This report covers the drinking water quality for Holland Board of Public Works for the 2021 calendar year. This information is a snapshot of the quality of the water that we provided to you in 2021. Included are details about where your water comes from, what it contains, and how it compares to United States Environmental Protection Agency (U.S. EPA) and The Michigan Department of Environment, Great Lakes, and Energy (EGLE) standards.

MONITORING AND REPORTING
THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) REQUIREMENTS

EGLE and the U.S. EPA require us to test our water on a regular basis to ensure its safety. We update this report annually and will keep you informed of any problems that may occur throughout the year as they happen.

Download Water Quality Report
https://www.hollandbpw.com/en/waterqualityreport

Printed copies are available
Holland BPW, 625 Hastings Ave., Holland, MI 49423

We invite public participation in decisions that affect drinking water quality. Your comments and participation are welcome at our public board meetings. Email publiccomment@hollandbpw.com or attend in person at the HBPW Service Center, 625 Hastings Ave., on the Monday between the first and second Wednesday of each month at 4:00 p.m. We recommend that you call to confirm the meeting time, date and location prior to arriving or visit our website at hollandbpw.com for details about the meetings.

• For more information about your water or the contents of this report, contact Holland Water Treatment Plant, 616.355.1589.
• For more information about safe drinking water from EGLE, visit https://www.michigan.gov/egle/about/organization/drinking-water-and-environmental-health/drinking-water
• For more information about safe drinking water from the U.S. EPA, visit www.epa.gov/safewater

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

HOLLAND WATER TREATMENT PLANT
46 N. Lakeshore Drive
Holland, Michigan 49424
Telephone: 616.355.1589

Report a water emergency, call Holland BPW: 616.355.1500
Arrange a tour of Holland BPW Water Treatment Plant: 616.355.1500
Water conservation tips from Holland BPW: www.hollandbpw.com
EPA’s Safe Drinking Water Hot line: 800.426.4791, www.epa.gov/safewater
EGLE Drinking Water website: www.michigan.gov/egle/about/organization/drinking-water-and-environmental-health/drinking-water
CONTAMINANTS AND THEIR PRESENCE IN 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 U.S. EPA’s Safe Drinking Water hotline (800-426-4791) or at www.epa.gov/safewater.

SOURCES OF DRINKING WATER
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from Lake Michigan. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants 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 and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban storm water 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 and residential uses.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations that limit the levels of certain contaminants in water provided by public water systems. Federal Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

VULNERABILITY OF SUB-POPULATIONS
Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people such as those with cancer undergoing chemotherapy, those 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. U.S. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water hotline (800-426-4791) or at www.epa.gov/safewater.

EASY WAYS TO USE LESS WATER

- Fix leaks to avoid water waste.
- Turn off the tap when you brush your teeth.
- Run dishwashers and washing machines with full loads.
- Water the lawn in the early morning or at night.
- Use rain gardens and native landscaping in place of a traditional lawn.
- Choose Water Sense and Energy Star products when replacing plumbing fixtures and appliances. These labels make it easy to identify products that are certified to be efficient.

EASY WAYS YOU CAN HELP
Lake Michigan is a precious resource. We share this great resource with plants, animals, fish, and each other. Just as we share in the benefits of this magnificent Great Lake, we share in the responsibility of protecting and conserving our water source. Here are some easy ways you can conserve and protect our clean water.

EASY WAYS TO USE LESS WATER

- Don’t overuse pesticides and fertilizers.
- Don’t dump hazardous waste on the ground.

PROTECT OUR WATER SOURCE
A watershed refers to the system of natural water sources that complete the water cycle. It includes rain and snowfall, groundwater, streams, rivers, lakes and oceans. When it rains, rainwater enters the ground. The water flows into streams and rivers that lead to lakes. Smaller bodies of water feed larger bodies of water. Unnatural substances can also enter the watershed through the ground. Anything you spray or pour on the ground at home can reach Lake Michigan, our source for drinking water. That’s why what you put on the ground matters.

