



Holland Board of Public Works

WATER QUALITY REPORT

This report covers the drinking water quality for Holland Board of Public Works for the 2020 calendar year. This information is a snapshot of the quality of the water that we provided to you in 2020. 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 state standards.

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

The State of Michigan and the U.S. EPA require us to test our water on a regular basis to ensure its safety. We will 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 at

<https://www.hollandbpw.com/en/waterqualityreport>

Printed copies are available

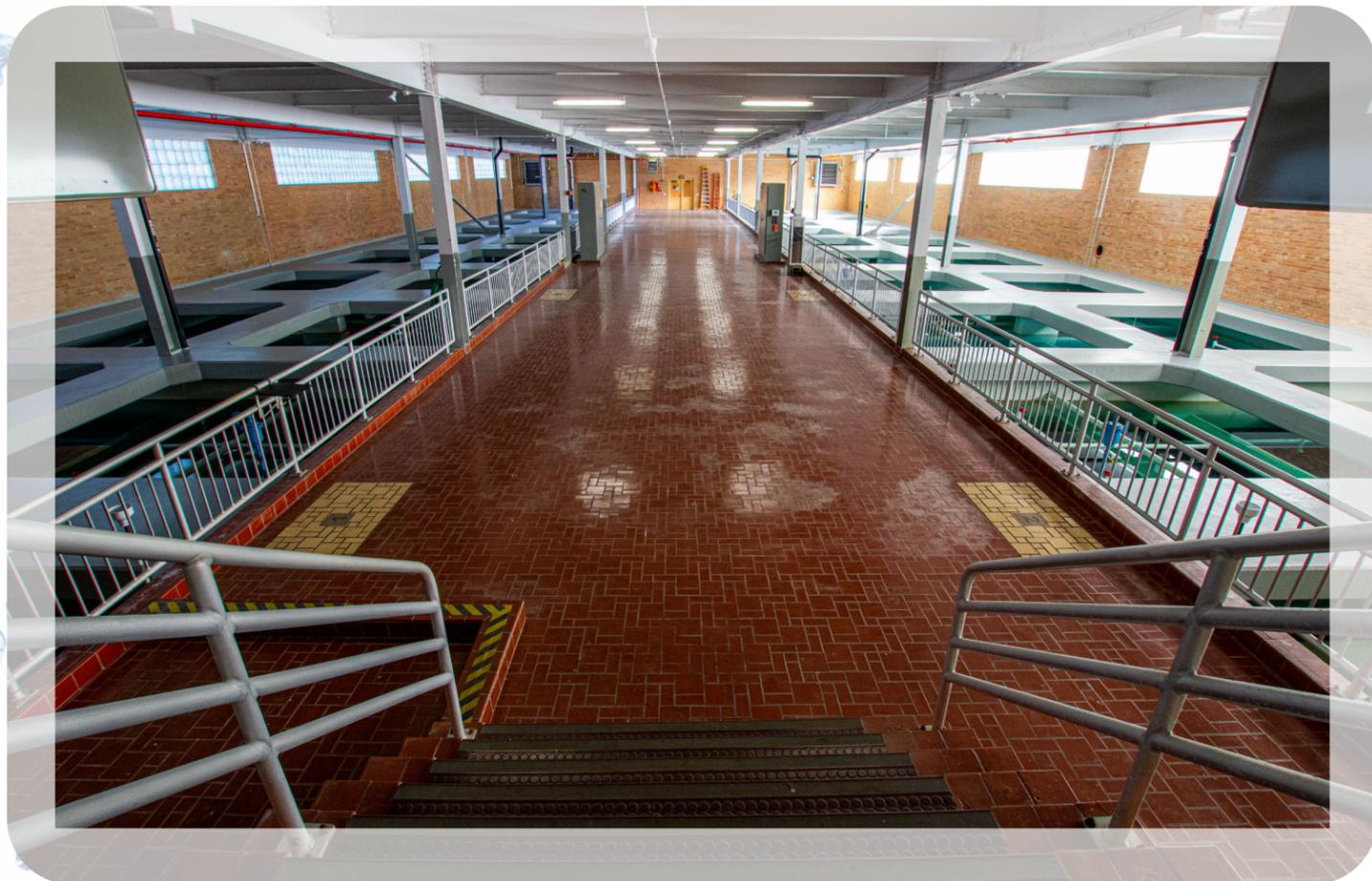
Holland BPW, 625 Hastings Ave., Holland, MI 49423

