Hard Water Fact Sheet

What is hard water?

- Hard water contains a high amount of naturally occurring minerals, particularly calcium and magnesium. The higher the content of calcium and magnesium, the harder the water.
- While hard water can leave water spots on shower doors and buildup on plumbing fixtures, it is safe to drink at levels found locally (in fact, calcium carbonate is the same mineral found in calcium vitamin supplements).
- Groundwater is typically harder than surface water, but is just as safe.

How does water become hard?

- Water becomes hard by picking up soluble minerals as it seeps through soil and rock into groundwater storage. Since water is a good solvent, it picks up minerals easily.

Indications of hard water

Hard water can interfere with cleaning tasks – from laundering and dishwashing to bathing and hair washing. Some telltale signs of hard water include:

- White scaly spots on your car after washing it.
- Soap scum or film on glass shower doors, shower walls, sinks and faucets, typical "ring around the bathtub."
- Reduced water flow due to hard-water deposits inside pipes.

How is it measured?

Water hardness is determined by the amount of calcium carbonate it contains. In 2007, Zone 7 Water Agency's imported and local surface water averaged from 88 to 98 milligrams per liter (considered moderately hard), while the groundwater drawn from three wellfields averaged from 264 to 348 mg/L (considered very hard).

Your tap water is primarily a blend of imported and local surface water, with groundwater taking up the slack during dry times and summertime-peak demand. In addition to seasonal variations, the percent of the blend in your tap will also vary depending on where you live in the Valley. For example, if you live near a surface-water treatment plan in Livermore, you will receive mostly surface water. If you live near a groundwater well in Pleasanton, you will receive more groundwater.

Household tips to combat hard water

- Leave a squeegee inside the shower and have each family member squeegee the walls and shower door after each use. This reduces hard-water buildup and a whole lot of scrubbing later on.

- Try applying plain white vinegar and lemon juice -- acids that help loosen and remove hard water deposits from glass shower enclosures.
- If your showerhead plugs up from hardness, fill a sandwich bag with vinegar and use a rubber band to fasten the bag to your shower. Leave it overnight.
- Pour a cup of white vinegar in the toilet bowl and leave it there overnight. Flush in the morning.
- Use phosphoric acid-based cleansers when cleaning the bathtub or shower. These items can be purchased at home improvement, drug or grocery stores. The manufacturer's instructions should always be followed.

To soften or not to soften

Nobody needs a water softener to make tap water safer, so this is really a matter of personal preference. Do your homework! Consider the following:

- Many water softeners add sodium to water, which may be a concern to people on sodium-restricted diets. Extremely soft water can also corrode pipes and is not recommended for watering plants, lawns or gardens due to high sodium content.
- Certain types of home water softeners release high concentrations of mineral salts into the municipal sewer system that can adversely affect wastewater treatment processes and make recycled water a poor choice for irrigation use. Consider using a softener with a portable cartridge that allows the water-softener company to haul the used brine away for disposal under controlled conditions.

What Zone 7 is doing to reduce water hardness

- Zone 7 is building a water-softening facility in northern Pleasanton. Using a process called reverse osmosis, the Mocho Demineralization Plant will remove minerals from groundwater pumped from four nearby existing wells.
- It will treat up to 7.7 million gallons per day (mgd) of groundwater. After mineral concentrate is removed, about 6.1 mgd of treated water will be available for blending with other supplies prior to delivery to retailers. The remaining 1.6 mgd of mineral concentrate will be exported out of the Valley in order to reduce the amount of salts in irrigation water that percolates back into the groundwater basin.
- The Mocho demineralization plant is expected to get on line in 2009, with a second plant planned for the future.
- After the initial project is on line, some people will see a significant reduction in water hardness, depending, among other factors, on where they live in the Valley and on seasonal factors. Some people will see very little change -- at least from the initial project -- because they receive water from Zone 7 wells that are not connected to the plant, or because they live in areas where retailers also pump from the groundwater basin.
- In the longterm, even those not directly benefiting from reductions in hardness of delivered water will see better groundwater quality because of salt removal from the groundwater basin as a whole.