

A hand is holding a clear glass under a chrome faucet. Water is flowing from the faucet into the glass. The background is a solid blue color.

2019

Water Quality Report

rpu  [®]
we pledge, we deliver

*In our 22nd annual
Drinking Water Quality Report,
we are pleased to announce that water
provided by Rochester Public Utilities (RPU)
meets all State and Federal drinking water standards.
RPU is dedicated to one clear goal – Quality First.
With a focus on customer service and efficiency
in operations, we continue to strive for excellence
through effective water quality programs that will
ensure a safe and reliable drinking water supply
for years to come. This report contains the results
of monitoring done on your drinking water for the
period from January 1 to December 31, 2019.
The purpose of this report is to advance consumers’
understanding of drinking water and
heighten awareness of the need to
protect our precious water resources.*



Source of Water

Water is pumped from 31 deep groundwater wells located throughout the city. Most wells are 24 inches in diameter and extend 400-1,000 feet in depth. Water in the Rochester municipal system is drawn from water-bearing rock layers called aquifers. An aquifer is any type of geologic material, such as sand or sandstone, which can supply water to wells or springs. Most of Rochester's water is drawn from the Jordan Aquifer, a deep sedimentary unit that underlies much of southeastern Minnesota. Water is also drawn from several multi-formation wells including: Prairie du Chien-Jordan, Prairie du Chien-Wonewoc, Jordan-Wonewoc, and Prairie du Chien-Mt. Simon aquifers.

Rochester works hard to provide you with safe and reliable drinking water that meets federal and state water quality requirements. The purpose of this report is to provide you with information on your drinking water and how to protect our precious water resources.

Contact Todd Osweiler, Environmental & Regulatory Affairs Coordinator, at 507-280-1589 or tosweiler@rpu.org if you have questions about Rochester's drinking water. You can also ask for information about how you can take part in decisions that may affect water quality.

The U.S. Environmental Protection Agency sets safe drinking water standards. These standards limit the amounts of specific contaminants allowed in drinking water. This ensures that tap water is safe to drink for most people. The U.S. Food and Drug Administration regulates the amount of certain contaminants in bottled water. Bottled water must provide the same public health protection as public tap water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Water Treatment

Rochester's water quality is especially high due to the depth of the wells and the quality of the source; therefore there is little need for treatment. At each of our wells, the following water treatment products are added to the groundwater before it enters into the water distribution system:

- **Fluoridation**

Fluoride is nature's cavity fighter, with small amounts present naturally in many drinking water sources. There is an overwhelming weight of credible, peer-reviewed, scientific evidence that fluoridation reduces tooth decay and cavities in children and adults, even when there is availability of fluoride from other sources, such as fluoride toothpaste and mouth rinses. Since studies show that optimal fluoride levels in drinking water benefit public health, municipal community water systems adjust the level of fluoride in the water to a concentration of 0.5 to 0.9 parts per million (ppm), with an optimal fluoridation goal of 0.7 ppm to protect your teeth. Fluoride levels below 2.0 ppm are not expected to increase the risk of a cosmetic condition known as enamel fluorosis.

State of Minnesota requires all municipal water systems add fluoride to the drinking water to promote strong teeth and to prevent tooth decay. Over 3,124 fluoride

tests were performed in 2019 at different residential and business sites around the city with an average level of 0.67 ppm. The Maximum Contaminant Level (MCL) and Maximum Contaminant Level Goal (MCLG) for fluoride is 4 ppm.

- **Disinfection**

A small amount of chlorine is added to the water at each well to minimize the chance for any bacteria, viruses, or fungi in the distribution system. Total Chlorine is measured weekly at the 25 different sites around the city averaging 0.8 ppm. The Maximum Residual Disinfectant Level (MRDL) and the Maximum Residual Disinfectant Level Goal (MRDLG) for Chlorine is 4 ppm.

