

Pheasant Branch at Deming Way

Road Salt Monitoring Data Summary

February –December 2011



Photo courtesy of Jim Beecher

Volunteers: Eric Grazia and Jim Beecher

Specific conductance summary:

- 15 measurements taken
- Minimum: 471 $\mu\text{S}/\text{cm}$ on 8/8/2011
- Maximum: 1930 $\mu\text{S}/\text{cm}$ on 2/17/2011
- Mean: 1025 $\mu\text{S}/\text{cm}$

Chloride (Cl⁻) summary:

- 8 samples collected
- Minimum: 68.5 mg/L 9/11/2011
- Maximum: 464 mg/L 2/17/2011
- Mean: 176 mg/L

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

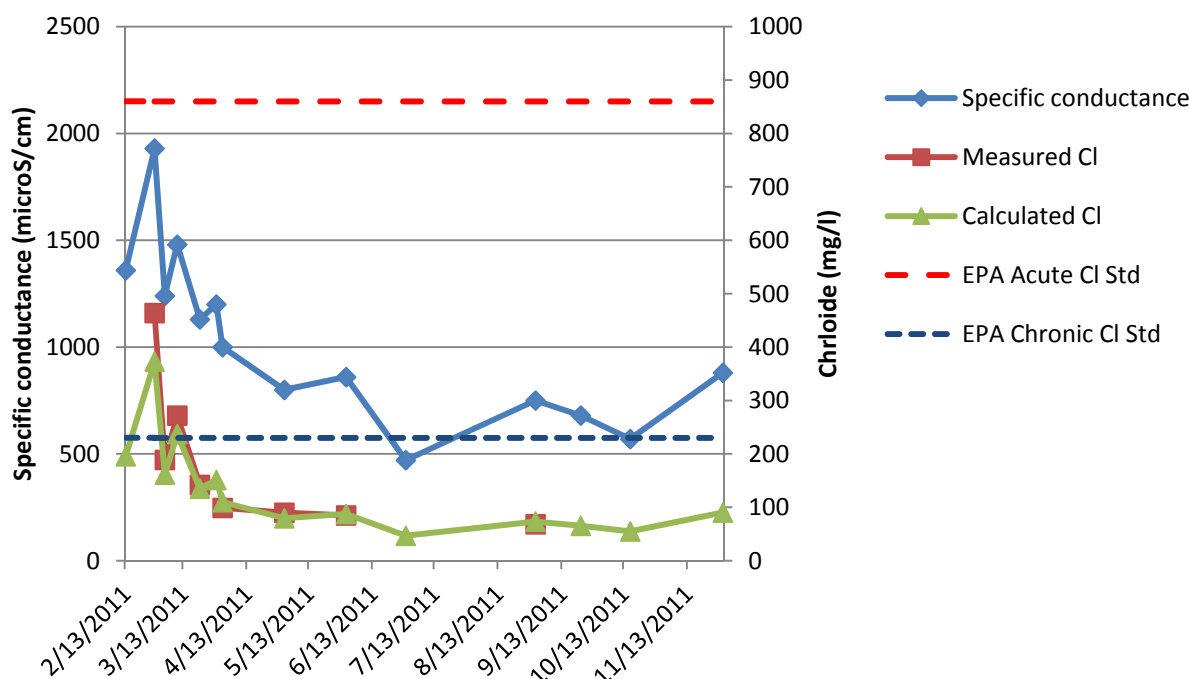
- Mid-level: 1000-1500 $\mu\text{S}/\text{cm}$
- High-level: >1500 $\mu\text{S}/\text{cm}$

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 twice:

- 272 mg/L on 3/10/2011 (measured)
- 464 mg/L on 2/17/2011 (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 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 $\text{Cl} = 1.044 * (\exp(0.001609 * \text{SC} + 3.046))$, $\text{adjR}^2 = 0.65$.