

Library Reference 5.2.1

Flow-weighted average of limnological parameters, 2009, in Onondaga Lake tributaries, with standard error of estimate.

| Parameter | Units | Nine Mile Creek | | Harbor Brook | | Onondaga Creek @ Kirpatrick Street | | Ley Creek | |
|------------------------------|-------------|-----------------|--------|---------------|--------|------------------------------------|-------|---------------|-------|
| | | Concentration | RSE | Concentration | RSE | Concentration | RSE | Concentration | RSE |
| 5-day BOD | mg/l | 3.2 | 12.9% | 2.7 | 33.6% | 2.3 | 16.8% | 4.5 | 21.4% |
| Total Alkalinity | mg/l | 193 | 2.1% | 227 | 5.0% | 219 | 2.6% | 198 | 4.6% |
| Total Organic Carbon | mg/l | 3.0 | 19.0% | 2.1 | 28.0% | 2.5 | 23.7% | 6.6 | 7.9% |
| TOC-filtered | mg/l | 3.0 | 14.3% | 2.0 | 29.8% | 2.4 | 25.4% | 6.3 | 7.6% |
| Total Inorganic Carbon | mg/l | 49.8 | 2.0% | 59.3 | 5.1% | 57.2 | 2.9% | 52.2 | 5.9% |
| Total Kjeldahl Nitrogen as N | mg/l | 0.73 | 10.5% | 0.48 | 22.0% | 0.57 | 16.2% | 0.83 | 13.0% |
| Organic Nitrogen as N | mg/l | 0.55 | 14.2% | 0.39 | 24.6% | 0.51 | 19.0% | 0.50 | 14.9% |
| Ammonia as N | mg/l | 0.22 | 8.6% | 0.08 | 21.0% | 0.07 | 13.6% | 0.28 | 14.2% |
| Nitrate as N | mg/l | 0.84 | 7.7% | 1.42 | 5.8% | 0.91 | 7.2% | 0.36 | 16.5% |
| Nitrite as N | mg/l | 0.02 | 13.8% | 0.02 | 25.1% | 0.03 | 47.0% | 0.02 | 23.1% |
| Arsenic | ug/l | 2.0 | 3.6% | 2.0 | 2.3% | 2.0 | 14.1% | 2.0 | 3.4% |
| Total Phosphorus | ug/l | 68.5 | 22.2% | 92.0 | 25.4% | 85.3 | 36.6% | 100.2 | 28.8% |
| Soluble Reactive Phosphorus | ug/l | 9.9 | 28.3% | 37.5 | 17.4% | 8.4 | 31.8% | 16.3 | 17.6% |
| Silica | mg/l | 4.0 | 5.3% | 4.4 | 5.5% | 5.4 | 8.4% | 5.6 | 6.2% |
| Calcium | mg/l | 179.7 | 2.3% | 209.3 | 4.9% | 109.8 | 2.2% | 111.8 | 5.4% |
| Sodium | mg/l | 102.8 | 5.1% | 163.7 | 13.4% | 278.5 | 7.4% | 216.2 | 19.5% |
| Sulfate | mg/l | 188.2 | 5.9% | 350.3 | 6.6% | 104.6 | 4.2% | 113.9 | 7.1% |
| Chloride | mg/l | 268.1 | 3.8% | 280.1 | 11.3% | 422.4 | 7.4% | 336.4 | 19.9% |
| Total Suspended Solids | mg/l | 30 | 31.5% | 29 | 48.3% | 63 | 67.6% | 24 | 55.8% |
| Total Dissolved Solids | mg/l | 998 | 2.9% | 1236 | 5.7% | 1109 | 5.3% | 958 | 11.5% |
| Zinc | ug/l | 16.4 | 31.4% | 11.7 | 28.2% | 11.2 | 31.3% | 13.9 | 20.5% |
| Copper | ug/l | 3.5 | 12.5% | 3.4 | 31.1% | 3.1 | 40.4% | 2.7 | 23.0% |
| Chromium | ug/l | 2.0 | 22.4% | 2.0 | 36.4% | 2.0 | 38.8% | 2.1 | 27.0% |
| Cadmium | ug/l | 0.8 | 11.2% | 0.8 | 12.4% | 0.8 | 13.4% | 0.8 | 8.6% |
| Lead | ug/l | 2.0 | 15.7% | 2.0 | 21.0% | 2.0 | 30.9% | 2.0 | 31.8% |
| Iron | mg/l | 0.93 | 20.0% | 0.86 | 39.4% | 2.2 | 72.6% | 1.2 | 38.5% |
| Magnesium | mg/l | 26.0 | 1.8% | 37.4 | 4.6% | 23.3 | 2.3% | 21.4 | 5.7% |
| Manganese | ug/l | 62.4 | 11.1% | 28.5 | 18.4% | 72.7 | 34.7% | 119.7 | 11.4% |
| Nickel | ug/l | 3.8 | 13.7% | 3.8 | 20.2% | 3.8 | 32.7% | 3.8 | 10.8% |
| Fecal Coliforms | cells/100ml | 2,178 | 155.5% | 6,312 | 156.8% | 1,620 | 80.0% | 1,916 | 59.6% |

RSE = relative standard error of the concentration estimate. ** METRO BOD5, NH3-N, TP, TSS based on observations made daily.

Calculated using a multiple regression algorithm relating concentration to flow, season, and trend with residual interpolation.

METRO TKN based on observations made 5 times each 2 week period. Other values are based on data collected bi-weekly; heavy metals sampled quarterly.

