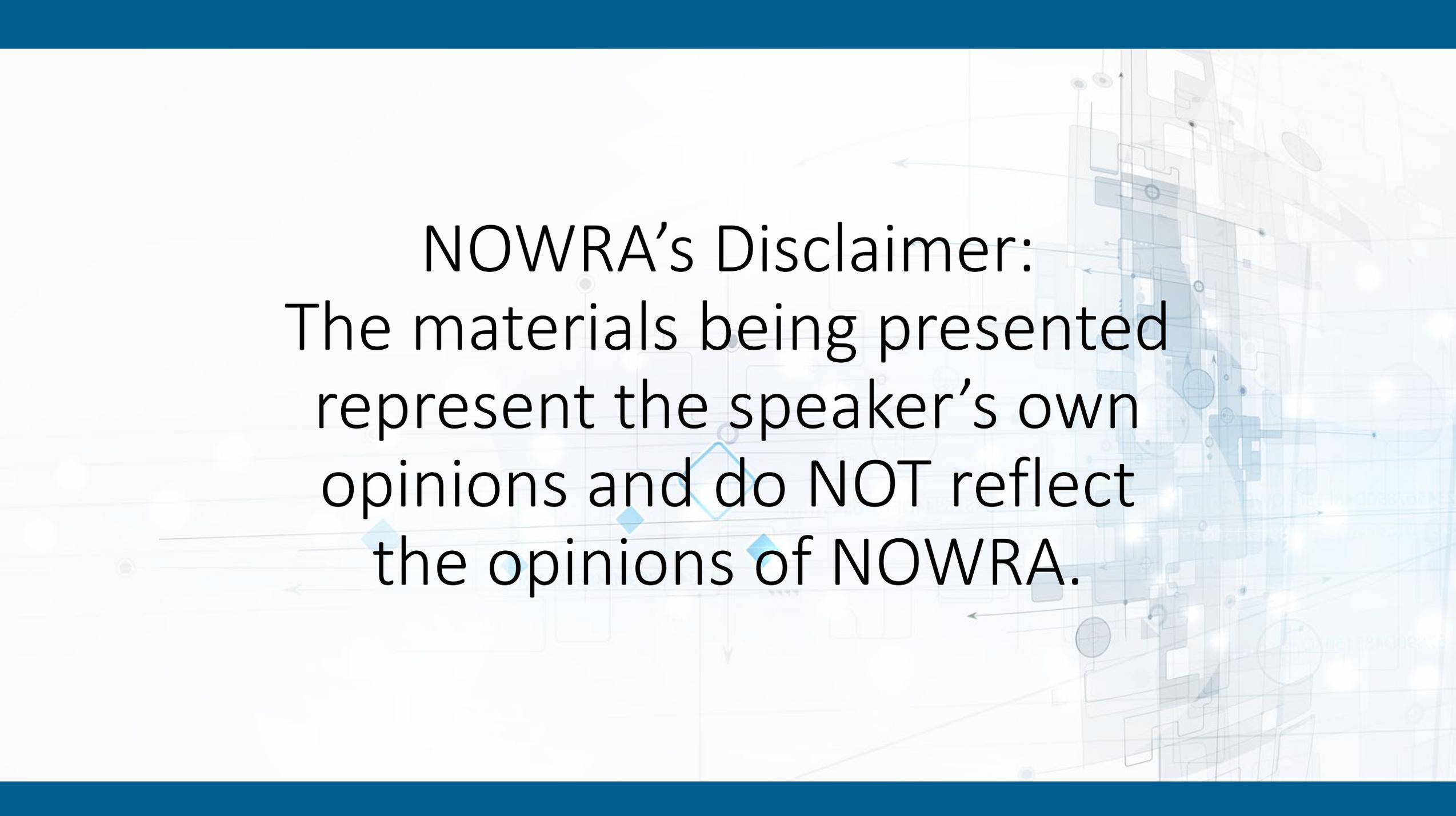


# Source Water Protection and Onsite Wastewater

**Sheryl Ervin**  
**Senior Regulatory Specialist**



**INFILTRATOR®**  
water technologies



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The materials being presented  
represent the speaker's own  
opinions and do NOT reflect  
the opinions of NOWRA.

# Water

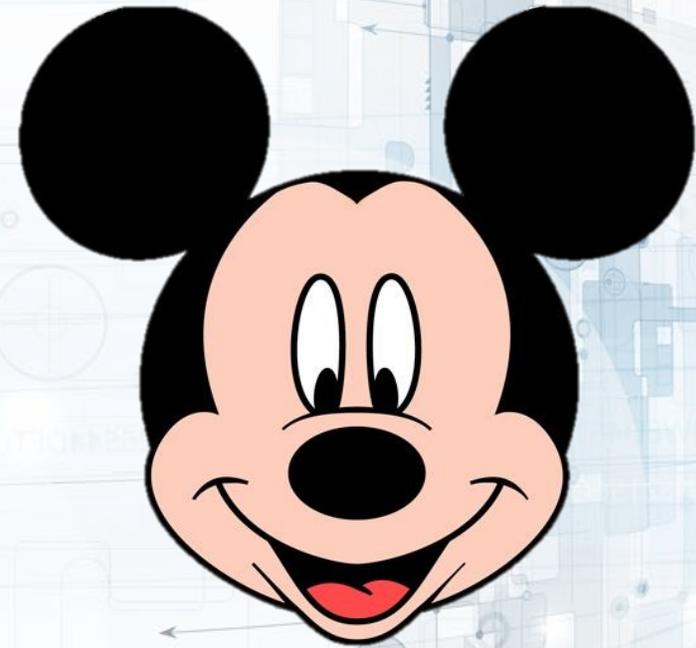
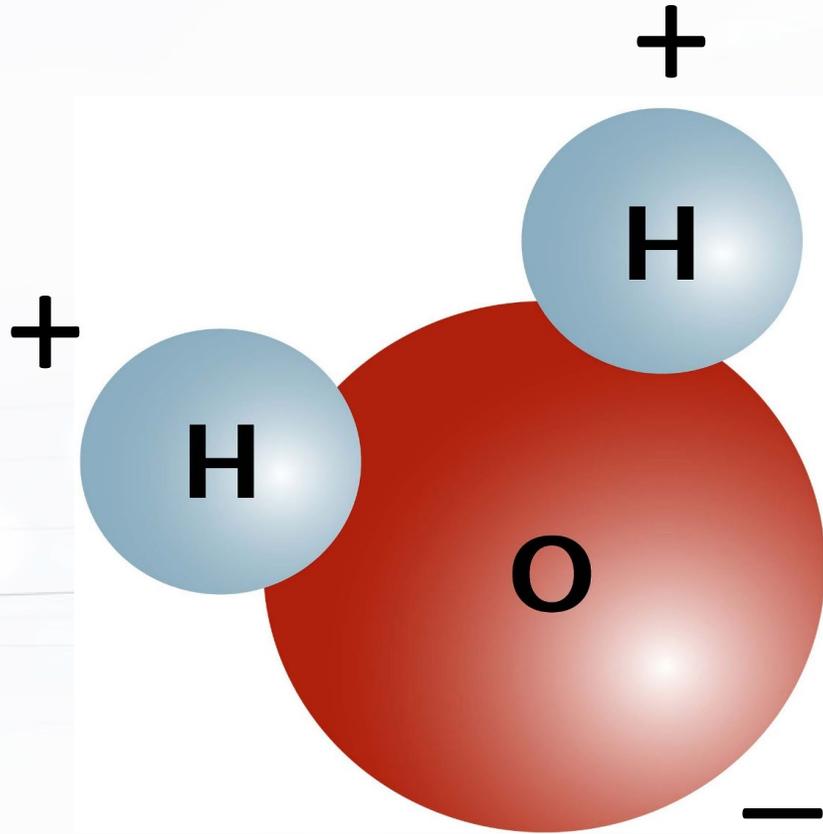


