

# City of Plymouth

## 2022 Consumer Confidence Report & Annual Water Quality Report

Drinking water quality is important to our community and the region. The City of Plymouth 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. The City of Plymouth 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 the City of Plymouth 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.

We hope this report addresses any drinking water quality concerns you might have. Additional information can be found on the Great Lakes Water Authority (GLWA) website [www.glwater.org](http://www.glwater.org) and on the EPA's website; Water on Tap: Consumer's Guide to the Nation's Drinking Water at [www.epa.gov/safewater](http://www.epa.gov/safewater).

### **Sources of your drinking water:**

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. However, all four GLWA water treatment plants that service the City of Plymouth and draw water from the Detroit River have historically provided satisfactory treatment and meet 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. In 2021, the Michigan Department of Environmental, Great Lakes and Energy approved the GLWA's 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 a 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 (313 926-8102).

## **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 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 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, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Lead service lines, corrosion of household plumbing including fittings and fixtures; erosion of natural deposits.
- 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 organics, 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 amounts of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

## **Vulnerability of sub-populations:**

Some people may be more vulnerable to contaminants in drinking water than is 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).

## **Information about the presence of lead:**

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 leaching into your water. Orthophosphates 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. The City of Plymouth 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 take steps to limit their exposure to 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. The City of Plymouth 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 water for drinking or cooking. If you have a service line that is lead, galvanized previously connected to lead, or unknown but likely to be lead, it is recommended that you run your water 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, 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 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

Infants and children who drink water containing lead could experience delays in their physical and 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.

The City of Plymouth is in the process of performing a material inventory of water service lines. A service line includes any section of pipe, both public and private, from the water main to the building plumbing at the water meter or 18 inches inside the building, whichever is shorter. The city did not historically record the materials used on the service lines installed. The process of collecting data to update the service line material inventory is ongoing.

Our water supply has 34 lead service lines and 2,234 of unknown material out of a total of 3,319 service lines, as in accordance with EGLE guidelines for service line determination. The city is actively verifying service line material, identifying lead lines, and replacing all active lead lines in service.

## **Water Quality Data:**

The following table lists all the drinking water contaminants detected during calendar year 2022. The presence of these 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 from January 1, 2022, to December 31, 2022.

## Key to the Detected Contaminants Table

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.
Level 1	Level 1 Assessment	A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our system.
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. MRDLG's 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. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
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

## 2022 Springwells Regulated Detected Contaminants Table

### 2022 Inorganic Chemicals - Annual Monitoring at 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	7-12-2022	ppm	4	4	0.60	n/a	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	7-12-2022	ppm	10	10	0.54	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	05/16/2017	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

### Lead and Copper Monitoring at the Customer's Tap in 2022

Regulated Contaminant	Unit	Year Sampled	Health Goal MCLG	Action Level AL	90 <sup>th</sup> Percentile Value*	Range of Individual Samples Results	Number of Samples Over AL	Major Sources in Drinking Water
Lead	ppb	2022	0	15	2	0-92	1	Lead services lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits.
Copper	ppm	2022	1.3	1.3	0.1	0.0-0.2	0	Corrosion of household plumbing systems; Erosion of natural deposits.

\* The 90<sup>th</sup> percentile value means 90 percent of the homes tested have lead and copper levels below the given 90<sup>th</sup> percentile value. If the 90<sup>th</sup> percentile value is above the AL additional requirements must be met. 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. City of Plymouth 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 the water for drinking or cooking. If you have a lead service line, it is recommended that you run your water for 5 minutes to flush water from both your home plumbing and the lead 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 1-800-462-4791 or at <http://www.epa.gov/safewater/lead>.

2022 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	2022	ppm	4	4	0.67	0.61-0.73	no	Water additive used to control microbes

2022 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	2022	ppb	n/a	80	29	29	no	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2022	ppb	n/a	60	20	16-20	no	By-product of drinking water chlorination

2022 Turbidity - Monitored Every 4 Hours at the 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
0.25 NTU	100%		no
			Soil Runoff

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon ppm	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

2022 Special Monitoring						
Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
Sodium	7-12-2022	ppm	n/a	n/a	5.6	Erosion of natural deposits

These tables are based on tests conducted by GLWA in the year 2022 or the most recent testing done within the last five calendar years. GLWA conducts tests throughout the year only tests that show the presence of a substance or require special monitoring are presented in these tables. The State allows us to monitor 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.

## 2022 Springwells Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.	Parameter	Units	Max	Min.	Avg
Turbidity	NTU	0.08	0.02	0.04	Phosphorus	ppm	0.87	0.42	0.53
Total Solids	ppm	166	114	141	Free Carbon Dioxide	ppm	13.6	6.5	10.1
Total Dissolved Solids	ppm	169	105	134	Total Hardness	ppm	112	76	92
Aluminum	ppm	0.071	0.014	0.030	Total Alkalinity	ppm	86	70	75
Iron	ppm	0.5	0.2	0.3	Carbonate Alkalinity	ppm	ND	ND	ND
Copper	ppm	0.002	ND	0.000	Bi-Carbonate Alkalinity	ppm	86	70	75
Magnesium	ppm	8.5	7.3	7.7	Non-Carbonate Hardness	ppm	42	2	17
Calcium	ppm	28.0	24.9	26.2	Chemical Oxygen Demand	ppm	12.0	ND	3.9
Sodium	ppm	7.1	4.9	5.3	Dissolved Oxygen	ppm	16.5	3.4	11.2
Potassium	ppm	1.1	0.9	1.0	Nitrite Nitrogen	ppm	ND	ND	ND
Manganese	ppm	0.001	ND	0.000	Nitrate Nitrogen	ppm	0.55	0.26	0.36
Lead	ppm	0.001	ND	0.000	Fluoride	ppm	0.77	0.51	0.58
Zinc	ppm	0.004	ND	0.001	pH		7.33	7.06	7.18
Silica	ppm	2.7	1.6	2.1	Specific Conductance @ 25 °C	µmhos	238	166	215
Sulfate	ppm	32.1	21.7	27.5	Temperature	°C	23.9	2.0	13.0
Chloride	ppm	15.0	8.3	10.7					