Calculations use the laboratory reported minimal reportable limit (MRL) when observations were below the MRL.

Flow-weighted average of limnological parameters, 2009, in Onondaga Lake tributaries, with standard error of estimate. (continued)

| Parameter | Units | Trib. 5A | | METRO Effluent ** | | METRO By-Pass | | East Flume | |
|------------------------------|-------------|---------------|--------|-------------------|-------|---------------|-------|---------------|--------|
| | | Concentration | RSE | Concentration | RSE | Concentration | RSE | Concentration | RSE |
| 5-day BOD | mg/l | 2.3 | 14.1% | 3.7 | 3.9% | 50.2 | 6.7% | 5.5 | 12.1% |
| Total Alkalinity | mg/l | 171 | 2.6% | 145 | 3.1% | 231 | 14.5% | 147 | 4.8% |
| Total Organic Carbon | mg/l | 3.2 | 6.2% | 6.0 | 5.6% | 13.2 | 24.5% | 3.7 | 7.3% |
| TOC-filtered | mg/l | 3.1 | 5.8% | 5.7 | 4.7% | 11.4 | 25.2% | 3.6 | 7.3% |
| Total Inorganic Carbon | mg/l | 43.6 | 3.5% | 41.2 | 3.3% | 60.4 | 17.1% | 36.4 | 5.0% |
| Total Kjeldahl Nitrogen as N | mg/l | 0.46 | 34.8% | 1.2 | 3.6% | 10.3 | 8.0% | 1.4 | 9.6% |
| Organic Nitrogen as N | mg/l | 0.31 | 15.8% | 0.7 | 16.8% | 3.9 | 29.9% | 0.46 | 13.4% |
| Ammonia as N | mg/l | 0.15 | 85.6% | 0.3 | 5.4% | 5.9 | 12.1% | 0.90 | 13.3% |
| Nitrate as N | mg/l | 0.73 | 14.8% | 11.2 | 5.6% | 1.6 | 42.3% | 3.4 | 7.1% |
| Nitrite as N | mg/l | 0.02 | 20.8% | 0.02 | 15.6% | 0.13 | 81.1% | 0.92 | 17.9% |
| Arsenic | ug/l | 2.1 | 11.2% | 2.0 | 6.2% | 2.0 | 6.1% | 2.8 | 15.1% |
| Total Phosphorus | ug/l | 122.8 | 8.2% | 79.7 | 3.5% | 1130.7 | 7.6% | 113.2 | 15.5% |
| Soluble Reactive Phosphorus | ug/l | 37.4 | 13.3% | 2.6 | 23.4% | 153.8 | 96.8% | 30.4 | 19.0% |
| Silica | mg/l | 7.8 | 5.8% | 5.1 | 3.5% | 6.2 | 21.5% | 9.6 | 6.9% |
| Calcium | mg/l | 140.2 | 3.6% | 142.7 | 6.3% | 113.4 | 36.6% | 122.8 | 7.3% |
| Sodium | mg/l | 176.6 | 5.3% | 318.3 | 14.2% | 416.6 | 40.5% | 364.9 | 8.4% |
| Sulfate | mg/l | 83.5 | 11.9% | 173.3 | 4.3% | 129.8 | 20.4% | 194.8 | 9.6% |
| Chloride | mg/l | 351.2 | 5.3% | 499.5 | 5.8% | 614.6 | 46.5% | 569.8 | 9.5% |
| Total Suspended Solids | mg/l | 19 | 66.8% | 5.5 | 5.1% | 56 | 10.5% | 11 | 37.4% |
| Total Dissolved Solids | mg/l | 1000 | 4.5% | 1308 | 4.4% | 1429 | 31.9% | 1437 | 7.5% |
| Zinc | ug/l | 25.9 | 43.8% | 20.6 | 6.7% | 35.1 | 15.4% | 33.2 | 47.4% |
| Copper | ug/l | 49.0 | 31.1% | 10.3 | 6.2% | 21.2 | 14.8% | 4.0 | 56.7% |
| Chromium | ug/l | 76.4 | 35.4% | 7.7 | 6.2% | 8.2 | 17.1% | 2.1 | 40.9% |
| Cadmium | ug/l | 0.80 | 23.8% | 0.8 | 10.4% | 5.0 | 7.5% | 0.80 | 37.7% |
| Lead | ug/l | 5.9 | 29.2% | 2.0 | 6.2% | 21.0 | 11.8% | 2.6 | 62.0% |
| Iron | mg/l | 1.4 | 47.2% | 1.65 | 6.6% | 2.6 | 16.4% | 0.28 | 38.0% |
| Magnesium | mg/l | 16.0 | 2.7% | 23.2 | 3.1% | 21.2 | 20.5% | 18.4 | 7.3% |
| Manganese | ug/l | 78.2 | 25.8% | 41.9 | 7.3% | 49.2 | 20.0% | 23.5 | 15.7% |
| Nickel | ug/l | 109.2 | 18.8% | 14.3 | 5.1% | 15.0 | 16.5% | 3.8 | 19.3% |
| Fecal Coliforms | cells/100ml | 73 | 483.1% | 829 | 57.9% | 270,226 | 46.2% | 110 | 103.4% |

RSE = relative standard error of the concentration estimate. ** METRO BOD5, NH3-N, TP, TSS based on observations made daily.

Calculated using a multiple regression algorithm relating concentration to flow, season, and trend with residual interpolation.

METRO TKN based on observations made 5 times each 2 week period. Other values are based on data collected bi-weekly; heavy metals sampled quarterly.

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