Your Annual Drinking Water Quality Report for

City of Wixom Municipal Water

For January 1, 2019 to December 31, 2019

Dear Water Utility Customer,

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are wholly committed to ensuring the quality of your water.

Where does my water come from?

Your source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from “very low” to “very high” based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards.

In 2015, GLWA received a grant from the Michigan Department of Environmental Quality to develop a source water protection program for the Lake Huron water treatment plant intake. The program includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential of source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation and education. If you would like to know more information about the Source Water Assessment report please, contact your water department.

The City of Wixom also utilizes two standby groundwater wells, in case the supply from GLWA is interrupted. These wells draw water from the Huron River and Rouge River watersheds and are approximately 100 feet in depth. These wells were not used to supply water to the City of Wixom in 2019. However, the city is required to sample them in the case that they ever need to be used.

The City of Wixom wants their customers to be informed about their water quality and will be glad to answer any questions pertaining to your water supply. If you as a customer are confused or feel misinformed, give your utility the opportunity to clarify things.

We routinely monitor your drinking water for contaminants according to federal and state laws. The following tables included with this report show the results of our monitoring for the period of January 1 to December 31, 2019. Sample results that are more than five years old need not be included in the report, even if it is the last available data for the supply (e.g., some metals are collected on a nine-year frequency). All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency Safe Drinking Water Hot Line at 1-800-426-4791.

It's our pleasure to report that in 2019 as in all years past, the water delivered from GLWA has met or surpassed all federal and state standards for quality.

If you wish to obtain a copy of this report, contact the Wastewater Plant at 248-960-0870. If you have questions concerning the contents of this report or the water utility, contact:

Heather Sherwood
Operator in Charge
248-960-0870

Opportunities for Public Participation:

We believe that informed citizens can be strong allies of water systems as they take action on pressing problems. The following is a listing of meeting dates and locations where your elected officials may discuss water system issues.

City Council	Regular Meeting Schedule	Location / Contact
City of Wixom	2nd Tuesday @ 7:00 pm 4th Monday @ 7:00 pm Monthly	City Hall - Council Chambers 49045 Pontiac Trail Wixom, MI 48939 cityofwixom@wixomgov.org

The table contain the only drinking water contaminants we detected in the year 2019. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report.

Great Lakes Water Authority – Lake Huron Water Treatment Plant

PRIMARY STANDARDS – Required sampling for substances which have federally enforced regulations, these substances are directly related to the safety of drinking water.

Inorganic/Organic Chemicals	Sample Date	MCLG	MCL	Result	Range of all Results	Violation	Likely source
Barium (ppm)	5-16-17	2	2	0.01	N/A	No	Discharge from metal refineries and coal-burning factories; discharge from industries
Fluoride (ppm)	6-11-19	4	4	0.61	N/A	No	Water additive to protect teeth
Nitrate (ppm)	6-11-19	10	10	0.46	N/A	No	Erosion of natural deposits, Runoff from fertilizer, septic leakage
Radioactive Contaminants	**Sample Date**	**MCLG**	**MCL**	**Result**	**Range of all Results**	**Violation**	**Likely source**
Combined Radium 226 and 228 (pCi/L)	5-13-14	0	5	0.86 + or - 0.55	N/A	No	Decay of natural radioactive elements
Disinfectant Residual	**Sample Date**	**MRDLG**	**MRDL**	**Level Detected**	**Range of all Results**	**Violation**	**Likely source**
Total Chlorine (ppm)	Daily	4.0	4.0	0.84	0.65 – 0.92	No	Disinfectant added to control microbes.
TOC Removal							**Likely source**
Total Organic Carbon (TT)	The Total Organic Carbon (TOC) is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each quarter and because the level was low, there are no TOC removal requirements.						Naturally present in the environment
Turbidity	**Sample Date**	**MCLG**	**MCL/TT**	**Highest Result**	**Range of all Results**	**Violation**	**Likely source**
NTU Filtered Water	Daily	N/A	TT = 1 NTU	0.14	N/A	No	Soil run-off
% of samples Filtered Water	Daily	N/A	95% <0.3NTU	100%	N/A	No	Soil run-off

ADDITIONAL MONITORING – Required and non-required sampling for substances that do not have federally enforced regulations, these substances are not directly related to your health. They reflect aesthetic qualities such as taste, odor and appearance.

