

CONSUMER CONFIDENCE REPORT

MPW is dedicated to providing the highest quality drinking water to our customers in the most reliable and professional manner. We believe the best way to assure you that your drinking water is safe is to provide you with the facts. This Consumer Confidence Report summarizes the quality of the water that we provided last year including where your water comes from, what it contains, and how it compares to the standards set by regulatory agencies.



MPW is proud to provide water at rates which continue to be among the lowest in Iowa and we're happy to report that our water surpasses all federal and state water quality standards.

Day in and day out, MPW works to provide top quality water to every tap. We continue to monitor and stay vigilant in protecting our source of water, called the Muscatine Island Aquifer.

WHERE YOUR WATER COMES FROM

The Muscatine water supply consists of 26 active groundwater wells ranging in depth from 64 to 140 feet that draw water from the Muscatine Island Aquifer. An aquifer is a geologic formation capable of yielding enough water to supply a well or spring. The Muscatine Island Aquifer is an alluvial aquifer, meaning it yields large volumes of water.

Every aquifer has a degree of susceptibility to contamination. Because of its characteristics,

overlying materials, and human activity, this aquifer was determined to be highly susceptible. Susceptibility generally increases with shallower aquifers and great care is taken to constantly monitor the water supply for contaminants caused by increasing permeability of the aquifer and overlying material as well as nearby development or agricultural activity, and abandoned or poorly maintained private wells.

A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources, and is available from the Water Operator at (563) 262-3360.

HOW WE TREAT YOUR WATER

The natural sand and gravel of the Muscatine Island aquifer produces water of such high quality that only chlorine, fluoride and phosphate are added at our 3 treatment facilities. To ensure that your water is free from disease-causing organisms as it travels through the distribution system, we add chlorine. Fluoride is added to the water's natural fluoride level to promote dental health and phosphate helps stabilize the water's chemistry.

HOW WE MAINTAIN THE SYSTEM

Our Well Head Protection plan will continue to protect our source of water for years to come as we partner with our customers to protect and conserve water sources to provide an economical, safe and dependable supply. In 2020, MPW delivered 10.4 billion gallons of water to 10,251 active meters (homes and businesses) and provided fire protection through a network of 1,258 fire hydrants.

Supplying clean, safe drinking water to the citizens of Muscatine is our top priority and the development of a new well field will continue. MPW conducts over 14,000 water sample tests each year. Water quality monitoring occurs at the well and at strategic points throughout the distribution system consisting of more than 157 miles of water mains. We continue to study the Muscatine Island Aquifer to predict the impacts of a new well field on our water source. We also conducted further water

quality tests as we position ourselves to meet the future water needs of the community.

We are required to test for lead and copper every 3 years. In the summer of 2019, we conducted the lead and copper testing which has been successful in showing there is no danger of lead contamination in our water. We will test again in 2022.

The Water Utility made significant improvements to the water production and distribution system in the past year, replacing 4,785 linear feet of water main, twenty-seven fire hydrants, and sixty-four water valves as part of the West Hill Sewer Separation project, Fuller and Mulberry projects and scheduled annual water main replacements. In addition to this work, we typically replace additional lead and galvanized water services that may be in the area of new construction.

The water-tower refurbishment project was also completed in 2020.

BACKFLOW PREVENTION

MPW and the State of Iowa take the quality and safety of our public water supply very seriously. To ensure your safety, the Iowa state plumbing code requires cities (15,000 population or greater) to enact a backflow prevention program to protect the community's tap water from accidental contamination that can occur due to cross-connections. Our internal policy meets or exceeds standards set forth in the Iowa Administrative Code Section 641.25.5, Backflow Prevention with Containment.

A cross-connection is any point where contaminants can "backflow" from the customer's point of use into the public water supply.

An approved reduced pressure zone backflow prevention assembly for isolation must be installed on branch piping serving a boiler, swimming pool, in-ground irrigation, garage or a yard hydrant. If your home or business meets at least one of these criteria, a backflow prevention assembly is required and assemblies must be tested when they are installed and at least once each year after that by a certified backflow prevention assembly technician to ensure the device is working properly. Testing results must be submitted to MPW.

