Draft Engineering Evaluation
Longfellow Corner Housing
3801 Martin Luther King Junior Way, Oakland, CA 94609-2313
Plant No. 204092
Application No. 739156
Project Description: Sub Slab Depressurization System

Background

Longfellow Corner Housing has applied for an Authority to Construct for the following equipment:

S-1 Sub Slab Depressurization System
Make: Obar, Model: GBR76 SOE compact radial blower, Max. 155 scfm,

Total Three (3) blowers, Max. 465 cfm

No Abatement

The site is located at 3801, 3823, and 3829 Martin Luther King Junior Way, Oakland, CA 94609-2313. This site is a former residential and commercial area. Environmental investigation data collected in preparation of the development has discovered the need for soil remediation.

The facility is proposing a Sub Slab Depressurization (SSD) system in order to improve soil gas conditions, reduce potential vapor intrusion risk, and improve groundwater quality at a proposed mixed-use residential building.

The SSD system at this site will consist of three blowers, each rated at 155 cubic feet per minute (cfm). The total flow rate from the three blowers will not exceed 465 cfm, per correspondence on November 26, 2025. A flow meter will be installed to ensure that the flow rate is not exceeded. No abatement is being proposed.

Emissions calculations were based on laboratory results from samples taken at the site. No notable compound was detected from the site based on the pilot test data from December 2025.

This project is not expected to trigger Health Risk Assessment per Regulation 2-5, Table 1.

Procedures are outlined in the conditions found below. The applicant will be required to provide written notification at the start of the operation. The applicant will be required to stay below the acute and chronic trigger levels of Regulation 2-5.

There are two K-12 schools within 1,000 feet of the proposed SSD system. Therefore, K-12 school public notification is required per Regulation 2-1-412.

This project is located within the boundaries of an Overburdened Community (OBC) as defined in Regulation 2-1-243. However, a Health Risk Assessment (HRA) is not triggered for this project. Therefore, Overburdened Community public notification is not required per Regulation 2-1-412.

Emission Calculations

Initial soil vapor data is used to estimate precursor organic compound (POC), non-precursor organic compound (NPOC), and toxic air contaminant (TAC) emissions. It is assumed that the equipment can operate 24 hours a day, 365 days a year.

The following assumptions are used to estimate emissions.

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- Operating conditions: Pressure = 1 Atm; Inlet Temperature = 21^{O}C; 1 mole occupies 24.15 Liters (or 386.8 ft3/pound-mol).
- Toxic Air Contaminants (TAC) emissions will be based on soil vapor data submitted with this application.
- There will be one SSD system consisting of three blowers, each rated at 155 scfm.
- The organic influent flow rate of the SSD system will be max. 465 scfm, as proposed by the facility.
- There will be no abatement for the blower.
- Emissions are from a pilot TO-15 test completed in December 2025 by Enthalpy Analytical.

Estimates of unabated emissions from the proposed SSD system are shown in Table 1 below.

Table 1. S-1 SSD System Unbated Emissions

Pollutant	CAS #	Unabated Emissions				
		Inlet Conc. (ug/m^3)	Hourly (lbs./hour)	Daily (lbs./day)	Annual (lbs./year)	Annual (ton/year)
4-Methyl-2-pentanone (MIBK)	108-10-1	9.8	1.7E-05	4.1E-04	1.5E-01	7.5E-05
Toluene	108-88-3	17	3.0E-05	7.1E-04	2.6E-01	1.3E-04
Hexane, n-	110-54-3	3.4	5.9E-06	1.4E-04	5.2E-02	2.6E-05
Tetrachloroethene	127-18-4	9.4	1.6E-05	3.9E-04	1.4E-01	7.2E-05
Xylenes	1330-20-7	4.7	8.2E-06	2.0E-04	7.2E-02	3.6E-05
Isopropyl alcohol	67-63-0	190	3.31E-04	7.9E-03	2.9E+00	1.5E-03
Acetone	67-64-1	69	1.2E-04	2.9E-03	1.1E+00	5.3E-04
Chloroform	67-66-3	14	2.4E-05	5.9E-04	2.1E-01	1.1E-04
Benzene	71-43-2	1.1	1.9E-06	4.6E-05	1.7E-02	8.4E-06
1,1-Difluoroethane	75-37-6	50	8.7E-05	2.1E-03	7.6E-01	3.8E-04
Freon 12 (Dichlorodifluoromethane)	75-71-8	1.9	3.3E-06	7.9E-05	2.9E-02	1.5E-05
2-Butanone	78-93-3	15	2.6E-05	6.3E-04	2.3E-01	1.1E-04

