

Infrastructure/Retrofit Working Group of the Blue Ribbon Panel on Water Sustainability

Meeting Minutes

April 7, 2010

Introductions

Per the sign-in sheet, 24 people attended the meeting.

Approval of 3-24-2010 Meeting Minutes

The Infrastructure/Retrofit Working Group (Working Group) approved the 3-24-2010 meeting minutes with one correction on Table 3, Item 4 – change from “Review the Type 2 Reuse (Agent) permit...” to “Review the Type 3 Reuse (Agent) permit...”

Presentations

Two presentations were given to the Working Group. One provided background information on existing reclaimed water distribution system standards developed by Australia. The other provided background information on the City of Phoenix’s future reclaimed water utilization strategy.

Australian Recycled Water Regulations – Presented by Graham Symmonds

- A. Australia has taken a risk-based approach to developing standards and guidelines for recycled water (non-drinking water).
- B. Australia’s recycled water practices are nationally mandated through the Ministry of Water. Australia uses the terminology “recycled water,” which isn’t as restrictive as reclaimed water, thus allowing other sources of non-potable water to be administered under the same regulatory framework.
- C. Australia’s standards contain provisions and guidance for :
 - a. Pipe clearances
 - b. Service connections
 - c. “Dead ends”
 - d. Placing potable and non-potable pipes in the same trench
 - e. Identification of non-potable infrastructure
- D. It was unclear how Australia’s risk-based approach was used to get to the numerical non-potable water infrastructure standards (e.g., pipe separation distances).
- E. Australia’s A+ reclaimed water standards require 4 log virus inactivation/removal and 8-9 log virus inactivation/removal for aquifer recharge (indirect potable).
- F. Australia sets its water rates with the assumption that the highest cost treatment process (desalination) would need to be used to generate potable water supplies. This results in water rates that are approximately 4 times higher than the water rates in the United States.

City of Phoenix Future Recharge Program – Presented by Andy Terrey

- A. Details of a feasibility study for a future recharge program near the Cave Creek Water Reclamation Facility (WRF) were provided. This program would involve using potable and non-potable Aquifer Storage and Recovery (ASR) wells to recharge the aquifer when water supply is greater than demand and then recover water from the same aquifer in the future when demands are greater than supply.
- B. The City has undertaken groundwater modeling to estimate how the water table would respond to different levels of ASR recharge and recovery activities.
- C. The City is considering using advanced oxidation processes (AOP) to treat the reclaimed water prior to recharge as a mechanism to prevent bio-fouling and maintain sufficient ASR recharge rates.
- D. The City of Phoenix would be using the aquifer as a “storage basin” where they will be mixing potable and non-potable supplies. The City is considering the following options for utilizing the recovered water:
 - a. Mixing with CAP supplies and treating at the Union Hills Water Treatment Plant (WTP),
 - b. Blending directly with Union Hills WTP treated water,
 - c. Distribution to reclaimed water customers.

Formation of Sub-committees

Two sub-committees were formed and several members of the Infrastructure/Retrofit Working group expressed interest in participating:

- A. **Aquifer Recharge Sub-committee** – Maurice Tatlow to chair and Doug Toy, Mike Barone, Jim Clune, Gary Gin and Andy Terrey to participate.
- B. **Retrofit Sub-committee** – Andy Terrey to chair and Dale Lieb, Mark Titus to participate.

The sub-committees set a goal to meet sometime in the next month. Participation in a sub-committee is open to any member of the Infrastructure/Retrofit working group.

Group Discussion

It was suggested that something like a Consumer Confidence Report for drinking water utilities might be useful for reclaimed water systems to send to end users as part of O&M best management practices. Such a report by the reclaimed water utilities might aid public acceptance of reclaimed water.

Graham passed out a document he drafted entitled “Road Map to Water Sustainability.” This was provided for consideration by attendees as one way of comprehensively organizing all of the topics the Infrastructure working group will be addressing.

The Working Group has identified several “gaps” in the state of Arizona existing reclaimed water technical standards. These gaps are shown in Table 1 along with the date of the meeting where each gap was identified.