For more information, please see the Backflow Prevention section of the MPW website and the MPW Water Service Rules, Backflow Prevention Section 2-7 at:

<https://mpw.org/water/backflow-prevention/>

TO LEARN MORE

For more information on this Consumer Confidence Report or other water quality concerns, please contact:

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3205 Cedar Street
Muscatine, IA 52761-2204
Phone: (563) 262-3360
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PUBLIC MEETING INFORMATION:

We encourage our customers to attend and participate in the meetings of our water utility. MPW's five member Board of Water, Electric and Communications Trustees meet the last Tuesday of each month. Board meetings are open to the public.

MPW conducts over
14,000
WATER SAMPLE TESTS EACH YEAR



DRINKING WATER AND HEALTH INFORMATION

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 posed a health risk. More information about contaminants or potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are also available from the Safe Drinking Water Hotline.

ADDITIONAL HEALTH INFORMATION

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.

MPW is responsible for providing high quality drinking water, but 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 2 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 or at

<http://www.epa.gov/safewater/lead>

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.



2020 WATER QUALITY REPORT FOR MUSCATINE POWER AND WATER

This report contains important information regarding the water quality in our water system. The source of our water is groundwater. Our water quality testing shows the following results:

SUBSTANCE	YEAR TESTED	VIOLATION Yes/No	MCL	HIGHEST DETECTED LEVEL	UTILITY RANGE	GOAL MCLG	SOURCE OF CONTAMINANT	
INORGANIC CONTAMINANTS								
Barium (ppm)	2013*	No	2	SSR	0.08	0.05-0.08	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	2020	No	4	SSR	0.71	0.58-0.71	4	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate [as N] (ppm)	2020	No	10	SSR	8	0.50-8.0	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	2020	No	N/A	SSR	15	9.7-15	N/A	Erosion of natural deposits; Added to water during treatment process
Radium 226 and 228 (ppm)	2020	No	5	SSR	2.1	<1-2.1	5	Erosion of natural deposits

SUBSTANCE	YEAR TESTED	VIOLATION Yes/No	MCL	HIGHEST DETECTED LEVEL	UTILITY RANGE	GOAL MCLG	SOURCE OF CONTAMINANT	
ORGANIC CONTAMINANTS								
Total Trihalomethanes (ppb) [TTHM]	2020	No	80	LRAA	31	7.8-31	N/A	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	2020	No	60	LRAA	<6	<6	N/A	By-products of drinking water chlorination/disinfection

SUBSTANCE	YEAR TESTED	VIOLATION Yes/No	MCL	HIGHEST DETECTED LEVEL	UTILITY RANGE	GOAL MCLG	SOURCE OF CONTAMINANT	
DISINFECTANTS								
Chlorine (ppm)	2019	No	4.0 MRDL	RAA	1.69	0.31-1.69	4.0 MRDLG	Water additive used to control microbes

SUBSTANCE	YEAR TESTED	VIOLATION Yes/No	ACTION LEVEL	MAXIMUM 90% DETECTION	UTILITY RANGE	# SAMPLES ABOVE AL	SOURCE OF CONTAMINANT	
COPPER AND LEAD REGULATED AT CUSTOMER TAP								
Copper (ppm)	2019	No	1.3	90th	1.1	0.01-1.1	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2019	No	15	90th	9.0	ND-9	0	Corrosion of household plumbing systems; erosion of natural deposits

*Note: Contaminants with earlier dates indicate results from the most recent testing done in accordance with US EPA and Iowa DNR regulations; e.g. Barium testing is only required every 9 years.

Unregulated Contaminants

The US Environmental Protection Agency has developed an unregulated contaminant monitoring program to better understand the existence of contaminants in the environment. These contaminants are not regulated by the National Primary Drinking Water Regulations, but are known or anticipated to occur at public water systems throughout the nation and may warrant regulation under the safe Drinking Water act. In 2020, 28 unregulated contaminants were not required to be tested. Results of detectable contaminants from the 2019 tests are listed below.

