

An important Public Health Evaluation is underway under the guidance of the Navy and Marine Corps Public Health Center. The Public Health Evaluation is designed to evaluate the potential short and long-term health risks associated with living in the Naples area as a result of inadequate trash collection, uncontrolled open burning of uncollected trash, and widespread dumping of waste, including chemical and other hazardous waste.

Launched in 2008, the Public Health Evaluation involves the collection of air, water, soil and soil gas samples from throughout the region to identify whether there are potential health risks.

For details and background information, visit the website listed at the bottom of this page.

Your Health: Facts for Navy Families in Naples

About: Understanding the Vapor Intrusion Mitigation System Being Installed at the Capodichino Child Development Center

This fact sheet provides information regarding recent environmental sampling results at the Capodichino Child Development Center (CDC), and the U.S. Navy's actions to address the results. The Navy is committed to ensuring the continued safety and health of children and staff at the CDC.

What's the Issue?

During Phase II of the Naples Public Health Evaluation, the Navy detected a chemical called tetrachloroethene – or PCE – in active soil gas samples that were collected from beneath the building slab of the Capodichino CDC. The presence of tetrachloroethene in soil gas underneath the CDC is an important finding because it indicates that tetrachloroethene vapors could potentially enter the indoor air of the building through a process called vapor intrusion (see vapor intrusion discussion on page 3).

To determine whether vapor intrusion is occurring, the Navy collected samples of the indoor air inside the CDC. The results of the indoor air sampling showed that tetrachloroethene was present in the indoor air, but not at a level that would pose a health risk to children or staff.

It is safe for children and staff to continue to attend the CDC. Using the health protective Risk Management Criteria that the Navy established for the Naples Public Health Evaluation, the level of tetrachloroethene detected in the indoor air is considered acceptable.

What Do Parents and Staff at the CDC Need to Do?

Parents should continue to bring their children to the CDC, and staff should continue to report to work. Remember, tetrachloroethene detected in active soil gas or indoor air samples does not pose a health risk at the CDC.

It is safe for children and staff to continue to attend the Child Development Center.

If you are concerned about the sampling results or would like more information about tetrachloroethene, please contact the Environmental Health Information Center, where health professionals are available to answer your questions and to meet with you individually (see page 3 for contact information).

What is the Navy Doing to Address Tetrachloroethene?

As a precautionary measure and to address the presence of tetrachloroethene, the Navy is installing a temporary vapor intrusion mitigation system within the next few weeks while a permanent system is

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About Tetrachloroethene

What is Tetrachloroethene?

Tetrachloroethene, or PCE, is a man-made chemical that is widely used in the dry cleaning of fabrics and degreasing of metals. It is also used in some consumer products and to make other chemicals. Tetrachloroethene is a liquid at room temperature, but can evaporate easily into the air. People can be exposed to unhealthful levels of tetrachloroethene by drinking it in contaminated water, or by inhaling it in indoor air as a result of vapor intrusion.

What Are the Health Effects from Tetrachloroethene?

Many factors can impact an individual's health effects from exposure to tetrachloroethene, including the amount of exposure, length of exposure and preexisting health conditions. In general, high concentrations of tetrachloroethene, particularly in closed, poorly ventilated areas, can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and under extreme conditions, death. According to the U.S. Department of Health and Human Services, tetrachloroethene may reasonably be anticipated to be a carcinogen.

For more information about tetrachloroethene, visit the Agency for Toxic Substances and Disease Registry at <http://www.atsdr.cdc.gov/>, and download the "Volatile Organic Compounds" fact sheet located on the Naples Community Health Awareness website listed at the bottom of this page.

designed for the building. Installation of the system is fairly simple, and services at the CDC will not be affected. Both systems will begin working immediately upon installation. As more information regarding the time and date for installation of the vapor intrusion systems becomes available, parents and staff will be notified. After the permanent vapor intrusion mitigation system has been installed, the Navy will periodically collect samples of the indoor air to ensure that the system is working properly over the long-term.

In addition to installing the vapor intrusion mitigation system, the Navy will seal possible pathways that may allow vapors to enter the building, such as gaps and spaces around plumbing, electrical conduits, or any other slab penetrations, so that the potential for tetrachloroethene to enter the building is minimized. Floor drains, another potential pathway, will also be investigated to ensure that they are not damaged or leaking.

How Did Tetrachloroethene Get into the Soil Gas beneath the Building?

The presence of tetrachloroethene in soil gas samples suggests that tetrachloroethene is present in the groundwater and/or soil beneath the CDC. Tetrachloroethene was detected in groundwater samples from an irrigation well located on Capodichino. This well is not used to provide drinking water; the well is only used for irrigation purposes on the base. The Navy does not have any data at this time indicating whether tetrachloroethene is in the soil.

