Reclaimed Water Rule Revisions Stakeholder Meeting

May 2, 2017
1. Introductions and Welcome
2. Rulemaking Schedule and Timeframe
3. Background and Existing Reclaimed Rules
4. Overarching Structure of Proposed Rules
5. Key Proposed Changes
6. Open Discussion
Rulemaking Schedule

- **Friday, May 5, 2017** – Please provide comments on the draft to Heidi Haggerty (haggerty.heidi@azdeq.gov)

- **Late May or early June 2017** - Proposed rule will be filed with Secretary of State

- **Late June 2017** – 30 day comment period likely to begin

- **December 2017** – Final Rule

- This is just Phase 1, Phase 2 & 3 involves workgroups to provide expert opinions
BACKGROUND AND EXISTING RECLAIMED RULES
1972 – First reclaimed water rules, ADHS

2001 – Comprehensive rules transform program
- Stringent treatment standards for new/expanded WWTPs under APP
- Permit program for reclaimed water end users
- RWQS for five classes of reclaimed water (A+, A, B+, B, C)
- List of end uses allowed for the five classes

Reclaimed water pipeline, City of Chandler

Viticulture with reclaimed water, Cottonwood
(Yavapai College photo)
Rules Helped Spur Reuse, National Prominence

82% of reuse occurs in just four states, Arizona being one

Map: Western Water, July/August 2008

Reused Wastewater Flows, 2014

Source: Bluefield Research
Rules Helped Spur Reuse, National Prominence

Arizona is 2nd highest nationally in per capita reuse
Rules Helped Spur Reuse, National Prominence

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

Source: Bluefield Research

...but #1 at integrating reuse into the water supply portfolio
Gray Water Rules Were Also Transformed In 2001

- Merged into the reclaimed water rules
- Removed requirement for “hard permitting” of home gray water use
- New focus on education—simple BMPs for home use
So, Why This Rule Revision?

- Keep up with the rapidly moving reclaimed/reuse field
- Sustainable water supplies are becoming even more important
- Need to address potable reuse
Expert workgroups established – first meeting held on April 28

- Reclaimed water quality standards
  - review standards based on current science
- Infrastructure/technology
  - review distribution system criteria for adequacy
  - recommend detailed criteria for potable reuse

Two installments of rulemaking (possibly combined into one) based on expert input
OVERARCHING STRUCTURE OF PROPOSED RULES
Existing Rule Organization

18 A.A.C. 9, Article 6

- Reclaimed Water Conveyances
  - Pipeline Conveyances
  - Open Water Conveyances
- Definitions, Transition, General Requirements, and other Administrative Sections
- Reclaimed Individual Permit Application and General Provisions
- Signage for Direct Reuse

18 A.A.C. 9, Article 7

- Direct Reuse of Reclaimed Water
  - Type 1 Reclaimed Water Permit
  - Type 2 Reclaimed Permits (A+, A, B+, B, C)
  - Type 3 Reclaimed Permits (Agent and Blended Facility)
  - Type 3 Gray Water Permit
- General Permit Revocation
- Enforcement
- Reclaimed Individual Industrial Wastewater Permit
Proposed Rule Structure

Recycled Water

Potable Reuse

Reclaimed Water

Gray Water

Recycled Industrial Wastewater
**New Recycled Water Umbrella**

<table>
<thead>
<tr>
<th>Article 7</th>
<th><strong>Use of Recycled Water</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>General Provisions</td>
</tr>
<tr>
<td>Part B</td>
<td>Reclaimed Water</td>
</tr>
<tr>
<td>Part C</td>
<td>Recycled Industrial Wastewater</td>
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<tr>
<td>Part D</td>
<td>Gray Water</td>
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<tr>
<td>Part E</td>
<td>Purified Water for Potable Reuse</td>
</tr>
</tbody>
</table>

“Recycled Water” means....

“a processed water, including reclaimed water and gray water, for which the Department has designated water quality specifications to allow the water to be used as a supply.”
<table>
<thead>
<tr>
<th>Article 7</th>
<th>Use of Recycled Water</th>
<th>Section Titles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part A</strong></td>
<td>General Provisions</td>
<td>→ Definitions</td>
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<tr>
<td></td>
<td></td>
<td>→ Applicability and Standards for Recycled Water</td>
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<tr>
<td></td>
<td></td>
<td>→ Recycled Water Individual Permit Application</td>
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<tr>
<td></td>
<td></td>
<td>→ Recycled Water General Permit</td>
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<tr>
<td></td>
<td></td>
<td>→ Recycled Water Permit Term, Information Changes, and Renewal</td>
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<tr>
<td></td>
<td></td>
<td>→ Recycled Water Permit Revocation</td>
</tr>
<tr>
<td><strong>Part B</strong></td>
<td>Reclaimed Water</td>
<td>→ Transition of Permits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ General Requirements (includes conveyances and signage)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ General Provisions for Recycled Water Individual Permit for Reclaimed Water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ Type 2 Recycled Water General Permit(s) for Direct Reuse of Class A+/A/B+/B/C Reclaimed Water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ Type 3 Recycled Water General Permit for a Reclaimed Water Blending Facility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ Type 3 Recycled Water General Permit for a Reclaimed Water Agent</td>
</tr>
<tr>
<td><strong>Part C</strong></td>
<td>Recycled Industrial Wastewater</td>
<td>→ Recycled Water Individual Permit for Industrial Wastewater</td>
</tr>
<tr>
<td><strong>Part D</strong></td>
<td>Gray Water</td>
<td>→ Type 1 Recycled Water General Permit for Gray Water</td>
</tr>
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<td></td>
<td></td>
<td>→ Type 3 Recycled Water General Permit for Gray Water</td>
</tr>
<tr>
<td><strong>Part E</strong></td>
<td>Purified Water for Potable Reuse</td>
<td>→ Recycled Water Individual Permit for an Advanced Water Treatment Facility</td>
</tr>
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</table>
Permit Types Under New Structure

