

WATER QUALITY REPORT

FOR BLOOMINGTON, MN • 2016 TEST RESULTS



JUNE 2017

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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, 2016, 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.

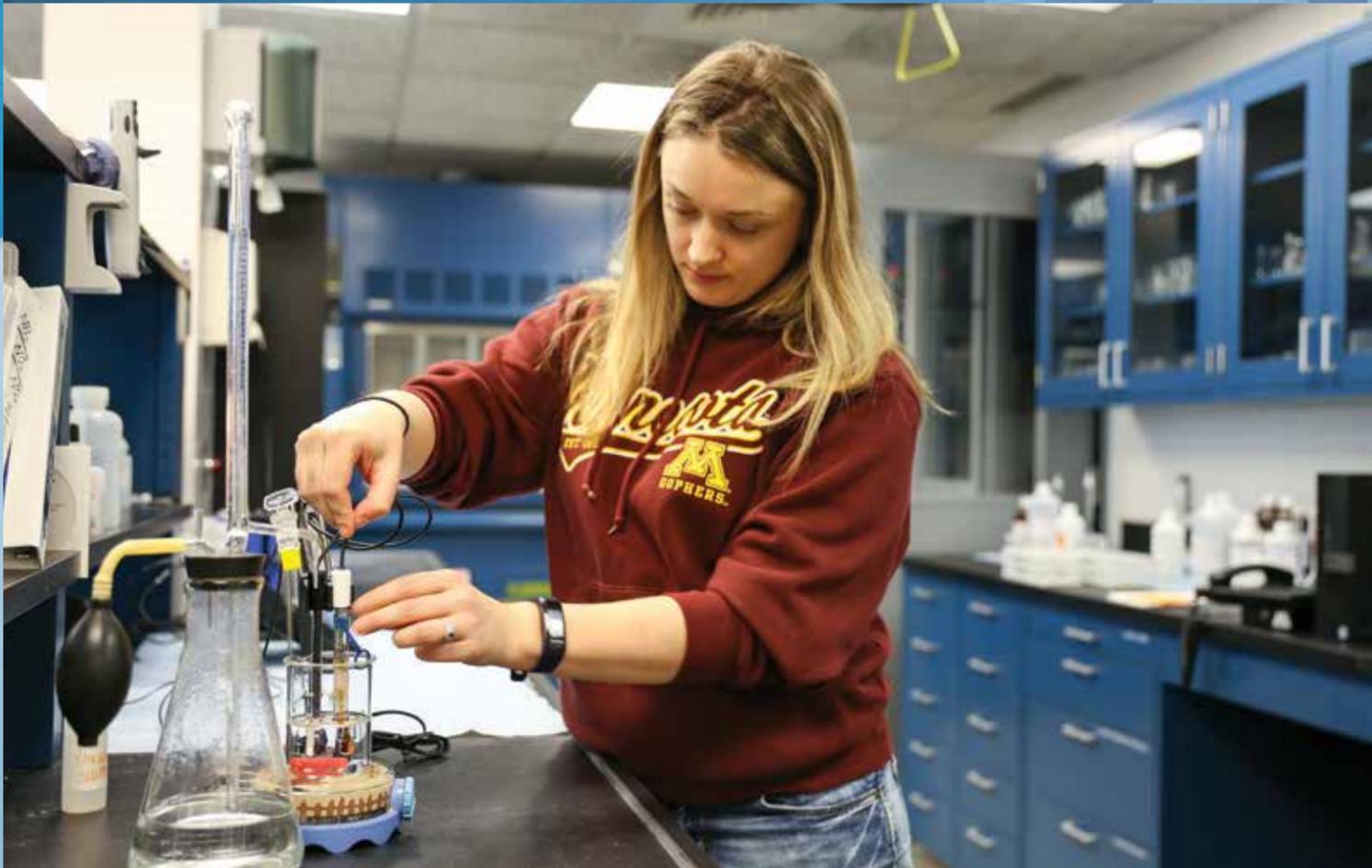
- Water Plant (24 hours a day) 952-563-4905
- TTY (8 a.m. – 4:30 p.m., M – F) 952-563-8740

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.

EVERY DROP MATTERS



KEEPING BLOOMINGTON'S TAP WATER SAFE

With an outpouring of support, residents have made it clear that they love the way Bloomington's tap water tastes. Not only is it delicious, it's proven safe since monitoring standards were established by the Minnesota Department of Health.

