Starkweather Creek at Atwood Ave

Road Salt Monitoring Data Summary

December 2011 – December 2012

Volunteers: Erin and Jake Vennie-Vollrath

Specific conductance summary:
- 14 measurements taken
- Minimum: 700 µS/cm on 9/12/2012
- Maximum: 3600 µS/cm on 1/24/2012
- Mean: 1487 µS/cm

Chloride (Cl\(^{-}\)) summary:
- 5 samples collected
- Minimum: 116 mg/L on 6/10/2012
- Maximum: 931 mg/L on 1/24/2012
- Mean: 382 mg/L

EPA Acute and Chronic Exceedences for Chloride\(^1\):
The EPA acute chloride standard of 860 mg/L was not exceeded in 2011 at this site but was exceed once 2012:
  - 931 mg/L on 1/24/2012 (measured)
The EPA chronic chloride standard of 230 mg/L was not exceeded in 2011 at this site but was exceeded twice in 2012:
  - 466 mg/L on 2/26/2012 (calculated)\(^2\)
  - 535 mg/L on 3/4/2012 (measured)

Results Over Time\(^2\):

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\(^1\) 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 SC >1540 µS/cm was Cl\(^{-}\) = 0.3441 \* SC – 291, adjR\(^2\) = 0.98; when SC was ≤ 1540 µS/cm was Cl\(^{-}\) = 1.044 \* (exp(0.001609 \* SC + 3.046)), adj R\(^2\) = 0.65. Equations based on data from both Madison and Milwaukee.