



Drinking Water Hardness

The major source of drinking water for Highlands Ranch is the South Platte River. This water source has levels of naturally occurring calcium and magnesium, which result in hard water. Our water hardness levels usually range between 11 to 13 grains per gallon (188-222 mg/l as CaCO₃).

Water hardness can be described as:

- Soft water = 0 to 3 grains per gallon
- Moderately hard water = 3 to 7 grains per gallon
- Hard water = 7 to 15 grains per gallon
- Very hard water = greater than 15 grains per gallon

The water that is supplied by Centennial Water and Sanitation District meets or exceeds all state and federal drinking water regulations. However, we do not remove water hardness at our water treatment plant. Water hardness is not considered a health concern. Using hard water in your home may result in water spots or a film on dishes or deposits on faucets, sinks, tubs and showers.

Dishwasher operation and spots/white film on dishes

In the past, dishwashing detergents that worked best with hard water contained high levels of phosphorus. Some contained up to nine percent. Recently-passed environmental regulations that prohibit or limit the use of phosphorus in dishwashing detergents went into effect July 2010. Dish detergent manufacturers have now replaced the phosphorus with enzymes or other chemicals that may not work as well with hard water.

Some dishwasher detergents perform better than others when used with hard water. The August and October 2009 *Consumer Reports* magazine includes ratings for various dishwasher detergents.

Most dishwasher manufacturers recommend filling both detergent cups with detergent to provide better cleaning and to reduce spots from hard water. The total amount of detergent used should be approximately one-third cup per load. The two detergent cups may not hold this amount, but the extra detergent can be placed in the bottom of the dishwasher. Rinse agents may also be recommended by the dishwasher manufacturers to reduce the spotting from hard water.

The water used in your dishwasher should be set at a temperature near 130 degrees. Run the hot water faucet closest to your dishwasher prior to washing your dishes to ensure that hot water reaches your dishwasher faster.

To remove existing films and spots on dishes and to prevent them from occurring again, you may add a half cup or more of white vinegar to the bottom of the dishwasher before starting the wash and/or rinse cycle. The vinegar dissolves the hard water deposits on the dishes. It is recommended that you check with your dishwasher manufacturer or read the instruction manual before using vinegar.

The *Consumer Reports* articles also recommended that silver and fine glassware should be hand washed as some of these cleaning products could cause damage and etching of glassware.

Hard water deposits on faucets, sinks, tubs and showers

Products that may remove hard water deposits include vinegar, baking soda or cornstarch mixed with water. There are also commercial cleaning products on the market to remove these deposits and they may be obtained from most hardware, home improvement or grocery stores. These products should be used according to manufacturer's directions.

Water softeners

Some Highlands Ranch customers choose to install a water softener to reduce the hardness levels. The most effective treatment method is an ion exchange process where calcium and magnesium are removed from the water in exchange for either sodium or potassium. These units require the use of sodium chloride (NaCl) or potassium chloride (KCl) to regenerate the softener resin. Water softeners will reduce the levels of hardness to lower levels and will reduce the hard water deposits and films. Because soft water may contain higher levels of sodium or potassium, softener users are advised to consult their physicians if they are on a low-sodium or low-potassium diet.

Chloride is a common by-product of a softener, and is flushed into the sewer system when the tank is recharged. Centennial Water must comply with chloride limits on the treated wastewater discharged into the South Platte River. The accumulative impact of chloride in wastewater can result in river quality degradation. Please consider this if you're thinking of purchasing a water softener system for your home or business.

There are various ways to install a water softener and piping options to consider. A reputable water softener dealer will provide assistance with the sizing and plumbing questions.

If you have further questions, please contact the Centennial Water & Sanitation District water quality laboratory at 303-791-2185, extension 3523.

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