

WATER QUALITY REPORT

FOR BLOOMINGTON, MN • 2017 TEST RESULTS



JUNE 2018

INSIDE

WQR 2 Where does your tap water come from?

WQR 3 FAQ.

WQR 4 2017 Water quality results.



MAKING SAFE DRINKING WATER

The City of Bloomington works hard to provide you with high-quality, safe, reliable drinking water that meets every federal and state water quality requirement. This report contains information about the sources, treatment process and history of our water system. The results of water quality monitoring on Bloomington's water sources from January 1 to December 31, 2017, conducted by the Minnesota Department of Health, the city of Minneapolis' and Bloomington's laboratories are on page WQR4.

The goal of this report is to advance residents' understanding of drinking water and heighten awareness of the need to protect precious water resources.

GET INVOLVED

Public Works welcomes input on water quality issues. Contact the water quality supervisor at 952-563-4904.

If you have questions about your water or need assistance, give us a call or visit the City's website at BloomingtonMN.gov.

- Water Plant (24 hours a day) 952-563-4905
- TTY (8 a.m. – 4:30 p.m., M – F) 952-563-8740

Este informe contiene información muy importante. Si necesita una traducción del mismo, sírvase llamar al 952-563-4944 V/TTY.

Bản báo cáo này có các thông tin rất quan trọng. Nếu quý vị cần bản dịch tiếng Việt, xin gọi số 952-563-4944 V/TTY.

Warbixintaan waxaa ku jira macluumaad aad muhiim u ah. Haddii aad u baahan tahay in lagu turjumo, fadlan la xiriir 952-563-4944 V/TTY.



REPRESENTING EXCELLENCE IN WATER TREATMENT

Last spring, U.S. Representative Erik Paulsen visited the Bloomington Water Treatment plant to see the work that goes into delivering some of the nation's best-tasting tap water. Paulsen got a behind-the-scenes look at the full-service lab, lime slakers and water processing basins. Representative Paulsen

said that he was excited to report back to his colleagues that the state's best-tasting tap water is produced in his district. *Pictured above: Utilities Operator Anthony Halberg leads the tour and explains the processing that happens in the water basins to Representative Paulsen, center, and Mayor Gene Winstead, left.*

PLANNING FOR SAFE AND SUSTAINABLE WATER

BLOOMINGTON UPDATES ITS WATER SUPPLY PLAN WITH A NEW FOCUS ON CONSERVATION

Like so many other important services, providing safe and delicious drinking water takes detailed planning.

From emergency response procedures to conservation strategies, the City's water supply plan provides a path to a continued safe and sustainable drinking water.

Water supply plans are required of all public water suppliers serving more than 1,000 people, some private water suppliers in designated groundwater management areas and all water suppliers in the metro area.

Last year the City updated its water supply plan, as is required every 10 years by Minnesota state statute. The new edition has a greater emphasis on water conservation, demand reduction and developing rate structures that encourage conservation.

"We've already begun making progress on the plan. Last fall, we introduced new water rate structures for residents and businesses that encourage conservation," Utility Superintendent Scott Anderson said.

While Bloomington has benefited historically from an abundant, high-quality water supply, the plan's water conservation component aims to continue efforts to use water wisely. Future population increases, economic trends and climatic change are just a few examples of factors that could influence our water availability, making ongoing conservation important.

In addition to lowering the threshold in water rate structures to encourage conservation, the City has set a goal to achieve at least a 1.5 percent annual reduction in nonresidential per-capita water use.

The plan also thoroughly evaluates the City's water supply system, considering current and future demand as well as water source availability. This information is used to develop emergency preparedness procedures that address unplanned events and routine maintenance. A few examples of the unplanned events described in the plan are water main breaks and power outages.

The water supply plan is focused on the future. When it comes to supplying water, the City is set up for success. With its own water treatment capacity, along with a contract to purchase water from the city of Minneapolis, Bloomington has ample resources to meet projected needs.

The update to the water supply plan is expected to be approved later this year.

UPDATING INFRASTRUCTURE TO BETTER SERVE

In an ongoing effort to preserve high-value infrastructure and keep Bloomington water tasting great, Public Works undertook the rehabilitation of its Western Reservoir water storage tank at 9921 Rich Road in 2017.

