Next Generation Water Treatment
(Residential Drinking Water)

Simple
Effective
Eco-Friendly
Legal
Good for Business
+
Economical
Marketable
Next Generation Water Treatment
(Residential Drinking Water)

Our objectives today include understanding:
1. The forces leading to innovative treatment systems
2. The technologies innovative treatments are using
3. The differences in the technologies
4. Why these new technologies are good for business
Salt Softener

- Bypass Assembly
- Raw Water In
- Treated Water Out
- Drain (Backwash) Line
- Control Valve (Head)
- Upper Distributor (Top Locking Basket)
- Distributor Tube
- Resin (Media) Tank
- Overflow
- Brine Well
- Lower Distributor (Regular or Stack)
- Underbedding (Support Gravel)
- Brine Line

Saltless Softener

- Bracket
- Relief Button
- O-ring
- Cap
- Cartridge
- Sump

Presented 12/5/17 NGWA Nashville, TN. By Gabe Ergler
Salt Softener

- **Complicated**
  - Requires Specialized Knowledge to Install, Service and Maintain
  - Dozens of parts

- **More Expensive**
  - To buy, install and maintain

- **Not Eco-friendly**
  - Uses salt, produces waste water, and requires power

- **Larger and sits on the floor**
Saltless Softener

- **Simple**
  - No Specialized Knowledge to Install, Service and Maintain

- **Lower Cost**
  - To buy, install and maintain

- **Eco-friendly**
  - No salt, waste water or power

- **Smaller and hangs on the wall**
Traditional vs. Next Generation Water Treatment

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Why Water Treatment?

• Consumers
  • Solves problems for customers
  • Better quality of life

• Installers and Distributors
  • Grow or Expand Business
    • Services
    • Customer Base
    • Revenue
Why Alternatives to Salt Based Softeners?

• Government Regulations
  • Environmental Issues and salt based softener bans and discharge restrictions
CONCENTRATION OF HARDNESS AS CALCIUM CARBONATE, IN MILLIGRAMS PER LITER
Why Alternatives to Salt Based Softeners?

• Government Regulations
  • Environmental Issues and salt based softener bans and discharge restrictions

• High Costs
  • Purchase, installation and operation
  • Environmental
  • Maintenance – time and money
  • Space Requirements

• Changing Consumer Attitudes
  • Low cost high quality water that are smaller and quieter
  • Environmental concerns
  • Simple low maintenance
  • No slippery feeling
Technologies Available
(Focusing on Softening Alternatives)

- Physical Category
  - Electro Deionization
  - Nano Membrane Filtration
  - Coil Around Pipe
  - Magnet Around Pipe
  - Nucleation Assisted Crystallization (NAC)
Technologies Available
(Focusing on Softening Alternatives)

- Physical Category
  - Electro Deionization
  - Nano Membrane Filtration
  - Coil Around Pipe
  - Magnet Around Pipe
  - Nucleation Assisted Crystallization (NAC)

- Chemical Category
  - PolyHalt® Polyphosphate Sequestration
What is Hard Water?
(Source = WQA Web Site)

Hard Water ACTS Hard – Soft Water ACTS Soft
Let’s break it down: Hard Water -
• Is hard to wash in, referring to the soap wasting properties of hard water.
• Prevents soap from lathering.
• Causes a curdy precipitate (soap scum).
• Typically causes the buildup of hardness scale (such as seen in cooking pans).
• Is responsible for most scaling in pipes and water heaters and causes numerous problems in laundry, kitchen, and bath.

If you eliminate these problems is the water still hard?
What is Hard Water?
(Source = WQA Web Site)

Industry definition:
• Hardness is usually expressed in grains per gallon (or ppm) as calcium carbonate equivalent.

Note:
Grains per gallon measurement –
Does tell you the concentration of hardness minerals
Does NOT tell you how the Water ACTS

Hard Water ACTS Hard  –  Soft Water ACTS Soft
What is Soft Water?
(NO Characteristics of Hard Water)

Let’s take a look: Hard Water - **Soft Water,**
- **Is hard to wash in,** referring to the soap wasting properties of hard water.
- **Is easy to wash in,** use less soap and clean faster and easier.
- Prevents soap from lathering.
- ** Allows soaps to make more lather.**
- Causes a curdy precipitate (soap scum).
- **Doesn’t form a curdy precipitate.**
- Typically causes the buildup of hardness scale (such as seen in cooking pans).
- **Doesn’t cause the buildup of hardness scale.**
- Is responsible for most scaling in pipes and water heaters and causes numerous problems in laundry, kitchen, and bath.
- **Doesn’t cause scaling and these other problems**

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The Best Next Generation Water Treatment Is -

