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. To protect our source water, we continue to monitor our source of water and stay vigilant in protecting the aquifer.

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.

Supplying clean, safe drinking water to the citizens of Muscatine is our top priority and the development of a new well field will continue. 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 4,960 feet of water main, eighteen fire hydrants, and twenty-seven water valves. Following the expansion of the well field the previous year (2018), our Grandview Avenue Treatment plant expansion was completed and became operational in early 2019.

As the City of Muscatine’s West Hill Sewer Separation Project continues, MPW’s aging water mains will be replaced. In addition to this work, we will be replacing additional lead and galvanized water services that may be in the area of new construction.

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 alluvial aquifer. An aquifer is a geologic formation capable of yielding enough water to supply a well or spring. The alluvial aquifer 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.

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 173 miles of water mains. In 2019, MPW delivered 10.3 billion gallons of water to 9,650 homes and businesses and provided fire protection through a network of 1,264 fire hydrants.

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 alluvial 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.

TO LEARN MORE
For more information on this Consumer Confidence Report or other water quality concerns, please contact:
Muscatine Power and Water
Bryan Butler
Manager, Water and Utility Services
3205 Cedar Street
Muscatine, IA 52761-2204
Phone: 563-262-3360
Fax: 563-262-3315
E-mail: bbutter@mpw.org

PUBLIC MEETING INFORMATION:
We encourage our customers to attend and participate in the meetings of our water utility. Muscatine Power and Water’s five member Board of Water, Electric and Communications Trustees meet the last Tuesday of each month. Board meet- ings are open to the public.

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2019 WATER QUALITY REPORT FOR MUSCATINE POWER & 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:

### INORGANIC CONTAMINANTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>Year Tested</th>
<th>Violation</th>
<th>MCL</th>
<th>Highest Detected Level</th>
<th>Utility Range</th>
<th>Goal MCLG</th>
<th>Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium (ppm)</td>
<td>2013</td>
<td>No</td>
<td>2</td>
<td>SGL</td>
<td>0.08</td>
<td>0.05-0.08</td>
<td>2</td>
</tr>
<tr>
<td>Fluoride (ppm)</td>
<td>2019</td>
<td>No</td>
<td>4</td>
<td>SGL</td>
<td>0.74</td>
<td>0.41-0.74</td>
<td>4</td>
</tr>
<tr>
<td>Nitrate (as N) (ppm)</td>
<td>2019</td>
<td>No</td>
<td>10</td>
<td>SGL</td>
<td>8.4</td>
<td>5.0-8.4</td>
<td>10</td>
</tr>
<tr>
<td>Sodium (ppm)</td>
<td>2017</td>
<td>No</td>
<td>N/A</td>
<td>SGL</td>
<td>15</td>
<td>10-15</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### ORGANIC CONTAMINANTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>Year Tested</th>
<th>Violation</th>
<th>MCL</th>
<th>Highest Detected Level</th>
<th>Utility Range</th>
<th>Goal MCLG</th>
<th>Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trihalomethanes (ppb) (THM)</td>
<td>2019</td>
<td>No</td>
<td>80</td>
<td>LRAA</td>
<td>33</td>
<td>9.6-33</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Haloacetic Acids (ppb) (HAA)</td>
<td>2019</td>
<td>No</td>
<td>60</td>
<td>LRAA</td>
<td>7</td>
<td>&lt;6-7</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### DISINFECTANTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>Year Tested</th>
<th>Violation Yes/No</th>
<th>Action Level</th>
<th>Maximum 90% Detection</th>
<th>Utility Range</th>
<th># Samples Above AL</th>
<th>Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine (ppm)</td>
<td>2019</td>
<td>No</td>
<td>4.0 MRDL</td>
<td>RAA</td>
<td>1.70</td>
<td>0.3-1.70</td>
<td>4.0 MRDLG</td>
</tr>
</tbody>
</table>

### COPPER AND LEAD REGULATED AT CUSTOMER TAP

<table>
<thead>
<tr>
<th>Substance</th>
<th>Year Tested</th>
<th>Violation Yes/No</th>
<th>Action Level</th>
<th>Maximum 90% Detection</th>
<th>Utility Range</th>
<th># Samples Above AL</th>
<th>Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (ppm)</td>
<td>2019</td>
<td>No</td>
<td>1.3</td>
<td>90th</td>
<td>1.1</td>
<td>ND-1.1</td>
<td>0</td>
</tr>
<tr>
<td>Lead (ppb)</td>
<td>2019</td>
<td>No</td>
<td>15</td>
<td>90th</td>
<td>9.00</td>
<td>ND-9</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