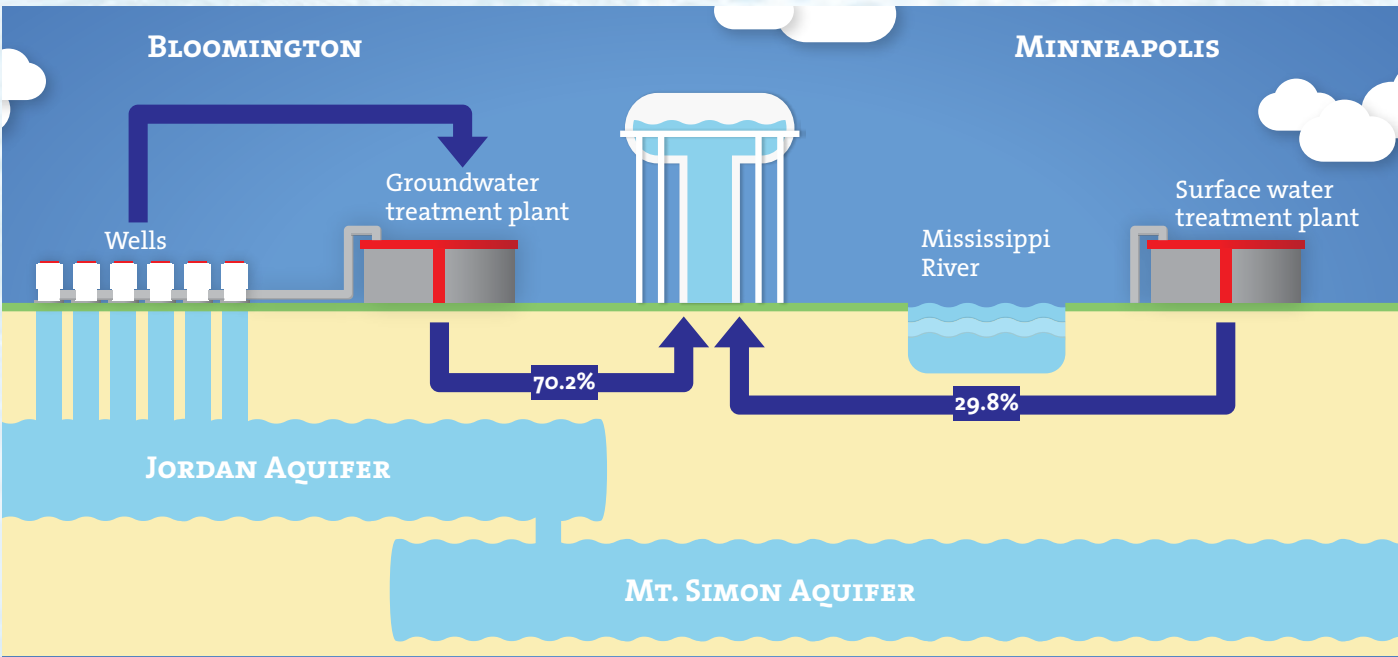
The tank was built in 1965, a time of rapid expansion of the City's water distribution system. The tank's last improvement project was finished in 1993. It included the

removal and replacement of all coatings inside and out.

This project included structural modifications to the existing overflow pipe, an additional access hatch, improved venting, a safety railing and a cable system on the roof.

"The goal of these improvements is to keep our water quality high and make sure crews are safe while maintaining the structure," Utilities Supervisor Gregg Randahl said.

THE SOURCES OF BLOOMINGTON'S TAP WATER

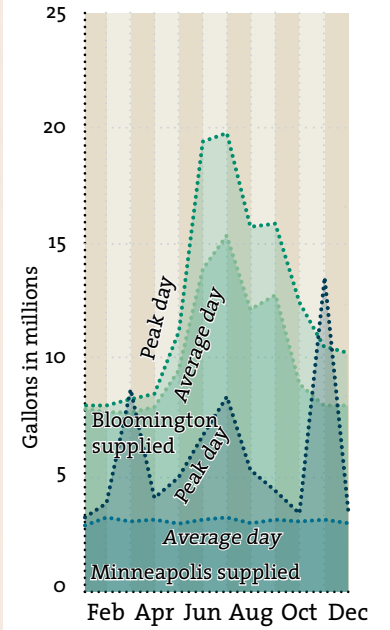


HOW MUCH IS USED?

In 2017, residents and businesses in Bloomington used 3.6 billion gallons of water, 44 million fewer gallons than 2016. Average usage was 10 million gallons of water per day last year.

