

# Your Health: Facts for Navy Families in Naples

## About: Water Holding Tank Disinfection

*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 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 information.*

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.

In Italy, home water holding tanks are not uncommon and are used because of low pressure conditions in the municipal drinking water system. A new requirement for landlords, included in new leases, is that landlords must ensure that the home's drinking water system (piping, tanks, components) is cleaned and disinfected before a tenant moves in, and every six months thereafter. The tenant should not be the one performing this procedure, however, but should be aware of the lease requirement and the general cleaning process the landlord should be using.

### Why do water holding tanks need to be disinfected?

Water delivered into a holding tank must be safe for human consumption and deemed acceptable by a regulatory authority. It is necessary to clean and disinfect a holding tank to remove organic material such as bacteria, algae and silt that may have built up in the tank over time and may contribute to the water having a bad odor, unacceptable taste, not being clear and in some cases, may result in bacteria that may be harmful to a person's health.



### How should a holding tank be inspected?

The landlord should start by checking whether the tank is in good condition and secure. For example, the landlord should check whether the tank's cover is kept locked, that there is no corrosion or leakage and that connections and screens are in good condition.

*Safety precautions listed on the product label should be followed when preparing and using a chlorine bleach solution to disinfect a water holding tank.*

Over a period of time, and under adverse conditions such as those involving prolonged, unchecked exposure to moisture (especially if not routinely maintained), areas around the tank, and plumbing to and from the tank, can become corroded or contaminated. At times, leaks may not be readily visible but instead may be detected through the presence of rust streaks. If a leak is discovered, a professional contractor familiar with water tank maintenance should inspect and repair the tank as quickly as possible. When examining the tank, the landlord should pay particular attention to the condition of components, such as the overflow discharge screen and vent screen, and should ensure that the screens are clear of debris and free of holes or gaps.



*Rust streaks may indicate leakage*

*Regular tank inspections help ensure early detection of needed repairs and can save the tank owner a significant amount of money. Most importantly, inspections may prevent the buildup of a variety of microorganisms that can cause illness.*

#### **Quick Facts**

At the foundation of the tank, the landlord should look for:

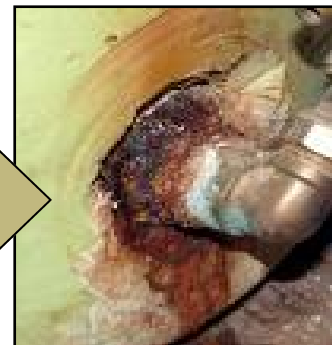
- Foundation settling
- Foundation cracking
- Exposed reinforcing steel
- Vegetation at tank base
- Vegetation on tank shell
- Unauthorized access to the tank



**Secure Cover**

At the tank, the landlord should look for:

- Corrosion
- Clogged or damaged screens
- Crossed connections



**Corrosion**

## How should a water holding tank be disinfected?

The disinfection of a home's water holding tank is a periodic maintenance action the landlord should ensure gets conducted. Below are instructions on how to disinfect a water holding tank.

### *If the tank is accessible:*

1. Cut off the water supply from the street and from the tank into the house.
2. Empty the tank.
3. Scrub or pressure wash the interior walls of the tank to remove dirt and grime.
4. Rinse out the tank.
5. Mix a solution of household chlorine bleach and water (1 tablespoon [15 milliliters (mL)] for every one gallon [4.5 liters (L)] of water).
6. Scrub or pressure wash the interior walls of the tank with this solution and let it sit for two hours.
7. After two hours, thoroughly rinse the tank with potable (clean) water.
8. Refill the tank with potable water.
9. Before reconnecting the water supply to the house, follow the testing procedure listed at right.

5. Leave for 12 hours (generally overnight).
6. Drain the water tank (but not into a septic tank).
7. Let all household taps drain for five minutes or until the strong chlorine odor is gone.
8. Refill the tank with potable water.
9. Before reconnecting the water supply, follow the testing procedure below.

### **Testing Procedure**

Before reconnecting the water supply to the home from tanks that have been disinfected and refilled, the tanks must be tested for chlorine residual to ensure chlorine levels are safe.

A chlorine residual test kit must be able to measure the chlorine remaining in the water at the end of a specified contact period following chlorination. If the

### Dosage of Unscented Household Bleach (5% chlorine) Required for the Cleaning and Disinfection of Water Holding Tanks NOT Accessible for Cleaning

Tank Size		Amount of Household Bleach Needed to Obtain 50 Parts Per Million of Chlorine	
Liters	Gallons	Milliliters	Cups
277	50	277	1
455	100	511	2
909	200	909	4
1137	250	1136 (1.2 L)	5

### *If the tank is not accessible:*

1. Ensure the tank is full of water.
2. Disconnect the water supply for the household distribution system.
3. Add the required amount of unscented household bleach (see table above for dosage). If possible, mix the bleach and water.
4. To disinfect the plumbing lines and fixtures, turn on the tap(s) inside the home. Once you smell the chlorine odor at each outlet, close the taps.

residual chlorine concentration is 0.5 milligrams per liter (mg/L) or less, the tank is safe to use for water storage. If the concentration is greater than 0.5 mg/L, the tank should be emptied again and refilled with potable water. This process should be repeated until the chlorine concentration is 0.5 mg/L or less.



For more information contact:

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