WHEN YOU OPEN THE DISHWASHER



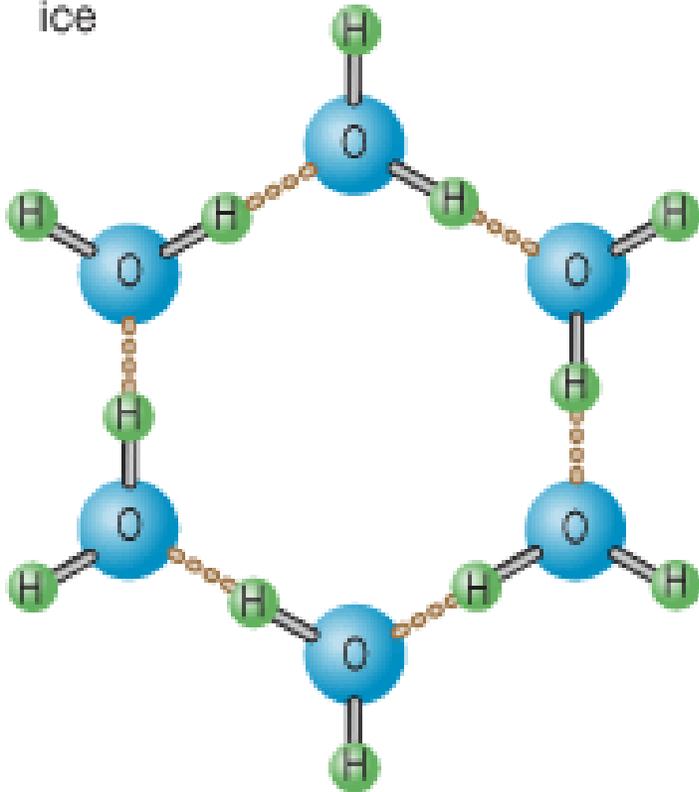
WITH YOUR GLASSES ON

# Water Molecule

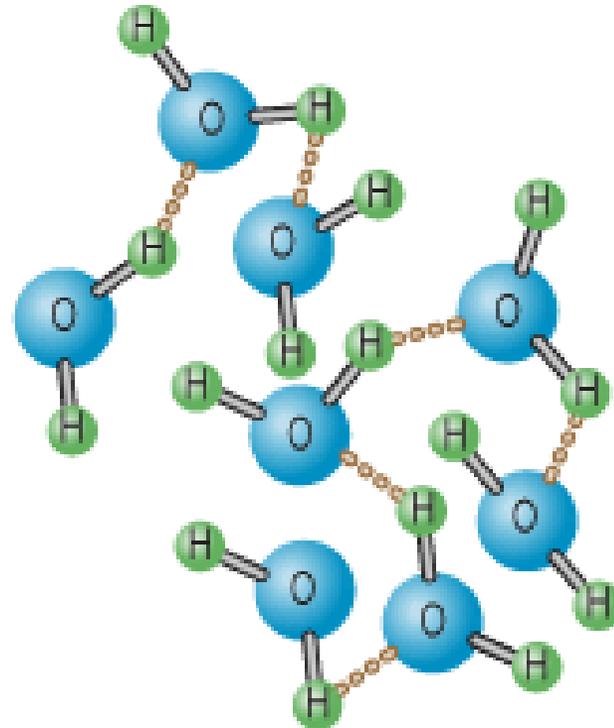


# Physical States of Water

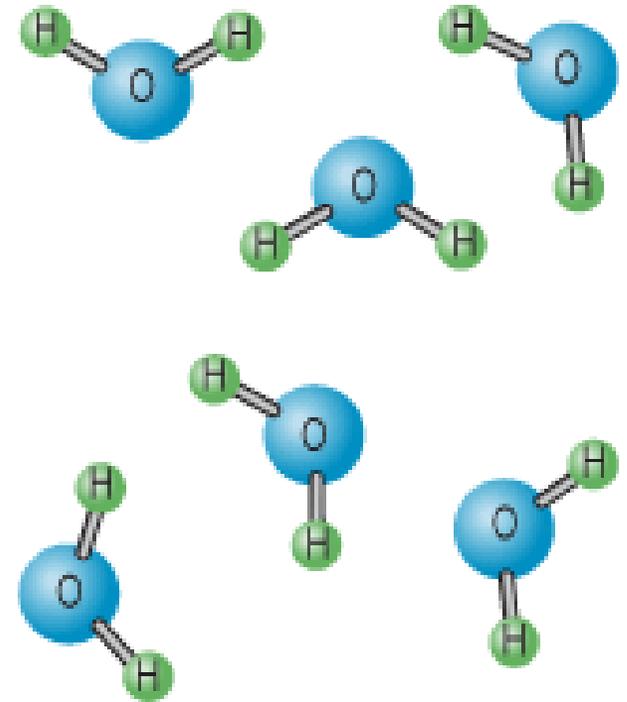
ice