The Tri-City William Lloyd Analytical Lab at Bloomington's Water Treatment Plant is largely to thank for performing the testing that monitors the safety of Bloomington's tap water. As part of water testing requirements, the City conducts lead and copper testing every three years in homes built from 1982 – 1986 with lead or copper pipes.

Bottles were delivered to 30 homes in May for the most recent sample collection, which will be analyzed by Pace Analytical for the Minnesota Department of Health.

"The Minnesota Department of Health mandates that every city perform lead and copper testing every three years," said Water Quality Supervisor Deb Weltzin. "As long as we stay under the action requirements, we stay on the three-year testing schedule."

While these specific samples will be analyzed by another MDH-certified lab, the City's lab processes samples to monitor bacteria, chlorine and fluoride levels, along with a great variety of other chemical and microbiological tests.

The lab also provides testing services to other public water utilities around the metro area, private well owners, private water sampling companies, contractors and other agencies or individuals with a need for chemical or bacteriological testing of water samples.

"Water is important. I love that I'm in a position that I can assure people that they're getting safe, quality water," Weltzin said. "We're testing 24 – 7 here to prevent anything from going wrong. In that way, Bloomington really stands out."

H2O EXCELLENCE

BLOOMINGTON WATER AND UTILITIES RECOGNIZED

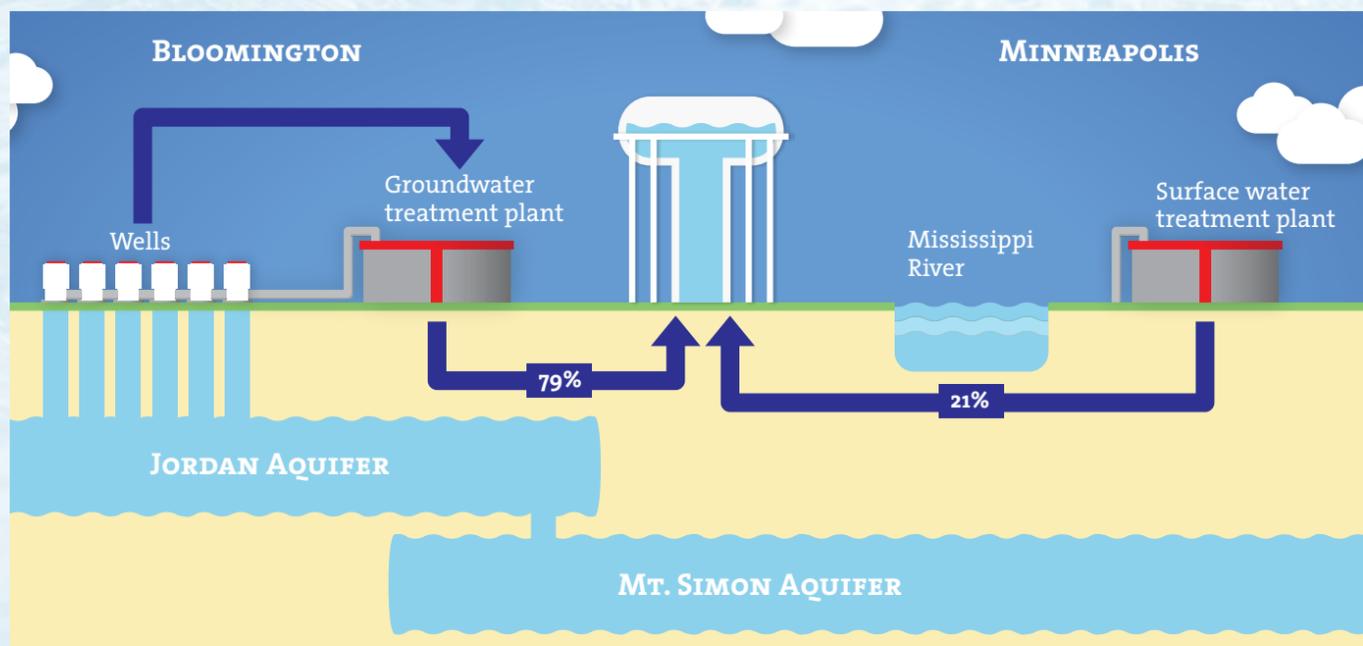
With a 90 percent approval rating, the City's tap water ranked first among its peer cities and 11th among all jurisdictions polled nationwide in the 2016 National Citizens Survey™.

