2024 water QUALITY report

CHARTER TOWNSHIP OF PLYMOUTH

DEPARTMENT OF PUBLIC WORKS

Plymouth Township's Annual Report

Drinking water quality is important to our community and the region. Plymouth Township and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, GLWA consistently delivers safe drinking water to our community. Plymouth Township operates the system of water mains that carry this water to your home's service line. This year's Water Quality Report highlights the performance of GLWA and Plymouth Township water professionals in delivering some of the nation's best drinking water. Together, we remain committed to protecting public health and maintaining open communication with the public about our drinking water.

Source Water Assessment

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River watersheds in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. 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 GLWA's Detroit River source water for potential contamination. The susceptibility rating is based on a seven-tiered scale and ranges from very low to very high determined primarily using geologic sensitivity, water chemistry, and potential contaminant sources. The report described GLWA's Detroit River intakes as highly susceptible to potential contamination. GLWA's Springwells water treatment plant that draws water from the Detroit River has historically provided satisfactory treatment and meets drinking water standards.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in the National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. GLWA has an updated Surface Water Intake Protection plan for the Belle Isle intake. The plan has seven elements that include: roles and duties of government units and water supply agencies, delineation of source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation, and public education activities. If you would like to know more information about the Source Water Assessment Report, please contact GLWA at 313 926-8127.

The Safe Drinking Water Act – What's In It For You?

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 Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

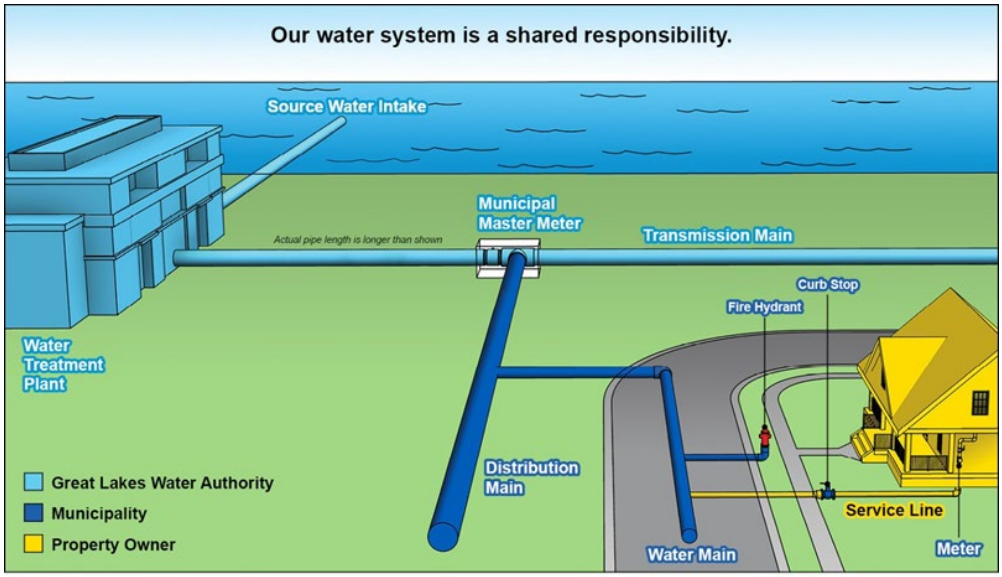
The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it can dissolve naturally occurring

minerals and, in some cases, radioactive materials, 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 by-products 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 and mining activities.

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



Important Information about Lead in Drinking Water

Safe drinking water is a shared responsibility. The water that GLWA delivers to our community does not contain lead. Lead can leach into drinking water through home plumbing fixtures, and in some cases, customer service lines. Corrosion control reduces the risk of lead and copper from leaching into your water. *Ortho*-phosphates are added during the treatment process as a corrosion control method to create a protective coating in service pipes throughout the system, including in your home or business. Plymouth Township performs required lead and copper sampling and testing in our community. Water consumers also have a responsibility to maintain the plumbing in their homes and businesses, and can take steps to limit their exposure to lead.

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. Plymouth Township is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water.

Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes, You can do this by running your tap, taking a shower, doing laundry, or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for at least 5 minutes to flush water from both your home plumbing and the lead service line. If you are concerned about lead in your water and wish to have your water tested, contact Plymouth Township Department of Public Works at (734) 354-3270 ext. 3. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at https://www.epa.gov/safewater/lead/.

