



Site-Wide Indoor Air Quality & Vapor Intrusion Program

LOCKHEED MARTIN



Summer 2020

1111 Marcus Avenue
Great Neck, New York

Project Summary

Since taking ownership of the property in 1996, Lockheed Martin has conducted a comprehensive environmental cleanup program to address contaminants from historical operations. Dry wells in the southeast corner of the facility, which once were used for liquid chemical disposal, are identified as the source and primary entry point for most of the subsurface contamination associated with the site.

The contaminants have affected groundwater, soil, sediments and soil vapor at the site. Lockheed Martin is working closely with the New York State Department

For more information on all environmental activities at the site, see the fact sheet available at www.lockheedmartin.com/greatneck

Lockheed Martin Commitment Statement:

In keeping with our commitment to environmental stewardship, Lockheed Martin is committed to doing the right thing, meeting all regulatory standards, protecting public health and the environment, and keeping the public informed throughout the cleanup process.

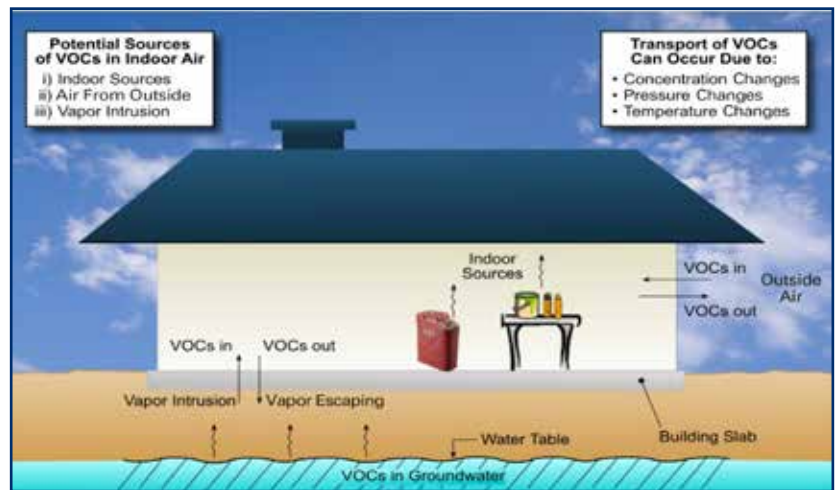
of Environmental Conservation (NYSDEC) to clean up the site, meet all regulatory standards, and protect public health and the environment.

Lockheed Martin constructed two active and one passive mitigation systems that operate 24/7 and will prevent vapors from entering buildings, and thus help ensure indoor air quality, in buildings at the former Unisys site at 1111 Marcus Ave. in Lake Success, NY.

