The proposed deed restriction shall notify future owners of sub-surface contamination at the Source Property, prohibit the use of shallow groundwater beneath the Source Property as a source of drinking water until cleanup levels are met, and require that all uses and development of the Source Property shall be consistent with any applicable Board order or risk management plan. The proposed deed restriction shall incorporate by reference the risk management plan. The proposed deed restriction shall name the Regional Water Board as a beneficiary and shall anticipate

that the Regional Water Board will be a signatory. Frank L. Burrell as trustee of the Frank L. Burrell 1937 Trust shall be responsible for this task.

9. **RECORDATION OF DEED RESTRICTION**

COMPLIANCE DATE: 60 days after Executive Officer approval of the proposed deed restriction

Record the approved deed restriction and submit a technical report acceptable to the Executive Officer documenting that the deed restriction has been duly signed by all parties and has been recorded with the appropriate County Recorder. The report shall include a copy of the recorded deed restriction. Frank L. Burrell as trustee of the Frank L. Burrell 1937 Trust shall be responsible for this task.

10. **FIVE-YEAR STATUS REPORT**

COMPLIANCE DATE: August 21, 2023, and every five years thereafter

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the approved remedial action plan. The report shall include:

- a. Summary of effectiveness in controlling contaminant migration and protecting human health and the environment
- b. Comparison of contaminant concentration trends with cleanup levels
- c. Comparison of anticipated versus actual costs of cleanup activities
- d. Performance data (e.g., groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted)
- e. Cost effectiveness data (e.g., cost per pound of contaminant removed)
- f. Summary of additional investigations (including results) and significant modifications to remediation systems
- g. Additional remedial actions proposed to meet cleanup levels (if applicable) including time schedule

If cleanup levels have not been met and are not projected to be met within a reasonable time, the report shall assess the technical practicability of meeting cleanup levels and may propose an alternative cleanup strategy.

11. **PROPOSED CURTAILMENT**

COMPLIANCE DATE: 60 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g., well closure), system suspension (e.g., cease extraction but wells retained), and significant system modification (e.g., major reduction in extraction rates, closure of individual extraction wells within extraction network). The report shall include the rationale for curtailment. Proposals for final closure shall demonstrate that cleanup levels have been met or that the Site qualifies for low-threat closure based on State Water Board Resolution 92-49 as amended and any associated Regional Water Board guidance.

12. **IMPLEMENTATION OF CURTAILMENT**

COMPLIANCE DATE: 60 days after Executive Officer approval of proposed curtailment

Implement the approved curtailment and submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in the proposed curtailment report.

13. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: 90 days after evaluation report required by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved remedial action plan of revising one or more cleanup levels in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

14. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after evaluation report required by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved remedial action plan and cleanup levels for this Site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be required unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup levels.

15. **Delayed Compliance:** If the Discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Discharger shall promptly notify the Executive Officer, and the Regional Water Board may consider revision to this Order.

D. PROVISIONS

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in Water Code section 13050, subdivision (m).
2. **Good O&M:** The Discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
3. **Cost Recovery:** The Discharger shall be liable, pursuant to Water Code section 13304, to the Regional Water Board for all reasonable costs actually incurred by the

Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the Discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records:** In accordance with Water Code section 13267, subdivision (c), the Discharger shall permit the Regional Water Board or its authorized representative:
 - a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the requirements of this Order.
 - c. Inspection of any monitoring or remediation facilities installed in response to this Order.
 - d. Sampling of any groundwater or soil that is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Discharger.
5. **Self-Monitoring Program:** The Discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.
6. **Contractor / Consultant Qualifications:** All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.
7. **Lab Qualifications:** All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Regional Water Board using approved U.S. EPA methods for the type of analysis to be performed. Quality assurance/quality control (QA/QC) records shall be maintained for Regional Water Board review. This provision does not apply to analyses that can only reasonably be performed onSite (e.g., temperature).
8. **Document Distribution:** An electronic version of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the Regional Water Board and to the Santa Clara Valley Water District. The Executive Officer may modify this distribution list as needed.

Electronic copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be uploaded to the State Water Board's GeoTracker database within five business days after submittal to the Regional Water

Board. Guidance for electronic information submittal is available at:
http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal

9. **Reporting of Changed Owner or Operator:** The Discharger shall file a technical report on any changes in contact information, Site occupancy or ownership associated with the property described in this Order.
10. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Discharger shall report such discharge to the Regional Water Board by calling (510) 622-2369.

A written report shall be filed with the Regional Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the California Emergency Management Agency required pursuant to the Health and Safety Code.

11. **Periodic SCR Review:** The Regional Water Board will review this Order periodically and may revise it when necessary.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 30, 2018.

Bruce H. Wolfe
Executive Officer

Compliance Notice: Failure to comply with the requirements of this Order may subject you to enforcement action, including but not limited to imposition of administrative civil liability under Water Code sections 13268 or 13350, or referral to the Attorney General for injunctive relief or civil or criminal liability.