Notes:
1. It is assumed that equipment will operate 24 hours a day, 365 days a year.

Estimated organic emissions from the proposed SSD system are shown in Table 2 below.

Table 2. Unabated Organic Emissions Review for S-1 (Based on the Soil Characterization Test)

Pollutant	Effluent Volumetric Concentration (ppmv)	Emissions			
		Hourly (lbs./hour)	Daily (lbs./day)	Annual (lbs./year)	Annual (ton/year)
POC	0.4	0.00	0.0	4.1	0.002
NPOC	0.2	0.00	0.0	1.8	0.001
Total	0.6	0.00	0.0	5.9	0.003

Notes:
1. It is assumed that equipment will operate 24 hours a day, 365 days a year.
2. Non-Precursor Organic Compounds (NPOCs) have been determined based on Regulation 1-234 and 40 CFR 51.100(s)(1). NPOCs have negligible photochemical reactivity.
3. The POC annual emission rates for the proposed SSD system (S-1) will be rounded up to 5 lb./year and the NPOC annual emissions rate will be rounded to be 2 lbs./year to be used as condition limit.

Statement of Compliance

Regulation 2 (Permits), Rule 1 (General Requirements)

Section 2-1-412 (Public Notice, Schools & Overburdened Communities)

Prior to approving an application for an authority to construct or permit to operate, a public notice, fully describing the potential emissions, shall be prepared for the following cases:

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(i) A new or modified source located within 1000 feet of the outer boundary of a K-12 school site and which results in the increase in emissions of any substance into the ambient air which has been identified by the California Air Resources Board or the APCO as a toxic air contaminant or a hazardous air contaminant or which is on the list required to be prepared pursuant to subdivision (a) of Section 25532 or Section 44321 subsections(a) to (f) inclusive of the Health and Safety Code.

(ii) A new or modified source located within an Overburdened Community as defined in Section 2-1-243 and for which a Health Risk Assessment is required pursuant to Section 2-5-401

This project is located within 1,000 feet of the following K-12 schools:

1. Oakland Military Institute, College Preparatory Academy
   3877 Lusk Street, Oakland, CA, 94608

2. Yu Ming Charter School, Upper School (K6-K8)
   675 41st St, Oakland CA 94609

St. Martin De Porres is closed.
https://www.cde.ca.gov/schooldirectory/details?cdscode=01612596967491

Therefore, this project triggers K-12 school public notice per Section 2-1-412.

This project is located within the boundaries of an Overburdened Community (OBC) as defined in Regulation 2-1-243. However, a Health Risk Assessment (HRA) is not triggered for this project. Therefore, this project is not subject to the Overburdened Community public notice requirements of Section 2-1-412.

A public notice was prepared and sent to the aforementioned schools and all addresses within 1,000 feet of the proposed source.

Section 2-1-311 California Environmental Quality Act (CEQA)
Department of Toxic Substances Control has finalized a CEQA review of this facility. In addition, the Air District has determined that this permit application is categorically exempt from CEQA. CEQA Guidelines, Section 15301 exempts projects that involve negligible or no expansion of use. The proposed SSD system will not expand the facility's normal operation above what was previously analyzed and will result in no increase or only a negligible increase in use of the facility. Further, based on the review of the permit application materials, environmental information form, the project will not have any significant environmental impacts, and cumulative impacts from successive projects of the same type in the same place will not result in significant environmental impacts.

