

ANNUAL WATER QUALITY REPORT

Reporting Year 2021



Presented By
Board of Public Utilities

We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at all hours—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater/lead.



Where Does My Water Come From?

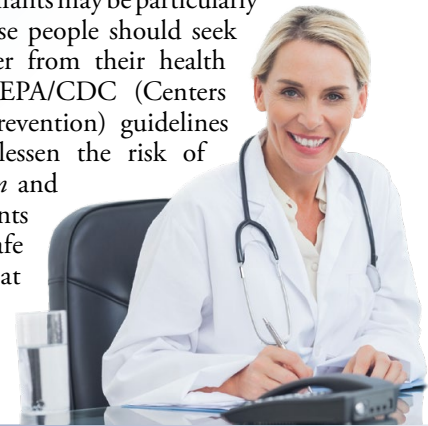
An underground aquifer called the Equus Beds is the only source of McPherson's water supply. The aquifer underlies portions of a four-county area, which is about 900,000 acres in size. Water is drawn from 12 underground wells located in and around the City of McPherson.

Think Before You Flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of our waterways by disposing responsibly. To find a convenient drop-off location near you, please visit <https://bit.ly/3IeRyXy>.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Information for the Public

Water quality reports for previous years can be accessed at www.mcphersonpower.com. Board meetings occur bimonthly at the BPU administrative office, 401 West Kansas Avenue, McPherson, and are open to the public.

Source Water Assessment

The City of McPherson, in partnership with the Kansas Department of Health and Environment, completed a source water assessment of our water supply, and McPherson has a moderate susceptibility rating for these potential sources of contamination. For further information, go to <https://www.kdhe.ks.gov/997/Drinking-Water-Protection-Program>, then access the Source Water Protection website to find the Drinking Water Protection Program Coordinator who can assist you in accessing the archived City of McPherson's Source Water Assessment Report.

QUESTIONS? For more information about this report, or for any questions relating to your drinking water, please contact the general manager at (620) 245-2525, in person at 401 West Kansas Avenue, McPherson, or online at www.mcphersonpower.com.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.



The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Water Stress

Water stress occurs when the demand for water exceeds the amount available during a certain period or when poor water quality restricts its use. Water stress causes deterioration of freshwater resources in terms of quantity (aquifer overexploitation, dry rivers, etc.) and quality (eutrophication, organic matter pollution, saline intrusion, etc.).

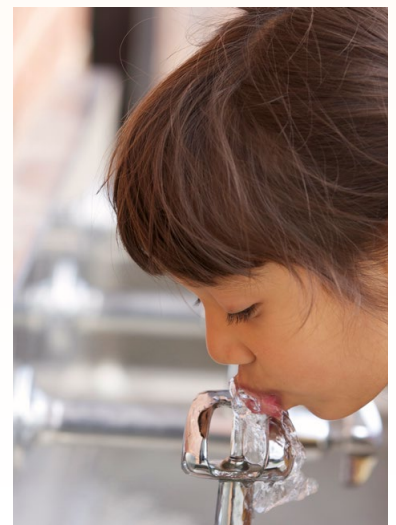
According to the World Resources Institute (www.wri.org), the Middle East and North Africa remain the most water-stressed regions on Earth. However, several states in the western half of the U.S. are similarly experiencing extremely high levels of water stress from overuse. It is clear that even in countries with low overall water stress, individual communities may still be experiencing extremely stressed conditions. For example, South Africa and the United States rank #48 and #71 on WRI's list, respectively, yet the Western Cape (the state home to Cape Town) and New Mexico experience extremely high stress levels.

There are undeniably worrying trends in water quality. But by taking action now and investing in better management, we can solve water issues before it's too late.

Safeguard Your Drinking Water

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain it to reduce leaching to water sources, or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use U.S. EPA's Adopt Your Watershed to locate groups in your community.
- Organize a storm drain stenciling project with others in your neighborhood. Stencil a message next to the street drain reminding people "Dump No Waste – Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. We are pleased to report that your drinking water meets or exceeds all federal and state requirements.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

In 2019 we participated in the fourth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water in order to determine if the U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so contact us if you are interested in obtaining that information. For more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2016	15	0	1.7	NA	No	Erosion of natural deposits
Arsenic (ppb)	2020	10	0	4.2	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Asbestos (MFL)	2020	7	7	0.18	NA	No	Decay of asbestos cement water mains; Erosion of natural deposits
Atrazine (ppb)	2020	3	3	<0.30	NA	No	Runoff from herbicide used on row crops
Barium (ppm)	2020	2	2	0.19	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	2020	100	100	4.3	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits
Nitrate (ppm)	2021	10	10	3.3	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2020	50	50	7.7	NA	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Tetrachloroethylene (ppb)	2021	5	0	<0.50	NA	No	Discharge from factories and dry cleaners
TTHMs [Total Trihalomethanes]–Stage 2 (ppb)	2021	80	NA	5.1	<2.0– 5.1	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2020	1.3	1.3	0.9	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2020	15	0	1.6	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alkalinity, Total (ppm)	2020	300	NA	270	NA	No	Naturally occurring
Calcium (ppm)	2020	200	NA	130	NA	No	Erosion of natural deposits
Chloride (ppm)	2020	250	NA	69	NA	No	Runoff/leaching from natural deposits
Conductivity (µS/cm)	2020	1,500	NA	820	NA	No	Substances that form ions when in water
Corrosivity (units)	2020	Non-corrosive	NA	0.50	NA	No	Natural or industrially influenced balance of hydrogen, carbon, and oxygen in the water, affected by temperature and other factors
Fluoride (ppm)	2020	2.0	NA	0.20	NA	No	Naturally occurring
Hardness, Total [as CaCO ₃] (ppm)	2020	400	NA	380	NA	No	Naturally occurring
Magnesium (ppm)	2020	150	NA	12	NA	No	Naturally occurring
pH (units)	2020	6.5-8.5	NA	7.6	NA	No	Naturally occurring
Phosphorus, Total (ppm)	2020	5	NA	0.58	NA	No	Naturally occurring; Component in cleaning products
Potassium (ppm)	2020	100	NA	2.8	NA	No	Naturally occurring; Found in water softeners
Silica (ppm)	2020	50	NA	36	NA	No	Naturally occurring as sand, quartz, sandstone, and granite
Sodium (ppm)	2020	100	NA	25	NA	No	Naturally occurring; Component of water softeners
Sulfate (ppm)	2020	250	NA	41	NA	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2020	500	NA	500	NA	No	Runoff/leaching from natural deposits
Zinc (ppm)	2020	5	NA	0.013	NA	No	Naturally occurring

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromide (ppm)	2019	0.064	NA	Disinfection by-product
Bromochloroacetic Acid (ppb)	2019	0.437	0.351-0.437	Disinfection by-product
Chlorodibromoacetic Acid (ppb)	2019	0.484	0.424-0.484	Disinfection by-product
Dibromoacetic Acid (ppb)	2019	0.797	0.697-0.797	Disinfection by-product
Dichloroacetic Acid (ppb)	2019	0.205	NA	Disinfection by-product



Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is 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): The 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.

MFL (million fibers per liter): A measure of the presence of asbestos fibers that are longer than 10 micrometers.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

μS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.



BY THE NUMBERS

The number of Americans who receive water from a public water system.

300
MILLION

129

The number of miles of drinking water distribution mains in the BPU's system.

The average number of gallons of water used daily by the BPU's system.

2.7
MILLION

135
BILLION

The amount of money spent annually on maintaining the public water infrastructure in the U.S.