CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER R2-2023-XXXX

ADOPTION OF SITE CLEANUP REQUIREMENTS for:

JIM HARDWICK
MAX GOODWIN AND SALLY GOODWIN

For the property located at:

4673 THORNTON AVENUE
FREMONT, CA 94536
ALAMEDA COUNTY

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

1. **Site Location:** The former Cabrillo Dry Cleaners (Source Site), a former dry cleaning business, operated in suite 6 at 4673 Thornton Avenue in Fremont. The Source Site is located in the Cabrillo Shopping Center, an approximately 45,000-square-foot multi-tenant commercial building surrounded by asphalt parking and storage, which is about 3.7 acres of commercial land with Alameda County assessor's parcel number 501-0080-080-09 (Property).

   The neighborhood is mixed residential and commercial. The Property is bounded by Balboa Way to the northeast, Thornton Avenue to the southeast, residential single-family homes and commercial development to the south and southwest, and residential apartments to the northwest.

2. **Site History:** The Property has been owned by Jim Hardwick, Max Goodwin, and Sally Goodwin since 1987. The Source Site occupied a large unit on the western corner of the building and operated from the 1960s to the end of 1987. The Property owners terminated the operation of the dry cleaning business upon purchase in 1987. Fremont Fire Administration records indicate that Cabrillo Dry Cleaners operated a dry cleaning machine containing one 50-gallon and one 20-gallon drum of tetrachloroethylene (PCE). When dry cleaning operations ceased, the dry cleaning machine and related chemicals were reportedly removed.

   Since 1999, subsurface investigations have detected PCE in soil, soil vapor, and groundwater beneath the Property indicating a release from the former dry cleaning operations. PCE breakdown products have also been detected: trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride (VC). Collectively, these contaminants are referred to as chlorinated volatile organic compounds (CVOCs). The extent of onsite and offsite groundwater, soil, and soil vapor contamination is not fully delineated.

3. **Named Dischargers:** Jim Hardwick, Max Goodwin, and Sally Goodwin are named as dischargers (hereinafter referred to as Dischargers) because they are the current owners of the Property on which there is an ongoing discharge of waste, they have knowledge of the discharge, and they have the ability to control it. They have thus permitted waste to be discharged 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 under Water Code section 13304. The Dischargers submitted an application to the City of Fremont to divide the Property into two lots (Lots 1 and 2). The City conditionally approved the application on April 27, 2022. Thus, the Property may be divided into two parcels: Jim Hardwick would be the sole owner of Lot 1 (western parcel), an approximately 1.7-acre parcel, and Max Goodwin and Sally Goodwin would be the sole owners of Lot 2 (eastern parcel), an approximately 2-acre parcel including the Balboa Way right-of-way. Any Property split does not affect Jim Hardwick's, Max Goodwin's, and Sally Goodwin's status as named dischargers to this Order because each, as owners of the Property, has permitted and continues to permit a discharge on the Property.

   In a letter to the Regional Water Board dated August 25, 2022, Jim Hardwick identified the former operator of Cabrillo Dry Cleaners as Boo Whan Cho, who is deceased. If additional information is submitted indicating that other parties caused or permitted any waste to be discharged at the Source Site where it entered or could have entered waters of the state, the Regional Water Board will consider adding those parties to this Order.

4. **Regulatory Status:** On October 1, 1999, the Alameda County Water District (ACWD) notified Jim Hardwick and the Regional Water Board that it had opened a case for the Property under its authority to provide the technical oversight of investigation and remediation at contaminated sites. On October 10, 2019, ACWD transferred the case to the Regional Water Board due to noncompliance, vapor intrusion risk, and limited progress in delineating the vertical and horizontal extent of the contamination.

