

# **CAP – Water Quality Standard Task Force**

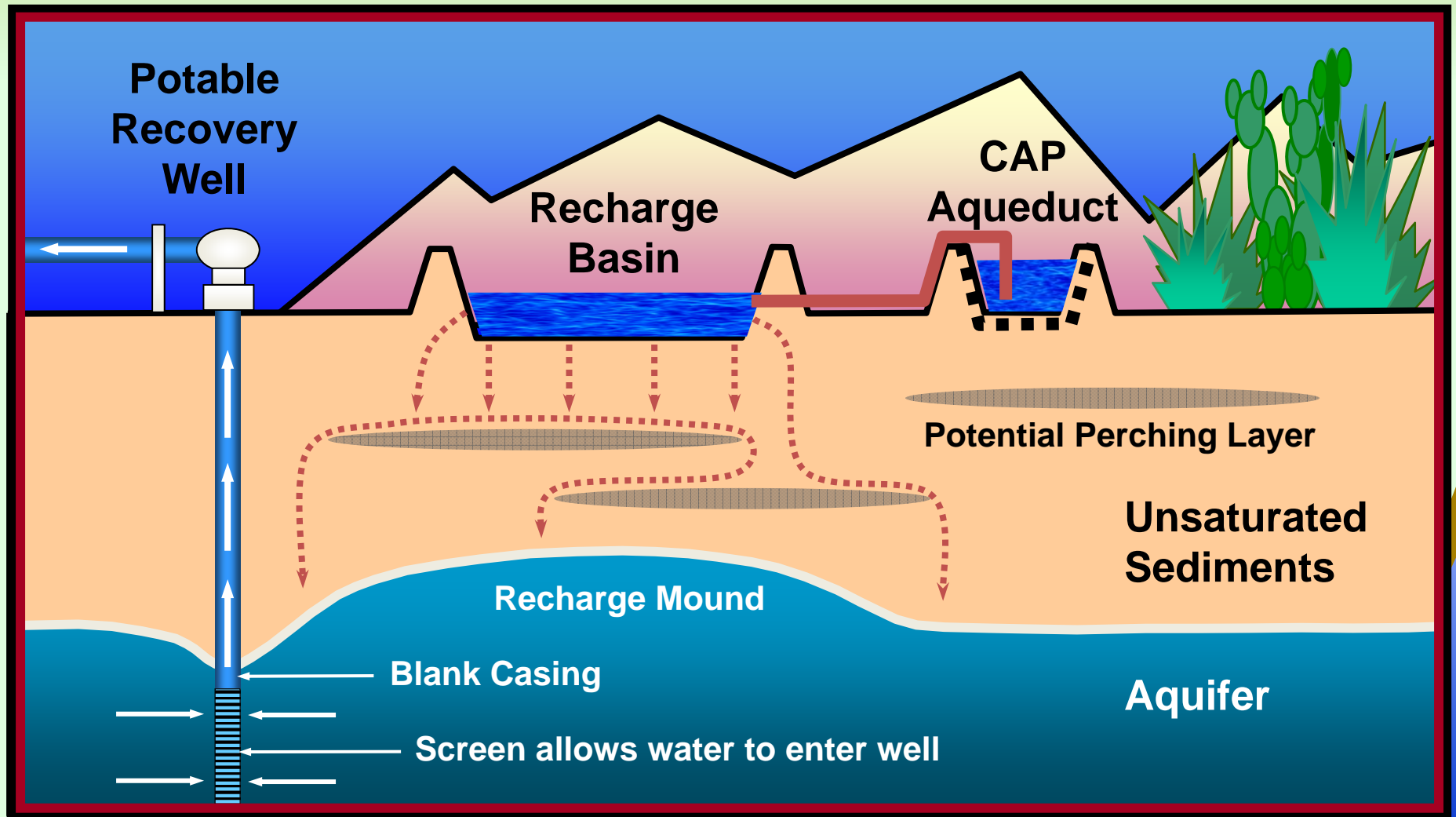
**Presented By:**  
**Sandy Elder, Deputy Director**



**June 6, 2017**



# Soil Aquifer Treatment (SAT)



# Soil Aquifer Treatment

## ***Effective***

- **Ammonia/Nitrate**
  - Chipello, *et al* 1996
- **Organic Carbon**
  - Quanrud, *et al* 1995
- **Parasites**
  - Cryptosporidium
  - Giardia
    - Quinonez, *et al* 1995
- **Viruses**
  - Poliovirus, *e. coli*
    - Carroll, *et al* 1996
- **Some Pharmaceuticals & Personal Care Products**
  - Surfactants
    - He, *et al* 2016
  - Painkillers
    - Gibson, *et al* 2010
  - Beta Blockers
    - Hernandez, *et al* 2012

## ***Not Effective***

- **TDS**
- **Pesticides**
  - Atrazine
  - Carbamazepine
- **Some Pharmaceuticals**
  - Anti-epileptics
  - Some Antibiotics
    - Hernandez, *et al* 2012

