

Starkweather Creek, W. Br. at Daley Drive

Road Salt Monitoring Data Summary December 2011 – December 2012



Photo courtesy of Jim Beecher

Volunteers: Erin and Jake Vennie-Vollrath

Specific conductance summary:

- 14 measurements taken
- Minimum: 780 $\mu\text{S}/\text{cm}$ on 10/10/2012
- Maximum: 2800 $\mu\text{S}/\text{cm}$ on 1/24/2012
- Mean: 1317 $\mu\text{S}/\text{cm}$

Chloride (Cl⁻) summary:

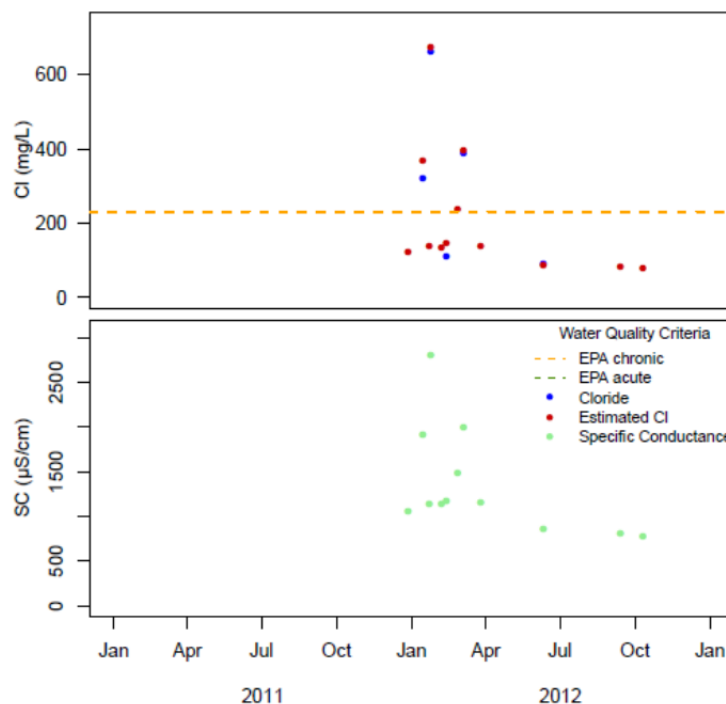
- 5 samples collected
- Minimum: 92 mg/L on 6/10/2012
- Maximum: 661 mg/L on 1/24/2012
- Mean: 315 mg/L

EPA Acute and Chronic Exceedences for Chloride¹:

The EPA acute chloride standard of 860 mg/L was not exceeded in 2011 or in 2012 at this site. The EPA chronic chloride standard of 230 mg/L was not exceeded in 2011 at this site but was exceeded four times in 2012:

- 238 mg/L on 2/26/2012 (calculated)²
- 322 mg/L on 1/14/2012 (measured)
- 389 mg/L on 3/4/2012 (measured)
- 661 mg/L on 1/24/2012 (measured)

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 Calculated chloride: When $\text{SC} > 1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 0.3441 * \text{SC} - 291$, $\text{adj} R^2 = 0.98$; when $\text{SC} \leq 1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 1.044 * (\exp(0.001609 * \text{SC} + 3.046))$, $\text{adj} R^2 = 0.65$. Equations based on data from both Madison and Milwaukee.