

Starkweather, E. Br. at Milwaukee

Road Salt Monitoring Data Summary

February 2011–December 2012



Photo by Jake and Erin Vennie-Vollrath

Volunteers: Erin and Jake Vennie-Vollrath

Specific conductance summary:

- 23 measurements taken
- Minimum: 300 $\mu\text{S}/\text{cm}$ on 9/3/2011
- Maximum: 6000 $\mu\text{S}/\text{cm}$ on 1/24/2012
- Mean: 1797 $\mu\text{S}/\text{cm}$

Chloride (Cl^-) summary:

- 5 samples collected
- Minimum: 35.5 mg/L 9/3/2011
- Maximum: 1750 mg/L 1/24/2012
- Mean: 568 mg/L

EPA Acute and Chronic Exceedences for Chloride¹:

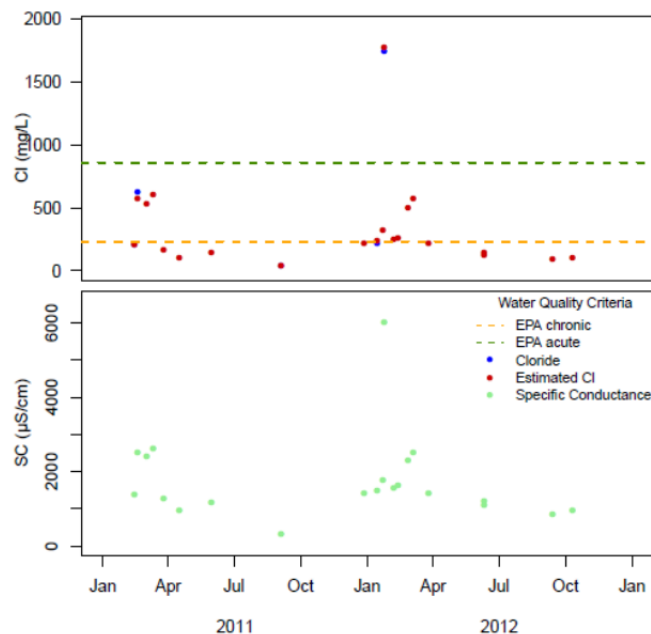
The EPA acute chloride standard of 860 mg/L was not exceeded in 2011² at this site, but was exceeded once in 2012:

- 1750 mg/L on 1/24/2012 (measured)

The EPA chronic chloride standard of 230 mg/L was exceeded three times in 2011², plus an additional seven times in 2012:

- 234 mg/L on 1/14/2012 (calculated)³
- 249 mg/L on 2/6/2012 (calculated)
- 263 mg/L on 2/12/2012 (calculated)
- 318 mg/L on 1/22/2012 (calculated)
- 500 mg/L on 2/26/2012 (calculated)
- 569 mg/L on 3/4/2012 (calculated)
- 845 mg/L on 12/21/2012 (calculated)

Results Over Time³:



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 <http://watermonitoring.uwex.edu/level3/UrbanRoadSaltReports.html>

³ Calculated chloride: When $\text{SC} > 1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 0.3441 * \text{SC} - 291$, $\text{adjR}^2 = 0.98$; when $\text{SC} \leq 1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 1.044 * (\exp(0.001609 * \text{SC} + 3.046))$, $\text{adjR}^2 = 0.65$. Equations based on data from both Madison and Milwaukee.