- **Corrosion Control**

Polyphosphate is added to our water to help prevent "rusty" water. A concentration of approximately 0.5 ppm is maintained in the distribution system. Polyphosphate is also used for corrosion control, by coating distribution mains and household piping to prevent the leaching of lead and copper from household plumbing into the drinking water.



Compliance with National Primary Drinking Water Regulations

Minnesota's primary drinking water sources are ground-water and surface water. Groundwater is the water found in aquifers beneath the surface of the land. Groundwater supplies 75 percent of Minnesota's drinking water. Surface water is the water in lakes, rivers, and streams above the surface of the land. Surface water supplies 25 percent of Minnesota's drinking water.

Contaminants can get in drinking water sources from the natural environment and from people's daily activities. There are five main types of contaminants in drinking water sources:

- **Microbial contaminants** such as viruses, bacteria, and parasites. Sources include sewage treatment plants, septic systems, agricultural livestock operations, pets, and wildlife.
- **Inorganic contaminants** include salts and metals from natural sources (e.g. rock and soil), oil and gas production, mining and farming operations, urban stormwater runoff, and wastewater discharges.
- **Pesticides and herbicides** are chemicals used to reduce or kill unwanted plants and pests. Sources include agriculture, urban stormwater runoff, and commercial and residential properties..

- **Organic chemical contaminants** include synthetic and volatile organic compounds. Sources include industrial processes and petroleum production, gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants** such as radium, thorium, and uranium isotopes come from natural sources (e.g. radon gas from soils and rock), mining operations, and oil and gas production.

The Minnesota Department of Health provides information about your drinking water source(s) in a source water assessment, including:

- How Rochester is protecting your drinking water source(s);
- Nearby threats to your drinking water sources;
- How easily water and pollution can move from the surface of the land into drinking water sources, based on natural geology and the way wells are constructed.

Find your source water assessment at [Source Water Assessments](http://www.health.state.mn.us/divs/eh/water/swp/swa) (www.health.state.mn.us/divs/eh/water/swp/swa) or call 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.



Results of Monitoring

This report contains our monitoring results from January 1 to December 31, 2019.

We work with the Minnesota Department of Health to test drinking water for more than 100 contaminants. It is not unusual to detect contaminants in small amounts. No water supply is ever completely free of contaminants. Drinking water standards protect Minnesotans from substances that may be harmful to their health.

Learn more by visiting the Minnesota Department of Health's webpage [Basics of Monitoring and Testing of Drinking Water in Minnesota](http://www.health.state.mn.us/divs/eh/water/factsheet/com/sampling.html) (www.health.state.mn.us/divs/eh/water/factsheet/com/sampling.html).

How to Read the Water Quality Data Tables

The tables on the following pages show the contaminants we found last year or the most recent time we sampled for that contaminant. They also show the levels of those contaminants and the Environmental Protection Agency's limits. Substances that we tested for but did not find are not included in the tables.

We sample for some contaminants less than once a year because their levels in water are not expected to change from year to year. If we found any of these contaminants the last time we sampled for them, we included them in the tables below with the detection date.

We may have done additional monitoring for contaminants that are not included in the Safe Drinking Water Act. To request a copy of these results, call the Minnesota Department of Health at 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.

No contaminants were detected at levels that violated State or Federal drinking water standards. However, some contaminants were detected in trace amounts that were below legal limits. The table that follows shows the contaminants that were detected in trace amounts last year. Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for in 2019. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred. In 2019 we also collected and tested over 1,200 water samples for coliform bacteria, which showed no bacteria present in the water.