   On March 18, 2020, the Regional Water Board issued a 13267 Order requiring Jim Hardwick and Max Goodwin to submit a VOC site characterization workplan and implementation schedule by May 15, 2020, and prepare an acceptable Site Characterization and Conceptual Site Model (CSM) Report by July 15, 2020. On November 7, 2020, the Regional Water Board concurred with a time extension request to comply with the 13267 Order. This letter set a new due date of June 30, 2021, to receive the Site Characterization and CSM Report. On July 9, 2021, the Regional Water Board issued a Notice of Violation to Jim Hardwick and Max Goodwin for noncompliance with the 13267 Order because there was no progress on site characterization. Since summer 2021, Regional Water Board staff has worked closely with the Dischargers to collect soil vapor and indoor air samples to ensure there are no immediate human health risks to the occupants of the downgradient single-family residences. As of the date of this Order, the onsite and offsite groundwater, soil, and soil vapor impacts are not fully delineated in all directions.

5. **Purpose of Order:** The purpose of this Order is to require the Dischargers to complete site characterization, initiate the cleanup and abatement of soil, groundwater, and soil vapor impacts, and conduct long-term monitoring to evaluate the effectiveness of cleanup and abatement. This Order is necessary, in part, because Jim Hardwick and Max Goodwin did not comply with the March 18, 2020, 13267 Order. This Order also includes Sally Goodwin as a named discharger since she has been a property owner, along with Jim Hardwick and Max Goodwin, since 1987.

6. **Site Hydrogeology:** The Property is located within the Niles Cone groundwater subbasin bounded on the east by the Diablo Range and on the west by San Francisco Bay. The Property and surrounding area are generally flat, sloping gently to the west/southwest toward the Bay. Alameda Creek, the primary stream in the subbasin, flows near the upgradient eastern and cross-gradient northern margins and is located to the north approximately 2.6 miles. The closest secondary streamline is Plummer Creek, located approximately 4,000 feet downgradient from the former Cabrillo Dry Cleaners. The Newark Aquifer underlies the Property, a regional aquifer utilized for municipal groundwater production. This aquifer is overlain by the Newark Aquitard, which generally prevents the hydraulic connection between the shallow water-bearing zone and the deeper Newark Aquifer. The presence of the aquitard beneath the Property was confirmed by a deep monitoring well (MW-4) installed in 2016. Based on the lithology beneath the Property, the Newark Aquifer is encountered at approximately 47 feet below ground surface (ft bgs), and an aquitard or semi-impermeable zone is encountered between 38 and 47 ft bgs. The material above the aquitard is generally a mix of silt and clay with increasing clean sands and gravels at approximately 20 ft bgs to the top of the semi-impermeable zone. The shallow groundwater is generally encountered at a depth of approximately 25 ft bgs. Shallow groundwater flow direction varies during different seasons and years and is to the west, southwest, south, or southeast, with an approximate hydraulic gradient of 0.002 ft/ft.

7. **Adjacent Site:** A former Shell service station was located at 4695 Thornton Avenue in Fremont, on the northern corner of Cabrillo Drive and Thornton Avenue. The case (GeoTracker Global ID T0600101264) was closed by the Regional Water Board on March 16, 2017, in accordance with the State Water Resources Control Board's (State Water Board) "Low-Threat Underground Storage Tank Case Closure Policy." Multiple petroleum underground storage tanks were removed before construction of a new commercial building, which is currently vacant. Based on the last groundwater samples collected from the former Shell service station on July 23, 2015, residual groundwater petroleum contamination is limited to an onsite area.

8. **Remedial Investigations:** Multiple investigations have occurred since PCE was first detected in July 1999 during an environmental assessment on behalf of a lender. These investigations identified mainly PCE in groundwater, soil, and soil vapor samples above the Regional Water Board's 2019 Environmental Screening Levels (ESLs). The concentrations and distribution of PCE in shallow soil and groundwater at the Property indicate that the highest PCE concentrations in shallow soil are found

by the back door of and behind the former dry cleaner. Discharges to the surface or shallow soil then impacted the groundwater underneath the Source Site and gradually migrated hydraulically downgradient. Additional investigations are needed to delineate the horizontal and vertical extent of the subsurface groundwater, soil, and soil vapor contamination. Figure 2 (attached) illustrates the locations of groundwater monitoring wells, soil sample locations, soil vapor, and indoor air sample locations.