Follow these rules to do your part in protecting the watershed:

- Don’t dump hazardous waste on the ground.
## HOLLAND WATER TREATMENT PLANT WATER QUALITY DATA FOR 2021 (WSSN 3190)

<table>
<thead>
<tr>
<th>Regulated Contaminant</th>
<th>Highest Local Running Annual Average</th>
<th>Highest Level Detected</th>
<th>EPA’s MCL</th>
<th>EPA’s MCLG</th>
<th>Violations</th>
<th>Range of Detection</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoride (ppm)</td>
<td>0.17 - 0.78</td>
<td>0.78</td>
<td>4.00</td>
<td>4.00</td>
<td>None</td>
<td>0.02</td>
<td>Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.</td>
</tr>
<tr>
<td>Nitrate (ppm)</td>
<td>0.27 - 0.31</td>
<td>0.31</td>
<td>0.31</td>
<td>1.0</td>
<td>None</td>
<td>0.17 - 0.31</td>
<td>Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>0.02 - 0.132</td>
<td>0.13</td>
<td>1.0</td>
<td>1.0</td>
<td>None</td>
<td>0.13</td>
<td>Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.</td>
</tr>
<tr>
<td><strong>Total Organic Carbon (TOC)</strong></td>
<td>The TOC was measured each quarter and because the level was low, there is no requirement for TOC removal.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Unregulated Contaminants

Unregulated Contaminants: These are contaminants for which the EPA has not established drinking water standards. The purpose of the unregulated contaminants monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water.

<table>
<thead>
<tr>
<th>Regulated Contaminant</th>
<th>Highest Local Running Annual Average</th>
<th>Highest Level Detected</th>
<th>EPA’s MCL</th>
<th>EPA’s MCLG</th>
<th>Violations</th>
<th>Range of Detection</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFAS Compounds (ppt)</td>
<td>All results for PFAS compounds were less than the EGLE minimum reporting limit of 2ppt, and most of them were undetected.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Trihalomethanes [TTHM] (ppb)</td>
<td>Varies</td>
<td>0.0236</td>
<td>28.2 - 43.0</td>
<td></td>
<td>None</td>
<td></td>
<td>Byproduct of drinking water disinfection</td>
</tr>
<tr>
<td>Haloacetic Acids [HAAs] (ppt)</td>
<td>23.8</td>
<td>29.0</td>
<td>60</td>
<td>0</td>
<td>None</td>
<td>12.8 - 29.0</td>
<td>Byproduct of drinking water disinfection</td>
</tr>
<tr>
<td>Total Coliform Bacteria</td>
<td>0</td>
<td>TT</td>
<td>0</td>
<td>0</td>
<td>0 - 0</td>
<td>Naturally present in the environment</td>
<td></td>
</tr>
</tbody>
</table>

### LAKE TOWNSHIP DISTRIBUTION SYSTEM WATER QUALITY DATA FOR 2021 (WSSN 3747)

<table>
<thead>
<tr>
<th>Regulated Contaminant</th>
<th>Highest Local Running Annual Average</th>
<th>Highest Level Detected</th>
<th>EPA’s MCL</th>
<th>EPA’s MCLG</th>
<th>Violations</th>
<th>Range of Detection</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine [Cl2] (ppm)</td>
<td>1.20 - 1.48</td>
<td>1.20</td>
<td>4.00</td>
<td>4.00</td>
<td>None</td>
<td>0.06 - 1.48</td>
<td>Water additive used to control microbes</td>
</tr>
</tbody>
</table>

### Unregulated Contaminants

<table>
<thead>
<tr>
<th>Regulated Contaminant</th>
<th>Highest Local Running Annual Average</th>
<th>Highest Level Detected</th>
<th>EPA’s MCL</th>
<th>EPA’s MCLG</th>
<th>Violations</th>
<th>Range of Detection</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium (ppm)</td>
<td>10.8</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
<td>None</td>
<td>10.0 - 10.8</td>
<td>Erosion of natural deposits</td>
</tr>
</tbody>
</table>