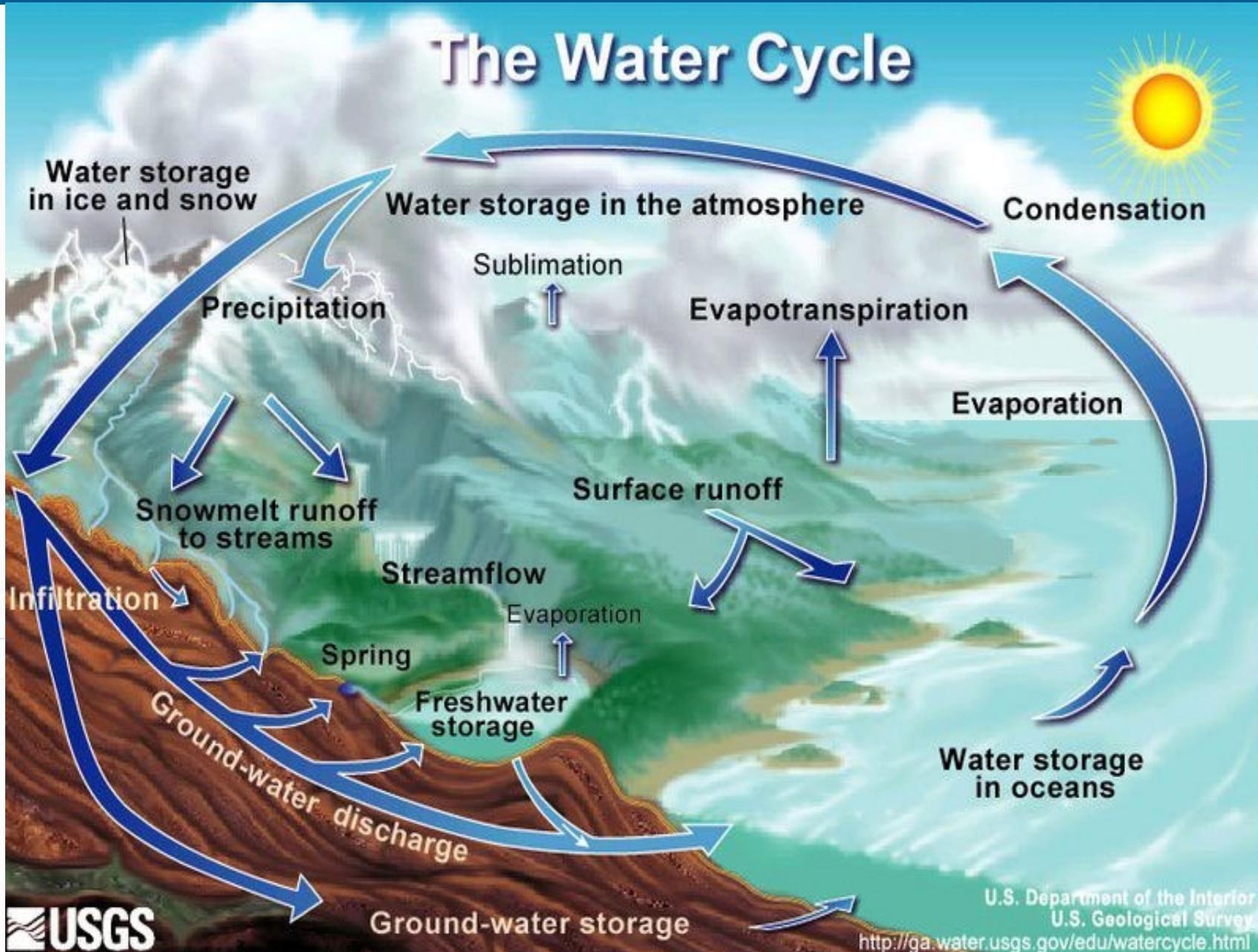
water



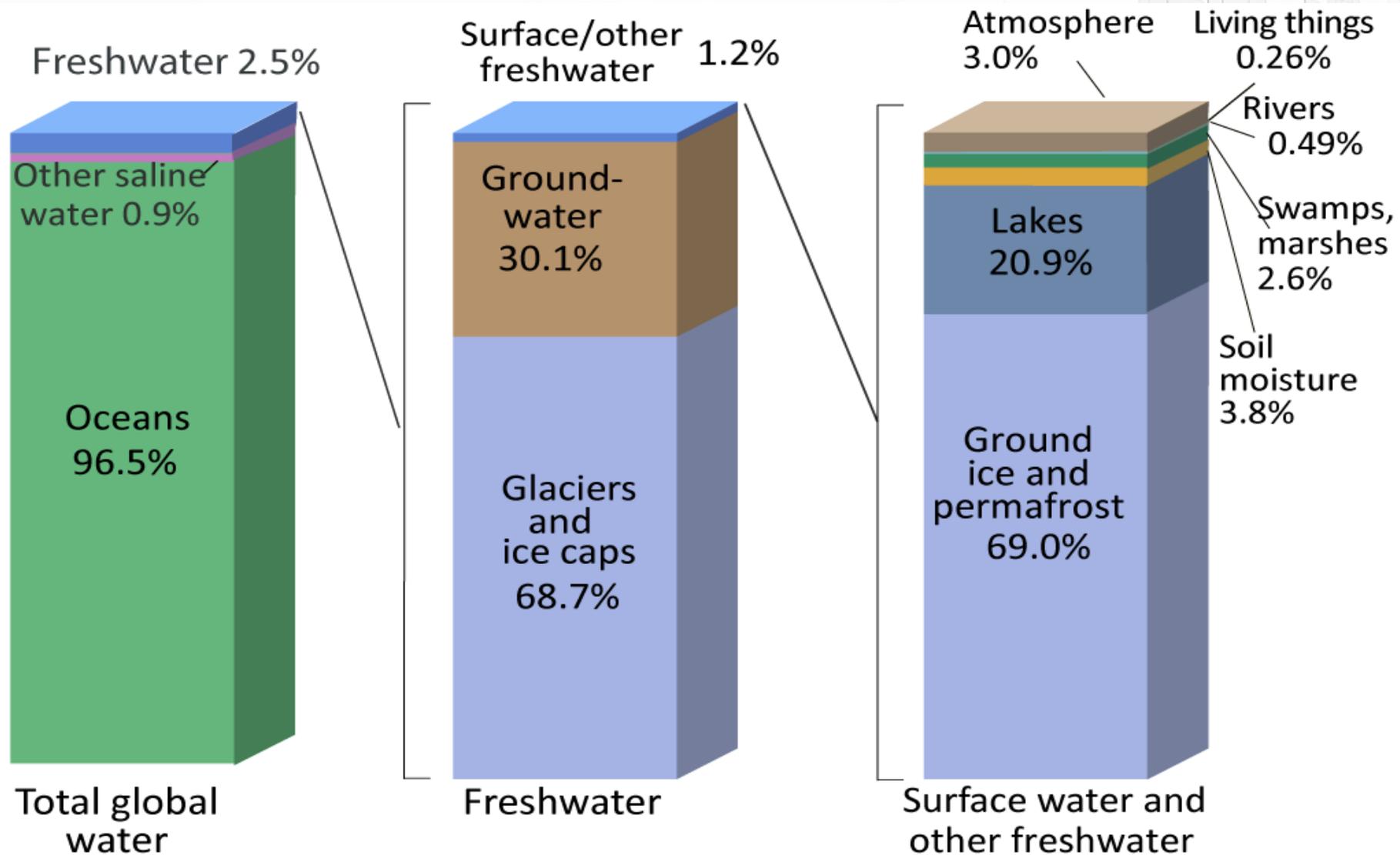
steam



# The Water Cycle



# Distribution of Earth's Water

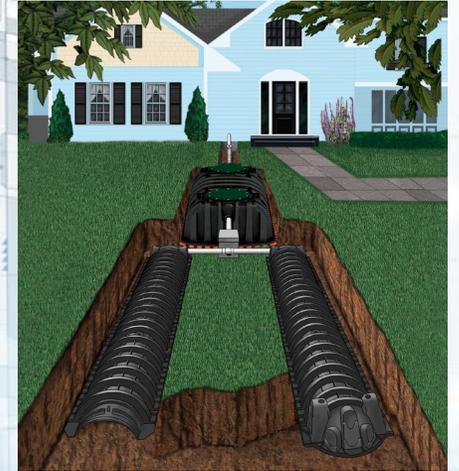


# WWTP versus OWWs

## The Goal



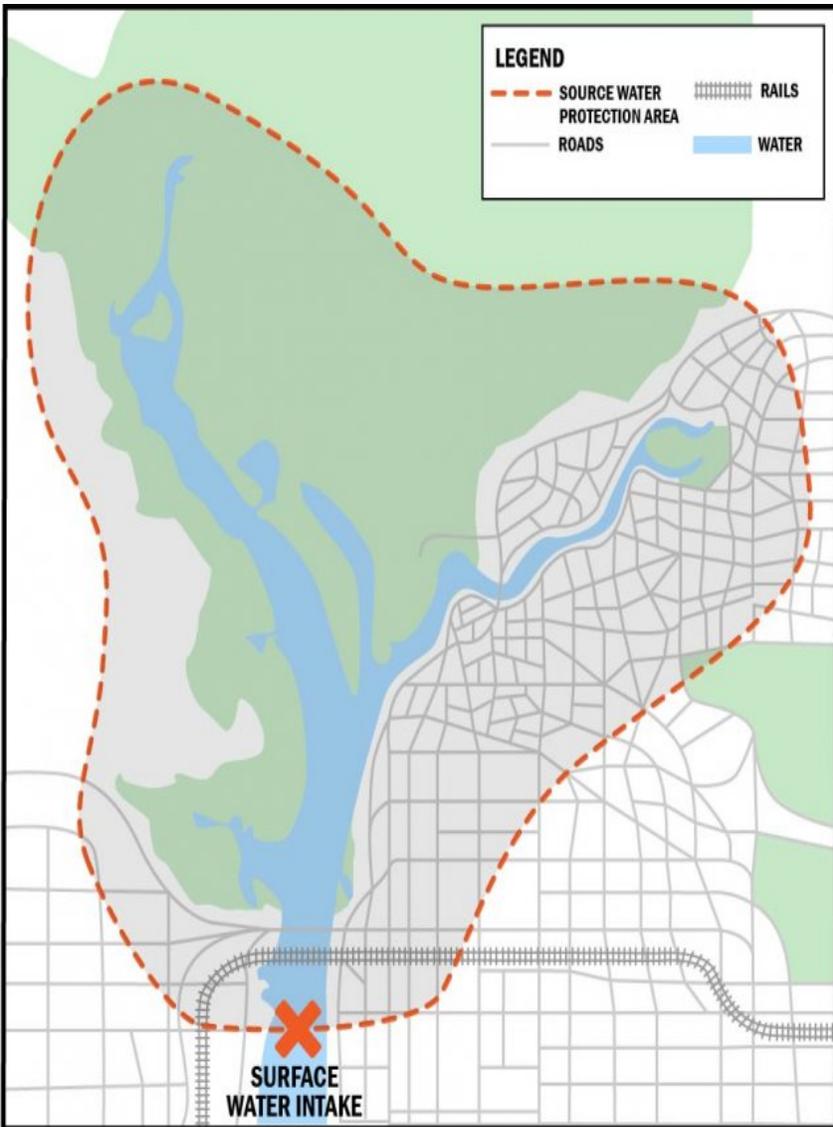