a. **Groundwater:** Shallow groundwater is generally encountered at a depth of approximately 25 ft bgs. In 2001, PCE was detected in groundwater up to 520 micrograms per liter (µg/L) in onsite monitoring well MW-1 near the source area and more recently was detected up to 230 µg/L. PCE has been detected up to 20 µg/L at offsite monitoring well MW-6 located along Cabrillo Drive, south of the downgradient residential properties. These onsite and offsite concentrations of PCE exceed the drinking water standard for PCE of 5 µg/L (the maximum contaminant level or MCL). The deeper groundwater monitoring well MW-4 screened within the Newark Aquifer has been sampled multiple times and has had non-detect results for PCE, except for a low concentration of PCE detected during the Spring 2023 sampling event. This result may have been due to sample cross-contamination and will be confirmed during the next sampling event in 2024.

b. **Soil:** PCE has been detected in multiple onsite soil borings with a maximum detected concentration of 3,800 micrograms per kilogram (µg/kg) at soil boring SB-3 located in the parking lot by the back door of the former Cabrillo Dry Cleaners. The PCE concentrations exceed the residential shallow soil human health cancer risk ESL of 590 µg/kg and leaching to groundwater ESL of 80 µg/kg. TCE has been detected in some onsite soil borings with a maximum detected concentration of 112 µg/kg at soil boring B-1, also located in the parking lot by the back door of the former Cabrillo Dry Cleaners. This TCE concentration exceeds the leaching to groundwater ESL of 85 µg/kg.

c. **Soil Vapor:** In 2016, PCE and TCE were detected up to 160,000 micrograms per cubic meter (µg/m^3) and 120 µg/m^3, respectively, in soil vapor in the vicinity of the source area at depths of 8 and 13 ft bgs. In 2021, PCE and TCE were detected up to 1,800 µg/m^3 and 19.3 µg/m^3, respectively, in offsite soil vapor probes at depths of 5 and 20 ft bgs. These concentrations exceed the residential vapor intrusion ESLs of 15 µg/m^3 (PCE) and 16 µg/m^3 (TCE). VC was detected at 242 µg/m^3 which exceeds the residential vapor intrusion ESL of 0.32 µg/m^3.

d. **Indoor Air:** In the October 2021 and February 2022 sampling events, one indoor air and one crawlspace air sample were collected from two downgradient residential buildings located at 36858 and 36918 Cabrillo Drive because of the elevated PCE, TCE, and VC soil vapor concentrations detected in their back yards in 2021. In October 2021, no dry cleaner contaminants were detected in the air samples collected at 36858 Cabrillo Drive and only PCE was detected in both indoor air and crawlspace air samples collected at 36918 Cabrillo Drive,

below the residential ESL of 0.46 µg/m^3. In confirmation air sampling conducted in February 2022, PCE was detected in all four samples, exceeding the residential ESL of 0.46 µg/m^3 only in the crawlspace air sample collected at 36918 Cabrillo Drive (1.0 µg/m^3). TCE and cis-1,2-DCE were not detected; VC could not be analyzed due to laboratory error.

9. **Remedial and Mitigation Measures:** In summer 2022, the Dischargers implemented a voluntary interim vapor intrusion remediation system and installed a crawlspace air pumping system at the downgradient residence at 36918 Cabrillo Drive to eliminate or reduce any potential PCE vapor intrusion. The mitigation system will remain in operation until further notice. The Dischargers proposed the project on March 17, 2022, and the Regional Water Board indicated its support on April 8, 2022. The project consisted of installing two crawlspace vacuum pumps and a domestic indoor air purifying unit at 36918 Cabrillo Drive. In September 2022, one indoor air and one crawlspace air sample were collected at 36858 and 36918 Cabrillo Drive to evaluate the performance of the mitigation system. No CVOCs were detected in crawlspace or indoor air samples at 36858 Cabrillo Drive. At 36918 Cabrillo Drive, PCE was detected in crawlspace air (0.17 µg/m^3) and indoor air (0.21 µg/m^3) below the residential ESL of 0.46 µg/m^3; no other CVOCs were detected.

