

Water Quality Monitoring – Conventional River Monitoring

Monitoring Purpose

Conventional river water monitoring is conducted to characterize river water quality and to determine specific sources of pollution, as well as the extent and nature of problems that may exist. Monitoring allows the Metropolitan Council Environmental Services (MCES) to:

- Measure compliance with state water quality standards and criteria
- Meet National Pollutant Discharge Elimination System (NPDES) permit requirements
- Assess the performance and effectiveness of MCES wastewater treatment plants
- Obtain information on the sources and water quality impacts of nonpoint source pollutants
- Document long-term trends and changes in water quality
- Project future water quality conditions



Monitoring Sites

- Mississippi River: 11 monitoring sites from Anoka, MN to Red Wing, MN
- Minnesota River: 5 monitoring sites from Jordan, MN to Fort Snelling, MN
- St. Croix River: 2 monitoring sites at Stillwater, MN and Prescott, WI
- Vermillion River: 3 monitoring sites from Farmington, MN to Empire, MN
- Rum River: 1 monitoring site at Anoka, MN, near the Mississippi River confluence
- Cannon River: 1 monitoring site near Harliss, MN
(Monitoring was discontinued at this site in April 2007)

[View map of MCES river monitoring network](#)

Mississippi River

(River mile measured from the intersection of the Ohio and Mississippi Rivers near Cairo, IL)

- *Anoka (river mile 871.6)
- Fridley (river mile 862.8)
- *Lock and Dam No. 1 (river mile 847.7)
- *St. Paul (river mile 839.1)
- *Newport (river mile 831.0)
- *Grey Cloud Island (river mile 826.7)
- Grey Cloud Daymark (river mile 821.8)
- *Lock and Dam No. 2 (river mile 815.6)
- Hastings Bridge (river mile 813.9)
- Below Hastings Bridge (river mile 812.8)
- *Lock and Dam No. 3 (river mile 796.9)

Minnesota River

(River mile measured from the downstream end or mouth of the river)

- *Jordan (river mile 39.4)
- Shakopee (river mile 25.1)
- Savage (river mile 14.3)
- *Black Dog (river mile 8.5)
- *Fort Snelling (river mile 3.5)

St. Croix River

(River mile measured from the downstream end or mouth of the river)

- *Stillwater (river mile 23.3)
- *Prescott (river mile 0.3)

Vermillion River

(River mile measured from the railroad bridge downstream of Hastings)

- *Farmington (river mile 20.6)
- *Empire (river mile 15.6)
- Hastings (river mile 2.7)

Rum River

(River mile measured from the downstream end or mouth of the river)

- Anoka (river mile 0.6)

Cannon River

(River mile measured from the downstream end or mouth of the river)

- Harliss (river mile 4.0)
(Monitoring was discontinued at this site in April 2007)

Monitoring Variables Analyzed

(* = analyzed at "starred" (*) sites only)

<p>Weekly (March-October)</p> <p>Semi-Monthly (November-February)</p>	<p>Semi-Monthly *</p>	<p>Monthly *</p>
<ul style="list-style-type: none"> • Ammonia Nitrogen • Dissolved Oxygen • E. coli Bacteria • Fecal Coliform Bacteria • pH • Specific Conductance • Temperature • Turbidity 	<ul style="list-style-type: none"> • BOD 5-day • CBOD 5-day • Chloride • Chlorophyll-a, Total • Chlorophyll-a, Pheophytin-corrected • Nitrate Nitrogen • Nitrite Nitrogen • Total Phosphorus • Total Dissolved Phosphorus • Ortho Phosphate as P • Total Particulate Phosphorus • Total Suspended Solids • Volatile Suspended Solids • Total Dissolved Solids 	<ul style="list-style-type: none"> • Total Kjeldahl Nitrogen • Particulate Kjeldahl Nitrogen • Total Silica

Bi-Monthly *	Quarterly *	Semi-Annually *	Annually *
<ul style="list-style-type: none"> • Cyanide • Hardness • Phenols • Total Metals: <ul style="list-style-type: none"> ○ Ag Hg ○ Al Mn ○ As Ni ○ B Pb ○ Be Sb ○ Cd Se ○ Cr Tl ○ Cu Zn ○ Fe 	<ul style="list-style-type: none"> • Dissolved: <ul style="list-style-type: none"> ○ Calcium ○ Chloride ○ Magnesium ○ Potassium ○ Silica ○ Sodium ○ Sulfate • Total Alkalinity • Bicarbonate Alkalinity • Carbonate Alkalinity 	<ul style="list-style-type: none"> • BOD Ultimate • CBOD Ultimate 	<ul style="list-style-type: none"> • Soluble Metals: <ul style="list-style-type: none"> ○ Ag Hg ○ Al Mn ○ As Ni ○ B Pb ○ Be Sb ○ Cd Se ○ Cr Tl ○ Cu Zn ○ Fe • Total Organics: <ul style="list-style-type: none"> ○ Volatile ○ Acid-Extractable ○ Base-Neutral • Pesticides

Monitoring Equipment

- Van Dorn water sampler or stainless steel sampling bucket
- Sampling bucket suitable for trace metals sample collection
- YSI multi-parameter meter (dissolved oxygen, pH, temperature, and specific conductance)
- BOD bottles and chemical reagents for Winkler dissolved oxygen method (use as backup and in winter)
- Cooler with ice for sample transport
- Various sample bottles and containers
- Equipped boat and transport vehicle (samples are collected either by boat or from shore during the summer)
- Ice auger or chisel (winter)
- Personal floatation devices

Monitoring Data and Reports

[2012 River Water Quality Summary](#)

Past river monitoring reports and river monitoring data can be found in the Metropolitan Council's Environmental Information Management System ([EIMS](#)).

For further information on conventional river monitoring, please contact Scott Schellhaass via [email](#) or at 651.602.8341.