Table 1. Gaps in the State of Arizona Existing Reclaimed Water Technical Standards Identified by the

Infrastructure/Retrofit Working Group			
No.	Description	Date of Meeting	Potential Source of Guidance/Applicability for Arizona
1	There is no guidance provided on retrofitting systems (e.g., converting an existing potable water line to deliver reclaimed water)	2-24-2010	
2	Current standards do not address groundwater augmentation that occurs when reclaimed water is recharged to the aquifer	2-24-2010	
3	There is no guidance provided on distribution and use of reclaimed water inside buildings	2-24-2010	Tucson Water
4	There is no guidance provided on using raw water to augment reclaimed water to meet seasonal demand fluctuations	2-24-2010	
5	There is no guidance provided regarding using high quality reclaimed water to augment potable water supplies at water treatment plants during emergencies	2-24-2010	
6	There is no guidance provided related to the protection of reclaimed water from the point of delivery to end users in order to preserve the quality of the water	2-24-2010	
7	On-site issues are not addressed	2-24-2010	State of Florida
8	There is no guidance provided related to operations and maintenance of reclaimed water conveyances	2-24-2010	
9	There is no guidance provided for abandoning a reclaimed water line.	3-24-2010	
10	Should a General Aquifer Protection Permit (APP) be required to operate a reclaimed water distribution system?	3-24-2010	
11	Should certification/training for reclaimed water users be required?	3-24-2010	
12	There is more EPA guidance for Water Treatment unit processes than for Wastewater Treatment Unit Processes.	4-7-2010	

The Working Group has suggested several ways to fill in the gaps in the state of Arizona's existing reclaimed water technical standards. These suggestions are shown in Table 2 along with the date of the meeting where suggestion was made.

Table 2. Proposed Methods to fill in the Gaps in the State of Arizona Existing Reclaimed Water Technical Standards Identified by the Infrastructure/Retrofit Working Group		
No.	Description	Date of Meeting
1	Incorporating design standards in the regulatory rules	2-24-2010

2	Considering aquifers as “infrastructure” for storing reclaimed water for future use	2-24-2010
3	Reviewing existing standards from other states or countries to determine applicability to the State of Arizona	2-24-2010
4	Incorporating a visioning process that will help chart a course to achieve goals of the working group	2-24-2010
5	Developing Best Management Practices (BMPs) for operations related to reclaimed water distribution	3-24-2010

The Working Group has identified several issues that are related to reclaimed water infrastructure but that also might be more appropriately addressed by another working group or at the Blue Ribbon Panel level. These issues are shown in Table 3 along with the date of the meeting where each issue was identified.

No.	Description	Date of Meeting
1	Impact of water softening on reclaimed water quality with primary concern for increased salinity and TDS concentrations	2-24-2010
2	De-centralized use of reclaimed water resources	2-24-2010
3	Permitting issues related to jurisdictional boundaries that might result in potable water supplies being located too close to reclaimed water recharge projects	2-24-2010
4	Review the Type 3 Reuse (Agent) permit for a reclaimed water distribution utility in regards to risk to the utility versus the end user with respect to the use of reclaimed water “after the meter”	3-24-2010
5	Addressing the formation of Disinfection By-Products (DBPs) in reclaimed water	3-24-2010
6	Addressing reclaimed “water wheeling” whereby an intermediate party delivers water to another user (e.g., a golf course providing water from its lake to a HOA subdivision).	3-24-2010

Action Items

The following action items resulted from the meeting:

- Guy Carpenter, Chuck Graf and Graham Symmonds will put together a framework for the recommendations from the Infrastructure/Retrofit Working Group to the Blue Ribbon Panel.
- The Aquifer Recharge and Retrofit sub-committees will hold their first meeting sometime in the next month.
- At the next meeting, Mike Palermo will present “Lessons (O&M and More) From 24 Years of Operating a HOA Reclaimed Water System”
- The next meeting will be held, Wednesday, April 21st from 9:30 – 11:30 at ADEQ.
- The next Blue Ribbon Panel Meeting is Friday, May 5th.