

Scottsdale Water Campus

Arizona's First Direct Potable Reuse Full Scale Permit

Brian K. Biesemeyer, PE, Scottsdale Water Executive Director



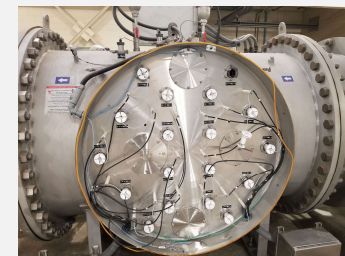
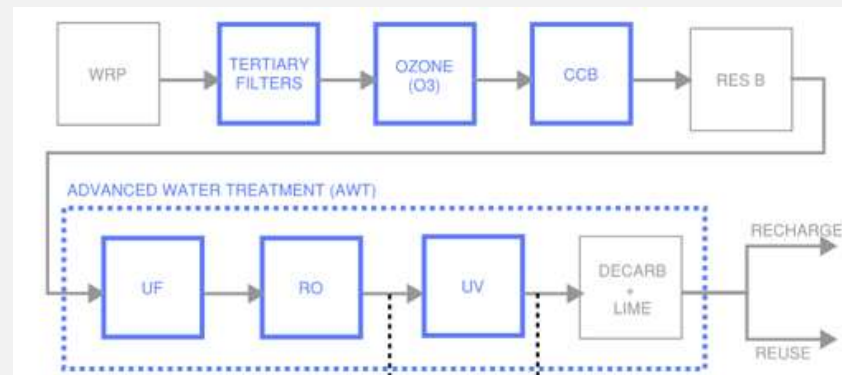


Scottsdale Water Campus

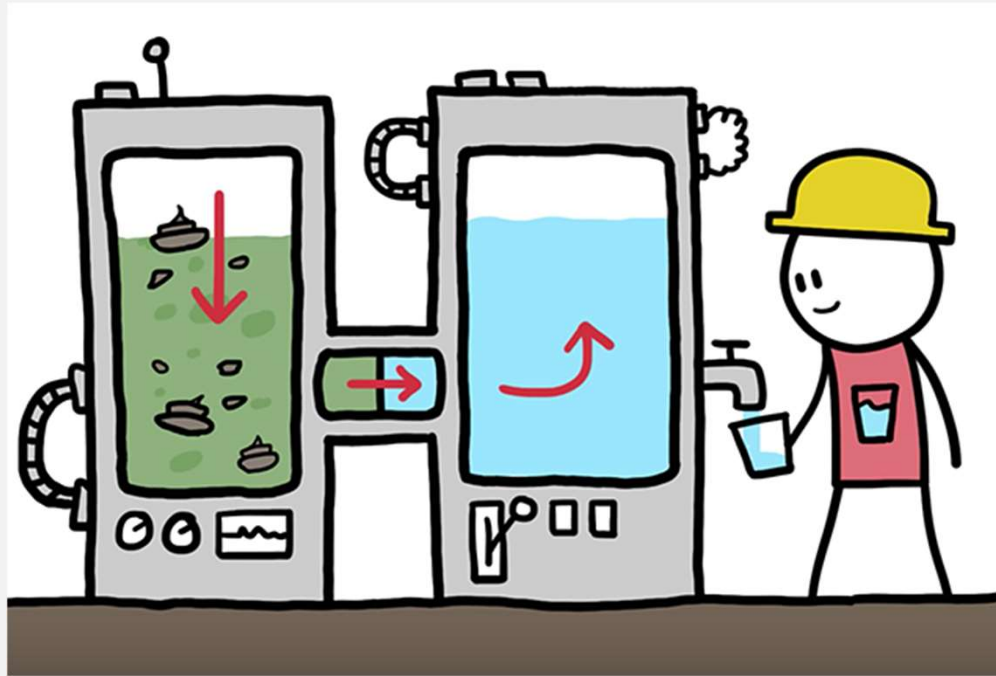
Water Campus History

- Initially
 - WRP
 - AWT
 - Membrane Filtration
 - Reverse Osmosis

- Expansion
 - AWT
 - Ozone
 - MF → Ultra Filtration
 - Ultra Violet Photolysis



Next Generation – Direct Potable Reuse



DPR Rule Changes

- January 1, 2018 – State DPR Prohibition Lifted
 - Phase I – R18-9-E701
 - Outline elements for design and source water monitoring
 - Phase II – delayed
 - Needs to outline specifics rule requirements

