

# Port LaBelle Utility System Water “Hardness” Report

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While it does not cause a drinking water health problem for people or pets, “Hardness” is still one of the most important water quality considerations for homeowners. Too much hardness is what prevents you from using tap water in your clothes iron, it’s what over time clogs your faucet screens and shower heads, it’s what accumulates in your coffee maker and causes a bitter taste, and it’s what creates cloudiness in your ice cubes.

Other effects of hard water include:

- produces soap scum; most noticeable on tubs and showers;
- produces white mineral deposits on dishes; more noticeable on clear glassware; and
- reduces the efficiency of devices that heat water. As hardness deposits build in thickness, they act like insulation, reducing the efficiency of heat transfer.
- builds up and gradually clogs pipes

The most common components of water hardness are calcium and magnesium, although iron, strontium, and manganese may contribute. Since most of the hardness is calcium (Ca) and most of the calcium is in the form of calcium carbonate (CaCO<sub>3</sub>), hardness in water is reported as if all the hardness were CaCO<sub>3</sub> and laboratories report the mass (mg - milligrams) contained in a volume (L - liter) of water. Sometimes it is reported as grains per gallon.

Port LaBelle uses groundwater from the sandstone aquifer located between 200 and 300 feet deep. When rainwater slowly percolates down into the earth it becomes slightly acidic from the carbon dioxide becoming dissolved into the water. The carbon dioxide comes from the atmosphere and from decomposing organic matter, primarily plants. This slightly acidic water then dissolves small amounts of the rock, particularly our limestone which is made up of calcium carbonate, thus creating the hardness we find in our ground water. The level of hardness in water is ranked from soft to very hard:

Classification	mg/L or ppm	grains/gal
Soft	0 - 17.1	0 --1
Slightly hard	17.1 - 60	1 - 3.5
Moderately hard	60 - 120	3.5 - 7.0
Hard	120 - 180	7.0 - 10.5
Very hard	180 & over	10.5 & over

Removing hardness from water is called “softening” and can be accomplished in different ways. The Port LaBelle Utility System’s new water treatment plant filters out most (70%) of that hardness using what is called a membrane softening or ultra-filtration process. We pump water from the aquifer at 320 ppm hardness and clean it up to approximately 90 ppm hardness. Thus your tap water is right in the middle of the “moderately hard” range. Roger Greer and his team continue to adjust the treatment plant operations in an effort to get that number even lower and improve the efficiency of the process. The old PLUS water plant produced water that was just within the “hard” range at 120 ppm.

New York City water (generally ranked as the best tap water in the nation) has an average hardness is 76 ppm which places it in the same range as PLUS, moderately hard. So, with the completion of the new water treatment plant in July 2007, you are now receiving higher quality water...thanks in part to a multi-million dollar grant and loan from the U.S. Department of Agriculture Rural Utilities Service. But as clean and pure as your new tap water is, you’ll still probably want to continue using distilled water in your iron, but you should have noticed a marked improvement compared to before July 2007.