The chart below shows the peak day and average day of water use for each month during 2017, as well as the average amount of water treated at the City's plant and purchased from Minneapolis. To get a more accurate picture of the actual water consumed, peak day data was adjusted to account for fluctuations in the City's reservoir levels. To learn more, visit blm.mn/water-usage.

2017 DAILY WATER USE



BY THE NUMBERS

Percentage of residents who ranked the City's water as excellent or good in the 2016 National Citizen Survey™.

91

Ranking of City's water among 301 jurisdictions polled nationwide in the National Citizen Survey™.

7

Ranking in the Minnesota Chapter American Water Works Association's "Best in Glass" taste test competition in 2017.

1

Ranking of City's water among peer cities for the past six years in the National Citizen Survey™.

1

BLOOMINGTON WELLS

FULFILLED 70 PERCENT OF WATER NEEDS IN 2017

The City's water plant draws groundwater from six deep wells. The wells extend downward between 376 and 963 feet into the Jordan, Prairie du Chien-Jordan, Tunnel City-Mount Simon and Jordan-St. Lawrence aquifers, porous underground rock formations that hold vast amounts of water.

In 2017, the City drew 2.6 billion gallons of water, 70 percent of Bloomington's needs, from these deep groundwater wells. The City continues to monitor water usage and takes appropriate actions to encourage wise water use. Additionally, the City continues to implement its wellhead protection study to ensure Bloomington well water continues to be safe.

MISSISSIPPI RIVER

SUPPLIED NEARLY 30 PERCENT OF WATER NEEDS IN 2017

To supplement production at the water treatment plant, Bloomington purchases treated water from Minneapolis. Treated water from our plant is blended with similarly treated water from Minneapolis and sent throughout Bloomington's distribution system. All of Bloomington's consumers receive a blend of water from these two sources.

Minneapolis' surface water treatment plant takes raw water from the Mississippi River. In 2017, Bloomington purchased 1.1 billion gallons of water from Minneapolis to supply almost 30 percent of Bloomington's water needs. For more information, visit the City's website at blm.mn/watertreatment.

WATER TREATMENT PROCESS

1 The softening process begins when lime, in the form of slakened quicklime, is mixed with raw water in one of the City's two contact solids basins. Each basin holds half a million gallons of water.

2 The lime-and-water mixture causes a chemical reaction that results in calcium and magnesium (the main components of hardness) forming insoluble particles called flocs. As these floc particles grow in size, they settle to the bottom of the contact solids basins. The solids are removed, dewatered and used as a USDA-approved source of lime by Minnesota farmers to stabilize the pH in farm fields.

3 The water enters a recarbonation basin where it is adjusted to the proper pH

by adding carbon dioxide. A precise amount of chlorine is added to discourage bacterial growth as the water travels through the City's distribution system.

4 The water is filtered to remove any remaining particles. Then it enters an underground reservoir called a clearwell where small quantities of fluoride are added. Because fluoride promotes strong teeth and bones, fluoridation is mandated by state law at a dosage of 0.7 parts per million. See page WQR4.

5 The finished water from the City's treatment plant is pumped into the distribution system, where it is mixed with treated water purchased from the city of Minneapolis. For more information, visit blm.mn/watertreatment.

WATER TESTING

The Tri-City William Lloyd Analytical Laboratory is certified by the Minnesota Department of Health to test water. In 2017, the lab performed more than 9,894 tests on Bloomington's well, raw, finished and distribution water. The lab also analyzed 84 state-mandated bacteria tests for new water main construction projects and conducted 522 water quality tests on Bloomington's surface water bodies.