Sampled at Plant Tap	Sample Date	MCLG	MCL	Average Result	Range of all Results	Violation	Likely source
Sodium (ppm)	2019	N/A	N/A	4.74	N/A	No	Erosion of natural deposits

Additional information about unregulated contaminants can be found here: www.epa.gov/dwucmr

City of Wixom – Distribution System

Copper & Lead	Sample Date	MCLG	AL	90th Percentile	Range of all Results	Violation	Likely source
Copper (ppm)	2019	1.3	1.3	0.2	0.0 – 0.2	No	Corrosion of household plumbing
Lead (ppb)	2019	0	15	0	0	No	Corrosion of household plumbing erosion of natural deposits

Disinfectant By- Products	Sample Date	MCLG	MCL	Result	Range of all Results	Violation	Likely source
TTHMs (ppb)	8/26/19	N/A	80	35	N/A	No	Disinfection By-product
HAA5 (ppb)	8/26/19	N/A	60	16.1	N/A	No	Disinfection by-product
Disinfectant Residual	**Sample Date**	**MRDLG**	**MRDL**	**Quarterly RAA**	**Range of all Results**	**Violation**	**Likely source**
Free Chlorine (ppm)	2019	4.0	4.0	0.89	0.29 – 1.18	No	Disinfectant added to control microbes.
Total Chlorine (ppm)	2019	4.0	4.0	1.06	0.39 – 1.41	No	Disinfectant added to control microbes.
Microbial Contaminants	**Sample Date**	**MCLG**	**MCL**		**Detected**	**Violation**	**Likely source**
Total Coliform	10/month	0	>1 positive monthly sample, >5% of all samples		0	No	Naturally present in environment
E. Coli	10/month	0	>1 positive routine & repeat samples		0	No	Naturally present in environment

City of Wixom – Standby Wells

Water Quality Parameters	Sample Date	MCLG	MCL	Average Result	Range of all Results	Violation	Likely source
pH (su)	2019	N/A	N/A	7.89	7.1 – 9.0	No	Naturally occurring elements
Alkalinity (mg/L as $CaCO_3$)	2019	N/A	N/A	84	71 - 98	No	Naturally occurring elements
Calcium (mg/L as $CaCO_3$)	2019	N/A	N/A	83	71- 97	No	Naturally occurring element
Temperature (°C)	2019	N/A	N/A	13.0	10.3 – 17.6	No	A measure of the ability of a substance to transfer heat energy
Orthophosphate (ppm)	2019	N/A	N/A	0.36	0.31 – 0.45	No	Water additive for corrosion control
Chloride (ppm)	2019	N/A	250	9.7	9.1 – 11	No	Erosion of natural deposits
Sulfate (ppm)	2019	N/A	250	18	17 - 19	No	Naturally occurring mineral

Important information about 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 components associated with services lines and home plumbing. The City of Wixom 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 your 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 (800-426-4791) or at http://www.epa.gov/safewater/lead.

The City of Wixom has 3,439 active service lines. There are 3,439 service lines that are of unknown composition.

In the table above you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

***Action Level* (AL) -** The concentration of a contaminant that if exceeded triggers treatment or other requirements that a water system must follow.

***Environmental Protection Agency* (EPA)**

***Food and Drug Administration* (FDA)**

***Maximum Contaminant Level* (MCL)** - The "Maximum Allowed" is 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 "Goal" is 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 (*MRDL) -** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the 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.

***Michigan Department of Environment, Great Lakes, and Energy* (EGLE)**

***Nephelometric Turbidity Unit* (NTU)** - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

***Not regulated* (NR) -** The substance is not currently regulated by the USEPA and or MDEQ. Monitoring helps EPA to determine where these contaminants occur and whether there is a need to regulate them.

***Not applicable* (NA)**

***Not Detected* (ND)**

***Parts per million* (ppm)**

***Parts per billion* (ppb)**

***Treatment Technique* (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

As you can see by these tables, our water system had no violations during this reporting period.

The City of Wixom is proud that your drinking water meets all federal and state requirements. We have learned from our monitoring and testing that some contaminants have been detected but are well within the standards. The EPA has determined that your water is safe at these levels.