- Collect
- Treat
- Dispose



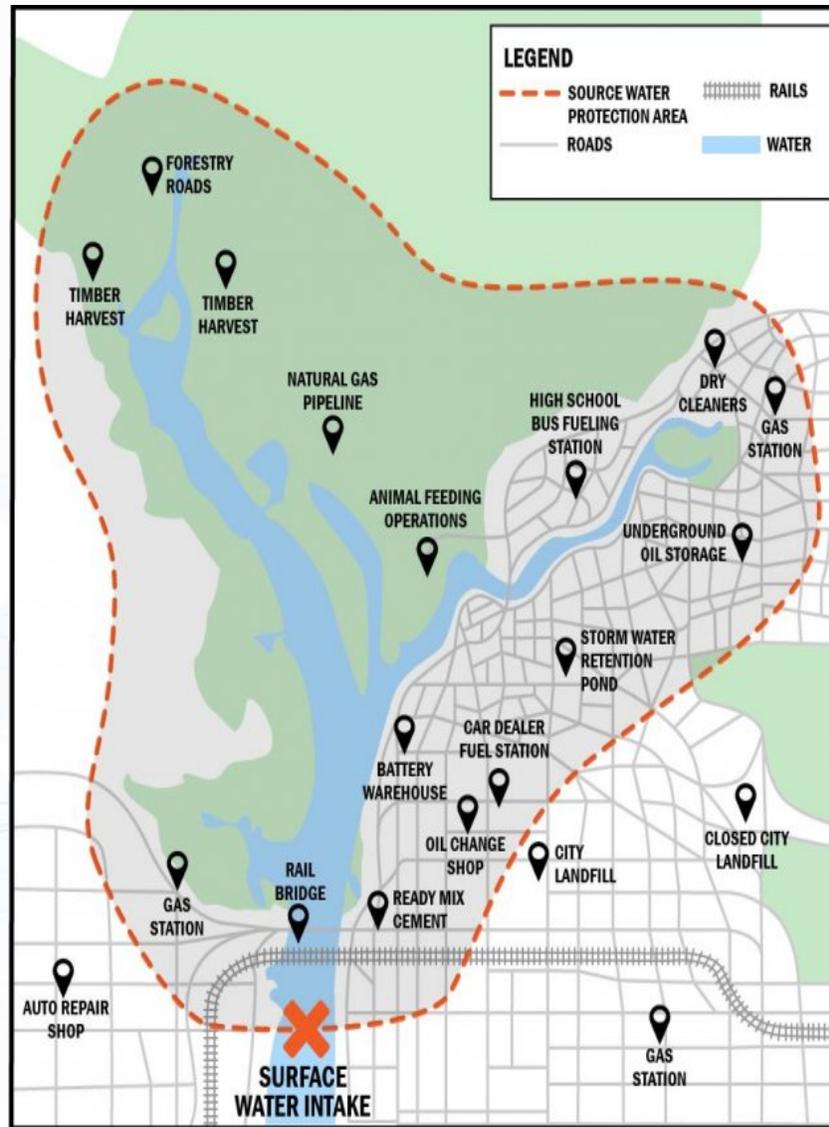
- Collect
- Treat
- Dispose

## Treated Wastewater Disposal

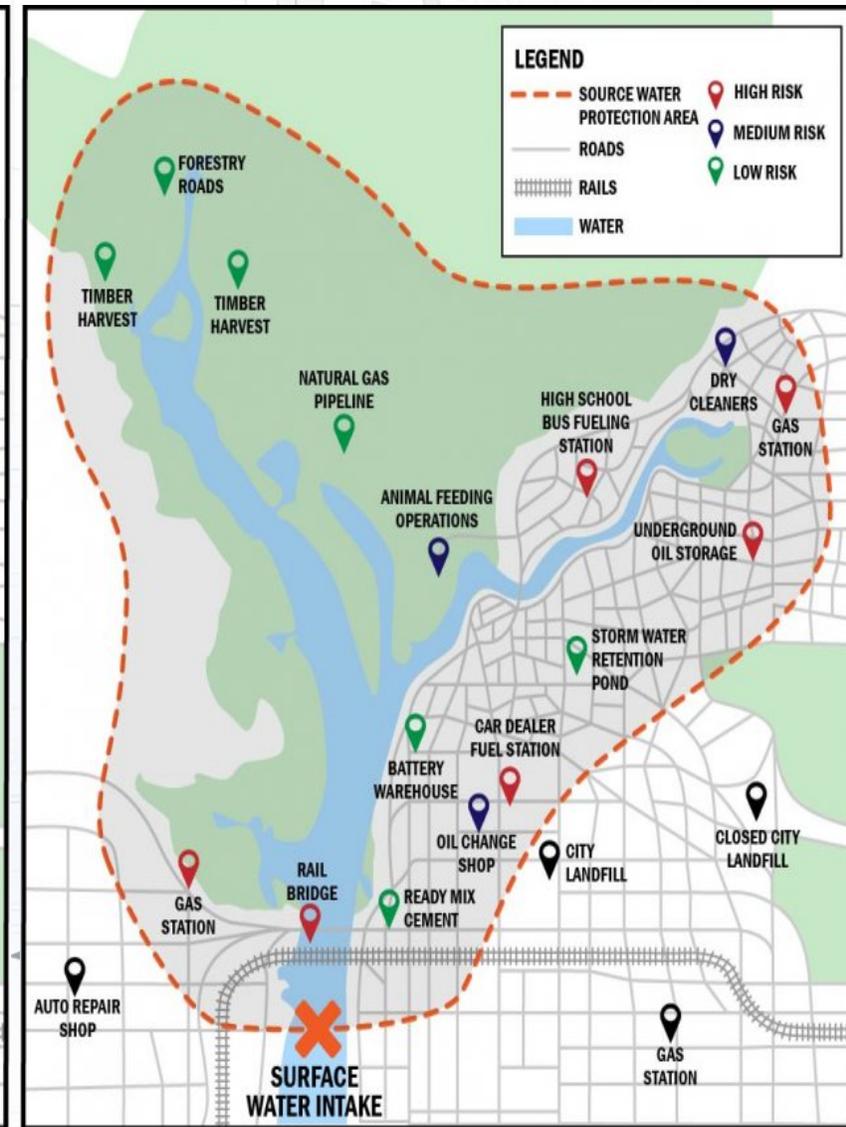
- Almost all surface discharge
  - Into a surface water body
  - Land treatment