- July 2018 – ADEQ Asks for Projects

First Steps

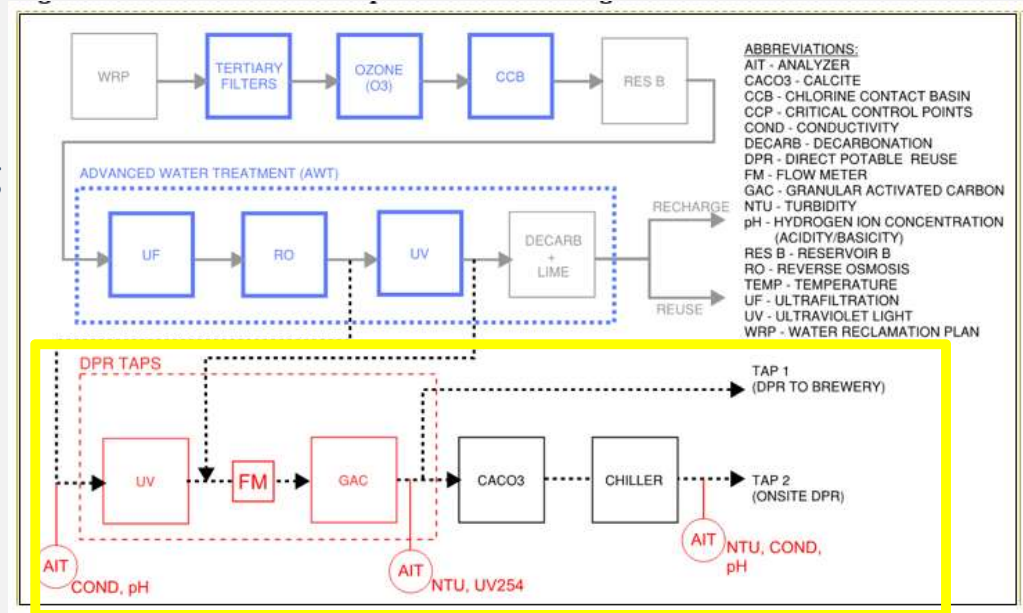
- October 4, 2018 - ADEQ and Scottsdale Water Meet
 - Scottsdale Water outlines thoughts on demonstration project
 - ADEQ expresses need for someone to be first and help determine process
- October 18, 2018
 - Team from ADEQ tours Water Campus
 - COS outlines intent to have DPR taps at end of AWT – not at CAP plant
 - Tap 1 – Water for making beer (water-based products)
 - Tap 2 – Taste testing for tours and Citizen Academy
 - Discuss preliminary issues
 - Log removal requirements
 - Emerging contaminants
 - Monitoring before distribution of water

Additional Treatment

- Though the Water Campus has all treatment necessary to meet quality standards an additional treatment skid is being added

- Redundant UV
- GAC for polishing
- Remineralization
- Chiller

Design, construction and permit support provided by





Permit Application

- February 7, 2019 – Scottsdale Water Submits Permit Application
 - Individual Reclaimed Water Permit
 - No application available for DPR
 - Included preliminary proposal for Design Report criteria
 - No pilot study – AWT has been operating 20 years
 - Log Removal credits of 10/8/8 – split between California and Texas
 - Short list of Emerging contaminants
 - Drinking water standards monitoring
 - Process Control Monitoring – prior to release of water for events

Challenges

- Laboratory license for emerging contaminants
 - ADHS unable to license Scottsdale WQ Lab because compounds not regulated.
 - Will analyze as process control
- Determination of Public Water System
 - Number of people served during taste tests will be less than threshold to classify as non-public water system
 - Not required to do any drinking water monitoring for a drinking water program.
 - System will be locked out while not in use to prevent access

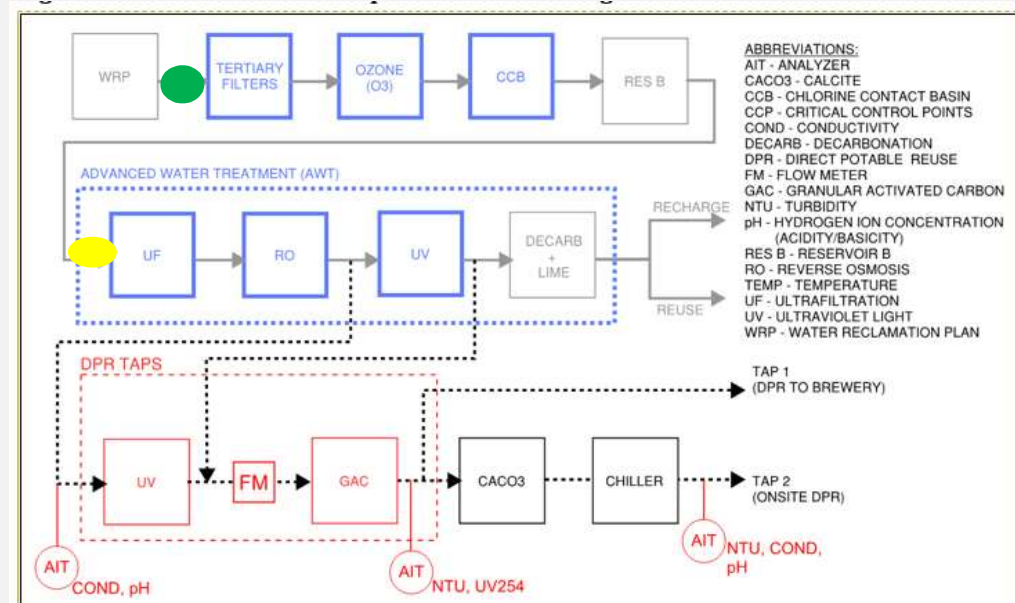


Challenges

- Operator certification or training
 - Not currently a license that covers reclaimed and drinking water together
 - ADEQ not requiring dual certification but Scottsdale water is working toward dual certification
 - Scottsdale Water will provide drinking water training by Water Quality staff
- Demonstration of technical, financial and management capability
 - Water Campus has been in operation for 20 years so technical and management are proven
 - Provided financial statement

Challenges

- “Source Water” location determination
 - Sampling per rule is required at location deemed to be “source water” and meet A+ requirements
 - For Water Campus that was determined to be UF Influent
 - For log removal credit “source water” starts at tertiary treatment - prior to ozone, filtration and disinfection



Final Steps

- April 30, 2019 – Scottsdale Water Submits Design Report and O&M
 - New treatment skid is fully design and build begins
- Involvement of Maricopa County
 - ATC/AOC – Not required as program was not delegated
 - Drinking Water – Not a public water system
 - County Prohibition – under review

Draft Permit

- June 7, 2019 – ADEQ issues draft permit
 - Edited version submitted back to ADEQ June 21, 2019
 - Final Draft will require a 30 day public comment period

- New Source Sample – UF Influent
 - Results submitted July 9, 2019

- Finished water sample – Taken from DPR Skid, Tap 1
 - In Process

Questions?



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