Reclaimed Water Rules Revision: A Progress Report

by
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Arizona WateReuse Symposium
Flagstaff, Arizona
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A smidgen of AZ reclaimed water history

A dash of Arizona’s current program

A dollop* of public comments on revising the rules

A dusting of rule revision plans going forward

*dollop n. a shapeless mass or blob of something; glob
1926 – Reuse of reclaimed water begins at South Rim, Grand Canyon

1932 – Reclaimed water from new Phx 23rd Ave WWTP goes to farm irrigation

1972 – First reclaimed water rules, ADHS

1983 – Phx 91st Ave WWTP begins delivering reclaimed water to PVNGS
1987 – EQA establishes ADEQ, which begins administering reclaimed rules

1999 – ADEQ gets clear legislative authority for permitting use of reclaimed water

2001 – New comprehensive rules transform program

2016 – ADEQ begins revision of reclaimed water rules
82% of reuse occurs in just four states, Arizona being one.
Arizona is 2nd highest nationally in per capita reuse
Reclaimed Water Use

<table>
<thead>
<tr>
<th>Water Reuse Capacity (AF/yr)</th>
<th>Reclaimed Water as % of Total Water Supply</th>
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</thead>
<tbody>
<tr>
<td><strong>Israel</strong></td>
<td>510,000</td>
</tr>
<tr>
<td><strong>Singapore</strong></td>
<td>80,783</td>
</tr>
<tr>
<td><strong>United States</strong></td>
<td>3,400,000</td>
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<tr>
<td><strong>Florida</strong></td>
<td>955,000</td>
</tr>
<tr>
<td><strong>California</strong></td>
<td>807,000</td>
</tr>
<tr>
<td><strong>Texas</strong></td>
<td>482,000</td>
</tr>
<tr>
<td><strong>Arizona</strong></td>
<td>504,000</td>
</tr>
</tbody>
</table>

Source: Bluefield Research

...but #1 at integrating reuse into the water supply portfolio
Arizona’s 98 largest WWTPs

- Comprise 1/3 of total, yet treat 95% of AZ sewer flows
- 93% distribute at least some reclaimed water for reuse!

Landscape impoundment, Freestone Park, Gilbert, AZ
Of Arizona’s 98 largest WWTPs (≥ 1 mgd)

- 56% distribute Class A+ water

Mesa Northwest Water Reclamation Plant
More than 82% of treated wastewater generated in the Phoenix metro area is reused

- represents wastewater from 60% of AZ population
Reuse in the Greater Phoenix Area

• Disposition of treated wastewater

- Power 22%
- Agriculture 22%
- Recharge 21%
- Environmental (i.e., Tres Rios) 11%
- Landscape, turf irrigation 6%

SUBTOTAL THAT IS REUSED 82%

- Discharged (uncommitted) 18%

TOTAL 100%

Source: “Water Reuse in Central Arizona,” ASU Decision Center for a Desert City, 2013
Arizona’s Largest Reclaimed Water System

City of Tucson

• Serves 1000s of residential, M & I, and agricultural users

  160 miles of purple pipe
  18 golf courses
  50 parks
  65 schools (incl. Univ. of Arizona)
  >700 single family homes

Irrigating athletic field with reclaimed water, University of Arizona
1. Keep up with the rapidly moving reclaimed/reuse field

2. Sustainable water supplies are becoming increasingly important

3. Advance ADEQ Strategic Goals
   a. Support environmentally responsible economic growth
   b. Enhance Arizona’s unique environment

So Why Rule Revision?
Jan 1, 2016 – ADEQ opens docket to revise reclaimed water rules

1. Conveyances/Infrastructure

2. Permits/Permitting Process

3. Reclaimed Water Quality Standards
   - the five classes: A+, A, B+, B, C

4. Associated end uses
Three listening session workshops held

Feb 12 Tucson
Mar 10 Phoenix
May 5 Flagstaff
• 40 - 70 people attended each workshop

• More than 300 comments received

• Compiled into Issues Matrix

http://www.azdeq.gov/reclaimed-water-rulemaking
Conveyances/Infrastructure

Chlorine residual in distribution systems?

Signage requirements for Class A+ distribution systems

Specific cross-connection control criteria in reclaimed water rules?

Detailed design, construction, O&M criteria in rules?

Require certified operator for distribution systems?
Permits/Permitting Process

Create a distribution system permit that has some of the characteristics of the current “Agent” permit?

Review signage requirements for end use sites

Change A+ end use permit from Type 2 to Type 1 permit?

Make it easier to allow integrated use of reclaimed water with other waters (stormwater, canal water, etc.)

Kino Environmental Restoration Project (combined reclaimed/stormwater)
Credit: Pima County
Reclaimed Water Quality Standards and End Uses

Review parameters, limits, monitoring frequencies for all classes of reclaimed water to ensure safe use.

Add new end uses (e.g., wildfire & structural fire fighting, splashpads, open loop cooling systems, metal finishing, ecosystem restoration & enhancement, full-body contact).

Allow technologies other than filtration for meeting Class A+

Remove prohibition for reuse of reclaimed water for human consumption.
Other

Develop streamlined permits for large-scale, non-residential use of gray water

Modernize terminology regarding reclaimed water

Large-scale gray water reuse, Barrett Honors College, ASU
Direct Reuse of Reclaimed Water (18 AAC, Chapter 9, Article 7)

Overall reclaimed water requirements

Signage requirements for end uses of reclaimed water

Individual reclaimed water permit requirements (incl. industrial)

Household gray water

General reclaimed water permits (Class A+, A, B+, B, C)

Non-household gray water use permit
Chapter 9, Article 7. Reuse of Recycled Waters

New Part A. Reclaimed Water

New Part B. On-site Wastewater Treatment Systems

New Part C. Recycled Industrial Water

New Part D. Gray Water
• Establish expert workgroups
  • Technology
  • Water quality standards

• Develop first rule package concurrently

• Initiate formal rulemaking for first rule package (adoption by end of 2016)

• Second rulemaking based on input from expert workgroups (adoption by end of 2017?)
To be on listserv for rule revision:

Send e-mail to: reuserulemaking@azdeq.gov

Or e-mail me at: cgg@azdeq.gov

Rule revision info & Issue Matrix:

http://www.azdeq.gov/reclaimed-water-rulemaking

Town of Payson
Green Valley Lake