- Reuse
- Continuous Monitoring
- Predominately subsurface discharge
- Reuse
- Service/maintenance is variable



**Delineate the Source Water Protection Area**

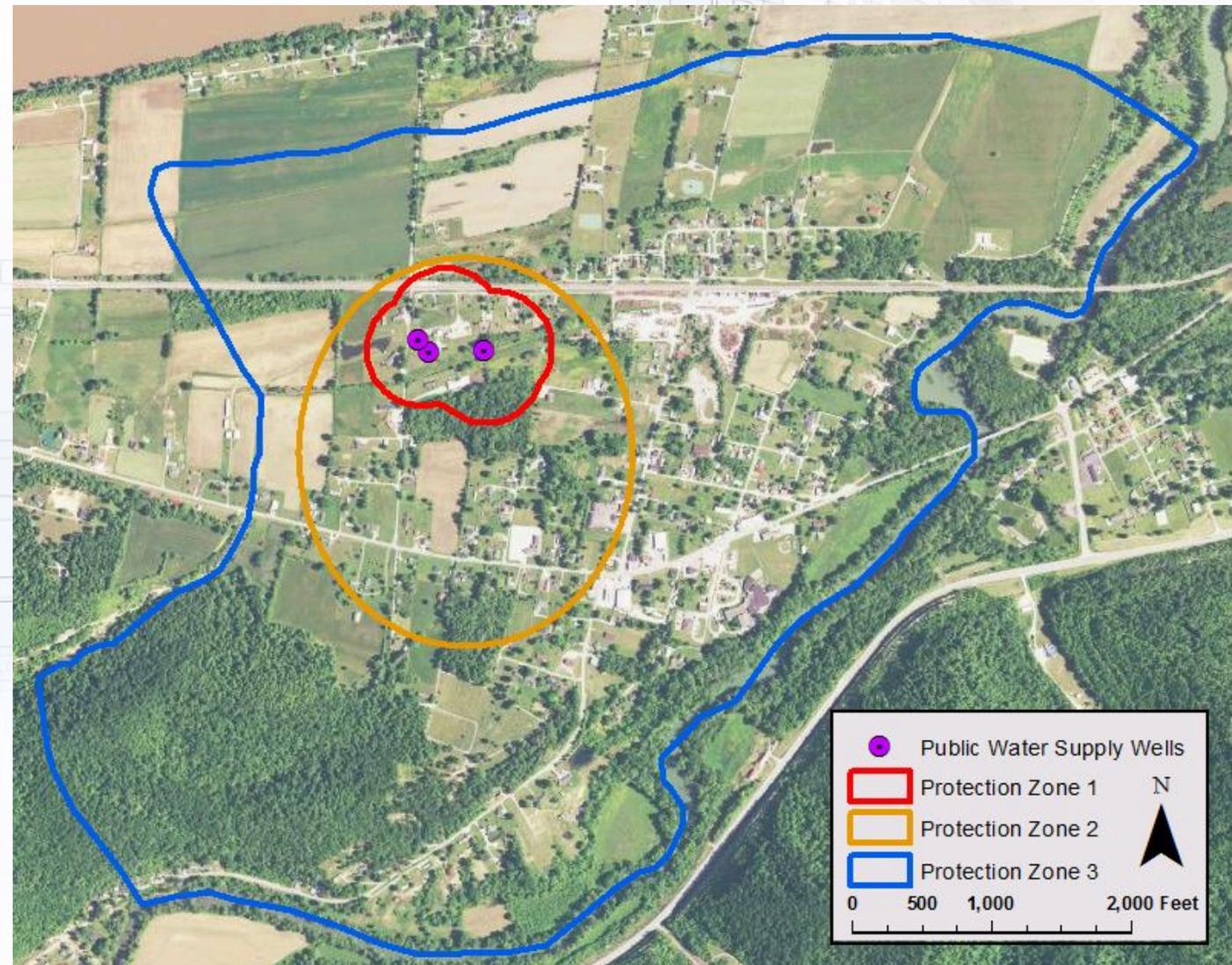
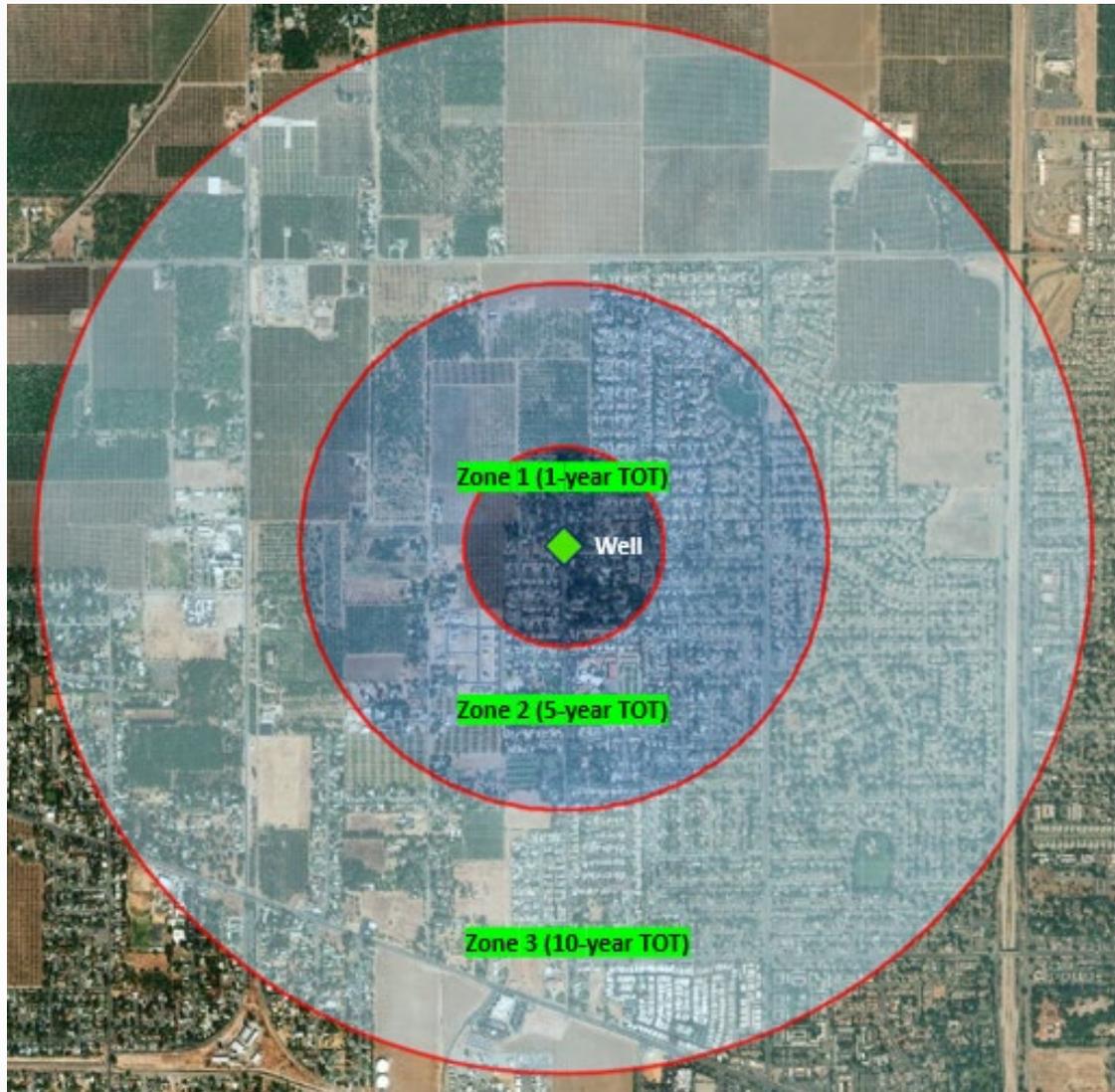