### PARK TOWNSHIP DISTRIBUTION SYSTEM WATER QUALITY DATA FOR 2021 (WSSN 5203)

<table>
<thead>
<tr>
<th>Regulated Contaminant</th>
<th>Highest Local Running Annual Average</th>
<th>Highest Level Detected</th>
<th>EPA’s MCL</th>
<th>EPA’s MCLG</th>
<th>Violations</th>
<th>Range of Detection</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine [Cl2] (ppm)</td>
<td>1.24 - 1.46</td>
<td>1.28</td>
<td>4.00</td>
<td>4.00</td>
<td>None</td>
<td>0.22 - 1.54</td>
<td>Water additive used to control microbes</td>
</tr>
</tbody>
</table>

### Unregulated Contaminants

<table>
<thead>
<tr>
<th>Regulated Contaminant</th>
<th>Highest Local Running Annual Average</th>
<th>Highest Level Detected</th>
<th>EPA’s MCL</th>
<th>EPA’s MCLG</th>
<th>Violations</th>
<th>Range of Detection</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trihalomethanes [TTHM] (ppb)</td>
<td>36.5</td>
<td>36.5</td>
<td>80</td>
<td>0</td>
<td>None</td>
<td>15.1 - 49.3</td>
<td>Byproduct of drinking water disinfection</td>
</tr>
<tr>
<td>Haloacetic Acids [HAAs] (ppt)</td>
<td>20.2</td>
<td>29.5</td>
<td>60</td>
<td>0</td>
<td>None</td>
<td>9.4 - 29.5</td>
<td>Byproduct of drinking water disinfection</td>
</tr>
<tr>
<td>Total Coliform Bacteria</td>
<td>0</td>
<td>TT</td>
<td>0</td>
<td>0</td>
<td>0 - 0</td>
<td>Naturally present in the environment</td>
<td></td>
</tr>
</tbody>
</table>
PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Per- and polyfluoroalkyl substances (PFAS), sometimes called PFCs, are a group of chemicals that are resistant to heat, water, and oil. PFAS have been classified by the United States Environmental Protection Agency (U.S. EPA) as an emerging contaminant on the national landscape. For decades, they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, fire-fighting foams, and metal plating. They are still used today. PFAS have been found at low levels both in the environment and in blood samples from the general U.S. population.

These chemicals are persistent, which means they do not break down in the environment. They also bioaccumulate, meaning the amount builds up over time in the blood and organs. Although our understanding of these emerging contaminants is constantly evolving, elevated levels of PFAS have the potential to cause increased cholesterol, changes in the body’s hormones and immune system, decreased fertility, and increased risk of certain cancers. Links to these health effects in humans are supported by epidemiologic studies and by laboratory studies in animal models.

COPPER

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

WHAT OTHER WAYS COULD I BE EXPOSED TO PFOA, PFOS AND OTHER PFAS COMPOUNDS?

PFAS are used in many consumer products. They are used in food packaging such as fast-food wrappers and microwave popcorn bags; waterproof and stain-resistant fabrics such as outdoor clothing, upholstery, and carpeting; nonstick coatings on cookware; and cleaning supplies including some soaps and shampoos.

People can be exposed to these chemicals in house dust, indoor and outdoor air, food, and drinking water. There is still uncertainty regarding these routes of exposure and more research is necessary.

WHO CAN I CALL IF I HAVE QUESTIONS ABOUT PFAS IN MY DRINKING WATER?

If any resident has additional questions regarding this issue, the State of Michigan Environmental Assistance Center can be contacted at 800-682-9278.

WHERE CAN I LEARN MORE ABOUT PFAS?

For information on PFOA, PFOS, and other PFAS, including possible health outcomes, you may visit these websites:

- www.epa.gov/pfas
- www.atsdr.cdc.gov/pfas
- www.michigan.gov/pfasresponse