

# Characterization of Dissolved Solids in the Ohio River

Technical Committee Meeting

February 7-8, 2012

# Study Objectives

1. Characterize ambient background levels of TDS.
2. Develop site-specific translators to convert conductivity to TDS.
3. Quantify TDS constituent makeup to document temporal and spatial variability.
4. Provide data to support possible development of an Ohio River bromide stream criterion.

# Sampling Design

- Weekly samples collected at 16 sites
- Collection sites located at water intakes
  - Participants identified through the WUAC and PIAC
- Sampling began in December
- Study will run for one-year

# Analysis

## Dissolved Solids Analytes

- |              |             |
|--------------|-------------|
| 1. Sodium    | 6. Chloride |
| 2. Potassium | 7. Sulfate  |
| 3. Magnesium | 8. Bromide  |
| 4. Calcium   | 9. Fluoride |
| 5. Lithium   |             |

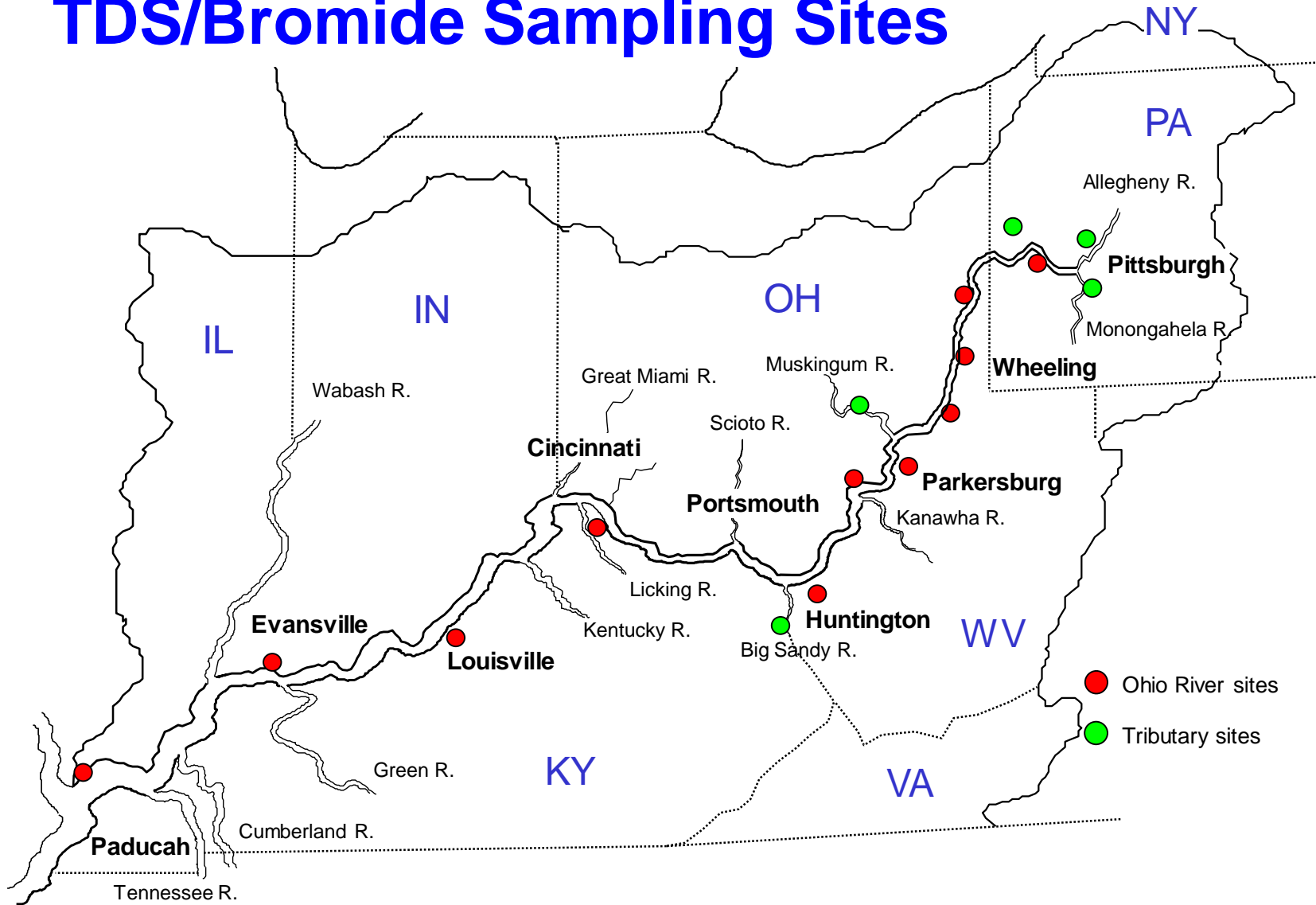
10. Bicarbonate

11. Total Dissolved Solids

## Supplemental Parameters

- pH
- Conductivity
- Temperature
- Stream flow
- Coordinate THM sampling when possible

# TDS/Bromide Sampling Sites



# Sampling Sites

## Ohio River Locations (Mile)

- Moon Township (12)
- Steubenville (65)
- Wheeling (87)
- Sistersville (138)
- Dupont – Parkersburg (190)
- Cheshire, OH (260)
- Huntington (304)
- Cincinnati (463)
- Louisville (600)
- Evansville (791)
- Cairo (978)

## Tributary Locations (Mile)

- Allegheny (8)
- Monongahela (5)
- Beaver (6)
- Muskingum (30)
- Big Sandy (20)
- **May add site on Mahoning**

# Early Results

- All 16 sites routinely collecting weekly samples
- TDS and individual constituent levels have been fairly low to date
  - Mainstem TDS: 100 – 200 mg/L
  - Levels on tribs a bit higher: 60 – 340 mg/L
  - Bromide only detected in 8 of 134 samples (6%)
    - Detection limit 100 ppb



Comments?