Simple
Effective
Eco-Friendly
Legal
Good for Business
+
Economical
Marketable

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## Compare Hard Water Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Saltless</th>
<th>Removes Hardness Minerals</th>
<th>No Waste Water</th>
<th>No Power Required</th>
<th>Low Operation &amp; Maintenance</th>
<th>Smaller Size</th>
<th>Lower Cost</th>
<th>No Specialized Knowledge Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt Softener</td>
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<tr>
<td>Electro Deionization</td>
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<td>Nano Membrane Filter</td>
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<td>Coil Around Pipe</td>
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<tr>
<td>Magnet Around Pipe</td>
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<tr>
<td>Nucleation Assisted Crystallization</td>
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<td>PolyHalt® Sequestration</td>
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Legend: Blank = False  ● = Yes  ○ = Partially
### Compare Saltless Softeners

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Simple</th>
<th>Eco-Friendly (no salt, power or waste water)</th>
<th>Legal where Salt Softeners are Banned or Restricted</th>
<th>Doesn’t Make Water Feel Slippery</th>
<th>3rd Party Certified</th>
</tr>
</thead>
</table>

Legend: Blank = False  ![Legend: Blank = False] = Yes  ![Legend: Blank = False] = Partially
These technologies do not remove the hardness so how do they soften the water? They change the potential for the hardness minerals to behave:

Treated minerals do not;

- Make water hard to wash in / with
- Cause a curdy precipitate
- Prevent soap from lathering
- Cause the buildup of hardness scale

- Cause scaling in pipes and water heaters and cause numerous problems in laundry, kitchen, and bath

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**Compare Top Saltless Softeners**

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<tr>
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<th>Simple</th>
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<th>Smaller Size</th>
<th>Lower Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucleation Assisted Crystallization</td>
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<td>PolyHalt® Polyphosphate Sequestration</td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Treatment</th>
<th>Max. Hardness</th>
<th>Also Treats Iron, Manganese, Low pH &amp; Silica</th>
<th>1 System Multiple Treatments?</th>
<th>System Maint.</th>
<th>Install Location</th>
<th>When Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucleation Assisted Crystallization</td>
<td>75 gpg</td>
<td></td>
<td></td>
<td>Media 1-3 years</td>
<td>Floor</td>
<td>2000’s</td>
</tr>
<tr>
<td>PolyHalt® Polyphosphate Sequestration</td>
<td>100 gpg</td>
<td>●</td>
<td>●</td>
<td>Filter 1 Year</td>
<td>Wall</td>
<td>1920’s &amp; 2000’s</td>
</tr>
</tbody>
</table>

Legend:
Blank = False  ● = Yes
Which Alternative Should You Use?

• All technologies have their pros and cons including:
  • Conditions for operating / water quality parameters
  • Complexity of treatment

• Consider
  • Customer needs / preferences
  • The manufacturer
  • Independent 3rd party certification

• Test the water
• Use the most suitable product
Whole home or business Cartridge Based treatment for:

- Arsenic
- Bacteria
- Hydrogen Sulfide (rotten egg odor)
- Iron Bacteria
- Low pH and
- Silica
Why Next Generation Water Treatment is Good for Consumers

- It is simple to understand – no special knowledge required
- It is quiet
- It is low Maintenance
- It is smaller and costs less to buy, ship and install
- It is Eco-Friendly
- It is legal where salt based treatment is not
- Their home is easier to clean and maintain
- They save Time and Money
- It solves their water quality problems and –
- It doesn’t make the water feel slippery
Why Next Generation Water Treatment is Good for Business

• It is simple
  • To understand – No special knowledge required
  • To Install
  • To Explain to customers
• It is smaller and costs less to buy, ship and install
• It is legal where salt based treatment is not
• It creates a Recurring Revenue Stream
What did we learn today?

1. Name different technologies challenging traditional treatment systems
1. Name different technologies challenging traditional treatment systems

2. Name benefits and differences between Next Generation and traditional treatment systems
What did we learn today?

1. Name different technologies challenging traditional treatment systems

2. Name benefits and differences between Next Generation and traditional treatment systems

3. What well water problems are treatable with cartridge based treatment systems?
1. Name different technologies challenging traditional treatment systems

2. Name benefits and differences between Next Generation and traditional treatment systems

3. What well water problems are treatable with cartridge based treatment systems?

4. Reasons to add drinking water treatment services to your business?
What did we learn today?

5. How do you pick the best treatment?
Summary

Water Treatment is Changing
Simpler and Easier
Eco-Friendly
Legal Everywhere
Good for Business
+
Economical
 Marketable
Limited Time Offers from Cascadian Water
Through December 2017

To get a copy of this presentation at
www.CascadianWater.com/NGWA2017

Learn More at on the web at www.CascadianWater.com

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