We invite public participation in decisions that affect drinking water quality. We welcome your comments and participation at our public board meetings 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, visit the U.S. EPA at 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

To report a water emergency, call: 616.355.1500

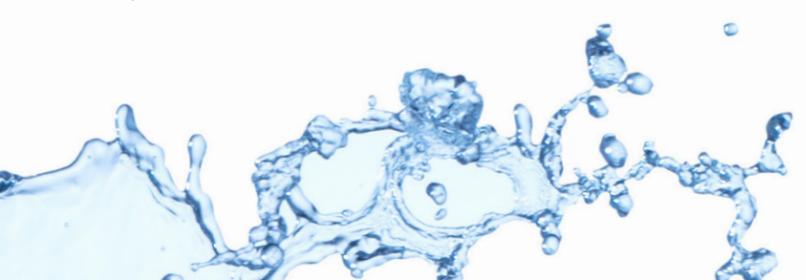
To arrange a tour of facilities, call: 616.355.1500

For information on water conservation, visit: www.hollandbpw.com

For the EPA's Safe Drinking Water Hot line: 800.426.4791, www.epa.gov/safewater

American Water Works Association: 800.926.7337, www.awwa.org

Federal Emergency Management Agency: www.fema.gov



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. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune systems 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/Center for Disease Control 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.

SOURCE WATER PROTECTION

The State performed an assessment of our source water, Lake Michigan, in 2003, to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very-low" to "very-high" based on geologic sensitivity, water chemistry and contamination sources. The State rated the HBPW's intake as "moderately sensitive" and the source water as having a "moderately high" susceptibility to contamination.

The State identified 364 potential sources of contamination within the total watershed of 175 square miles that could impact our water source. The report further states, "Historically, the Holland Board of Public Works Water Treatment Plant has effectively treated this water source to meet drinking water standards. There have been no detections of synthetic or volatile organic contaminants in the system's raw water." A copy of the full report can be obtained by calling HBPW at 616.355.1500.

SOURCE WATER PROTECTIONS CONTINUE

After this Source Water Assessment Program (SWAP) concluded, Holland BPW initiated the creation and implementation of a Surface Water Intake Protection Plan (SWIPP), which has been developed in accordance with the guidelines of the SWAP and is an extension of those efforts. It is a voluntary program encouraged by the USEPA and the Michigan Department of Environment, Great Lakes and Energy (EGLE). Its purpose is to utilize the information provided by the mandatory SWAP program in order to allow regional participation of communities to protect their drinking water sources. For more information about the ongoing efforts of the SWIPP, please call the water treatment plant at 616.355.1589.

TERMS AND ABBREVIATIONS USED IN THIS REPORT

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 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 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.

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 deflect the benefits of the use of disinfectants to control microbial contaminants.

Treatment Technique (TT):

A required process intended to reduce the level of a contaminant in drinking water.

ppt: Parts per trillion or nanograms per liter

ppb: Parts per billion or micrograms per liter

ppm: Parts per million or milligrams per liter

Action Level (AL):

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Lifetime Health Advisory (LHA):

Refers to a concentration that is not expected to cause adverse health effects over a lifetime of consistent daily exposure at that level. This is based on a 154 pound adult consuming two liters of water each day. These advisories are not enforceable standards, but are meant to serve as guidance and are based on scientific studies.

Unregulated Contaminants:

Contaminants that are suspected to be present in drinking water and do not have health-based standards set under the Safe Drinking Water Act (SDWA).

Highest Local Running Average:

The highest average of a specific contaminant over the annual sampling period from a single sampling point. This measure is used in reporting TTHM and HAA5.

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 service lines and home plumbing. Holland Board of Public Works is responsible for providing high quality drinking water but cannot control the variety of materials used in private 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 have been notified that you have a service line with lead components, it is recommended that you run your water for at least 5 minutes to flush water from both your home plumbing and the service line.

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 1-800-426-4791 or at www.epa.gov/safewater/lead.

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

QUANTITY OF SERVICE TYPES IN 2020

Service Description	City of Holland	Holland Township*	Laketown Township*	Park Township*	Total
Copper, Plastic, and other Non-Lead	6762	546	1101	3871	12280
Lead Service: Lead Pipe	0	0	0	0	0
Lead Service: Galvanized Pipe with Lead Gooseneck	1950	30	0	0	1980
Lead Service: Galvanized Pipe Previously Connected to Lead Gooseneck	1730	11	0	0	1742
Unknown Material	281	21	60	447	809
Total	10723	608	1161	4319	16811

*HBPW Service Areas Only

WATER QUALITY DATA

This table lists all the drinking water contaminants that we detected during the 2020 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The data presented in this table is from testing done Jan. 1 through Dec. 31, 2020.