10. **Risk Assessment**

    a. **Screening Level Risk Assessment:** The Dischargers have not conducted a site-specific screening level risk assessment to establish site-specific cleanup levels accepted by the Regional Water Board. Regional Water Board staff has conducted a screening level assessment by comparing the site analytical data to the applicable 2019 Regional Water Board ESLs for groundwater, soil, soil vapor, and indoor air. The presence of chemicals at concentrations above the ESLs indicates that additional evaluation is warranted to identify any potential threats to human health and the environment. Applicable screening levels for groundwater address the following environmental concerns: 1) drinking water impacts (toxicity, taste, and odor) and 2) impacts to indoor air. While impacts to indoor air from groundwater are considered, soil vapor and indoor air data better predict vapor intrusion potential since shallow groundwater is generally encountered at a depth of 25 ft bgs. Groundwater migration and impacts to aquatic habitat screening levels were not considered because no contaminated groundwater discharge to surface waters is expected. Applicable screening levels for soil address: 1) direct exposure and 2) leaching to groundwater. Soil screening levels for potential leaching concerns are intended to prevent impacts to groundwater above target groundwater goals (e.g., drinking water standards). Applicable screening levels for soil vapor and indoor air address impacts to indoor air. Screening levels for nuisance issues were considered for all media, but they are significantly higher than other applicable screening levels for CVOCs and, thus, do not drive risk. Screening levels for nuisance concerns are intended to address potential odor and other aesthetic issues. 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 1.0 for noncarcinogens.

b. **Assessment Results:** As noted in the table below, PCE, TCE, and VC exceed some ESLs. PCE exceeds the residential groundwater and soil vapor to indoor air ESLs; residential indoor air direct exposure ESL; soil leaching to groundwater ESL; residential shallow soil human health cancer risk ESL; and drinking water ESL. TCE and VC also exceed the residential soil vapor to indoor air ESLs. TCE also exceeds the soil leaching to groundwater ESL.

Chemical	Human Health Direct Contact	Leaching to Groundwater	Indoor Air	Drinking Water
Indoor Air				
PCE			X	
TCE			-	
Cis-1,2-DCE			-	
Trans-1,2-DCE			-	
Vinyl chloride			-	
Soil Vapor				
PCE			X	
TCE			X	
Cis-1,2-DCE			-	
Trans-1,2-DCE			-	
Vinyl chloride			X	
Soil				
PCE	X	X		
TCE	-	X		
Cis-1,2-DCE	-	-		
Trans-1,2-DCE	-	-		
Vinyl chloride	-	-		
Groundwater				
PCE			X	X
TCE			-	-
Cis-1,2-DCE			-	-
Trans-1,2-DCE			-	-
Vinyl chloride			-	-

Notes:
1. Data were compared to the 2019 ESLs, revision 2.
2. "X" = Chemical concentration exceeds the ESLs.
3. "-" = Chemical is not detected or concentration is below the ESLs.
4. Shading = Not applicable. There are no ESLs for these pathways.

c. **Conclusions:** The results of the Regional Water Board's screening level assessment indicate that concentrations of PCE in groundwater exceed the MCL. Therefore, there is a potential threat to beneficial uses of groundwater and a potential risk to people if they use the groundwater as a source of drinking water.

Results also indicate that concentrations of dry cleaner contaminants in soil exceed screening levels intended to protect human health and prevent impacts to groundwater; and concentrations in groundwater, soil vapor, and indoor air exceed screening levels protective of occupants in overlying buildings via vapor intrusion.