<table>
<thead>
<tr>
<th>Permit Type</th>
<th>Part</th>
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<tbody>
<tr>
<td>Type 1 Recycled Water General Permit for Gray Water</td>
<td>D</td>
</tr>
<tr>
<td>Type 2 Recycled Water General Permit(s) for Direct Reuse of Class A+/A/B+/B/C Reclaimed Water</td>
<td>B</td>
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<td>Type 3 Recycled Water General Permit for a Reclaimed Water Blending Facility</td>
<td>B</td>
</tr>
<tr>
<td>Type 3 Recycled Water General Permit for a Reclaimed Water Agent</td>
<td>B</td>
</tr>
<tr>
<td>Type 3 Recycled Water General Permit for Gray Water</td>
<td>D</td>
</tr>
<tr>
<td>Recycled Water Individual Permit</td>
<td>A</td>
</tr>
<tr>
<td>Recycled Water Individual Permit for Industrial Wastewater That Is Reused</td>
<td>C</td>
</tr>
<tr>
<td>Recycled Water Individual Permit for an Advanced Water Treatment Facility</td>
<td>E</td>
</tr>
</tbody>
</table>

1No permit types were removed from existing rule.
2Individual permit can be used with all recycled water types to accommodate special situations and provide flexibility.
3New permit tailored to potable reuse.
KEY PROPOSED CHANGES
Key Proposed Changes

1. New Nomenclature and Rule Structure
2. Modified Prohibition Against Providing Reclaimed Water for Human Consumption
3. Added Interim Permitting Criteria for Producing Potable Water from a Reclaimed Water Source
4. Modified Type 1 and Type 3 Gray Water Permit Provisions
6. Reporting Requirements
8. Notice Requirements for Permit Issuance
9. Other minor clarifications and technical, grammatical, and consistency modifications
Purified Water for Potable Reuse

- Modified Prohibition Against Providing Reclaimed Water for Human Consumption
- Definition: Advanced Water Treatment Facility
- Part E. Interim Criteria for an Individual Permit for Potable Reuse
Modification of Human Consumption Prohibition

From:
Prohibited activity.
Providing or using reclaimed water for...
“Direct reuse for human consumption.”

To:
Prohibited activity.
“Providing water for human consumption from a reclaimed water source except as allowed in Part E of this article.”
“Advanced water treatment facility” means:

- A facility that treats and purifies Class A+ or Class B+ reclaimed water to produce potable water suitable for distribution for human consumption.

- R18-9-B702(B) does not apply to an advanced water treatment facility.

- Potable water produced by an advanced water treatment facility is not reclaimed water.
Interim Permitting Criteria of Potable Reuse

- Source water characterization
- Pilot treatment system
- Microbial control technology
- Microbial reduction targets
- Chemical control technology
- Monitoring plan
- Start-up plan
- Operation and maintenance plan
- Operator Training
- Financial capability
Advanced Water Treatment Example

Drinking Water

Drain to Collection System

Wastewater Treatment

Class A + or B+ Reclaimed Water

Example Advanced Treatment

Membrane Process
- Ultrafiltration
- Reverse Osmosis

Disinfection and Advanced Oxidation
- Granular Activated Carbon & Chlorination
- UV

Potable Water
Household Gray Water

- No fundamental permitting changes
- Best management practices clarifications and improvements including:
  - Lists some measures for minimizing standing water
  - Holding time in tanks should be less than 24 hours

Photo by Brad Lancaster
Larger Volume Gray Water Use

- New criteria for end use makes Type 3 permit more usable

Subsurface irrigation with gray water and harvested rainwater, Reid Park Zoo Training Center, Tucson
Reporting and Permit Revocation Provisions

- Annual reporting changed to calendar year
- Easy to make informational changes
- Other unlisted changes will require a new permit
- Clearer language for revocation of permits for noncompliance
Modification of Permit Notice Provisions

- ADEQ will notice permits on the Department’s website, rather than in the newspaper
  - More efficient
  - Saves the state and customers money in the end
  - Will still reach large audience through GovDelivery
  - Saves time and speeds up permit issuance
OPEN DISCUSSION

Send comments to:
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602-771-4815 (or above email)