2024 Regulated Detected Contaminants Tables

The tables below are based on tests conducted in 2024 or the most recent testing done within the last five calendar years. Tests are conducted throughout the year and only tests that show the presence of a substance or require special monitoring are presented in these tables. The State allows monitoring for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. The data is representative of the water quality, but some are more than one year old.

2024 Inorganic Chemicals - Annual Monitoring at GLWA Springwells Water Treatment Plant Finished Tap								
Regulated Contaminant	**Test Date**	**Unit**	**Health Goal MCLG**	**Allowed Level MCL**	**Highest Level Detected**	**Range of Detection**	**Violation**	**Major Sources in Drinking Water**
Fluoride	02/13/2024	ppm	4	4	**0.49**	**n/a**	**no**	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	02/13/2024	ppm	10	10	**0.31**	**n/a**	**no**	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

2024 Disinfection Residual - Monitoring in the Distribution System								
Regulated Contaminant	**Test Date**	**Unit**	**Health Goal MRDLG**	**Allowed Level MRDL**	**Highest Level RAA**	**Range of Quarterly Results**	**Violation**	**Major Sources in Drinking Water**
Chlorine Residual	2024	ppm	4	4	**0.74**	**0.63-0.76**	**no**	Water additive used to control microbes

2024 Disinfection By-Products - Stage 2 Disinfection By-Products Monitoring in the Distribution System								
Regulated Contaminant	**Test Date**	**Unit**	**Health Goal MCLG**	**Allowed Level MCL**	**Highest Level LRAA**	**Range of Quarterly Results**	**Violation**	**Major Sources in Drinking Water**
(TTHM) Total Trihalomethanes	2024	ppb	n/a	80	**32.5**	**30 - 38**	**no**	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2024	ppb	n/a	60	**28.5**	**20 - 35**	**no**	By-product of drinking water chlorination

See the "Key to the Detected Contaminants Tables" on Page 7

2024 Turbidity - Monitored Every 4 Hours at the GLWA Springwells Water Treatment Plant Finished Water Tap			
Highest Single Measurement Cannot Exceed 1 NTU	**Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)**	**Violation**	**Major Sources in Drinking Water**
0.13 NTU	100%	no	Soil Runoff
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			
Summary of Violation: Great Lakes Water Authority (GLWA) did not monitor individual filter turbidity for five hours on September 2, 2024, due to an interruption of power at the GLWA Springwells Water Treatment Plant. The issue was resolved.			

2024 Special Monitoring						
Contaminant	**Test Date**	**Unit**	**MCLG**	**MCL**	**Highest Level Detected**	**Source of Contaminant**
Sodium	**02/13/2024**	**ppm**	**n/a**	**n/a**	**5.2**	Erosion of natural deposits

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC is measured each quarter and because the level is low, there is no requirement for TOC removal.	Erosion of natural deposits

2024 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Regulated Contaminant	**MCLG**	**MCL**	**Highest Number Detected**	**Violation yes/no**	**Major Sources in Drinking Water**
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	1 in one month	no	Naturally present in the environment.
E.coli or Fecal Coliform Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or E.coli positive.	0	no	Human waste and animal fecal waste.

Lead and Copper Monitoring at the Customer's Tap in 2024								
Regulated Contaminant	**Unit**	**Year Sampled**	**Health Goal MCLG**	**Action Level AL**	**90th Percentile Value***	**Range of Individual Samples Results**	**Number of Samples Over AL**	**Major Sources in Drinking Water**
Lead	ppb	2024	0	15	**0**	**ND – 1.4**	**0**	Lead services lines, corrosion of household, plumbing including fittings and fixtures; erosion of natural deposits.
Copper	ppm	2024	1.3	1.3	**0.1**	**0.0 - 0.3**	**0**	Corrosion of household plumbing system; Erosion of natural deposits.
* The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL, then additional requirements must be met.								

See the "Key to the Detected Contaminants Tables" on Page 7

Plymouth Township Water Service Line Inventory Status		
Number of Lead Service Lines	**Number of Unknown Material Service Lines**	**Total Number of Service Lines**
2	0	10,115
A service line includes any section of pipe from the water main to the building plumbing at the first shut-off valve inside the building, or 18 inches inside the building, whichever is shorter. For questions and/or information regarding the Water Service Line Inventory for Plymouth Township, please call the Department of Public Works at (734) 354-3270 ext. 3.		