11. **Basis for Cleanup Levels:**

a. **Resolution 68-16:** 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 high 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.

b. **Resolution 92-49:** 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. Any alternative cleanup level less stringent than background levels must comply with section 2550.4 of title 23 of the California Code of Regulations and must be consistent with the maximum benefit to the people of the state, not unreasonably affect present and anticipated beneficial uses of water, and not result in exceedance of applicable water quality objectives. Based on current technology and site hydrogeology, cleanup of groundwater and soil to background is likely technologically and economically infeasible. Nevertheless, Task 4 of this Order requires the Dischargers to determine if cleanup to background is feasible and, if so, requires cleanup to background. Where cleanup to background is infeasible, cleanup to MCLs is the best water quality that is reasonable and is consistent with the maximum benefit of the people, will not unreasonably affect present and potential beneficial uses, and not result in water quality less than prescribed.

c. **Beneficial Uses:** The *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) is the Regional Water 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 Water Board and approved by the State Water Board, Office of Administrative Law, and the 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, such as those with high total dissolved solids or low yield. Groundwater underlying and adjacent to the Source Site qualifies as a potential source of drinking water.

The Property and surrounding area are part of the Santa Clara County groundwater basin, specifically Niles Cone subbasin. The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Property:

i. Municipal and domestic water supply
ii. Industrial process water supply
iii. Industrial service water supply
iv. Agricultural water supply

Groundwater is not currently used at the Property. However, there are several municipal, domestic, and agriculture wells within 0.5 miles of the Source Site. An irrigation well located 400 feet downgradient from the Source Site is buried and not being used for any water supply uses. There are two water supply wells in the vicinity of the Source Site: downgradient water supply well (Well ID 04S01W30N003M) approximately 1,400 feet to the southwest, and an upgradient water supply well (Well ID 04S01W30L006M), approximately 500 feet to the north. Based on the State Water Board's Groundwater Ambient Monitoring and Assessment Program (GAMA), these wells are not impacted by the release from the Source Site.

d. **Basis for Groundwater Cleanup Levels:** The groundwater cleanup levels are based on applicable water quality objectives, which are the more stringent of U.S. EPA and California primary MCLs. Cleanup to this level will protect beneficial uses of groundwater and will result in acceptable residual risk to human health.

e. **Basis for Soil Cleanup Levels:** The soil cleanup levels are intended to prevent leaching of contaminants to groundwater and will result in acceptable residual risk to humans. The soil to groundwater leaching levels are based on the California primary MCLs. Cleanup to this level will protect beneficial uses of groundwater and will result in acceptable residual risk to human health.

f. **Basis for Soil Vapor Cleanup Levels:** The soil vapor cleanup levels are intended to protect downgradient residential occupants from health risks caused by Source Site related vapor intrusion. Cleanup to these levels will result in acceptable residual risk to human health.

g. **Basis for Indoor Air Cleanup Levels:** The indoor air cleanup levels are intended to protect downgradient residential occupants from health risks caused by Source Site related vapor intrusion. Cleanup to these levels will result in acceptable residual risk to human health.

12. **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. The Dischargers may propose revised cleanup levels for Regional Water Board consideration

supported by a new or updated risk assessment, feasibility study, and remedial action plan.

13. **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 the Property found contamination-related risks exceeding these acceptable levels. Active remediation will reduce these risks over time. However, risk management measures may be needed during and after active remediation to assure protection of human health. Risk management measures include engineering controls (such as vapor barriers, engineered caps, or well head treatment) and institutional controls (such as deed restrictions that prohibit certain groundwater or land uses). Risk management measures also include how to handle unexpected soil or groundwater contamination if they are encountered during site activities.

14. **Reuse or Disposal of Extracted Groundwater:** Regional Water Board Resolution No. 88-160 explains that it is the intent of the Regional Water Board to issue National Pollutant Discharge Elimination System (NPDES) permits for discharges of extracted, treated groundwater from site cleanups to surface waters if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

15. **Basis for Water Code section 13304 Order:** California Water Code section 13304 authorizes the Regional Water Board to issue orders requiring a discharger to clean up 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.

16. **Cost Recovery**: Pursuant to California Water Code section 13304, the Dischargers are 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.