HOLLAND WATER TREATMENT PLANT WATER QUALITY DATA FOR 2020 (WSSN 3190)

Regulated at the Water Treatment Plant						
Regulated Contaminant	Highest Level Detected	EPA'S MCL	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Fluoride (ppm)	0.80	4.00	4.00	None	0.18 - 0.8	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	0.61	10	10	None	0.34 - 0.61	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Turbidity (NTU)	0.42	1.0	N/A	None	0.015 - 0.418	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.
Unregulated Contaminants ¹						
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.						
Sodium (ppm)	12.1	Not Regulated	Not Regulated	None	10.0 - 12.1	Erosion of natural deposits
Holland BPW performed additional testing for other unregulated contaminants; no detections were found. Results of these tests are available by contacting the Water Treatment Plant at 616-355-1589.						

HOLLAND BPW DISTRIBUTION SYSTEM WATER QUALITY DATA (WSSN 3190)

Regulated At Customer's Tap							
Inorganic Contaminant Subject to Action Levels (AL)	Year Sampled	90th Percentile ²	EPA's Action Level	MCLG	# of Tests With Levels above EPA's AL	Range of Detection	Typical Sources of Contaminant
Copper (ppm)	2019	0.0	1.3	1.3	None	0.00100 - 0.0423	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb)	2019	1.0	15	0.0	None	0 - 3	Lead service line, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits.
Regulated in the Distribution System							
Regulated Contaminant	Highest Local Running Annual Average	Highest Level Detected	EPA'S MCL	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Chlorine [Cl ₂] (ppm)	1.22	1.63	4.0 MRDL	4.0 MRDLG	None	0.03 - 1.63	Water additive used to control microbes
Total Trihalomethanes [TTHM] (ppb)	47.1	58.5	80	0	None	27.8 - 58.5	Byproduct of drinking water disinfection
Haloacetic Acids [HAA5] (ppb) ³	27.0	47.7	60	None	None	15.6 - 47.7	Byproduct of drinking water disinfection
Total Coliform Bacteria		0	<5%	0%	None	0 - 0	Naturally present in the environment

[1] Holland BPW performed additional testing for other regulated and unregulated contaminants; no detections were found. More information about these tests are available by contacting the Water Treatment Plant at 616-355-1589.
 [2] Ninety (90) percent of the samples collected were at or below the level reported for our water. [3] Additional HAA5 samples were collected for the UCMR4 program and are shown in the 2020 UCMR4 Sampling table on the next page.

LAKETOWN TOWNSHIP DISTRIBUTION SYSTEM WATER QUALITY DATA FOR 2020 (WSSN 3747)

Regulated at the Customer's Tap							
Inorganic Contaminant Subject to Action Levels (AL)		90th Percentile	EPA's Action Level	MCLG	# of Tests With Levels above EPA's AL	Range of Detection	Typical Sources of Contaminant
Copper (ppm)		0.02	1.3	1.3	None	0.0032 - 0.0209	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb)		0.0	15	0.0	None	0 - 0	Lead service line, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits.
Regulated in the Distribution System							
Regulated Contaminant	Highest Local Running Annual Average	Highest Level Detected	EPA'S MCL	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Chlorine [Cl ₂] (ppm)	1.24	1.45	4.0 MRDL	4.0 MRDLG	None	0.84 - 1.45	Water additive used to control microbes
Total Trihalomethanes [TTHM] (ppb)	42.1	53.3	80	0	None	18.6 - 53.3	Byproduct of drinking water disinfection
Haloacetic Acids [HAA5] (ppb)	25.4	43.0	60	None	None	18.6 - 43.0	Byproduct of drinking water disinfection
Total Coliform Bacteria		1	<5%	0%	None	0 - 0	Naturally present in the environment

PARK TOWNSHIP DISTRIBUTION SYSTEM WATER QUALITY DATA FOR 2020 (WSSN 5203)

Regulated in the Distribution System							
Regulated Contaminant	Highest Local Running Annual Average	Highest Level Detected	EPA'S MCL	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Chlorine [Cl ₂] (ppm)	1.23	1.53	4.0 MRDL	4.0 MRDLG	None	0.13 - 1.53	Water additive used to control microbes
Total Trihalomethanes [TTHM] (ppb)	33.9	49.6	80	0	None	15.1 - 49.6	Byproduct of drinking water disinfection
Haloacetic Acids [HAA5] (ppb)	22.8	36.8	60	None	None	9.4 - 36.8	Byproduct of drinking water disinfection
Total Coliform Bacteria		0	<5%	0%	None	0 - 0	Naturally present in the environment



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.