Regulated Substances in the Source Water

Parameter	Units	MCLG	MCL	Range	Avg./Results	Violation	Typical Source
Gross Alpha	pCi/l	0	15.4	0.0-7.1	7.1	No	Erosion of natural deposits.
Barium	ppm	2	2	0.03-0.06	0.06	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chlorine*	ppm	4	4	0.70-0.94	0.8	No	Water additive used to control microbes.
Combined Radium	pCi/l	0	5.4	0.0-3.8	3.8	No	Erosion of natural deposits.
Haloacetic Acids (HAA5)*	ppb	0	60	1.00-6.10	3.4	No	By-product of drinking water disinfection.
Nitrate (as Nitrogen)	ppm	10	10.4	0.00-0.49	0.49	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
TTHM (Total trihalo-methanes)*	ppb	0	80	2.10-15.60	10.5	No	By-product of drinking water disinfection.
Tetrachloro-ethylene (PERC)	ppb	0	5	0.00-0.39	0.39	No	Leaching from PVC pipes; discharge from factories and dry cleaners.
Total Coliform Bacteria*	Presence / Absence	0	>5 %	N/A	0	No	Naturally present in the environment.
Trichloro-ethylene (TCE)	ppb	0	5	0.00-0.17	0.14	No	Discharge from metal degreasing sites and other factories.
Fluoride*	ppm	4	4	0.62-0.69	0.67	No	Water additive to promote strong teeth.

*Tested at customer taps

Regulated Substances Controlled in the Distribution System

Substance	Units	MCLG	AL	90% Level	# of sites over AL	Violation	Typical Source
Lead (July 2019)	ppb	0	15	5.5	2 out of 50	No	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (July 2019)	ppm	0	1.3	0.94	0 out of 50	No	Corrosion of household plumbing systems; Erosion of natural deposits.

RPU samples and tests for Lead and Copper every 3 years to comply with the EPA's Lead & Copper Rule. **The next round of sampling and testing is July 2022.**

Unregulated Substances in the Source Water

Parameter	Units	SMCL/MCLG	Avg./Results	Effects – Source
Alkalinity	ppm	N/A	260	Carbonate rocks (limestone)
Aluminum	ppm	0.05 to 0.2	0.005	Colored water.
Calcium	ppm	N/A	72	Mineral deposits from rock.
Chloride	ppm	250	4.67	Salty taste.
Copper	ppm	1.3	0.13	Corrosion of household plumbing systems; Erosion of natural deposits.
Hardness, Total	ppm	N/A	283	Mineral deposits.
Hardness, Total	gpg	N/A	17	Mineral deposits.
Iron	ppm	0.3	0.28	Rusty color, staining, metallic taste.
Lead	ppb	1.5	0	Corrosion of household plumbing systems; Erosion of natural deposits.
Manganese	ppm	0.05	0.04	Black-to-brown color, staining, metallic taste.
Magnesium	ppm	N/A	24.5	Mineral deposits from rock.
pH	pH	6.5 to 8.5	7.5	Corrosion, metallic taste if below 6.5; deposits, slippery feel, soda taste if above 8.5.
Sodium*	ppm	20	5.95	Salty taste – Erosion of natural deposits. (range 1.25 to 10)
Sulfate	ppm	500	36.8	Laxative effect – Erosion of natural deposits. (range 10.6 to 45.9)
Total Dissolved Solids	ppm	500	330	Hardness, deposits, colored water, staining, salty taste.
Turbidity	Ntu	N/A	<1	Refers to how clear the water is.

*Note that home water softening can increase the level of sodium in your water

Key

MCL (Maximum Contaminant Level) Highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal) Level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

N/A Not Applicable.

ND Not Detected.

NT Not Tested.

ppm Parts per million.

ppb Parts per billion.

gpg Grains per gallon.

PCi/L Pico curies per liter (a measure of radioactivity).

Range Lowest to the highest a contaminant was detected in 2019.

AL Action Level is the concentration of a contaminant which triggers treatment or another requirement which a water system must follow.

90% Level 90% of samples must be below the AL.

SMCL Secondary Maximum Contaminant Level.

Ntu Nephelometric units.

Avg./Results Highest Average or Highest Single Test Result.