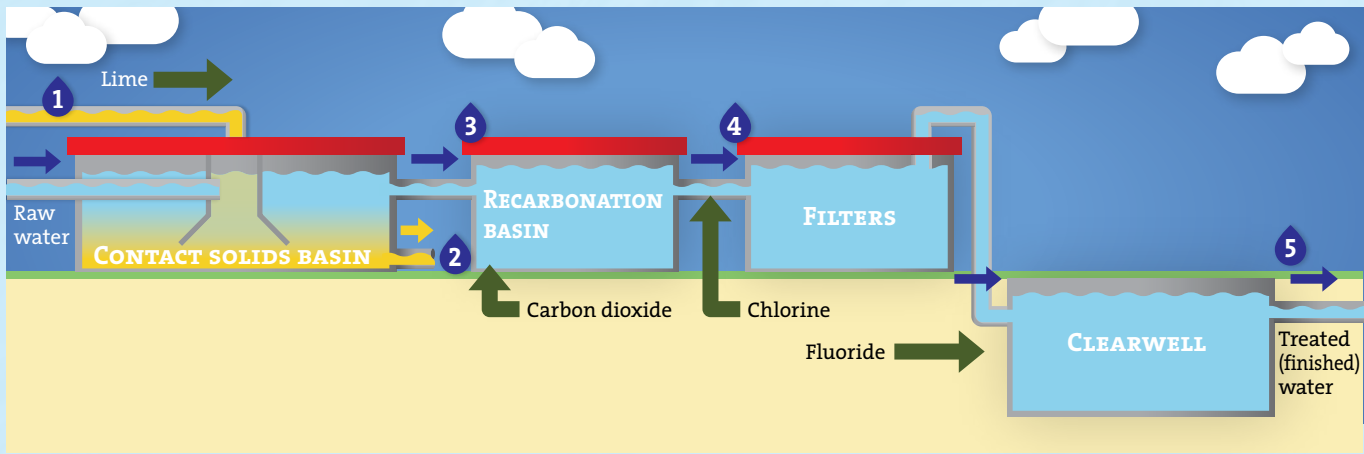
St. Cloud Technical College

A CAREER IN THE WATER INDUSTRY IS WAITING FOR YOU!

St. Cloud Technical and Community College's Water Environment Technologies program provides you with the skills you need to land a great job in this rapidly growing industry. The program has many benefits:

- Hands-on learning.
- Twelve-month program.
- Metro and St. Cloud locations.
- Ninety-five percent placement rates.

For more information on this career program, call St. Cloud Technical and Community College at 320-308-5952 or email instructor Bill Spain at bspain@sctcc.edu.



FREQUENTLY ASKED QUESTIONS ABOUT BLOOMINGTON’S WATER

WHY IS THE WATER FROM MY FAUCET CLOUDY?



Occasionally, the City receives calls about water that appears cloudy or milky. Usually indicating the presence of either oxygen or calcium, cloudy water is perfectly safe to drink.

Oxygen in water: Sometimes water fresh from the tap appears cloudy. Within a minute or two, the cloudiness rises toward the top of a glass and before long the whole glass is crystal clear. This is caused by excess oxygen escaping from the water.

Changes in temperature and pressure can cause the oxygen dissolved in water to reach a supersaturated state where more oxygen is in the water than it can hold. When the water passes through a faucet, the disturbance is enough to release the excess oxygen from the water, forming microscopic bubbles. The bubbles are so tiny that it takes them a long time to rise through the water. No harm will come from using oxygenated water, and you don’t need to take any corrective action if you experience it.

Calcium in water: The chemistry of water is surprisingly complex, and many factors influence how it behaves. The City treats Bloomington’s water so that it is slightly prone to deposit a trace of calcium sediment as it travels

through our distribution system. This reduces the likelihood that it might corrode water mains or leach lead or copper from customers’ plumbing and fixtures. Usually, this calcium sediment remains at the bottom of the water mains, unnoticed by water users.

However, the calcium can be stirred up when a large volume of water is drawn through a water main in a short time. Events that can increase water velocity include firefighting, water main breaks, hydrant maintenance and the filling of water or street-cleaning trucks’ tanks at a hydrant. If you happen to turn on your cold water right after such an event, you may draw some of the stirred-up water into your pipes.

When calcium causes cloudiness, it is usually noticed in cold water. Let a glassful of the cloudy water sit for about 30 minutes and any calcium, appearing as a white or grayish substance, will settle to the bottom of the glass. Though it may be visually unappealing, such water is perfectly safe to drink or use for cooking.

To clean calcium sediment from your system, we recommend that you wait an hour or two to allow the calcium in the main to settle. Then, open a large faucet such as a bathtub faucet and let the cold water run for about 20 minutes. This will draw clean water through your system and should remove any remaining calcium from your pipes.

If you have any concerns or if your water remains cloudy after taking these steps, call 952-563-4905.



SHOULD I GET A WATER FILTRATION SYSTEM?