Residents are not the only ones who love the water. Bloomington's tap water was also named "Best in Glass" at the 2015 American Water Works Association (AWWA) fall conference which led to a national win with the AWWA "Best of the Best" title in the summer of 2016.

The AWWA also recognized Bloomington Utilities staff for their speed and accuracy in water meter and hydrant assembly at the 2016 AWWA fall conference. Staff took first place in the Hydrant Hysteria competition and second place in Meter Madness competition. These awards show the quality and speed of service Utilities staff provides residents in Bloomington.



THE SOURCES OF BLOOMINGTON'S TAP WATER

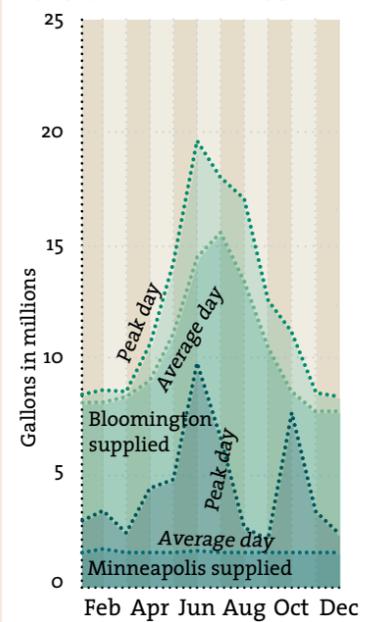


HOW MUCH IS USED?

In 2016, residents and businesses in Bloomington used 3.8 billion gallons of water, 20 million more gallons than 2015. Average usage was 10.4 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 2016, 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/uttl/water-usage.

2016 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™.

90

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

11

Ranking in the American Water Works Association national taste test competition, earning the title "Best of the Best."

1

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

1

BLOOMINGTON WELLS FULFILLED 79 PERCENT OF WATER NEEDS IN 2016

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 2016, the City drew 3 billion gallons of water, 79 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 recently updated its wellhead protection study to ensure Bloomington well water continues to be safe.

MISSISSIPPI RIVER SUPPLIED 21 PERCENT OF WATER NEEDS IN 2016

To supplement production at the water treatment plant, Bloomington purchases treated water from the city of 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 2016, Bloomington purchased 783 million gallons of water from Minneapolis to supply almost 21 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.

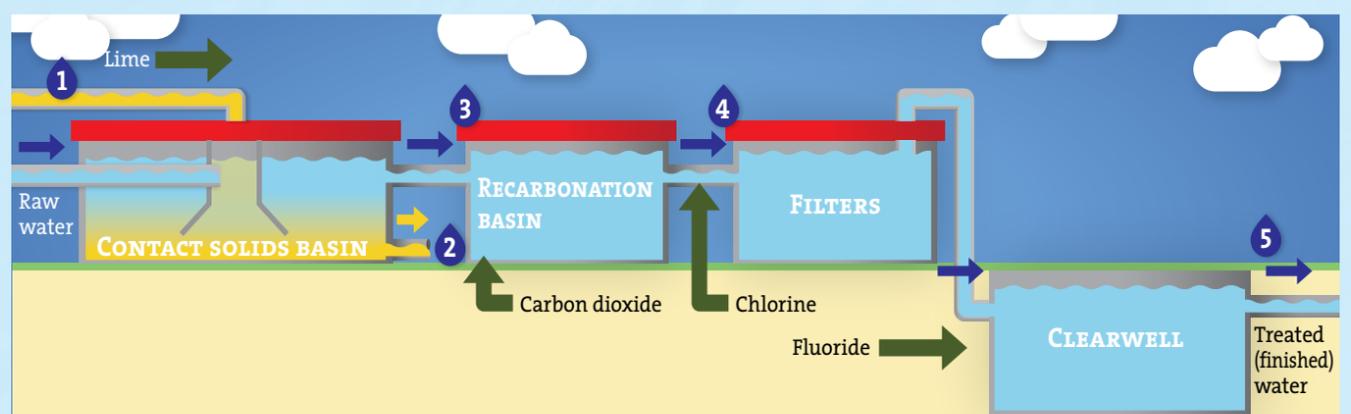
2 The lime-and-water mixture causes a chemical reaction that results in calcium and magnesium (the main components of hardness) forming insoluble particles called flocs. As these floc particles grow in size, they settle to the bottom of the contact solids basins. The solids are removed, dewatered and 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 2016, the lab performed more than 66,445 tests on Bloomington's water and analyzed approximately 20,467 samples received. The lab also analyzed 96 state-mandated bacteria tests for new water main construction projects and conducted 500 water quality tests on Bloomington's surface water bodies.