ADDITIONAL MONITORING (UCMR4) UNREGULATED CONTAMINANT MONITORING RULE 4

The 1996 Safe Drinking Water Act (SDWA) amendments require that once every five years the EPA is to issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems (PWSs).

The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) was published in the Federal Register on December 20, 2016. UCMR 4 requires monitoring for 30 chemical contaminants between 2018 and 2020 using analytical methods developed by EPA and consensus organizations. This monitoring provides a basis for future regulatory actions to protect public health.

For more information about UCMR4 see:
www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule

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.

ARE THERE HEALTH ADVISORY LEVELS?

The U.S. EPA has not established enforceable drinking water standards, called maximum contaminant levels (MCLs), for these chemicals. However, the U.S. 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 amount of PFOA and PFOS combined in the sample collected from the Holland Water Treatment Plant raw water intake and distribution system entry point ranged from 0 to 3 ppt (parts per trillion), which is more than 23 times lower than the LHA for the combination of these two chemicals. There are many other PFAS compounds that currently do not have LHA levels.

While the U.S. EPA has not established MCLs, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) recently developed MCLs for seven PFAS compounds in drinking water for Michigan, which took effect in August 2020. These MCLs amend existing rules for public drinking water supplies under Michigan's Safe Drinking Water Act (SDWA), affecting approximately 2,700 public water supplies statewide. Based on the results from the initial voluntary sampling performed in 2019, the first set of compliance samples from the Holland Water Treatment Plant were taken early in 2021. Results from this sampling event can be found at www.michigan.gov/pfasresponse and will be included in the 2021 Water Quality Report.

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

WHY WAS HOLLAND BPW'S SOURCE WATER TESTED FOR PFAS?

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has coordinated a statewide initiative to test drinking water from all schools that use well water and community water supplies for PFAS. EGLE is taking this precautionary step of testing these drinking water sources to determine if public health actions are needed.

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 through Friday, 8:00 AM to 4:30 PM.

2020 UCMR4 SAMPLING

Unregulated Contaminant	Lowest Level (ppb)	Highest Level (ppb)	Average
HAA5 ⁴	34.30	37.00	35.65
HAA6Br	13.40	13.90	13.65
HAA9	46.80	49.90	48.35
Chlorodibromoacetic	1.20	1.20	1.20
Dibromoacetic Acid	0.66	0.67	0.67
Dichloroacetic Acid	14.70	15.50	15.10
Trichloroacetic	18.90	20.50	19.70
Bromochloroacetic Acid	4.60	4.60	4.60
Bromodichloroacetic Acid	6.90	7.40	7.15
Manganese	0.26	0.26	0.26
Total Organic Carbon (TOC)	600	600	600

ppb = parts per billion
Only contaminants that were detected are listed.

[4] HAA5 is currently regulated and our routine monitoring results are in the table at the top of page 2. However, the samples presented in this table were collected for the UCMR4 program in addition to the routine monitoring and during months other than required by routine monitoring.

VOLUNTARY PFAS MONITORING NOT REGULATED BY USEPA OR EGLE

Unregulated Contaminant	Year Sampled	Highest Level (ppt)	Range (ppt)	Lifetime Health Advisory (LHA)
PFOA	2019	3	0-3	70 ppt
PFOS	2019	2	0-2	
Total PFAS	2019	3	0-3	

ppt = parts per trillion

Samples were collected from May-September 2019.

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, information currently available suggests that this is not a major contributor to overall exposure.

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
- Michigan Department of Health and Human Services Toxicology hotline at 800-648-6942
 - Center for Disease Control and Prevention/ATSDR at 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. There is still uncertainty regarding these routes of exposure and more research is necessary.

HOW CAN I STAY UPDATED ON THE SITUATION?

The state of Michigan 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: www.michigan.gov/pfasresponse