Because Bloomington’s water surpasses all federal and state standards, home filtration systems are not necessary. However, if you choose to purchase a filtration system for aesthetic or medical reasons, keep the following in mind:

- Find out if the filter you are considering is capable of removing substances that concern you.
- Look for filters that have been certified by NSF International (an independent testing group) and Underwriters Laboratory (UL).
- Follow the manufacturer’s maintenance instructions carefully for usage and filter replacement frequency guidelines.



WATER SOFTENING

The City’s lime-softening process removes most of the hardness in Bloomington’s water, reducing it from 19 grains per gallon to about 5.2 grains per gallon finished water. (Zero-grain water is ultra-soft while 19-grain water is considered raw.) The water is also treated to be noncorrosive. This helps prevent unsafe levels of lead and copper from leaching into the water from home plumbing. Home softening systems can further reduce water hardness, usually by adding a small amount of sodium.

Bloomington is one of 24 Minnesota municipal utilities that softens water, which means homeowners do not need to purchase their own water-softening system.

It is estimated that the cost of home water softening ranges between \$5.02 and \$5.64 per 1,000 gallons of water, compared to \$2.84 per 1,000 gallons for City-treated water in 2017.



LEAD IN WATER

Lead in drinking water primarily comes from components associated with home plumbing. The City is responsible for providing high-quality drinking water, but cannot control the materials used in home plumbing.

Minimizing exposure to lead

Lead pipes, solder, brass faucets and other plumbing in your home pose the greatest threat of adding dangerous levels of lead to your water. A few simple practices can minimize your exposure to lead from your home.

First, always use cold water for your cooking and drinking. If your plumbing contains lead, hot water will draw more lead out of it. Second, allow your cold water to run for 30 seconds to two minutes before using. This flushes out any water that may have been in your pipes long enough to pick up higher concentrations of lead.

The presence of lead ranks among the most common health concerns people have about drinking water. Studies suggest levels of lead once thought to be safe can pose risks, especially to unborn babies and children.

Infants and children who drink water containing excessive levels of lead could experience delays in their physical or mental development. Children can show slight deficits in attention span and learning abilities. Adults who drink this water over many years can develop kidney problems or high blood pressure.

Fortunately, over years of regular and rigorous monitoring, Bloomington’s water has never been found to be a significant source of lead.

For more information, call the Safe Drinking Water Hotline at 1-800-426-4791 or visit www.epa.gov/safewater/lead. If you are concerned about your home’s lead levels, our laboratory can test your water for a fee. For more information, call 952-563-4904.

FOR PEOPLE WITH COMPROMISED IMMUNE SYSTEMS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk of infections.

These people should seek advice from their health care providers about drinking water. Guidelines from the



Environmental Protection Agency and Centers for Disease Control on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline: 1-800-426-4791.

Did you know that nearly 97 percent of the world’s water is salty or otherwise undrinkable? Another two percent is trapped in glaciers—that leaves one percent for all of humanity’s needs.

WWW.EPA.GOV

WATER PURITY INFORMATION PROVIDED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



Drinking water sources in the United States, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over or through the ground, it dissolves naturally occurring minerals and, sometimes, radioactive material. Water also picks up substances resulting from animal or human activity.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) regulates the amount of certain contaminants in water provided by public systems. The Food and Drug Administration regulates contaminants in bottled water to provide the same public health protection.

Drinking water, including bottled water, may be expected to contain reasonably small amounts of some contaminants. Their presence does not necessarily indicate that the water poses a health risk. Information about contaminants and potential health effects can be obtained by calling the EPA’s Safe Drinking Water Hotline at 1-800-426-4791.

CONTAMINANTS THAT MAY BE PRESENT IN UNTREATED SOURCE WATER

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic contaminants, such as salts and metals, can occur naturally or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.

Pesticides and herbicides come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

Radioactive contaminants can occur naturally or be the result of oil and gas production and mining activities.

2017 WATER QUALITY RESULTS

The Minnesota Department of Health (MDH) and City staff regularly test samples of Bloomington’s water for contaminants. Substances detected appear in the table below. Undetected substances are not listed and unregulated contaminants are only listed if federal health risk limits are exceeded. This response is the same as if a maximum contaminant level had been exceeded and would include

customer notification and corrective actions. The top half of the table summarizes test results performed on Bloomington water. The lower half presents results for Minneapolis water which is blended into Bloomington’s distribution system. Information on Bloomington’s Source Water Assessment can be found at blm.mn/swa or by calling the MDH at 651-201-4700 or 1-888-345-0823.