**Inventory Potential Sources of Contamination**

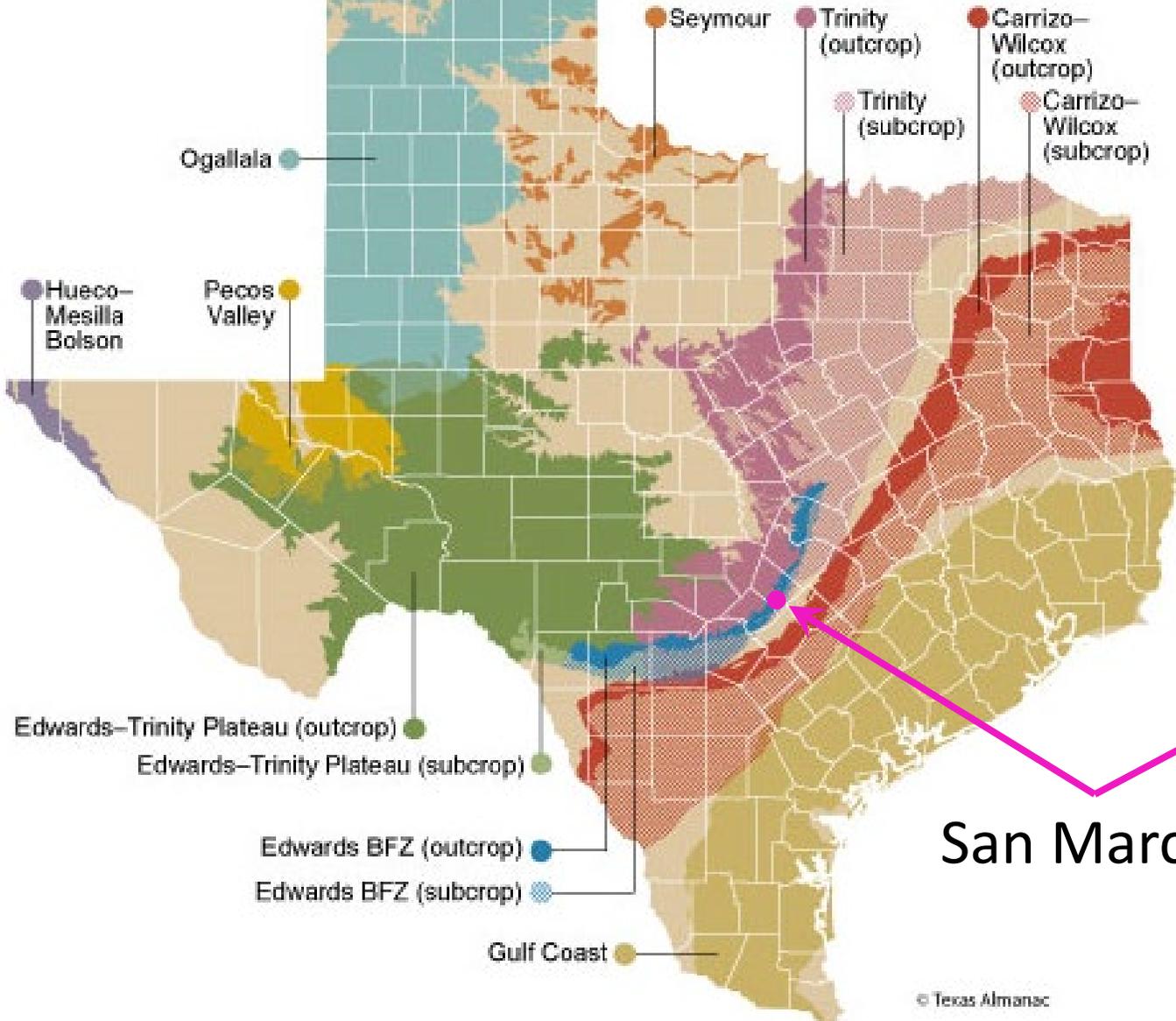


**Prioritize Risks to Drinking Water**

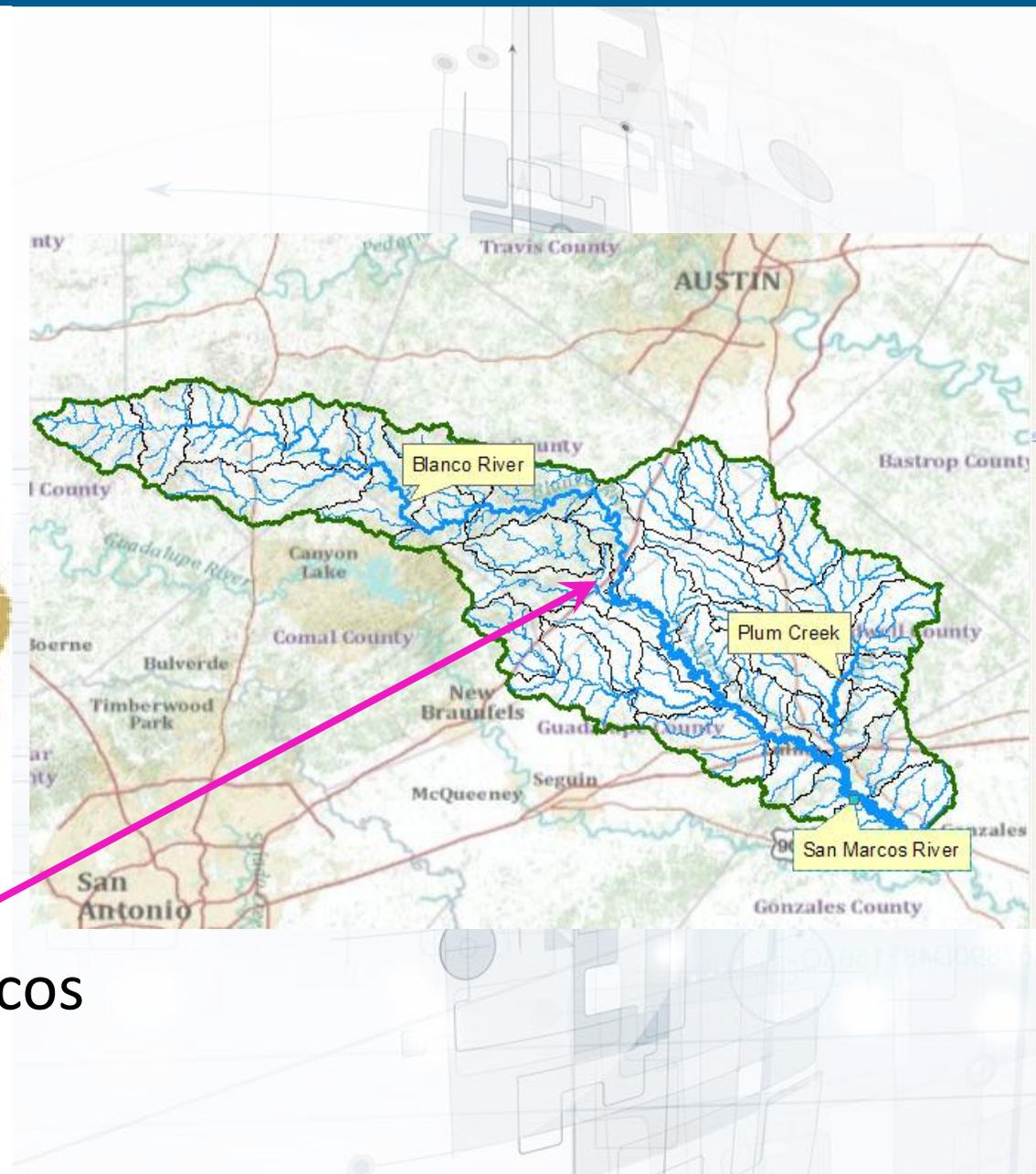
# SWP Zones for Groundwater



# Major Aquifers of Texas

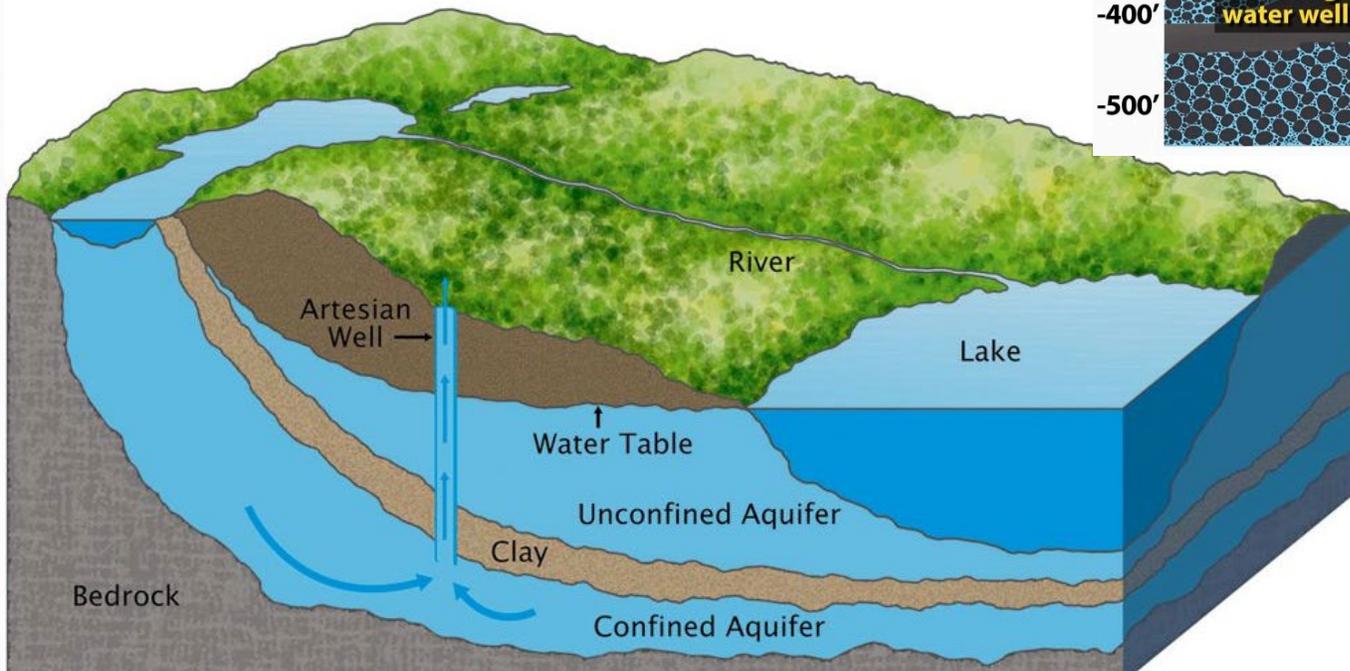


San Marcos

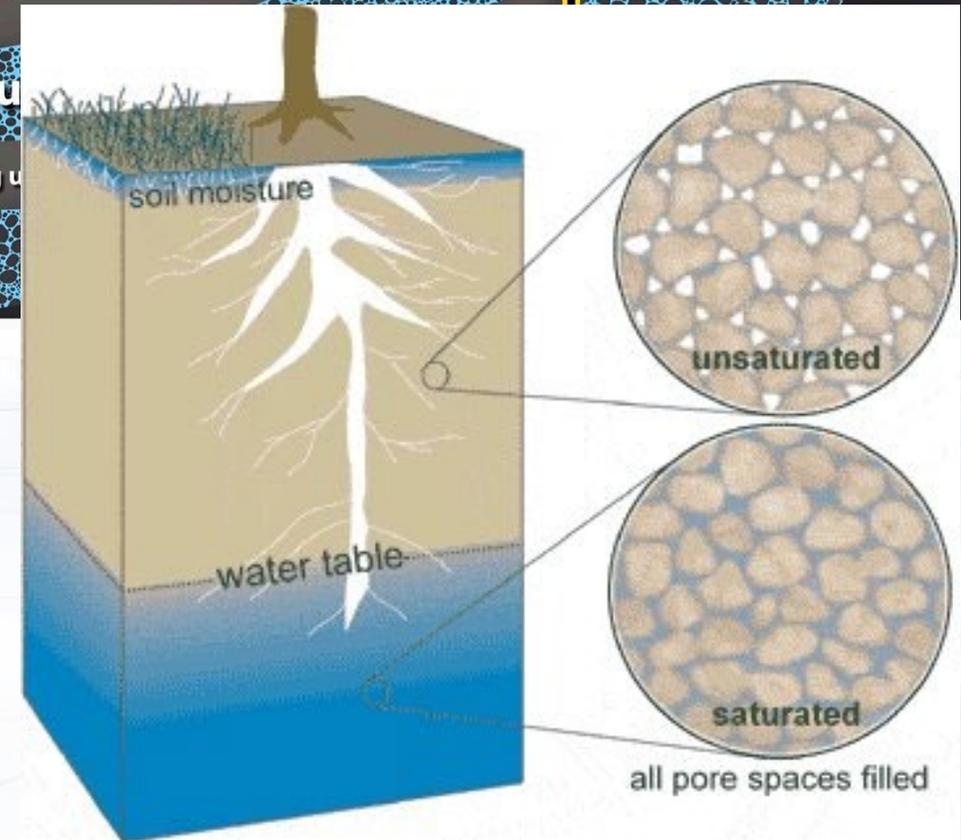


# Aquifers

Common depiction of an underground aquifer



# Reality



# Groundwater Issues



- Overpumping
- Lack of recharge
- Can result in land subsidence
- May affect surface water

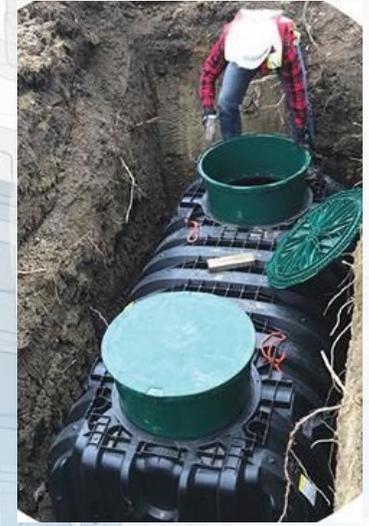
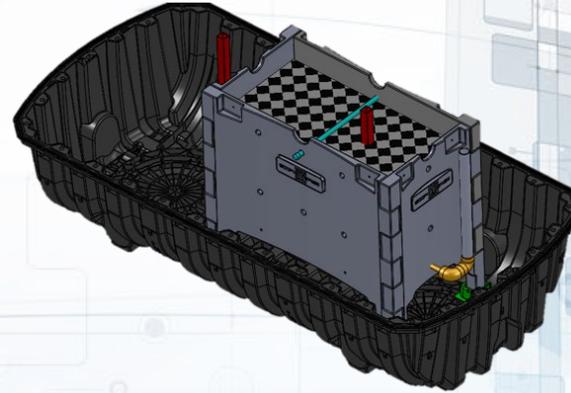
# Groundwater and OWWS

- OWWS systems return water to the general are from which it's been taken.
  - Municipal Projects
- Proper siting, construction, operation and maintenance is critical
- Let's Change the Narrative



# Recycle/Reuse and OWWWS

- Step 1
  - Tank
  - with or without advanced treatment
- Step 2
  - Dispersal field
  - Combined treatment and dispersal
- Step 3
  - Soil



**ASK  
SMART  
about  
WATER  
EXPERTS**

**Solution Is More Than  
Technology**