## ***Unknown***

- **Newer Emerging Contaminants**
  - Ethers
  - PFOS & PFOA

# Recharge & Recovery WQ Permit

- “Non-Degradation of Groundwater”, Aquifer water quality standards
- Exceedance can result in shutdown of recharge facility
- CAP Recharge & Recovery is the potable water supply for the City of Tucson

## Unregulated Contaminants

- 1,4 – Dioxane
- PFOS/PFOA
- Chrome VI
- Emerging Contaminants

USF Permit No. 71-211276.0003

Analyte	Method <sup>1</sup>	OPL <sup>2</sup> (mg/L)	Monitoring Frequency	Reporting Frequency
<b>Field</b>				
pH	Field	NA	Every 6 months	Annually
Specific Conductance	Field	NA	Every 6 months	Annually
Temperature	Field	NA	Every 6 months	Annually
<b>Inorganic Analytes</b>				
Alkalinity, Bicarbonate	2120B	NA	Every 6 months	Annually
Alkalinity, Carbonate	2120B	NA	Every 6 months	Annually
Boron	200.7	NA	Every 6 months	Annually
Calcium	200.9	NA	Every 6 months	Annually
Chloride	300	NA	Every 6 months	Annually
Fluoride	300	4	Every 6 months	Annually
Hardness (Total)	150.2	NA	Every 6 months	Annually
Nitrate (as N)	300	10	Every 6 months	Annually
Nitrite (as N)	300	1	Every 6 months	Annually
Nitrate and Nitrite (as N)	553.2	10	Every 6 months	Annually
Potassium	258.1	NA	Every 6 months	Annually
Sodium	273.1	NA	Every 6 months	Annually
Sulfate	300	NA	Every 6 months	Annually
Total Dissolved Solids	2540C	NA	Every 6 months	Annually
<b>Trace Metals</b>				
Antimony	200.9	0.006	Every 6 months	Annually
Arsenic	200.9	0.05	Every 6 months	Annually
Barium	200.7	2	Every 6 months	Annually
Beryllium	200.7	0.004	Every 6 months	Annually
Cadmium	200.7	0.005	Every 6 months	Annually
Chromium	200.7	0.1	Every 6 months	Annually
Copper	200.7	NA	Every 6 months	Annually
Iron	200.7	NA	Every 6 months	Annually
Lead	200.9	0.05	Every 6 months	Annually
Magnesium	200.7	NA	Every 6 months	Annually
Manganese	200.7	NA	Every 6 months	Annually
Mercury	245.1	0.002	Every 6 months	Annually
Nickel	200.9	0.1	Every 6 months	Annually
Selenium	200.9	0.05	Every 6 months	Annually
Thallium	200.9	0.002	Every 6 months	Annually
Zinc	200.7	NA	Every 6 months	Annually

Analyte	Method <sup>1</sup>	OPL <sup>2</sup> (mg/L)	Monitoring Frequency <sup>3</sup>	Reporting Frequency <sup>4</sup>
<b>Field</b>				
pH	Field	NA	Every 6 months	Annually
Specific Conductance	Field	NA	Every 6 months	Annually
Temperature	Field	NA	Every 6 months	Annually
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# CAP Goals



Tucson Supports these  
Policy Concepts

## 2014 Wheeling Process

- Staff began with general policy concepts
  - No harm to the system
  - No harm to other customers
  - No harm to public health

*Particular focus was on constituents that could cause operational problems (e.g., nutrients that could cause algae), and finding standards that could withstand challenge and avoid inviting contractual disputes or unwanted regulatory scrutiny*



Source: CAP Presentation - Review of Proposal  
from Wheeling Stakeholder Process (05/24/2017)

# Other Tucson AMA Stakeholders

## Tucson Water Wheeling Partners

- Oro Valley
- Pasqua Yaqui
- Vail
- Metro Water

## Storage Partners

- Water Bank
- Phoenix
- Ground Water Savings Facilities (GSFs)

## Other Entities Using CAP Water

- Metro Water
- Marana
- Tohono O'odam
- Pasqua Yaqui
- FICO
- Green Valley

# Water Quality (WQ) Changes Cannot Be Taken Lightly

- WQ changes even below MCL or Alert Levels can result in adverse affects on disinfection by-products, corrosion potential, and customer confidence
- Unregulated contaminants can also have adverse affects
- Public Trust
  - Changes in Water Quality
  - Media Scrutiny
  - Decreased support for water providers
  - More Treatment = Higher Rates

**Lorain, Ohio 2011:**

Utilities Director

Suspended due to close  
water

**Flint, Michigan, 2016:**

Michigan DEQ Head  
fired, Federal Regulator  
Resigned

**Riviera Beach, Fl. 2016:**

Utility Director fired for  
failing to inform public of  
Water Quality Violations