17. **Human Right to Water:** Under California Water Code section 106.3, the State of California's policy is that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. (Wat. Code, § 106.3; see also State Water Board Resolution No. 2016-0010.) The human right to water extends to all Californians, including disadvantaged individuals and groups and communities in rural and urban areas. This Order promotes the human right to water by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

18. **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 California Code of Regulations, title 14, section 15321.

19. **Notification:** The Regional Water Board has notified the Dischargers and all interested agencies and persons of its intent under California Water Code section 13304 to prescribe site cleanup requirements for the discharge and has provided them with an opportunity to submit their written comments.

IT IS HEREBY ORDERED, pursuant to California Water Code section 13304, that the Dischargers (or their agents, successors, or assigns) shall cleanup 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.

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

B. PRELIMINARY CLEANUP LEVELS

The preliminary cleanup levels presented in this section for groundwater, soil, soil vapor, and indoor air are intended to protect human health and the environment. The preliminary cleanup levels shall be used to guide remedial investigation and interim remedial actions, pending establishment of site-specific cleanup levels approved by the Regional Water Board. Finding 11 (Basis for Cleanup Levels) explains the basis of the preliminary cleanup levels.

1. **Groundwater Cleanup Levels:** The following groundwater cleanup levels shall be met in all wells identified in the attached Self-Monitoring Program:

Constituent	Concentration (µg/L)	Basis
PCE	5	Drinking water MCL
TCE	5	Drinking water MCL
cis-1,2-DCE	6	Drinking water MCL

Constituent	Concentration (µg/L)	Basis
trans-1,2-DCE	10	Drinking water MCL
Vinyl chloride	0.5	Drinking water MCL

2. **Soil Cleanup Levels:** The following soil cleanup levels shall be met in all onsite vadose zone soils:

Constituent	Concentration (mg/kg)	Basis
PCE	0.08	Leaching to groundwater
TCE	0.085	Leaching to groundwater
cis-1,2-DCE	0.19	Leaching to groundwater
trans-1,2-DCE	0.65	Leaching to groundwater
Vinyl chloride	0.0015	Leaching to groundwater

3. **Soil Vapor Cleanup Levels:** The following soil vapor cleanup levels shall be met in all onsite and offsite vadose zone soils affected by pollution from the Source Site where a vapor intrusion threat exists to occupants of existing buildings:

Constituent	Concentration ($\mu g/m^3$) Residential Use	Concentration ($\mu g/m^3$) Commercial Use	Basis
PCE	15	67	Human health – vapor intrusion
TCE	16	100	Human health – vapor intrusion
cis-1,2-DCE	280	1,200	Human health – vapor intrusion
trans-1,2-DCE	2,800	12,000	Human health – vapor intrusion
Vinyl chloride	0.32	5.2	Human health – vapor intrusion

4. **Indoor Air Cleanup Levels:** The following indoor air cleanup levels shall be met in occupied buildings to the extent the concentrations are due to vapor intrusion of subsurface contaminants from the Source Site:

Constituent	Concentration ($\mu g/m^3$) Residential Use	Concentration ($\mu g/m^3$) Commercial Use	Basis
PCE	0.46	2	Human health – inhalation
TCE	0.48	3	Human health – inhalation
cis-1,2-DCE	8.3	35	Human health – inhalation
trans-1,2-DCE	83	350	Human health – inhalation
Vinyl chloride	0.0095	0.16	Human health – inhalation

C. TASKS

1. REMEDIAL INVESTIGATION WORKPLAN

COMPLIANCE DATE: October 31, 2023

Submit a workplan acceptable to the Executive Officer to define the vertical and lateral extent of subsurface pollution. The workplan shall consider all relevant contaminants (i.e., VOCs), media (soil, soil vapor, and groundwater), exposure pathways, and receptors. The workplan shall also include indoor air investigations, as necessary. It shall be designed so that its implementation shall produce site data needed to assess contamination threat to human health and the environment. The workplan shall specify investigation methods and a proposed time schedule. Work may be phased to allow the investigation to proceed efficiently, provided that this does not delay compliance.

