

# Drinking Water Hot Topics in South Carolina



## SE NAWC Conference

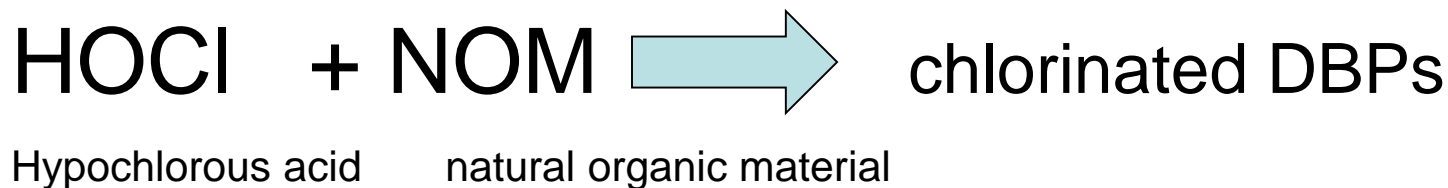
*April 30, 2015*

**Charleston, S.C.**

# Hot Topics in SC

- Bromide and DBPs
- UCMR3 monitoring data
- UCMR3 – Individual Contaminants
- Premise Plumbing Pathogens
- Future Regulations

## Formation of Disinfection Byproducts



# Trihalomethanes

- Trichloromethane (chloroform) -  $\text{CHCl}_3$
- Bromodichloromethane -  $\text{CHBrCl}_2$
- Dibromochloromethane –  $\text{CHBr}_2\text{Cl}$
- Tribromomethane (Bromoform) –  $\text{CHBr}_3$

# Haloacetic Acids

- Monochloroacetic acid – CLAA
- Dichloroacetic acid –  $CL_2AA$
- Trichloroacetic acid –  $Cl_3AA$
- Monobromoacetic acid – BrAA
- Dibromoacetic acid –  $Br_2AA$
- Bromochloroacetic acid – BrCIAA
- Bromodichloroacetic acid –  $BrCl_2AA$
- Dibrochloroacetic acid –  $Br_2CIAA$
- Tribromoacetic acid –  $Br_3AA$

Compounds in Red are not part of HAA5 and are not currently regulated

# UCMR3 Monitoring

# UCMR 3 Most Commonly Found

Unregulated Contaminant	Number of detections	Percentage of samples analyzed	SC Range of Results (µg/L) or ppb
1, 4 Dioxane	125	32.1%	.07 – 3.6
Chlorate	367	55.7%	20 – 730
Hexavalent Chromium	521	40.8%	.03 - .64
Molybdenum	85	6.7%	.72 – 11
Strontium	656	51.5%	.31 – 1400
Vanadium	352	27.6%	.21 – 8.6

# UCMR3 Specific Contaminants

- Chlorate ( $\text{ClO}_3^-$ )
  - Disinfection Byproduct
    - Sodium hypochlorite or Chlorine Dioxide
    - Detected in 56% of UCMR3 samples (659) in SC
  - EPA current health reference level is 210 ppb
    - World Health Organization – 700 ppb
  - Range of UCMR data in SC
    - 20 ppb to 730 ppb
  - Likely candidate for future regulation



# UCMR3 Specific Contaminants

- 1,4 Dioxane
  - Solvent or Solvent stabilizer
    - Historically used in chlorinated solvents
    - Currently textiles, coolant, cosmetics, shampoos, etc.
  - Detected in 32% of samples (389) in SC
  - As low as 0.35 ppb over lifetime exposure may have negative health effects
  - Range of UCMR3 data in SC
    - 0.07 to 3.6 ppb
  - Likely candidate for future regulation

# Premise Plumbing Pathogens

# Premise Plumbing Pathogens

- What is premise plumbing?
  - Potable water system beyond property line
  - Can be extensive (hospitals, apartments, etc.)
- Why the concern?
  - Pathogens can grow and multiply especially in low flow, low disinfectant conditions
- Which pathogens are of concern?
  - Legionella, Nontuberculous mycobacteria (NTM), mycobacteria avium complex (MAC), Naegleria fowleri

# Premise Plumbing Pathogens

- Latest Information
  - EPA will issue guidance on treatment effectiveness for controlling pathogens (likely 2015)
  - Guidance will focus on legionella
  - EPA needs to also make final decision concerning whether adding treatment makes a facility (hospital, apartment complex, etc.) a separate public water system

# Potential Future Regulations

- Strontium
  - Comment period closed. EPA will make final determination (this year?)
- Perchlorate
  - Likely to occur sometime
- Regulation of contaminant in groups
  - Carcinogenic VOCs likely first
- UCMR4
  - Monitoring begins January 2017 (tentative)

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