Analyte	Unit	Average	Range	Analyte	Unit	Average	Range
Chloroacetic acid	ug/l	<2.0	<2.0	Chlorpyrifos	ug/l	<0.03	<0.03
Bromoacetic acid	ug/l	<0.30	<0.30	Dimethipin	ug/l	<0.2	<0.2
Dichloroacetic acid	ug/l	1.95	1.4-2.6	Ethoprop	ug/l	<0.03	<0.03
Trichloroacetic acid	ug/l	1.26	0.91-1.6	Oxyfluorfen	ug/l	<0.05	<0.05
Bromochloroacetic acid	ug/l	1.14	0.94-1.5	Profenofos	ug/l	<0.3	<0.3
Dibromoacetic acid	ug/l	0.6	0.5-0.76	Tebuconazole	ug/l	<0.02	<0.02
Bromodichloroacetic acid	ug/l	1.23	1.0-1.5	Total Permethrins	ug/l	<0.04	<0.04
Chlorodibromoacetic acid	ug/l	0.74	0.62-0.86	Tribufos	ug/l	<0.07	<0.07
Tribromoacetic acid	ug/l	<2.0	<2.0	o-Toluidine	ug/l	<0.007	<0.007
Bromide	ug/l	77.83	23-216	Quinoline	ug/l	<0.02	<0.02
Total Organic Carbon	mg/l	1.27	<1-1.7	Butylated hydroxyanisole	ug/l	<0.03	<0.03
Manganese	ug/l	111.85	50-200	2-Propen-1-ol	ug/l	<0.50	<0.50
Germanium	ug/l	<0.30	<0.30	1-Butanol	ug/l	<2.0	<2.0
alpha-Hexachlorocyclohexane	ug/l	<0.010	<0.010	2-Methoxyethanol	ug/l	<0.4	<0.4

More information about contaminants and potential health effects can be obtained by contacting:

EPA Safe Drinking Water Hotline
1-800-426-4791
<http://water.epa.gov/drink>

AWWA Safe Drinking Water Website
www.drinktap.org



Muscatine Power and Water
 3205 Cedar Street
 Muscatine, IA 52761-2204
 Phone: (563) 263-2631
 Website: www.mpw.org

The EPA requires monitoring of over 80 drinking water contaminants. Those listed above are the only contaminants detected in your drinking water. For a complete list, contact Muscatine Power and Water at (563) 262-3360.

DEFINITIONS

- Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Chlorine Disinfectant** - The most common drinking water treatment is disinfection. Disinfection is considered to be the primary mechanism to kill bacteria and other germs to prevent the spread of waterborne diseases. Chlorine is the most widely used disinfectant. Disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts. EPA sets standards for controlling the levels of disinfectants and disinfection byproducts in drinking water. The water quality chart in this report reflects these standards and the utility's ability to meet those standards.
- Fluoride** - Some fluoride is naturally present in the source water. The amount is carefully monitored every day so optimum concentration is maintained. If you have concerns about fluoride, you should discuss this topic with your dentist and doctor.
- Lead** - 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 compounds associated with service lines and home plumbing. Muscatine Power and Water is responsible for providing high quality drinking water, but 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 2 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 methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.
- LRAA** - Locational Running Annual Average
- Maximum Contaminant Level (MCL)** - 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.
- Maximum Contaminant Level Goal (MCLG)** - 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.
- Maximum Residual Disinfectant Level Goal (MRDLG)** - 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.
- Maximum Residual Disinfectant Level (MRDL)** - 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.
- N/A** - Not applicable
- ND** - Not detected at testing limit
- Nitrate** - Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than 6 months of age. High nitrate levels in drinking water may cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agriculture activity. If you are caring for an infant, you should ask for advice from your healthcare provider.
- NTU** - Nephelometric Turbidity Units
- Organic Contaminants** - Includes synthetic and volatile organic chemicals, which are industrial and petroleum process byproducts and can also come from gas stations, urban storm water runoff and septic systems.
- Pesticides and Herbicides** - May come from agriculture, urban storm water runoff and residential use.
- pCi/L** - PicoCuries per liter
- mg/l (ppm)** - Parts of contaminant per million parts of water. One part per million (ppm) is equivalent to a single penny in ten thousand dollars. Ppm may also be referred to as mg/l or milligrams per liter.
- ug/l (ppb)** - Parts of contaminant per billion parts of water. One part per billion (ppb) is equivalent to a single penny in ten million dollars. Ppb may also be referred to as ug/l or micrograms per liter.
- ng/l (ppt)** - Parts of contaminant per trillion parts of water. One part per trillion (ppt) is equivalent to a single penny in ten billion dollars. Ppt may also be referred to as ng/l or milligrams per liter.
- RAA** - Running Annual Average
- Radioactive Contaminants** - Occur naturally or result from oil and gas production and mining activities.
- SSR** - Single Sample Result
- TCR** - Total Coliform Rule
- TOC** - Total organic carbon in untreated water.
- Total Trihalomethanes (TTHMs)** - Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of getting cancer.
- Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.
- Turbidity** - Turbidity is an indicator of treatment filter performance and is regulated as a treatment technique.