

Starkweather, E. Br. at Commercial Road Salt Monitoring Data Summary February –December 2011



Photo courtesy of Jim Beecher

Volunteers: Erin and Jake Vennie-Vollrath

Specific conductance summary:

- 9 measurements taken
- Minimum: 370 $\mu\text{S}/\text{cm}$ on 9/3/2011
- Maximum: 2800 $\mu\text{S}/\text{cm}$ on 2/17/2011
- Mean: 1591 $\mu\text{S}/\text{cm}$

Chloride (Cl^-) summary:

- 3 samples collected
- Minimum: 44.8 mg/L 9/3/2011
- Maximum: 696 mg/L 2/17/2011
- Mean: 316 mg/L

Specific conductance ranges at which to collect grab samples in 2012 for this site:

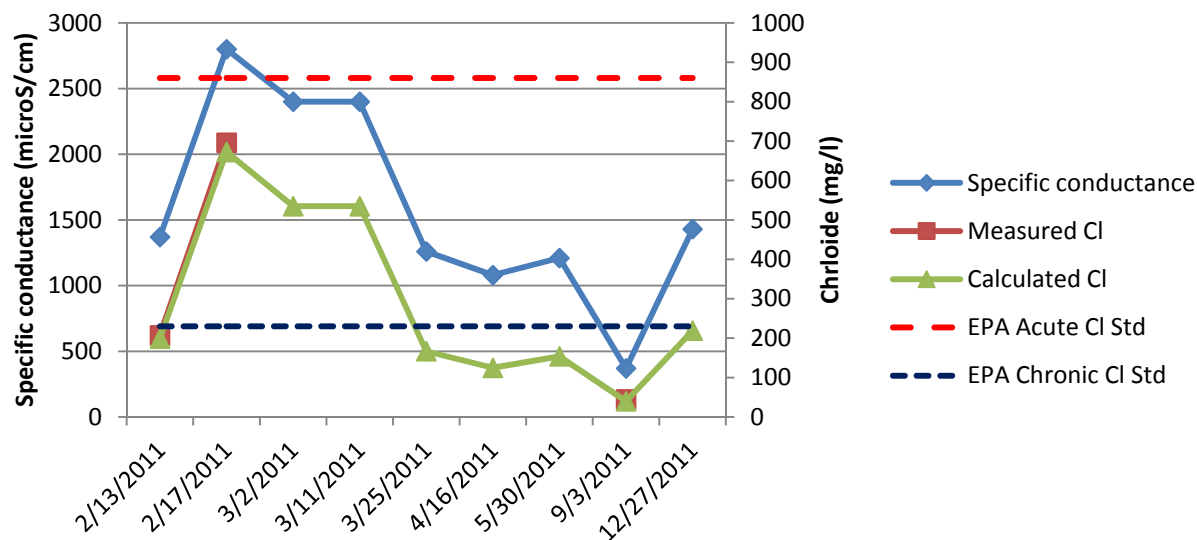
- Mid-level: 1000-2000 $\mu\text{S}/\text{cm}$
- High-level: >2000 $\mu\text{S}/\text{cm}$

EPA Acute and Chronic Exceedences for Chloride¹:

The EPA acute chloride standard of 860 mg/L was not exceeded at this site. The EPA chronic chloride standard of 230 mg/L was exceeded three times:

- 535 mg/L on 3/2/2011 (calculated)²
- 696 mg/L on 2/17/2011 (measured)
- 535 mg/L on 3/11/2011 (calculated)

Results Over Time²:



¹ EPA acute chloride standard: The one-hour average concentration should not exceed 860 mg/L more than once every three years. EPA chronic chloride standard: The four day average concentration should not exceed 230 mg/L more than once every three years on average. Source: EPA. 1988. Ambient Water Quality Criteria for Chloride. EPA 440/6-88-001.

² Two regression equations calculated based on specific conductance and chloride data collected from the Madison and Milwaukee areas collectively. The equation used when specific conductance >1540 $\mu\text{S}/\text{cm}$ was $\text{Cl} = 0.3441 * \text{SC} - 291$, $\text{adjR}^2 = 0.98$; and when specific conductance ≤ 1540 $\mu\text{S}/\text{cm}$ was $\text{Cl} = 1.044 * (\exp(0.001609 * \text{SC} + 3.046))$, $\text{adjR}^2 = 0.65$.