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Well Water

- Municipal water is required by law to be disinfected or sanitized before it's made available for use by the consumer. It goes through three steps: (1) a sand and gravel trap to remove particulates such as twigs, bugs, etc., (2) aeration to release trapped gases, and (3) *chlorination* to kill bacteria.

- The owner of a private well, in order to achieve the same standard of safety, has three water treatment options: *chlorination*, ozonation and ultraviolet light.

- Of those three options, *chlorination* is by far the least expensive and the least troublesome.

- Ozonation and ultraviolet light, while being excellent from a technological standpoint, cost about 35 per cent more than chlorination and require constant maintenance and service.

- All of our water - whether municipal or well - comes from the same source: the Florida aquifer. But it's certainly not all identical. At any given site, the well owner may be faced with a number of unfavorable water conditions that will require treatment.

- While liquid *chlorination* will effectively resolve many of these problems, some others will require special attention.

- The first step in evaluating the situation is to have the water tested. Bacteriological testing must be done at a professional laboratory. Tests for iron, hydrogen sulfide, tannic acid, salt, or pH that's too high or too low can be done at the wellhead.

- There are four steps that lead to perfect well water. They must be taken in the proper sequence to insure long-term satisfaction. The four steps are as follows:

  (1) Oxidation/Sanitation

  Chlorination of all water to kill bacteria and oxidize such things as iron, manganese, sulphur, etc.

  (2) Filtration

  Primary filtration, consisting of a *whole house carbon filter* to remove chemicals, including chlorine, as well as iron and sulphur.

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(3) Conditioning or Softening

Secondary filtration, consisting of a *whole house water softener* or conditioner to remove minerals.

(4) Point Of Use Treatment

A *reverse osmosis drinking water system* installed under the kitchen sink provides clinically perfect water for drinking, cooking and ice cubes (refrigerator water supply must be connected under sink).

- All water to be consumed by humans should go through a minimum of steps (1) and (2). In other words, there should be at least a *chlorinator, a retention tank and a dechlorinator or carbon filter*. This combination provides potable drinking water and removes iron (up to 5 ppm), hydrogen sulfide, tannin (up to 1 ppm) and other chemicals

- Step (3)...conditioning or softening...is normally not considered a requirement except by homeowners who prefer soft water and have become accustomed to its benefits. One exception to this rule involves wells with tannin exceeding 1 ppm. In these cases, a *softener* with tannin resin added is *required* to provide water that will not leave stains on fixtures and tile.

- *Reverse osmosis drinking water systems*, as mentioned in Step (4), are also optional unless someone has a particular medical need or a desire for clinically perfect water. A series of three filters are mounted under the kitchen sink with a separate faucet for drinking and cooking water. Refrigerator supply lines for ice and water may also be connected under the sink. The capacity of such systems is 14 gallons per day.

- Special problems require special solutions. Excess iron in the water - to a degree that it cannot be taken out by a *media filter* - may require a water softener designed for iron removal. Tannic acid, if present in amounts greater than one part per million, can be removed by making tannin resin part of the *water softener* medium. Low pH may mandate the use of a calcite filter, and high pH calls for the use of a citric acid injector.

- Excessive salt in the well may have to be treated with a twofold approach: (1) calcite to protect the pipes and (2) a *reverse osmosis system* to desalinate the drinking water.

Treatment Options for Well Water

A. Submersible Well Pump
B. Chlorine Injection Pump
C. Solution Tank
D. Pressure Tank
E. Retention Tank
F. Carbon Filter
G. Softener Filter
H. Brine Tank
I. Treated Water

Shown above:
Chlorine/De-Chlorine & Softener System

Chlorination/De-chlorination System

- Dramatically reduces over 100 EPA priority pollutants
- Kills all bacteria indigenous to Florida
- Automatically backwashes every night, purging the system of accumulated pollutants
- Treats every drop of water that leaves the well
- Greatly reduces or eliminates all stains caused by iron, both inside the home and on outside vertical surfaces
- Removes rotten egg odor caused by hydrogen sulfide
- Fiberglass tank neither rusts nor corrodes

Includes:
-LMI Chemical Pump **(B)**
-120 Gallon Fiberglass Holding Tank **(E)**
-Fleck 5600 Control Valve w/ Bypass **(F)**
-Fiberglass Media Tank (10" x 54") **(F)**
-30 Gallon Solution Tank **(C)**
-1 1/2 Cubic Foot of Activated Carbon **(F)**

Whole House Water Softener

- Prolongs the life of your dishwasher, water heater, appliances and plumbing fixtures
- Leaves hair revitalized and skin refreshed after showering
- Reduces spots on glassware and dishes
- Reduces consumption of soaps and detergents by as much as 60%
- Brightens laundry colors
- Softens every drop of water that enters your home
- Fiberglass tank neither rusts nor corrodes

Includes:
-Fleck 5600 Control Valve w/ Bypass **(G)**
-Fiberglass Media Tank (10" x 54") **(G)**
-Brine Tank (17" x 30") **(H)**
-Softening Resin **(G)**

NOTE: *Option available with Tannin Resin as well.*

Attention Well Water Users!

FILTERING WELL WATER without disinfection provides an excellent environment for bacterial growth because:

1) The system is not assembled in a sterile environment.
2) Neither the filtering tank, its valve, nor the plumbing is disinfected.
3) The filtering medium (carbon, resin, etc.) has a large surface area, which makes it ideal for promoting bacterial growth.
4) Bacteria feed on organic & inorganic nutrients present in the water supply. Some of these nutrients are concentrated in the filtering medium --- such as calcium, magnesium and iron.

Having only a SOFTENER on a well without disinfection can eventually **BREED BACTERIA** and, if hydrogen sulfide and iron are present, the softener will eventually become plugged.

MANY WATER TREATMENT MARKETING COMPANIES convince their prospective customers that they only need a softener on a well. It will work for a while, and then the problems begin. Quite often the same company will return within months to "upgrade" the water treatment system to what it originally should have been.

IF SOFTENED WATER WERE THE ANSWER....

MUNICIPAL WATER COMPANIES WOULD SUPPLY IT

AND

GROCERY STORES WOULD SELL IT!