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 2019, MPW was required to test for 28 unregulated contaminants. The detectable contaminants are listed below:

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Unit</th>
<th>Average</th>
<th>Range</th>
<th>Analyte</th>
<th>Unit</th>
<th>Average</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroacetic acid</td>
<td>ug/l</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
<td>Chlorpyrifos</td>
<td>ug/l</td>
<td>&lt;0.03</td>
<td>&lt;0.03</td>
</tr>
<tr>
<td>Bromoacetic acid</td>
<td>ug/l</td>
<td>&lt;0.30</td>
<td>&lt;0.30</td>
<td>Dimethoate</td>
<td>ug/l</td>
<td>&lt;0.2</td>
<td>&lt;0.2</td>
</tr>
<tr>
<td>Dichloroacetic acid</td>
<td>ug/l</td>
<td>1.95</td>
<td>1.4-2.6</td>
<td>Ethoxyphenol</td>
<td>ug/l</td>
<td>&lt;0.03</td>
<td>&lt;0.03</td>
</tr>
<tr>
<td>Trichloroacetic acid</td>
<td>ug/l</td>
<td>1.26</td>
<td>0.91-1.96</td>
<td>Ethylphenol</td>
<td>ug/l</td>
<td>&lt;0.05</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Bromochloroacetic acid</td>
<td>ug/l</td>
<td>1.14</td>
<td>0.94-1.5</td>
<td>Propanol</td>
<td>ug/l</td>
<td>&lt;0.3</td>
<td>&lt;0.3</td>
</tr>
<tr>
<td>Dibromoacetic acid</td>
<td>ug/l</td>
<td>0.6</td>
<td>0.5-0.6</td>
<td>Tebucarbazone</td>
<td>ug/l</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
</tr>
<tr>
<td>Bromodichloromethane</td>
<td>ug/l</td>
<td>1.23</td>
<td>1.0-1.5</td>
<td>Total Permethrin</td>
<td>ug/l</td>
<td>&lt;0.04</td>
<td>&lt;0.04</td>
</tr>
<tr>
<td>Chlorodibromomethane</td>
<td>ug/l</td>
<td>0.74</td>
<td>0.62-0.86</td>
<td>Tributyltin</td>
<td>ug/l</td>
<td>&lt;0.07</td>
<td>&lt;0.07</td>
</tr>
<tr>
<td>Tribromacetic acid</td>
<td>ug/l</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
<td>o-Toluidine</td>
<td>ug/l</td>
<td>&lt;0.007</td>
<td>&lt;0.007</td>
</tr>
<tr>
<td>Bromo</td>
<td>ug/l</td>
<td>77.83</td>
<td>23-216</td>
<td>Quinoline</td>
<td>ug/l</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
</tr>
<tr>
<td>Total Organic Carbon</td>
<td>mg/l</td>
<td>1.27</td>
<td>&lt;1.17</td>
<td>Butylated hydroxyanisole</td>
<td>ug/l</td>
<td>&lt;0.03</td>
<td>&lt;0.03</td>
</tr>
<tr>
<td>Manganese</td>
<td>ug/l</td>
<td>111.85</td>
<td>50-200</td>
<td>2-Propanol</td>
<td>ug/l</td>
<td>&lt;0.50</td>
<td>&lt;0.50</td>
</tr>
<tr>
<td>Germanium</td>
<td>ug/l</td>
<td>&lt;0.30</td>
<td>&lt;0.30</td>
<td>1-Butanol</td>
<td>ug/l</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
</tr>
<tr>
<td>alpha-Hexachlorocyclohexane</td>
<td>ug/l</td>
<td>&lt;0.010</td>
<td>&lt;0.010</td>
<td>2-Methoxyethanol</td>
<td>ug/l</td>
<td>&lt;0.50</td>
<td>&lt;0.50</td>
</tr>
</tbody>
</table>

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

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**
- **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 disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **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 Goal (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.
- ** minimal value detected**
- **Not detected**
- **ND** - Not detected at testing limit
- **Nitrate - Nitrite in drinking water at levels above 10 ppb 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 agricultural 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.
- **ppb** - Parts per billion
- **ppm** - 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.
- **Radioactive Contaminants** - Occur naturally or result from oil and gas production and mining activities.
- **Safety Level Goal (SLG)** - Single Sample Result
- **Total Coliform Rule**
- **Total Organic Carbon (TOC)** - Total organic carbon in treated water.
- **Total Trihalomethanes (THM)** - 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.
- **Total Coliform Rule**
- **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 potential health effects can be measured by turbidity units (NTU).
- **ND** - Not detected at testing limit