Regulation 2 (Permits), Rule 2 (New Source Review)
Section 2-2-208 Cumulative Increase
Per Section 2-2-208, cumulative increase is the increase in the potential to emit authorized by an authority to construct or permit to operate.

Cumulative emissions for the facility are shown in Table 3 below.

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Table 3. Cumulative Increase

Pollutant	Current Permitted Emissions, Post 4/5/1991 (ton/year)	Application New Emissions Increase (ton/year)	New Cumulative Increase (ton/year)
POC	0.000	0.002	0.002

This is a new facility. Therefore, there are no existing emissions at this facility.

Section 2-2-301 Best Available Control Technology
In accordance with Regulation 2-2-301, Best Available Control Technology (BACT) is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxides (SO_2), particulate matter less than 10 micrometer (PM_{10}) and particulate matter less than 2.5 micrometer ($PM_{2.5}$).

With the proposed abatement device, NPOC and POC emissions are expected to be below 10 pound per day for the SSD system. Therefore, BACT is not required.

Section 2-2-302 / Section 2-2-303 Offsets
Pursuant to Regulation 2-2-302, offsets must be provided for any new or modified source at a facility that emits, or is permitted to emit, more than 10 tons per year of precursor organic compounds (POCs) or nitrogen oxides (NO_X). Furthermore, pursuant to Regulation 2-2-303 offsets must be provided for any new or modified source at a major facility with a cumulative increase that exceeds 1.0 ton per year of PM_{10}, $PM_{2.5}$, or sulfur dioxide (SO_2).

The site is not expected to have a PTE greater than 10 tons per year of POC or NO_X, nor is the site a major site of PM_{10}, $PM_{2.5}$, and SO_2. Therefore, the requirements of Regulations 2-2-302 and 2-2-303 do not apply.

Regulation 2, Rule 5 (New Source Review for Toxic Air Contaminants)
The requirements of Regulation 2, Rule 5 apply to a new or modified source of toxic air contaminants that is required to have an Authority to Construct or Permit to Operate pursuant to Regulation 2, Rule 1.

Estimated toxic air contaminant emissions from the proposed S-1 SSD system are shown in Table 4 below.

Table 4. Toxic Air Contaminant Emissions Approved in Air District Authorities to Construct

Pollutant	CAS #	Hourly Emission Rate (lbs./hour)	Acute Trigger Level (lbs./hour)	Exceeds Acute Trigger Level?	Annual Emission Rate (lbs./year)	Chronic Trigger Level (lbs./year)	Exceeds Chronic Trigger Level?
Toluene	108-88-3	3.0E-05	2.2E+00	No	2.6E-01	1.6E+04	No
Hexane, n-	110-54-3	5.9E-06	N/A	No	5.2E-02	2.7E+05	No
Xylenes	1330-20-7	8.2E-06	9.7E+00	No	7.2E-02	2.7E+04	No
Isopropyl alcohol (2-Propanol)	67-63-0	3.3E-04	1.4E+00	No	2.9E+00	2.7E+05	No
Chloroform	67-66-3	2.4E-05	6.6E-02	No	2.1E-01	1.5E+01	No
Benzene	71-43-2	1.9E-06	1.2E-02	No	1.7E-02	2.9E+00	No
2-Butanone	78-93-3	2.6E-05	5.8E+00	No	2.3E-01	N/A	No

At the given rates in Table 4, emissions do not exceed the Chronic Trigger Levels in Regulation 2-5, Table 2-5-1. Therefore, this project did not trigger a Health Risk Assessment (HRA).

