Water Softener Sustainability Professional/Arizona (WSSP-A) Certificate Program

Module 2

Softeners and the Arizona Environment

Arizona Water Quality Association

Salinity and Water Concerns

Salinity and water scarcity are genuine problems facing Arizona.

Salinity and Water Concerns

Potable water sources **are diminishing**

- ✓ drought condition prevailing
- ✓ lower than average rainfalls
- ✓ increased population

Salinity and Water Concerns

Salinity **enters the soil** through source waters, as well as through human activity

- ✓ **8-10%** of total salts treated are from SWRS's
- ✓ **reduces** crop yields
- ✓ golf industry has sought SWRS **restrictions**
- ✓ **increases cost** of treating water for reuse

Water Treatment Costs

Water for homes and businesses is first treated at central facilities, both public and private.

Water Treatment Costs

Salinity is not treated centrally because:

- ✓ **cost prohibitive** to bring salinity down at the central water treatment plant
- ✓ **special equipment** is needed

Water Reuse and Salinity

Salinity has a clear impact on reclaimed wastewater.

Water Reuse and Salinity

- ✓ reclaimed water is a **major source** for agriculture and landscape, irrigation and industrial water use
- ✓ reclaimed water is **"climate independent"**, dependable, locally-controlled and generally beneficial
- ✓ must be **treated** for salinity
  - **Scottsdale**: $6 - $7 million annually with $56 - $80 million in capital costs
  - **Phoenix**: $25 - $200 million per year in capital, operation and management

Addressing the Issues Through Softeners

Salinity concerns have to be addressed at an individual level. The industry can do its part.

Addressing the Issues Through Softeners

Looking at the type of softeners:

- ✓ time-clock regeneration should be examined for **inefficient use of salt & water**
- ✓ "demand-initiated" regeneration is **very reliable and efficient** regarding the use of salt & water

Addressing the Issues Through Softeners

With an average daily soft water use per home of 300 gallons:

- ✓ **Time clock unit:** 15,000 gallons of water and 1,217 pounds of salt per year
- ✓ **DIR unit:** when properly programmed, 4,258 gallons of water and 973 pounds of salt per year*

* CASS Study

Addressing the Issues Through Softeners

The DIR unit represents a 60% savings of water and a 20% savings of salt compared to the time clock unit.

Addressing the Issues Through Softeners

Customers should be encouraged to move away from time clock softeners and onto DIR units.

Benefits of Water Softeners

The obvious benefits of softened water - better shampoo lather, fewer spots on dishes, reduced films on shower walls.

Benefits of Water Softeners

But there are many other practical advantages to softeners.

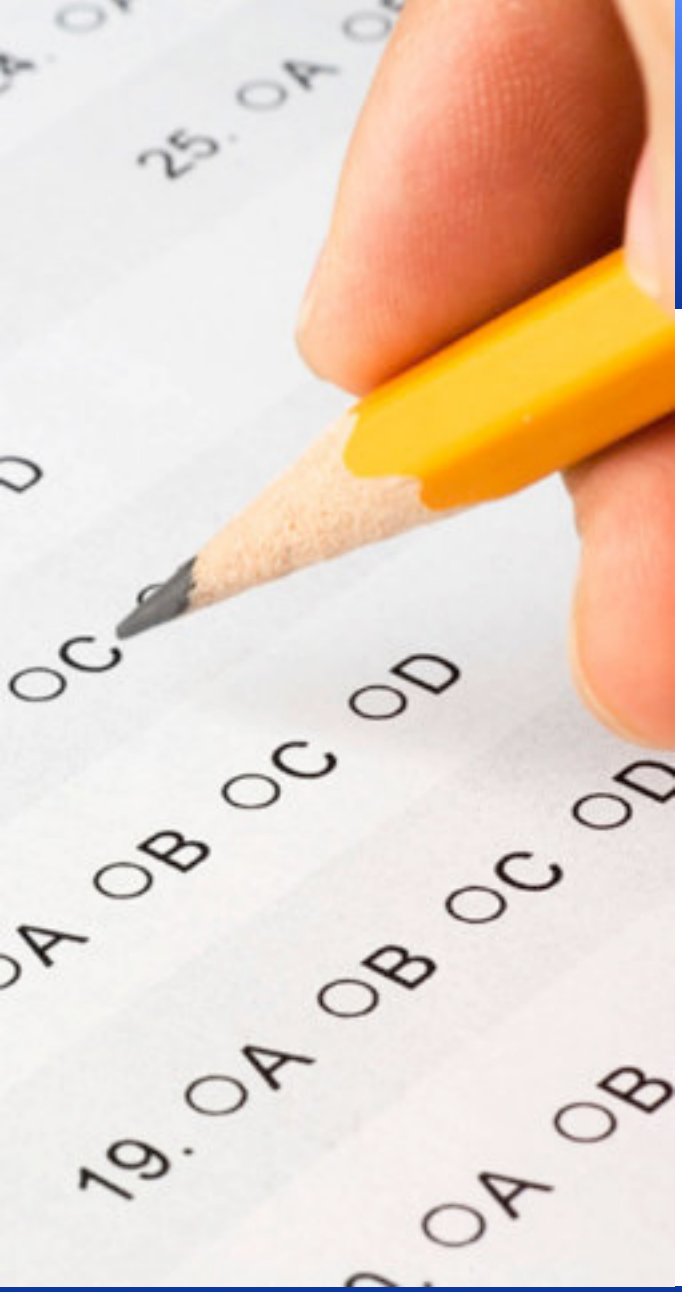
- ✓ **showerheads and faucets:** last longer
- ✓ **major appliances:** free of scale build-up
- ✓ **reduced detergent use:** 50-70% reduction
- ✓ **water heaters with storage tank**: more efficient
- ✓ **tankless water heaters:** failed efficiency testing on hard water
- ✓ **softeners & pipes:** not harmful to pipes
- ✓ **personal grooming:** skin and haircare

Review

- ✓ treatment at central facilities **cost prohibitive**
- ✓ water reuse involves **expensive** salinity treatment
- ✓ DIR units are **more efficient** than time clock units
- ✓ softeners mean **longer life** for appliances

Learn More

- ✓ **Arizona Water Quality Association** - http://azwqa.org
- ✓ **Water Quality Association** - http://wqa.org
- ✓ **CASS study** - http://www.usbr.gov/lc/phoenix/programs/cass/cass.html
- ✓ **HDR report** - http://watereuse.org/files/s/docs/Peter_Newell.pdf
- ✓ **Battelle study** - http://wqa.org/Portals/0/WQRF/ResearchStudy_WaterSoftenersEnvironmentalImpact-ExecSummary.pdf
- ✓ **Madison study** - http://www.madsewer.org/Portals/0/ProgramInitiatives/ChlorideReduction/Water%20Softener%20Study%20Final%20Report%20111615.pdf



Quiz

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