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 or Keith Redmond at kredmond@sctcc.edu.

FREQUENTLY ASKED QUESTIONS ABOUT BLOOMINGTON'S WATER

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 grains water is ultra soft, 19 grains 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 supplement with a private water-softening system.

It is estimated that the cost of home water softening ranges between \$4.42 and \$4.82 per 1,000 gallons of water, compared to \$2.84 per 1,000 gallons for City-treated water in 2016.

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 water 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.

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 the human body is more than 60 percent water? Blood is 92 percent water, the brain and muscles are 75 percent water and bones are about 22 percent water.

WWW.SAVETHEWATER.ORG



LEAD IN WATER

Lead in drinking water is primarily from the components associated with service lines and 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. 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. Recent studies suggest that levels of lead once thought to be safe can pose risks, especially to unborn babies and children.

If present, infants and children who drink water containing lead in excess 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.

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 SOURCE UNTREATED 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.

2016 WATER QUALITY RESULTS

The Minnesota Department of Health (MDH) and City staff regularly test samples of Bloomington's water for many contaminants. Some substances were detected in trace amounts in the drinking water. Only those substances that were detected appear on the table. Many results are not listed because the substances were not found at any time by tests designed to detect them. Some substances are tested less than once per year. In such cases, the most recent results and the test dates are reported.

Some contaminants do not have an established maximum contaminant level (MCL). These "unregulated contaminants" are assessed using federal standards known as health risk limits to determine if they pose a threat. If unacceptable levels of an unregulated contaminant are found, the response is the same as if an MCL has been exceeded; the water system must inform its customers and take corrective actions. The table's upper portion summarizes test results performed on Bloomington water.

The lower portion shows results for Minneapolis water because Bloomington's treated groundwater is blended with Minneapolis-treated surface water.

MDH made a determination as to how vulnerable Bloomington's source water may be to future contamination incidents. To obtain the entire source water assessment, call 651-201-4700 or 1-888-345-0823 during normal business hours, or view the assessment online at blm.mn/swa.

Detected substance	Amount detected	Maximum (MCL)	Target (MCLG)	Typical source of substance	Type	Meets standards?
CITY OF BLOOMINGTON						
Chlorine (ppm)	Avg. = 1.91 (1.3 to 2.2)	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Copper (ppm) (7/2014)	90% = 0.01 (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. = 0.85 (0.66 to 1.1)	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. = 16.93 (1.4 to 33.3)	60	0	Byproduct of drinking water disinfection	R	Yes
Lead (ppb) (7/2014)	90% = 3.1 (0 of 30 sites over AL)	AL = 15	0	Corrosion of household plumbing systems; erosion of natural deposits <i>See page WQR 3</i>	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. = 14.85 (0.9 to 30.8)	80	0	Byproduct of drinking water disinfection	R	Yes
CITY OF MINNEAPOLIS						
Chloramine (ppm)	Avg. = 3.33 (2.6 to 3.6)	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Copper (ppm) (7/26/2012)	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. = 0.75 (0.66 to 0.72)	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. = 26.85 (2.7 to 55.4)	60	0	Byproduct of drinking water disinfection	R	Yes
Lead (ppb) (7/26/2012)	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)	0.52	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. 25.18 (8.7 to 33.3)	80	0	Byproduct of drinking water disinfection	R	Yes
Turbidity (NTU)	0.18	TT	NA	Soil runoff	R	Yes
Detected substance	Unit	Removal achieved	Removal required	Typical source of substance	Quarters out of compliance	
CITY OF MINNEAPOLIS						
Total Organic Carbon	% Removed	55.2 to 64.2%	25 to 30%	Naturally present in the environment	0	

KEY

AL Action Level. An amount that, if exceeded, triggers a specific response that a water system must follow.

cfu Colony Forming Unit.

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.

MCLG Maximum Contaminant Level Goal. Below this level there is no known or expected health risk. MCLGs allow for a margin of safety.

MRDL Maximum Residual Disinfectant Level.

MRDLG Maximum Residual Disinfectant Level Goal.

NA Not Applicable.

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.