Information for people with special health concerns

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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hot Line (800-426-4791).

The sources of all 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 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, urban storm water runoff, and residential uses.

- **Organic Chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production in mining activities.

In order to ensure that tap water is safe to drink, the **EPA** prescribes regulations which limits the amount of certain contaminants in water provided by public water systems. **FDA** regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

There is nothing more important to our community than quality drinking water. We will continue to work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future.

Per- and polyfluoroalkyl substances (PFAS) and perfluorooctanoic acid (PFOA)

The City of Wixom is pleased to inform its water system customers that the water was tested for per- and polyfluoroalkyl substances (PFAS). Samples were collected from the Great Lakes Water Authority (GLWA) Lake Huron Water Treatment Plant January 16, 2018. The results for PFAS showed **Not Detectable (ND)**.

What are Per- and polyfluoroalkyl substances (PFAS) and why are they harmful?

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 U.S. Environmental Protection Agency (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 of 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. Studies in people who were exposed to PFAS found links between the chemicals and increased cholesterol, changes in the body's hormones and immune system, decreased fertility, and increased risk of certain cancers.

Are there health advisory levels?

The EPA has not established enforceable drinking water standards, called maximum contaminant levels, for these chemicals. However, EPA has set a lifetime health advisory (LHA) level in drinking water for two PFAS: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The PFOA and PFOS LHA is the level, or amount, ***below which no harm is expected from these chemicals***. The LHA level is 70 parts per trillion (ppt) for PFOA and 70 ppt for PFOS. If both PFOA and PFOS are present, the LHA is 70 ppt for the combined concentration.

The estimated levels of PFOA and PFOS combined in the samples collected from the Lake Huron Treatment Plant Intake showed Not Detectable (ND). Not Detectable would be considered well below the LHA of 70 ppt. There are many other PFAS compounds that currently do not have LHA levels. For information on PFOA, PFOS and other PFAS, including possible health outcomes, you may visit these websites: https://www.epa.gov/pfas; www.atsdr.cdc.gov/pfas; or http://www.michigan.gov/pfasresponse.

Why was the GLWA source water tested for PFAS?

The DEQ coordinated sampling in our raw water supply to help characterize Lake Huron raw water quality.

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) 662-9278. Representatives may be reached to assist with your questions Monday – Friday, 8:00 AM to 4:30 PM. You may also contact the City of Wixom Water at (248) 960-0870.

Is it safe to eat fish in these areas?

Wild fish samples are being collected from local lakes and rivers. These samples will be analyzed to determine the levels of PFAS in fish and make recommendations on how much is safe to eat. Some information is already available in the State of Michigan Eat Safe Fish guides, which are available at **www.michigan.gov/eatsafefish**.

May I bathe or swim in water containing PFAS?

Yes, PFAS does not easily absorb into the skin. It is safe to bathe, as well as do your laundry and household cleaning. It is also safe to swim in and use recreationally.

How can PFAS affect people's health?

Some scientific studies suggest that certain PFAS may affect different systems in the body. The National Center for Environmental Health (NCEH)/Agency for Toxic Substances and Disease Registry (ATSDR) is working with various partners to better understand how exposure to PFAS might affect people's health.

If you are concerned about exposure to PFAS in your drinking water, please contact the MDHHS Toxicology Hotline at 800-648-6942 or the CDC/ATSDR: **https://www.cdc.gov/cdc-info/** or 800-232-4636. Currently, scientists are still learning about the health effects of exposures to PFAS, including exposure to mixtures.

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. Usually the amounts of PFAS a person may be exposed to is quite small.

What is being done about this issue?

State and local agencies are actively working to obtain more information about this situation as quickly as possible. Additional testing of the drinking water will be conducted to demonstrate that the PFAS levels are consistent, and reliably below the existing LHA. Additional monitoring in and around Lake Huron Watershed and other affected areas will also be performed by DEQ, which will help us answer more questions and determine next steps.

How can I stay updated on the situation?

The state has created a website where you can find information about PFAS contamination and efforts to address it in Michigan. The site will be updated as more information becomes available. The website address is **http://michigan.gov/pfasresponse**