

Root River at Layton Ave

Road Salt Monitoring Data Summary

February 2011–December 2012



Photo courtesy of Jim Beecher

Volunteer: Kevin Hensiak

Specific conductance summary:

- 31 measurements taken
- Minimum: 480 $\mu\text{S}/\text{cm}$ on 7/31/2012
- Maximum: 9700 $\mu\text{S}/\text{cm}$ on 1/23/2012
- Mean: 2800 $\mu\text{S}/\text{cm}$

Chloride (Cl⁻) summary:

- 9 samples collected
- Minimum: 73.8 mg/L on 9/28/2011
- Maximum: 2930 mg/L on 1/23/2012
- Mean: 1198 mg/L

EPA Acute and Chronic Exceedences for Chloride¹:

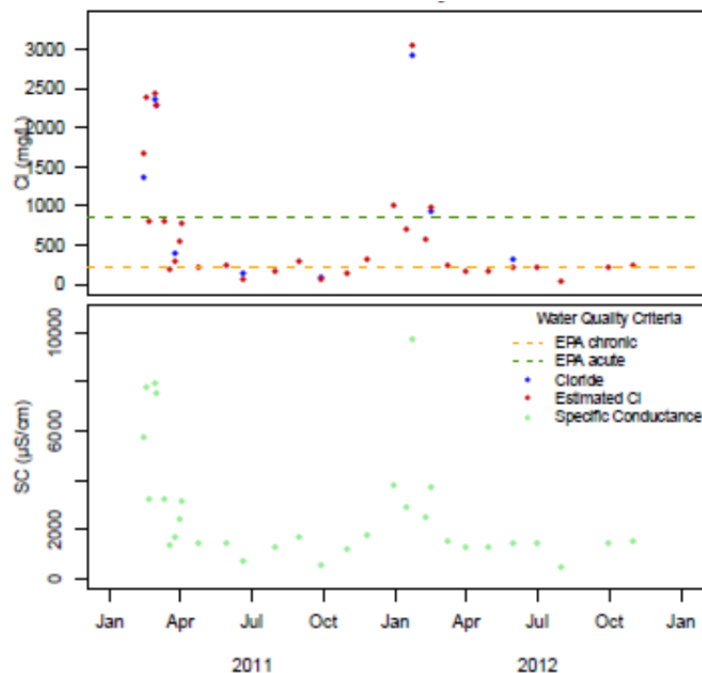
The EPA acute chloride standard of 860 mg/L was exceeded four times in 2011² at this site, plus an additional two times in 2012:

- 921 mg/L on 2/16/2012 (measured)
- 2930 mg/L on 1/23/2012 (measured)

In addition, the EPA chronic chloride standard of 230 mg/L was exceeded seven times in 2011² at this site, plus an additional five times in 2012:

- 242 mg/L on 3/8/2012 and 10/31/2012 (calculated)³
- 315 mg/L on 5/31/2012 (measured)
- 569 mg/L on 2/9/2012 (calculated)
- 707 mg/L on 1/15/2012 (calculated)

Results Over Time³:



¹ Acute standard: The one-hour average should not exceed 860 mg/L more than once every three years. Chronic standard: The four day average should not exceed 230 mg/L more than once every three years. 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 $\text{Cl} = 1.044 * (\text{exp}(0.001609 * \text{SC} + 3.046))$, $\text{adjR}^2 = 0.65$. Equations based on data from both Madison and Milwaukee.