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Regulation 8 (Organic Compounds), Rule 47 (Air Stripping and Soil Vapor Extraction Operations)
Regulation 8-47-301 requires that any sub-slab depressurization operation which emits benzene, vinyl chloride, tetrachloroethene, methylene chloride, and/or trichloroethene shall be vented to a control device, which reduces emissions to the atmosphere by at least 90 percent by weight. However, Regulation 8-47-113 states that the provisions of Regulation 8-47-301 shall not apply to operations with total emissions of less than 1 pound per day of benzene, vinyl chloride, perchloroethylene, methylene chloride and/or trichloroethylene, provided the requirements of Section 8-47-402 are satisfied.

Regulation 8-47-402 requires that the facility submit a written request requesting to be exempt per Regulation 8-47-113. While Regulation 8-47-402 requires a "health risk screening analysis", the term is not defined. In the absence of other alternatives, Regulation 2-5 health risk assessment (HRA) standards are used to meet the "health risk screening analysis" requirement. The rules in Regulation 2 are to implement New Source Review, whereas Regulation 8, Rule 47 is a prohibitory rule.

The facility submitted a written request to operate under the Regulation 8-47-113 exemption on February 18, 2026. Table 2 of this evaluation report shows that the total daily emissions of all compounds do not exceed 1 pound per day. Therefore, the total daily emissions of total emissions of less than 1 pound per day of benzene, vinyl chloride, perchloroethylene, methylene chloride and/or trichloroethylene do not exceed 1 pound per day.

Table 4 shows that based on the soil characterization test conducted in December of 2025, the proposed project will not trigger a health risk assessment per Regulation 2-5. Therefore, this project complies with the requirements of Regulation 8-47-113 and 8-47-402.

Federal Regulations
Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAPS) do not apply to this project.

Permit Conditions

Permit Condition #100868 for S-1

1. The influent vapor flow rate shall not exceed 465 scfm from the Sub Slab Depressurization System at any given time.
   [Basis: Cumulative Increase, Regulation 2-5]

2. In no event shall the toxic air contaminant (TAC) emissions to the atmosphere from each abatement system exceed the trigger levels listed in Air District Regulation 2-5, Table 2-5-1.
   [Basis: Regulation 2-5]

3. The owner/operator shall not emit from the SSD system (S-1) more than 5 pounds of precursor organic compounds (POC) and 2 pounds of non-precursor organic compounds (NPOC) per 12-month consecutive period.
   [Basis: Cumulative Increase]

4. The owner/operator shall maintain the following information for each month of operation:
   a. Hours and time of operation.
   b. Each emission test, analysis, or monitoring results logged in for the day of operation they were taken.
   c. Total throughput of soil vapor from source the SSD system (S-1) in standard cubic feet.

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Such records shall be retained and made available for inspection by the Air District for two (2) years following the date the data is recorded.
[Basis: Recordkeeping]

5. The owner/operator shall report any noncompliance with these conditions to the Compliance and Enforcement Division at the time that it is first discovered. The owner/operator shall detail the corrective action taken and include the data showing the exceedance as well as the time of occurrence in the submittal.
[Basis: Regulation 2-1-403]

6. The owner/operator shall maintain a file containing all measurements, records and other data that are required to be collected pursuant to the various provisions of this condition. All measurements, records and data required to be maintained by the operator shall be retained for at least two (2) years following the date the data is recorded.
[Basis: Regulation 8-47]

7. Upon final completion of the remediation project, the operator shall notify the Engineering Division within two weeks of decommissioning the operation.
[Basis: Regulation 2-1-403]

Recommendation

The Air District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of Air District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source is located within 1,000 feet of a K-12 school which triggers public notification requirements per Regulation 2-1-412. After the comments are received from the public and reviewed, the Air District will make a final determination on the permit.

I recommend that the Air District initiate public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following equipment:

S-1 Sub Slab Depressurization System
Make: Obar, Model: GBR76 SOE compact radial blower, Max. 155 scfm,
Total Three (3) blowers, Max. 465 cfm

No Abatement

Youjin Kim, Air Quality Engineer
March 2, 2026

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