GLWA Compliance Reporting Requirement

GLWA is required to notify water users of any unresolved significant deficiencies identified by the Michigan Department of Environment, Great Lakes, and Energy, Drinking Water and Environment Health Division (EGLE). Below is the status of significant deficiencies in the GLWA water system identified by EGLE:

Date Identified by EGLE	Description	Compliance Agreement Deadline	Status
05-25-2022	Inoperable rapid mixing equipment at the Springwells 1930s water plant	12-31-2023	Completed in December 2023.
05-25-2022	Inoperable flocculation equipment at the 1958 Springwells water plant	11-11-2027	Phase I construction is completed as of December 2024. Phase II scheduled to begin at the fall of 2025.

Cryptosporidium and Giardia

GLWA voluntarily monitors for Cryptosporidium and Giardia in our source water monthly. The untreated water samples collected from our Belle Isle Intake indicated the presence of one Giardia cyst in December 2023 and one Cryptosporidium oocyst in March 2023. All other samples collected from the Bell Isle Intake in 2023 were absent for the presence of Cryptosporidium and Giardia. Systems using surface water like GLWA must provide treatment so that 99.9 percent of Giardia lamblia and Cryptosporidium is removed or inactivated. GLWA's drinking water treatment process is designed to remove and inactivate these protozoans.

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

What Precautions Should You Consider?

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 available from the Safe Drinking Water Hotline (800) 426-4791.

2024 Springwells Tap Water Mineral Analysis										
Parameter	**Units**	**Max.**	**Min.**	**Avg.**		**Parameter**	**Units**	**Max.**	**Min.**	**Avg.**
Turbidity	N.T.U.	0.78	0.03	**0.13**		Phosphorus	mg/L	0.81	0.35	**0.52**
Total Solids	mg/L	148	126	**136**		Free Corbon Dioxide	mg/L	13.6	6.2	**10.3**
Total Dissolved Solids	mg/L	150	92	**120**		Total Hardness	mg/L	110	88	**101**
Aluminum	mg/L	0.088	0.020	**0.037**		Total Alkalinity	mg/L	82	66	**73**
Iron	mg/L	0.3	0.2	**0.2**		Carbonate Alkalinity	mg/L	9	0	**1**
Copper	mg/L	0.002	ND	**0.001**		Bi-Carbonate Alkalinity	mg/L	82	56	**71**
Magnesium	mg/L	8.6	6.7	**7.8**		Non-Carbonate Hardness	mg/L	36	12	**28**
Calcium	mg/L	29.8	25.6	**27.4**		Chemical Oxygen Demand	mg/L	8.3	ND	**4.2**
Sodium	mg/L	8.9	0.5	**4.8**		Dissolved Oxygen	mg/L	14.3	6.7	**10.5**
Potassium	mg/L	1.2	0.9	**1.1**		Nitrite Nitrogen	mg/L	ND	ND	**0.0**
Manganese	mg/L	ND	ND	**0.000**		Nitrate Nitrogen	mg/L	0.40	0.17	**0.27**
Lead	mg/L	ND	ND	**0.000**		Fluoride	mg/L	0.65	0.43	**0.54**
Zinc	mg/L	0.002	ND	**0.000**		pH		7.39	7.02	**7.15**
Silica	mg/L	3.7	1.7	**2.3**		Specific Conductance @ 25 °C	µmhos	233	147	**200**
Sulfate	mg/L	35.9	24.8	**28.8**		Temperature	°C	23.2	1.9	**13.7**
Chloride	mg/L	13.2	9.9	**11.1**						

Unregulated Contaminant Monitoring Rule (UCMR5)

In 2024 Plymouth Township participated in water quality studies as part of the fifth Unregulated Contaminant Monitoring Rule (UCMR 5). Unregulated contaminants are those for which the U.S. Environmental Protection Agency (EPA) has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

As required by UCMR 5, the Township monitored 29 per- and polyfluoroalkyl substances (PFAS) and lithium in 2024. None of these contaminants were detected in the water. A list of these contaminants and associated non-detect results are available upon request by calling the Department of Public Works at (734) 354-3270 ext. 3. Information about UCMR 5 is available at the EPA website, www.water.epa.gov/dwucmr.

KEEP WATER RATES IN CHECK!

Don't get soaked on water bills!
By continuing to shift outdoor and indoor water usage activities to the non-peak hours of 12 to 6, you can help avoid large rate increases in the future.