2. COMPLETION OF REMEDIAL INVESTIGATION

COMPLIANCE DATE: May 31, 2024

Complete tasks in the Task 1 workplan, as approved or amended by the Executive Officer, and submit a technical report acceptable to the Executive Officer documenting their completion. The technical report shall define the vertical and lateral extent of VOCs in groundwater, soil, soil vapor, and indoor air down to preliminary cleanup levels.

3. SITE-SPECIFIC RISK ASSESSMENT (OPTIONAL)

Submit a technical report, acceptable to the Executive Officer, comprising a site-specific risk assessment. The report shall include a conceptual site model (i.e., identify contaminants, media, pathways, and receptors where site contaminants pose a potential threat to human health or the environment). The results of this report will help establish acceptable exposure levels to be used in developing remedial alternatives.

4. REMEDIAL ACTION PLAN

COMPLIANCE DATE: August 30, 2024

Submit a technical report acceptable to the Executive Officer containing:

a. Summary of remedial investigations
b. Summary of site-specific risk assessment (optional)
c. Evaluation of the installed interim remedial actions
d. Feasibility study evaluating alternative final remedial actions
e. Recommended final remedial actions and cleanup levels
f. Implementation tasks and time schedule

The remedial action plan must propose remedial work that has a high probability of eliminating unacceptable threats to human health and restoring beneficial uses of water in a reasonable time, with “reasonable time” based on the severity of impact to the beneficial use (for current impacts) or the time before the beneficial use will occur (for potential future impacts). The remedial action plan must address the full extent of contamination originating from the Property, including any contamination that extends beyond the Property boundary.

Item d shall include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through d shall be consistent with applicable regulations, policies, and guidance, such as Subpart E of the National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. part 300), U.S. EPA remedial investigation and feasibility study guidance (U.S. EPA 1988 and 2000), Health and Safety Code section 25356.1(c), and State Water Resources Control Board Resolution No. 92-49 (as amended in 1994 and 1996).

Item e shall consider the preliminary cleanup levels for groundwater, soil, soil vapor, and indoor air identified in section B (Preliminary Cleanup Levels) and shall address the attainability of background levels of water quality (see Finding 11). If cleanup to background is attainable, then the remedial action plan shall propose remedial work and final cleanup levels to achieve background levels of water quality.

5. IMPLEMENT REMEDIAL ACTION PLAN

COMPLIANCE DATE: November 14, 2024

Implement the remedial action plan submitted in accordance with Task 4, as approved or amended by the Executive Officer.

6. REMEDIAL ACTION COMPLETION REPORT

COMPLIANCE DATE: 60 days following Executive Officer requirement

Complete all tasks as described in the remedial action plan submitted in accordance with Task 4, as approved or amended by the Executive Officer, and submit a technical report acceptable to the Executive Officer documenting their completion.

7. REMEDIATION EFFECTIVENESS EVALUATION REPORTS

COMPLIANCE DATE: July 1, 2025, and every year thereafter

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

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 shall propose an alternative or additional cleanup strategy.

8. SUPPLEMENTAL REMEDIAL ACTION PLAN

COMPLIANCE DATE: 60 days following Executive Officer requirement

The Executive Officer will require a supplemental remedial action plan if the remedial activities conducted in accordance with Tasks 4, 5, and 6 did not adequately address the full extent of contamination originating from the Property, including any contamination that extends beyond the Property boundary.

If required, submit a supplemental remedial action plan, which must be acceptable to the Executive Officer, proposing additional remedial work to address residual or remaining contamination. The plan shall meet the substantive requirements listed and described in Task 4, above.

9. COMPLETION OF SUPPLEMENTAL REMEDIAL ACTION

COMPLIANCE DATE: 60 days following Executive Officer requirement

Complete all tasks as described in the supplemental remedial action plan submitted in accordance with Task 8, as approved or amended by the Executive Officer, and submit a technical report acceptable to the Executive Officer documenting their completion.

