

# Geo-Seal® and Vapor-Vent™ Approved to Protect Urban School Complex from Harmful PHC and cVOC Contaminants

## Project Highlights

- Geo-Seal® applied to 40,000-square-feet of new construction
- Geo-Seal and Vapor Vent approved by California Department of Toxic Substances Control

## Project Summary

A former manufacturing facility site in Oakland, California was contaminated due to years of engine repair, vehicle maintenance and fuel storage that took place on the property. The site is currently being used as a school complex and the Oakland Board of Education approved construction of a modern facility. However, after a site assessment was completed, it was determined that high levels of petroleum hydrocarbons (PHCs), PAHs and chlorinated solvents were present.

Ninyo and Moore prepared a Removal Action Work Plan and Operation and Maintenance plan for approval by the California Department of Toxic Substances Control. An excavation remediation plan was implemented on-site to dispose of the majority of the contaminated soil and groundwater. A vapor mitigation system was utilized to avoid any potential inhalation risk that remained. Geo-Seal and Vapor-Vent™ were applied to 40,000-square-feet of new construction to mitigate the vapor intrusion risk and meet regulatory requirements. Vapor-Vent was installed passively with the ability to activate in the future, if needed. Vapor ports were installed on-site and vapor sampling will occur quarterly for one year. After four sampling events, continued monitoring will be evaluated. A five-year review is also planned per state law requiring review if hazardous substances remain in place and will ensure the remediation and mitigation is functioning properly and maintained.

## Technology Description

**Geo-Seal** is a gas vapor management technology designed to eliminate vapor intrusion on Brownfields or any type of environmentally-impaired site. Geo-Seal is a chemically-resistant material placed between the foundation of the building and the soil pad to eliminate vapor intrusion pathways and stop contaminant vapors from permeating through the slab. By deploying Geo-Seal, developers can ensure a healthy indoor environment while reducing the cost of site remediation and expediting site construction.

**Vapor-Vent** is a low profile vent system that can be used in lieu of slotted PVC pipe. The speed of installation and the proximity of the vent to the barrier provide cost savings and performance benefits compared to other technologies. Vapor-Vent can be installed to passively or actively vent vapors from under the building. The movement for energy efficient buildings and the cost to maintain active venting systems make passive systems an attractive alternative. In addition, a passive system can be designed to become active if needed.



## Site Details

**Site Type:** Former manufacturing facility

**Contaminant of Concern:** Petroleum hydrocarbons, PAHs and chlorinated solvents

**Vapor Intrusion Solution:** Vapor intrusion barrier and low profile vent system

**Treatment Area:** 40,000 ft<sup>2</sup>

**Technology Used:**



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