

An important Public Health Evaluation (PHE) is underway under the guidance of the Navy and Marine Corps Public Health Center. The PHE 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 PHE involves 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: Vapor Intrusion

The U.S. Navy is committed to ensuring our families are safe while serving our country at home or overseas. The following information is provided as part of a wide-ranging effort to understand the health risks of our personnel and families living in Naples, Italy. Currently underway is a comprehensive Public Health Evaluation (PHE) to assess potential short and long-term health risks associated with living in the Naples area (see sidebar). In line with our commitment to continually share important health information, we encourage you to review the following.

### What is Vapor Intrusion?

Vapor intrusion occurs when chemicals in soil or groundwater get into indoor air. This happens when there is contamination under a structure, like a home or office building, and the contamination finds its way inside the structure such as through small cracks or gaps in the foundation. Volatile Organic Compounds (VOCs) are liquid chemicals that evaporate easily at room temperature (see *About: VOCs* fact sheet). When VOCs are spilled on to the ground they can seep into the soil and groundwater. The chemicals can easily travel through groundwater or through soil as vapors. If conditions are right, these vapors can then move up through the soil and

groundwater into nearby buildings or homes. This is known as Vapor Intrusion. Heating, air conditioning and ventilation can draw these vapors into buildings. Soil vapors can also enter buildings through cracks in the concrete-slab floors, basement floors, sump pumps or wherever electrical wires or pipes penetrate the foundation.

### Where do VOCs come from?

VOCs are found in a variety of everyday products and have been widely used in industrial and household products for

more than 100 years because of their dissolving and cleaning properties. A wide variety of common products used in homes, offices and schools contain VOCs, such as perfumes, hair sprays, shoe polish, mothballs, rug and oven cleaners, paints, lacquers and thinners, cigarette smoke, and more.

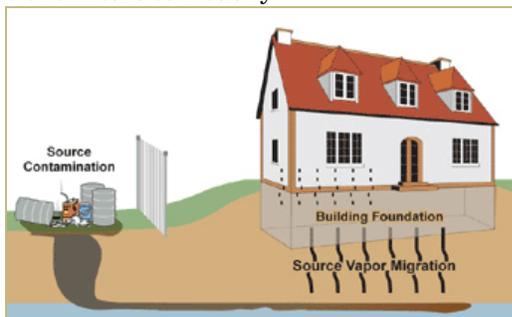
In addition to exposure from everyday products, VOCs have been discovered in soils and groundwater due to leaking storage tanks, accidental spills, and improper refuse disposal and hazardous

waste disposal practices such as have occurred in Naples.

### How can I be affected by Vapor Intrusion?

Many factors impact individual health effects from exposure to VOCs through vapor intrusion, including the material itself, length of exposure, amount of exposure, and pre-existing health conditions. In

general, immediate effects can include eye, nose and throat irritation; headaches; nausea; memory impairment; and visual disorders. Exposure to high amounts of chlorinated VOCs can cause dizziness, reduce the ability to concentrate, damage the nervous system, and cause an irregular heartbeat. Longer exposures can result in damage to the liver, kidney and central nervous system. Studies indicate that exposure to high levels of some chlorinated solvent VOCs may result in cancer.



Chemicals that evaporate easily are called "volatile" chemicals. Under certain conditions, volatile chemicals can move from underground into the indoor air of overlying buildings through a process known as "vapor intrusion."



For more information contact:

**Environmental Health Information Center**

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Portsmouth, VA 23708  
757.953.0664  
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**Why is Vapor Intrusion an issue in Naples?**

Currently, the Commander, Navy Region Europe, Africa, Southwest Asia (CNREURAFSWA), with the assistance of the Navy and Marine Corps Public Health Center, is undertaking a comprehensive health study (see sidebar on page 1). While the first phase of this Public Health Evaluation (PHE) is not complete, initial results show presence of VOCs in water from private wells, likely due to historical improper dumping and hazardous material disposal. This creates the potential for vapor intrusion to occur in buildings that are located near VOCs in soil and/or groundwater.

**What is the Navy doing to resolve the situation?**

The health and safety of our personnel and their families is a top priority in Naples. The Naples PHE is a big step toward determining the potential for health risks in the area as a possible result of improper trash disposal (including burning) and hazardous waste disposal. The goal is to develop as clear a picture as possible of what is happening and then take steps necessary to protect the health of our families. Updates on the progress of the PHE can be found at [www.cnic.navy.mil/Naples/Programs/HealthAwareness/index.htm](http://www.cnic.navy.mil/Naples/Programs/HealthAwareness/index.htm). Part of this effort involves soil gas and tap water sampling to determine the potential for vapor intrusion. These tests will be conducted during the first half of 2009.

In addition to PHE efforts, the Navy is:

- Working closely with landlords and tenants in homes tested to minimize health risks;
- Sharing important public health information with all military families through regular updates and a dedicated website;
- Making provisions for bottled water to minimize risk exposure from tap water;
- Continuing to support the Environmental Health Information

Center established by the Navy as a resource for health related questions and concerns;

- Working closely with host nation officials, civic groups and individuals to help them identify the sources of environmental risks in the greater Naples area; and
- Sharing results of all findings with the Italian government, their regulatory agencies and local officials whenever possible to support them in their efforts to remove or contain risks.

**What should you do?**

The Navy needs volunteers to participate in the Phase II sampling effort. We need a select number of homes in each of our nine study areas to provide a representative sampling of environmental conditions throughout the region. Not all properties will meet the spatial and geographic criteria for testing.

If your residence is not part of the testing pool and you believe you may be at risk, contact the Environmental Health Information Center located on the ground floor of Naval Hospital Naples, Room 1096, DSN 629-6071.

**What if a problem is found?**

The Navy is committed to promptly sharing evaluated test results of the PHE with all military families. If unacceptable levels of VOCs are found, residents in those homes will be notified and relocated as necessary. We will continue to publicize updates and information through All-Hands meetings and emails, the *Panorama*, the Environmental Health Information Center, the NSA Naples website, and through special meetings as necessary.

At any time, should you have a question or require additional information, visit [www.cnic.navy.mil/Naples/Programs/HealthAwareness/index.htm](http://www.cnic.navy.mil/Naples/Programs/HealthAwareness/index.htm), or call the Environmental Health Information Center at DSN 629-6071.