Attachments: Site Map
Self-Monitoring Program

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

SELF-MONITORING PROGRAM for:

FRANK L. BURRELL, TRUSTEE of the FRANK L. BURRELL 1937 TRUST

for the property located at:

14440 BIG BASIN WAY
SARATOGA, SANTA CLARA COUNTY

1. **Authority and Purpose:** The Regional Water Board requires the technical reports identified in this Self-Monitoring Program pursuant to Water Code sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Regional Water Board Order No. R2-2018-0041 (site cleanup requirements).
2. **Monitoring:** The Discharger shall measure groundwater elevations semi-annually in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following table:

Well Identification	Location	Approximate Screen Interval	Sampling Frequency	Analyses
Shallow Zone				
HV1	Inside Hillview Cleaners	4 to 19	A	8260
MW-3	Crossgradient	25 to 35	None	
SGI-MW-8	Every 2 Years	20 to 30	Every 2 Years	8260
Middle Zone				
BP-MW-3	Former BP Service Station	7 to 45	A	8260
BP-EX-4	Former BP Service Station	19 to 39	None	
SGI-MW-12	North Side of Big Basin Way	20 to 45	Every 2 Years	8260
SGI-MW-13	West of Former BP Service Station	20 to 45	None	
SGI-MW-14	West of Former BP Service Station	20 to 45	None	

SGI-MW-15	West of Former BP Service Station	20 to 45	None	
SGI-MW-16	East of Former BP Service Station	20 to 45	None	
BP-E-3	Former BP Service Station	20 to 35	None	
MW-4	Downgradient	25 to 35	None	
CV-RP-7	Sidewalk near Starbucks	32 to 54	Every 2 Years	8260
MW-2	Northeast Side	30 to 50	Semi-Annually	8260
BP-E-4	Former BP Service Station	30 to 45	Semi-Annually	8260
CV-DR-4	Dental Property	30 to 50	Every 2 Years	8260
CV-DR-2	Upgradient	33 to 53	Semi-Annually	8260
CV-DR-3	East of CV-DR-2	30 to 50	Annually	8260
MW-17	Northeast Side	34 to 44	Semi-Annually	8260 Bio-parameters
MW-1	Immediately Downgradient	35 to 55	Annually	8260
CV-RP5	Upgradient	35 to 60	Semi-Annually	8260
INJ-01A	Immediately Downgradient	38 to 48	Semi-Annually	8260 Bio-parameters
INJ-05A	Immediately Downgradient	38 to 48	None	
INJ-06A	Crossgradient	38 to 48	None	
SGI-MW-9	Immediately Downgradient	41 to 51	Semi-Annually	8260
MW-6	Crossgradient	45 to 55	None	
MW-7	Downgradient	45 to 65	Every 2 Years	8260
BP-DW-1	Former BP Station	48 to 58	Semi-Annually	8260

MW-18	Northeast Side	48.5 to 53.5	Semi-Annually	8260 Bio-parameters
New Well	Near SGI-MW-12 but deeper	50 to 60	SemiAnnually	8260
INJ-01B	Immediately Downgradient	52 to 62	Semi-Annually	8260 Bio-parameters
INJ-05B	Immediately Downgradient	52 to 62	Semi-Annually	8260
INJ-06B	Immediately Downgradient	52 to 62	Semi-Annually	8260
CV-MW-2A	Former Chevron Property		Annually	8260
Deep Zone				
BP-DW-2	Former BP Service Station	61 to 66	Every 2 Years	8260
BP-DW-3	Former BP Service Station	56 to 61	Every 2 Years	8260
BP-DW-4	Former BP Service Station	85 to 95	Every 2 Years	8260
SGI-MW-10	Immediately Downgradient	73 to 83	Annually	8260
Saratoga Creek Surface Water Sampling Locations				
BM-4	Upstream Location West of Bridge	NA	Semi-Annually	8260
BM-2	Just Upstream of Storm Drain Outfall	NA	Semi-Annually	8260
BM-5	Just Downstream of Storm Drain Outfall	NA	Semi-Annually	8260
BM-6	Downstream Location East of Bridge	NA	Semi-Annually	8260

Key: SA = Semi-Annually (January and July)
A = Annually (July)
8260 = EPA Method 8260 or equivalent
Bio-parameters - bioremediation parameters (wells in immediate vicinity of injections) – sulfate, ferrous iron, total organic carbon, methane, ethene

The Discharger shall sample any new monitoring or extraction wells semi-annually and analyze groundwater samples for the same constituents as shown in the above table. The Discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Annual Monitoring Reports:** The Discharger shall submit annual monitoring reports to the Regional Water Board no later than November 30 of each year. The reports shall include:
- a. **Transmittal Letter:** The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the Discharger's principal executive officer, trustee, or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.
 - b. **Groundwater Elevations:** Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map shall be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the report each year.
 - c. **Groundwater Analyses:** Groundwater sampling data shall be presented in tabular form, and an isoconcentration map shall be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).
 - d. **Groundwater Extraction:** If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the Site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g., soil vapor extraction), expressed in units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the report each year.

- e. **Status Report:** The report shall describe relevant work completed during the reporting period (e.g., Site investigation, interim remedial measures) and work planned for the following year.
- 4. **Violation Reports:** If the Discharger violates requirements in the Site Cleanup Requirements, then the Discharger shall notify the Regional Water Board office by telephone as soon as practicable once the Discharger have knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the Discharger to submit a separate technical report on the violation within five working days of telephone notification.
- 5. **Other Reports:** The Discharger shall notify the Regional Water Board in writing prior to any Site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for Site investigation.
- 6. **Record Keeping:** The Discharger or its agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Regional Water Board upon request.
- 7. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.