Detected substance	Amount detected	Maximum (MCL)	Target (MCLG)	Typical source of substance	Type	Meets standards?
CITY OF BLOOMINGTON						
Chlorine (ppm)	Avg. = 2.2 (1.58 – 2.57)	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Copper (ppm) (6/14/2017)	90% = 0.02 (0 of 30 sites over AL)	AL = 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Fluoride (ppm)	Avg. = 0.69 (0.63 – 0.69)	4	4	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	R	Yes
Haloacetic acids (HAA5) (ppb)	Avg. = 18.6 (0 – 30.4)	60	0	Byproduct of drinking water disinfection	R	Yes
Lead (ppb) (6/14/2017)	90% = 5.3 (1 of 30 sites over AL)	AL = 15	0	Corrosion of household plumbing systems; erosion of natural deposits See page WQR 3	R	Yes
Sodium (ppm) (6/9/2015)	6.18	U	U	Erosion of natural deposits	U	NA
Sulfate (ppm) (6/9/2015)	16.7	U	U	Erosion of natural deposits	U	NA
Total coliform Bacteria	Avg. = 1% **	>5% present	0 present	Naturally present in the environment	R	Yes
Trihalomethanes (TTHM) (ppb)	Avg. = 15.7 (1.2 – 26.9)	80	0	Byproduct of drinking water disinfection	R	Yes
CITY OF MINNEAPOLIS						
Chloramine (ppm)	Avg. = 3.14 (2.7 to 3.6)	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Copper (ppm) (6/25/2015)	90% = 0.08 (0 of 54 sites over AL)	AL = 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Fluoride (ppm)	Avg. = 0.7 (0.64 to 0.7)	4	4	State of Minnesota requires all municipal water systems to add fluoride to the drinking water to promote strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	R	Yes
Haloacetic acids (HAA5) (ppb)	Avg. = 26.3 (0 to 36.4)	60	0	Byproduct of drinking water disinfection	R	Yes
Lead (ppb) (6/25/2015)	90% = 1.6 (0 of 54 sites over AL)	AL = 15	0	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Nitrate (as nitrogen) (ppm)	0.41	10.4	10.4	Runoff from fertilizer use; leaching from sewage; erosion of natural deposits	U	NA
Total coliform bacteria	Avg. = 1% **	>5% present	0 present	Naturally present in the environment	R	Yes
Trihalomethanes (TTHM) (ppb)	Avg. 23.5 (6.7 – 34.4)	80	0	Byproduct of drinking water disinfection	R	Yes
Turbidity (NTU)	0.19	TT	NA	Soil runoff	R	Yes

Detected substance	Removal achieved	Removal required	Typical source of substance	Quarters out of compliance
CITY OF MINNEAPOLIS				
Total organic carbon	Avg.=59% (55 – 64%)	25 to 30%	Naturally present in the environment	0

Contaminant	EPA’s limit (MCL)	EPA’s ideal goal (MCLG)	Highest average or highest single test result	Range of detected test results	Violation	Typical sources
CITY OF MINNEAPOLIS						
Carbon tetrachloride	5 ppb	0 ppb	0.2 ppb (follow up sampling showed no contamination present)	N/A	No	Discharge from chemical plants and other industrial activities

KEY						
AL	Action level. An amount that, if exceeded, triggers a specific response that a water system must follow.			MRDL	Maximum residual disinfectant level.	
cfu	Colony forming unit.			MRDLG	Maximum residual disinfectant level goal.	
MCL	Maximum contaminant level. The highest level allowed in drinking water. MCLs are set as close to MCLG as feasible using the best available treatment technology.			NA	Not applicable.	
MCLG	Maximum contaminant level goal. Below this level there is no known or expected health risk. MCLGs allow for a margin of safety.			nd	No detection.	
				NTU	Nephelometric turbidity unit. A measure of water clarity.	
				ppb	Parts per billion. Units of a substance, in pure form, found in every billion units of water.	
				ppm	Parts per million. Units of a substance, in pure form, found in every million units of water.	
				R	Regulated.	
				TT	Treatment technique. A required process intended to reduce the level of a contaminant.	
				U	Unregulated, but monitoring is required by the State of Minnesota. No limits have been set for this compound.	
				90%	Value obtained after disregarding the 10 percent of the samples taken that had the highest levels.	

** Follow-up sampling showed no contamination present.