Lead in Drinking Water

You may be in contact with lead through paint, water, dust, soil, food, hobbies, or your job. Coming in contact with lead can cause serious health problems for everyone. There is no safe level of lead. Babies, children under six years, and pregnant women are at the highest risk.

Lead is rarely in a drinking water source, but it can get in your drinking water as it passes through lead service lines and your household plumbing system. Rochester provides high quality drinking water, but it cannot control the plumbing materials used in private buildings.

Read below to learn how you can protect yourself from lead in drinking water.

1. Let the water run for 30-60 seconds before using it for drinking or cooking if the water has not been turned on in over six hours. If you have a lead service line, you may need to let the water run longer. A service line is the underground pipe that brings water from the main water pipe under the street to your home.

- You can find out if you have a lead service line by contacting your public water system, or you can check by following the steps at: [Are your pipes made of lead? Here's a quick way to find out](http://www.mprnews.org/story/2016/06/24/npr-find-lead-pipes-in-your-home) (www.mprnews.org/story/2016/06/24/npr-find-lead-pipes-in-your-home).
- The only way to know if lead has been reduced by letting it run is to check with a test. If letting the water run does not reduce lead, consider other options to reduce your exposure.

2. Use cold water for drinking, making food, and making baby formula. Hot water releases more lead from pipes than cold water.

3. Test your water. In most cases, letting the water run and using cold water for drinking and cooking should keep lead levels low in your drinking water. If you are still concerned about lead, arrange with a laboratory to test your tap water. Testing your water is important if young children or pregnant women drink your tap water.

- Contact a Minnesota Department of Health accredited laboratory to get a sample container and instructions on how to submit a sample:

www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/labmap.pdf

4. Treat your water if a test shows your water has high levels of lead after you let the water run.

- Read about water treatment units:

Point-of-Use Water Treatment Units for Lead Reduction (www.health.state.mn.us/divs/eh/water/factsheet/com/poulead.html)

Learn more:

- **Visit [Lead in Drinking Water](http://www.health.state.mn.us/divs/eh/water/contaminants/lead.html#Protect)** (www.health.state.mn.us/divs/eh/water/contaminants/lead.html#Protect)
- **Visit [Basic Information about Lead in Drinking Water](http://www.epa.gov/safewater/lead)** (www.epa.gov/safewater/lead)
- **Call the EPA Safe Drinking Water Hotline at 1-800-426-4791.** To learn about how to reduce your contact with lead from sources other than your drinking water, visit **Lead Poisoning Prevention: Common Sources** (www.health.state.mn.us/divs/eh/lead/sources.html).

Water Conservation

RPU continues to offer rebates on qualifying efficient equipment purchases to promote and encourage water conservation. For full details and available rebates, visit www.rpu.org. Through RPU's Conserve & Save® rebate program, a water savings of over 9.1 million gallons was attained in 2019!

Save Water! Save Money!

Look for the Energy Star®, Energy Star® Most Efficient, and WaterSense® labels. These products are certified to use at least 20 percent less water, save energy, and perform as well as or better than regular models.

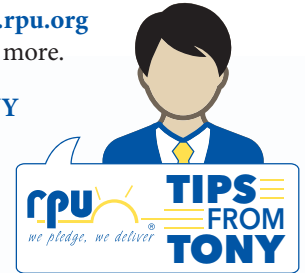
Plus, you can apply for a rebate from RPU on:

- Clothes Washers
- High Efficiency Toilets
- Rain Barrels
- Weather-Based Irrigation Controllers

Download a Water Efficiency Rebate Application with complete terms and conditions at www.rpu.org.

How can you learn to save water, energy, and money?

- **Look for the Water Conservation Tips** in our monthly newsletter, Plugged In.
- **Visit our website at www.rpu.org** for more tips and to learn more.
- **Watch TIPS FROM TONY** on television, on our YouTube channel, and on our Facebook page.



CONSERVE & \$AVE®



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