Water and Energy Recycling for the home

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www.NexusEwater.com
Agenda

• How Nexus System Works
• Current Applications
• Obstacles and challenges
Home Water Recycling with Nexus eWater

- 67% of all indoor water is treated
- 70% reduction in all sewer flow
- 100% green – just like your lawn!
Treatment Process

1. Grey Water Collection
2. Batch Treatment Process
   - Coarse Filtration (~30 mesh)
   - Hybrid Flotation (Aeration, Ozone and Electrolysis)
   - Activated Carbon Contact
   - Fine Filtration (<0.5µ)
   - UV Disinfection
3. Storage and Reuse Management
4. Monitoring and Reporting
5. Fault Detection
• Looks like tap water
• Very high water quality
• NSF 350 certified water can be used in California since January 1, 2014 for above ground lawn watering

Before

After
NSF/ANSI-350 Standard

“NSF/ANSI Standard 350 is a revolutionary standard established to set clear, rigid, yet realistic guidelines for water reuse treatment systems. With a key focus on public health and appropriate water quality criteria for reuse applications....” NSF.org

Systems certified to NSF/ANSI-350 are:

- Independently validated for system performance
- Undergone rigorous 6-month test program
- Verified to meet stringent water quality
- Verified to produce no odor
- Tested for electrical safety
- Tested to maximum permitted sound levels
- Tested for strength and integrity requirements
- Maintenance-free for 6-month minimum
- Approved with warranty and literature
- Subjected to annual audit requirements
Nexus eWater: NSF Certified

<table>
<thead>
<tr>
<th></th>
<th>Challenge Water</th>
<th>Treated Water</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOD₅ (mg/L)</strong></td>
<td>Specified in NSF/ANSI-350</td>
<td>Actual tested average</td>
</tr>
<tr>
<td></td>
<td>130-180</td>
<td>184</td>
</tr>
<tr>
<td><strong>TSS (mg/L)</strong></td>
<td>80-160</td>
<td>133</td>
</tr>
<tr>
<td><strong>Turbidity (NTU)</strong></td>
<td>50-100</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total Coliforms (CFU/100ml)</strong></td>
<td>10⁵-10⁶</td>
<td>1.5x10⁶</td>
</tr>
<tr>
<td><strong>E. Coli (CFU/100ml)</strong></td>
<td>100-1000</td>
<td>125</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>6.5-8.5</td>
<td>7.0</td>
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<tr>
<td><strong>Odor</strong></td>
<td>-</td>
<td>-</td>
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Trenching for Tanks
NEXbench
Tank Installed
NEXtreater Installed
Current Projects

• Custom SFR
• 40 -50 Tract SFR Developments
• Multi-family
• Whole community (10,000 home)
Obstacles and Challenges

• Education & Code Knowledge
  – Do not know difference of Treated vs Untreated Greywater
  – Do not clearly know the rules for either

• Fear of Unknown
  – Protectors of the Public Health not enforcers of the code.
  – Fear of homeowner tapping into recycled water line in the future

• Over-regulation = cost
  – Air Gap + testable ($$$) backflow prevention
  – Code clearly states that Air Gap is adequate

• Need cover to move forward
  – Staff wants policy from leadership rather than just following code.