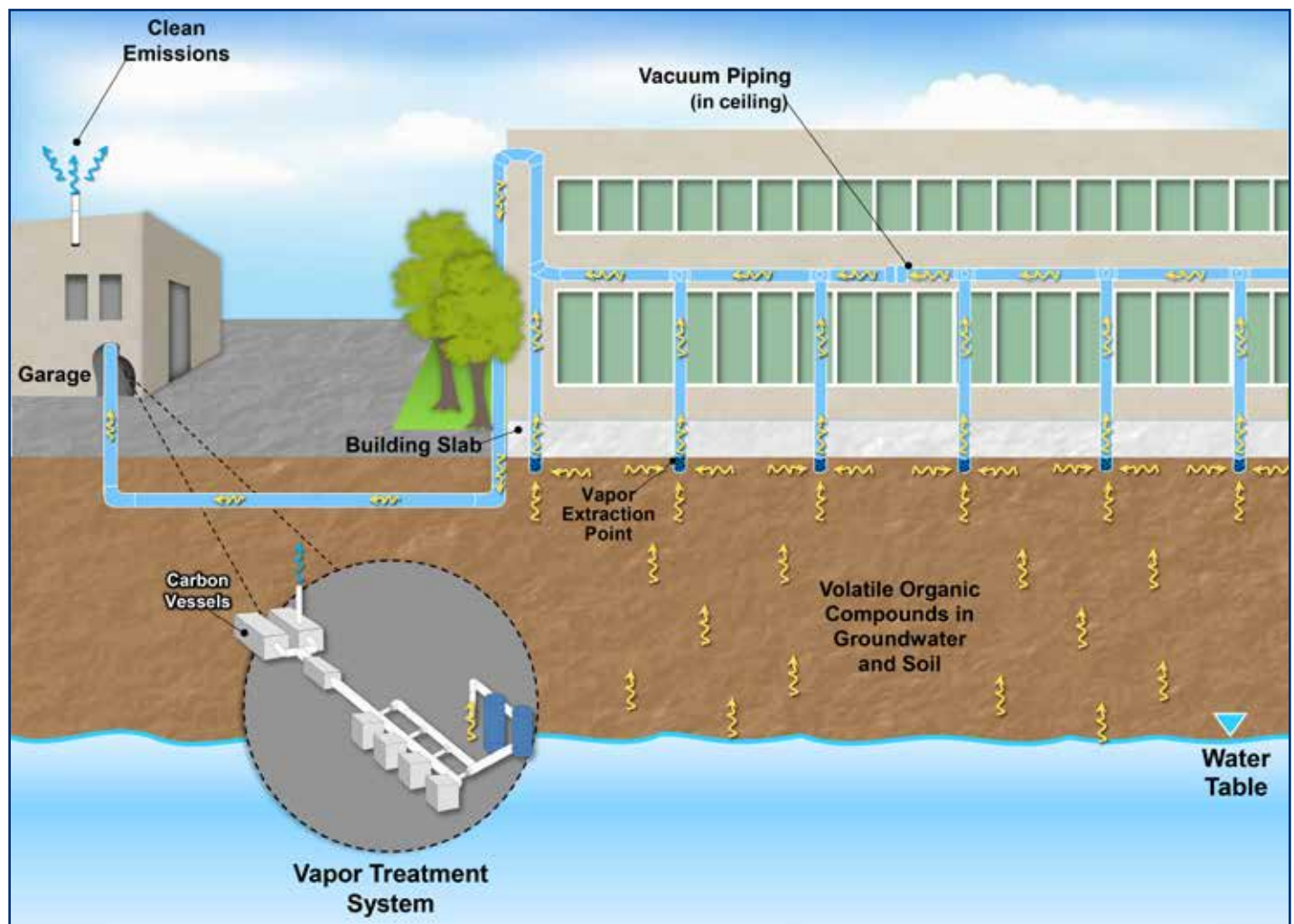
This handout provides information on the ways in which Lockheed Martin has addressed soil vapor, including Lockheed Martin's vapor intrusion investigations and its efforts in buildings on the former Unisys site.

What is Vapor Intrusion?

“Vapor intrusion” describes a process in which a chemical present in contaminated soil or contaminated groundwater moves as a gas or “vapor” through the subsurface and enters a building. Certain chemicals, called volatile organic compounds (VOCs), can readily change from a liquid to a vapor, much like how water evaporates. When volatile organic compounds are present beneath the ground, they can change (volatilize) and move upward — through air pockets between the soil particles — toward the surface.



Indoor air quality may be affected if the contaminated vapor travels through cracks or openings in the foundation and enters the building. Vapor intrusion can occur in any type of building — regardless of age or construction — through a crack or opening in a basement, crawl space or foundation slab.



Graphic depicts sub-slab vacuum system which extracts vapors from beneath the entire building and pipes those vapors to the garage, where they are treated and clean air is released.

In 2006, the New York State Department of Health (NYSDOH) released indoor air guidelines aimed at protecting human health. Revised guidance was subsequently released in 2017.

