ROSE & THORN HOME INSPECTION

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CISTERN CARE:

Keep it clean

Gutter screens are your first defense against debris

Overflow screens keep out critters

A sound cistern cover /lid will help maintain the cleanliness of your cistern

Inspect your cistern routinely

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Water Quality in your Home.

Many homes on St. Croix have a water cistern to collect and hold rain water, this water is used in the home, as one would use city water. The water is collected through a system of roof gutters and downspouts. It is important that the water in the cistern is managed. These tips and information will help provide the home owner with safe potable drinking water. There are many ways to protect your water quality. A few of them are noted in this newsletter.

Most pipe lines that go from close to the bottom of the cistern to the pump have a filter on the end, these filters may become clogged over time. A good reason to keep your gutters and gutter screens clear to limit the amount of debris getting into the cistern. The fine sediment at the bottom of the cistern is Sahara dust that rain picks up as it falls, or washes from the roof.

The home owner may choose to install a whole house water filter after the cistern pump. This type of filter will remove particulates. Generally, the smaller micron rating for a filter is better, but as with most everything, there is a trade-off. Flow capability usually drops off as the micron rating gets smaller, especially if the water has a lot of sediment. The filter may need to be changed frequently.

What is a Micron Rating?

The average size of the openings between pieces of the filter media are represented in microns. For example, a 20-micron filter has larger openings than a 5-micron filter. Consequently, the 20-micron filter element will let larger particles pass through the filter than the 5-micron element.

To overcome sediment-causing flow rate problems, low micron-rating filters must have larger elements to keep from sacrificing precious flow, like a sediment prefilter to remove larger particles that clog the 1-micron filter and reduce water flow. In a cistern water situation, it is common to see two or three sediment prefilters in the water flow, starting with the higher micron rating to remove the larger particulate, followed by lower micron rating filters. For example, first filter the water through a 20-micron sediment prefilter, then a 5-micron and finally through a 1-micron or a sub-micron filter. This process extends the life of all filters, including the carbon filters which do the work of removing chemicals, herbicides, pesticides and other water pollutants.

Bacteria range in size from 0.2 to 2 microns in width or diameter and from 1 to 10 microns in length for the nonspherical specie, so a 1-micron filter will remove most bacteria and cysts. If you are on municipal water, the water has already been treated with chlorine, chloramines and/or fluoride to remove bacteria, so chances are you do not have a bacteria problem unless there is a problem with the water pipes between the water reclamation plant and your home. If you are on well or cistern water and have a bacteria problem, installing a 1-micron absolute water filter at the point of use will remove most of the bacteria (99.9%).

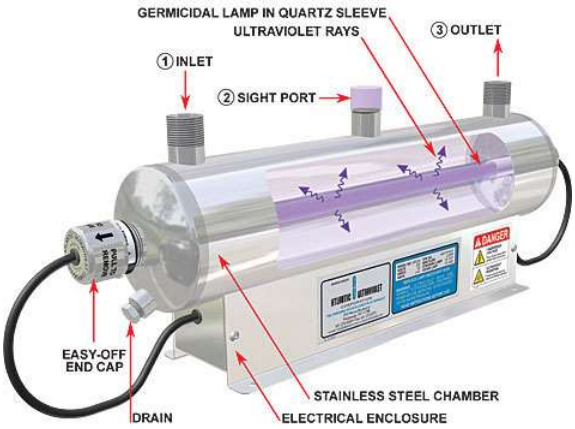
The right water filter and treatment for you

Choose the flow rate that will work with your home. Most homes rate 6 -12 gallons per minute (gpm), The system pictured can cope with up to 15 gpm. This type is avalible from your local hardware and plumbing stores.

The addition of a UV (Ultra Violet) light will sterilize your water. The UV light must by installed after the filters as particulates and sediments will block the UV Rays from passing through the water. They can act as a shield, "protecting" germs from UV light. Suspended solids should be physically removed from water by mechanical pre-filtration before the water goes to a UV system.

Most ultraviolet water treatment systems require only an annual change of lamp – as simple as changing a light bulb – and a periodic change of a filter cartridge(s) that protects the lamp. The UV light bulb has an effective life of 1 year, the filters may last longer depending on the cleanliness of your cistern and gutters.

As water passes through a UV water treatment system, living organisms in water are exposed to UV light which attacks the genetic code of the microorganism and rearranges the DNA /RNA, eliminating the microorganism's ability to function and reproduce. If a microorganism can no longer reproduce, it cannot replicate, therefore it cannot infect other organisms with which it has contact. This process of exposing water to UV light is simple but effective, destroying 99.99 percent of harmful microorganisms without adding any chemicals to water.



UV dis-infection is very quickly gaining ground on other conventional disinfection processes because it is effective, environmentally friendly and economical. UV does not change the taste of water and does not add anything to it. For many applications, it is the ideal choice for disinfecting water.

Helpful Math: To determine the volume of water in your cistern. Measure in feet:

L x W x D x 7.47 = volume in gallons.

Should you wish to add bleach to your cistern. Use a non-scented only.

Gallons of water in cistern x 3 /1000 = ozs of bleach. This is an approximation. Be sure that your filter system includes a carbon filter to remove any residual chlorine. Another newsletter will cover this in more detail.