Technology is not the limiting factor in protecting source water from wastewater contamination. There are technologies, such as sand filters, that have been successfully used for 100+ years. Many other robust technologies have been developed and are appropriate to either encourage or mandate in areas with critically important or highly vulnerable drinking water resources.

What we have learned over the past 30+ years that the solution to source water protection is not simply technology based. We now understand that we must also implement a program to ensure that the technology is used in the right situation and cared for properly. A good management program will ensure that wastewater treatment systems are designed properly and placed in the appropriate location. It will make sure that knowledgeable people install the technology and that the people who inspect and approve it are also knowledgeable. A good management program will provide helpful information to users of the technology and make sure that well-trained people perform timely maintenance and required upgrades. Finally, a good management program will carry out the necessary technology monitoring and environmental follow-up to double-check that the water resources remain protected.



*Kevin Sherman,  
Director of  
Engineering  
Quanics, Inc  
Crestwood,  
Kentucky*

**Small Flows Magazine  
NESC  
Spring/Summer 2009  
Volume 9, Number 3**

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# Did A Dinosaur Drink This Water?



# Thank You!

**Sheryl Ervin**  
**(816) 266-3476**



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water technologies

The logo for the 2021 Onsite Wastewater MEGA-CONFERENCE features a red outline of the state of Texas with a white star in the center. To the right of the map, the text '2021 Onsite Wastewater MEGA-CONFERENCE' is displayed in blue and red. Below this, the tagline 'Essential Work in the Lone Star State' is written in a smaller font. At the bottom of the logo block are four smaller logos: NOWRA, NAWT (National Association of Wastewater Technicians), ISORA (International Society of Onsite Resource Administrators), and TOWA (Texas Onsite Wastewater Association).

