

wellcare[®] information for you about **Tannins & Groundwater**

What are Tannins?

Tannins are a natural organic material that can be the byproducts of nature's fermentation process, be created as water passes through peaty soil and decaying vegetation. This can cause water to have a faint yellow to tea-like color, and can cause yellow staining on fabrics, fixtures, china and laundry.

Tannins may give a tangy or tart aftertaste to water. They may also cause water to have a musty or earthy odor.

Tannins – also known as fulvic or humic acid – are more common in surface water supplies and shallow wells than in deep wells. Water in marshy, low-lying, or coastal areas is also more susceptible to tannins.

What are the health effects of Tannins?

Tannins are considered an aesthetic problem. While they may make water unappealing to drink and stain laundry, they present no health hazard.

Should I test my water for Tannins?

Tannins create a light yellow to dark brown discoloration in the water. A simple test for tannins involves filling a clear glass with water and letting it sit overnight. If the color settles to the bottom of the glass, the discoloration is most likely caused by iron and/or manganese and not tannins. If the intensity of the color remains intact, it is most likely caused by tannins.

If you suspect your water may contain tannins and wish to know how much tannin is present in your water, contact your local or state health department for a list of state-certified laboratories that can perform tannin testing.

You may also wish to test for sulfates, alkalinity, iron, total dissolved solids (TDS) and hardness, as these may help determine which treatment method(s) will be most effective for your situation. There is another reason to test for iron along with tannins; iron creates a false positive for tannins and must be subtracted from the tannin result to determine that true tannin concentration.

What can I use to remove Tannins from my water?

Common tannin treatment uses an organic scavenging anion exchange resin. The anion resin is sensitive to hardness, so most systems include a water softener as pretreatment. The water softener extends the life of the anion resin and increases tannin absorption.

Anion exchange resin systems should be regenerated occasionally with a baking soda and salt water solution to improve the effectiveness of the resin. When cleaning is needed, the water will have a "fishy" odor caused by the fouled anion resin. Anion exchange resin systems can also change

Organic scavenging units use anion exchange resins. These resins "trade" negatively charged ions for tannins in the water.

the chloride, alkalinity and sulfate levels of the water, so you may wish to monitor these substances more closely once the system is installed.

Oxidation and filtration is another method to remove tannins, but is not as simple as anion exchange and softening. Contact a water treatment expert in your area for assistance.

It should be noted that tannins can sometimes interfere with equipment used to treat other water problems. For example, the resins or medias in iron filters, cation exchange filters and neutralizing filters can become coated by the tannins, and may no longer work properly. It may be useful to test for tannins (using the "clear glass" method described above) before installing these types of water treatment devices.

For more information about Tannins and Groundwater

Water Quality Association. Aesthetic Water Quality Problems. Retrieved on November 29, 2007 from www.wqa.org.

Water Technology. Scavengers Lead Hunt for Organics. Retrieved November 30, 2007 from <http://www.watertechonline.com/article.asp?IndexID=5201003>.

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