10. RISK MANAGEMENT PLAN

COMPLIANCE DATE: 60 days following Executive Officer requirement

Submit a proposed risk management plan, acceptable to the Executive Officer, whose goal is to limit onsite occupants' exposure to contaminants to acceptable levels. The proposed risk management plan shall prohibit the use of shallow groundwater beneath the Property as a source of drinking water until cleanup levels are met and shall prohibit sensitive uses of the Property such as residences and daycare centers unless additional investigation demonstrates that there would be no unacceptable vapor intrusion threat. The Executive Officer will require this task once active cleanup is completed.

11. PROPOSED DEED RESTRICTION

COMPLIANCE DATE: 90 days following requirement by the Executive Officer

If required by the Executive Officer, submit a proposed deed restriction, acceptable to the Executive Officer, whose goal is to limit onsite occupants' exposure to contaminants to acceptable levels. The proposed deed restriction shall prohibit the use of shallow groundwater beneath the Property as a source of

drinking water until cleanup levels are met and prohibit sensitive uses of the Property such as residences and daycare centers unless additional investigation demonstrates that there would be no unacceptable vapor intrusion threat. The proposed deed restriction shall incorporate by reference the risk management plan (Task 10). The proposed deed restriction shall name the Regional Water Board as a beneficiary and the Regional Water Board will be a signatory. The Dischargers shall be responsible for this task. The Executive Officer will require this task once active cleanup is completed, if needed to restrict use.

12. 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. The Dischargers shall be responsible for this task.

13. 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, contaminant concentrations are stable, and contaminant migration potential is minimal.

14. 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.

15. 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.

16. 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 that bears on the approved remedial action plan and cleanup levels. 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.

17. **DELAYED COMPLIANCE:** If the Dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Dischargers shall promptly notify the Executive Officer. The Regional Water Board or Executive Officer 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 California Water Code section 13050(m).

2. **Good Operations and Maintenance (O&M):** The Dischargers 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 Dischargers shall be liable, pursuant to California Water Code section 13304, to the Regional Water Board for all reasonable costs 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 Property 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 Dischargers 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 California Water Code section 13267(c), the Dischargers 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 Dischargers.

5. **Self-Monitoring Program:** The Dischargers 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, California certified engineering geologist, or California registered civil engineer.

7. **Reporting of Changed Owner or Operator:** The Dischargers shall notify the Regional Water Board of any changes in contact information, site occupancy, or ownership associated with the Property.

8. **Abandonment of Groundwater Wells:** Abandonment of any groundwater well at the Property must be approved by and reported to the Executive Officer at least 14 days in advance. Any groundwater wells removed must be replaced within a reasonable time, at a location approved by the Executive Officer. With written justification, the Executive Officer may approve of the abandonment of groundwater wells without replacement. When a well is removed, all work shall be completed in accordance with the California Department of Water Resources Bulletin 74-90, “California Well Standards,” Monitoring Well Standards Chapter, part III, section 16-19.

9. **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).

10. **Document Distribution:** An electronic version of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following distribution list:

    a. San Francisco Bay Regional Water Quality Control Board
    Ciroos Liaghat, P.G.
    Ciroos.Liaghat@waterboards.ca.gov

    b. Alameda County Water District
    Brianna Thomas
    brianna.thomas@acwd.com

    c. City of Fremont
    Mark Hungerford (Community Development)
    mhungerford@fremont.gov

    d. City of Fremont
    Cindy Monges (Fire Department)
    CMonges@fremont.gov

    The Executive Officer may modify this distribution list as needed.

    The Dischargers shall upload electronic copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order 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.

11. **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 Dischargers shall report such discharge to the Regional Water Board by calling (510) 622-2369.

    A written report shall be submitted to the Regional Water Board within five business days that describes: 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 Office of Emergency Services required pursuant to the Health and Safety Code.

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

I, Eileen M. White, 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 Month Day, 2023.

_____

Eileen M. White, P.E.
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 California Water Code sections 13268 or 13350, or referral to the Attorney General for injunctive relief or civil or criminal liability.

Attachments:

Figure 1: Site Location Map
Figure 2: Site Layout
Self-Monitoring Program

FIGURES

SELF-MONITORING PROGRAM