If contamination is found below the ground surface, a sub-slab depressurization system (SSDS) can be used to remove vapors before the vapors can potentially enter a building.

Sub-slab depressurization systems use a vacuum technology. The air and vapors beneath the building are collected from vapor extraction points under the foundation slab, then they are carried through a closed piping system (located throughout the building) to a treatment system located outside the building.

Solutions in the Main Building

Today, the site is occupied by a mix of uses including office, medical, warehouse, and a health club.

Lockheed Martin initiated a sampling program in March 2007 in accordance with vapor intrusion guidance that the New York State Department of Health (NYSDOH) released in late 2006. Lockheed Martin collected soil gas (vapor) samples from under the building foundations (slabs) and indoor air samples from various points inside the buildings.

Sampling completed in 2008 found that tenant space in the northeast corner of the main building exceeded NYSDOH indoor air guidelines for trichloroethene (TCE), and tenant space in the south central portion of the building exceeded the guidelines for carbon tetrachloride, a cleaning solvent that was also formerly used as a refrigerant. NYSDOH guidelines for carbon tetrachloride are the same as those for TCE.

After sampling revealed the presence of the vapors in the indoor air space in the northeast and south central portions of the building, in 2008 Lockheed Martin installed interim sub-slab depressurization systems in two tenant spaces to quickly improve indoor air quality there. All indoor air samples have met NYSDOH guidelines since the interim systems were installed. In addition, testing results for all site-related chemicals are consistent

Locally, in coordination with the NYSDEC and NYSDOH, indoor air of nearby buildings was sampled, and no impacts were found.

with outdoor air samples obtained at the property and typical indoor air background levels.

Although the interim systems worked well, Lockheed Martin constructed a building-wide sub-slab depressurization system (SSDS) to prevent soil vapors from entering the building and impacting indoor air quality throughout the remaining portions of the building. The system's treatment plant is located in the former garage on the south side of the property and has run continuously since September 2013.

Solutions in the Fitness Center

The building immediately to the south of the main building was used as a foundry and today is occupied by a fitness center.

Since March 2007, indoor air and sub-slab soil gas samples have been collected within the fitness center. Indoor air and sub-slab soil gas sampling results were below NYSDOH guidelines for occupied spaces. Air samples were also collected from an unoccupied basement vault space and TCE was identified above NYSDOH guidelines. This space is not occupied and there are no plans for occupancy in the future.

However, as a preventive measure, Lockheed Martin installed a passive ventilation system to ventilate the basement area under the fitness center building. The passive ventilation system acts much like a chimney, where the least resistant path to escape the basement is the ventilation system rather than through the basement ceiling into indoor air of the occupied space above. This ventilation system ensures that indoor air quality of the occupied floor above the basement area continues to meet the NYSDOH guidelines.

Routine annual sampling in 2018, after the 2017 revised guidance was released, indicated that mitigation was required due to contaminant concentrations in the sub-slab in the northwestern portion of the fitness center. A sub-slab depressurization system was designed in 2018 and constructed in early 2019 in the northwestern portion of the building, and the system continuously operates. Indoor air concentrations never exceeded NYSDOH guidelines.

Ongoing Monitoring

Lockheed Martin monitors quarterly to confirm the vacuum pressure is maintained under the slabs of the sub-slab treatment systems. Vacuum monitoring at various points inside the main building provide continuous information about the effectiveness of the vacuum system. Additionally, annual sub-slab and indoor air monitoring is conducted in the area of the fitness center not under the influence of the sub-slab depressurization system.

Lockheed Martin provides indoor air sample results to the New York State Department of Environmental Conservation, New York State Department of Health, and the property manager. The property manager then provides the sample results to management staff associated with each building tenant space and posts sample results on the bulletin board in the cafeteria to ensure parties are informed and up-to-date on the indoor air quality. The monitoring reports are sent in letter format with data included. Additional information can be found at the Lockheed Martin website.

(www.lockheedmartin.com/greatneck).

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