Does 12 to 6 mean AM or PM?
Both! 12 midnight to 6 am is a non-peak time period. If you need to use water during daylight hours, please use water between 12 noon and 6 pm, which is also a non-peak time period in Plymouth Township.

When should I water my lawn?
Set your irrigation systems to operate between the designated non-peak hours of 12 midnight and 6 am. If you manually water your lawn, the best time to water is between 12 noon and 6 pm.

Are there outdoor water use restrictions?
No. You are not being discouraged from outdoor water use. Just keep in mind that using water during non-peak hours can benefit everyone.

Key to the Detected Contaminants Tables

Symbol	Abbreviation	Definition/Explanation
AL	Action Level	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
>	Greater than	
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, di-bromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
MCL	Maximum Contaminant Level	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.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow a margin of safety.
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal	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.
n/a	not applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter.
RAA	Running Annual Average	The average of all analytical results for all samples during the previous four quarters.
SMCL	Secondary Maximum Contaminant Level	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.
µmhos	Micromhos	Measure of electrical conductance of water

Residential Water Cross-Connection Control Program

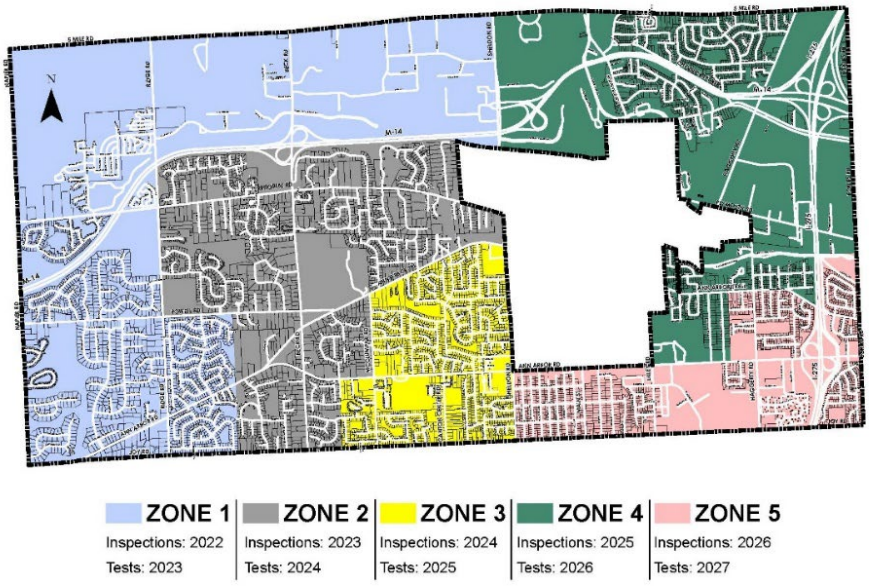
In 2022 the Township initiated a Residential Cross-Connection Control (CCC) Program to maintain compliance under the Michigan Safe Drinking Water Act (Public Act 399, Part 14). The purpose of the program is to to identify and eliminate any possible connections that could contaminate the public water system. The residential program consists of inspections of the exterior of homes and requires periodic testing of backflow prevention assemblies, which are typically found on lawn irrigation systems.

The Resdiential CCC Program is based on a five-year rotational schedule for inspections and testing. The Township's contractor (HydroCorp of Troy, MI) will begin inspections in Zone 4 in Spring 2025. Homeowners will receive advance notice and all inspections will be done outside of the home.

Homeowners will be notified following the inspection if modification(s) and/or testing of backflow prevention assemblies are necessary.

To find out which inspection zone you reside in, and additional information about the residential program, please visit the Township's Water Cross-Connection Control Program website at **https://watercustomer.com/plymouth-township.**

Residential Cross Connection Control Zone Map
Plymouth Township



Public Participation

The Township's water system is occasionally discussed at the regularly scheduled Board of Trustees meetings. The public is welcomed and encouraged to attend meetings to learn more about the system and express any concerns. The meetings are usually held on the first and third Tuesday of each month. Meetings are open to the public, and unless announced otherwise, are at 6:30 PM at Township Hall located at 9955 N Haggerty. Please see the Township's website at www. Plymouthtwp.org or call (734) 354-3201 for more information.

Plymouth Township and the Great Lakes Water Authority are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. Please contact Patrick Fellrath, Director of Public Services, at (734) 354-3270 ext. 5 with any questions or concerns regarding this report.