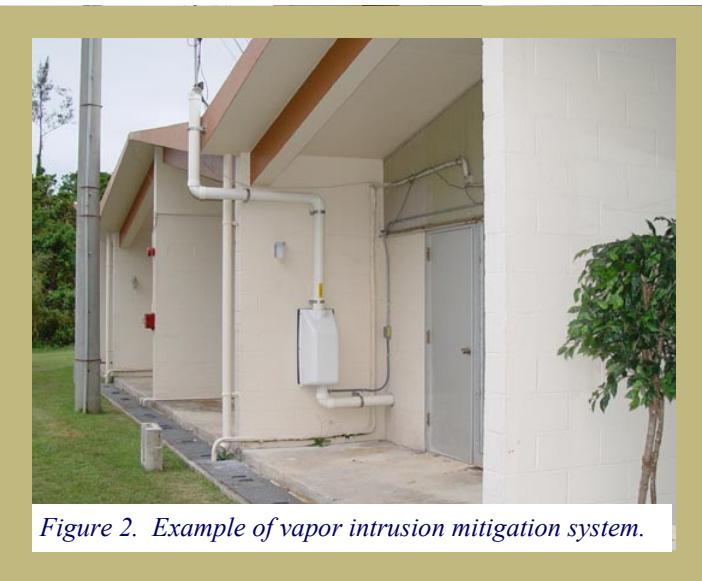
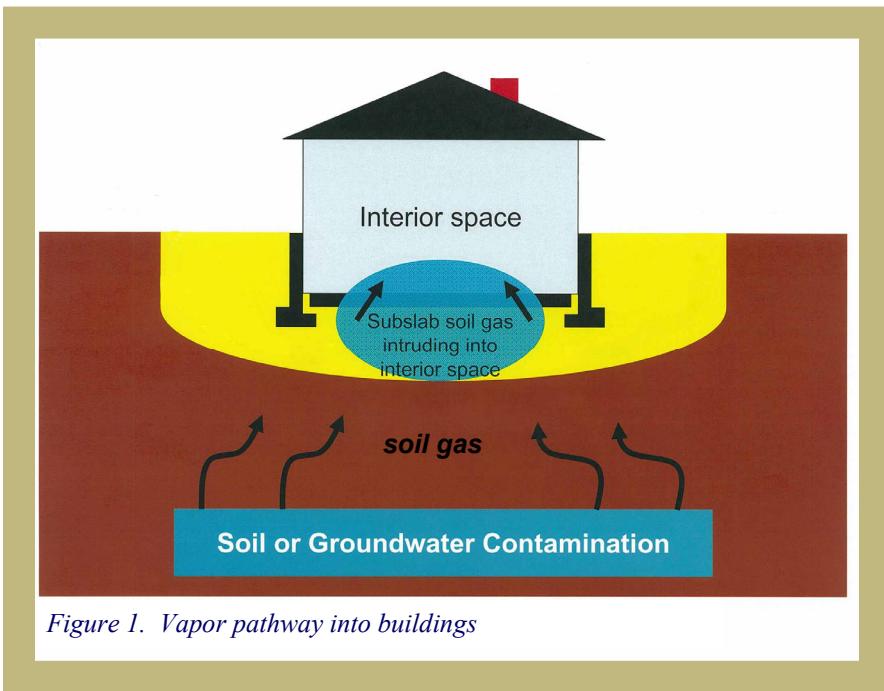
Tetrachloroethene in groundwater easily becomes a gas and then travels upward towards the ground surface. When tetrachloroethene or other chemicals are present as a gas beneath the ground surface they are called "soil gas." At this point in time, the Navy does not know how tetrachloroethene got into the groundwater and then ultimately into the soil gas beneath the building. The Navy plans to install groundwater monitoring wells to obtain more information on the direction that groundwater, and tetrachloroethene, are moving. As always, the Navy will share sampling results with the appropriate Italian authorities.

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What is Vapor Intrusion?

Chemicals such as tetrachloroethene can easily travel through groundwater or through soil as vapors. If conditions are right, these vapors can move up through the groundwater and soil into the air of overlying buildings or homes (see Figure 1 below). This process is called “vapor intrusion.” Soil gas can enter buildings through cracks in concrete-slab floors, basement floors, sump pumps or wherever electrical wires or pipes penetrate the foundation. If vapor intrusion occurs, occupants are at risk for exposure to the chemical through inhalation.

For more information about vapor intrusion, download the “Vapor Intrusion” fact sheet and the “Understanding Vapor Intrusion: A Guide to Key Concepts and Principles” video, from the Naples Community Health Awareness website listed at the bottom of this page.



Tetrachloroethene in indoor air can be removed by the installation of a “vapor intrusion mitigation system.” A vapor intrusion mitigation system prevents tetrachloroethene in soil gas from migrating into the indoor air of the overlying building.



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