City of PIQUA Ohio

2022 Water Quality Report

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PIQUA MUNICIPAL WATER SYSTEM
Drinking Water Consumer Confidence Report
For 2021

The Piqua Municipal Water System has prepared the following report to provide information to you, the consumer, on the quality of our drinking water. This report is required as part of the Safe Drinking Water Act Reauthorization of 1996 and is required to be delivered to the consumers by July of 2022. Included within this report is general health information, water quality test results, how to participate in decisions concerning your drinking water, and water system contacts.

The City of Piqua's drinking water met all of the Ohio EPA standards for 2021. Water quality is the number one priority of the Piqua Water Treatment Plant. Constant testing (more than 200 analysis daily) by the dedicated staff of certified operators and laboratory personnel ensure the highest standards for drinking water quality are being met at all times.

How do I participate in decisions concerning my drinking water?
If you have any questions or would like more information on your drinking water, visit Piqua's web page at www.piquaoh.org, or contact Todd Hone of the Piqua Municipal Water System at (937) 778-2090, or by e-mail at thone@piquaoh.org.

Public participation is encouraged at regular meetings of the City of Piqua Commission, which meets the first and third Tuesdays at 6:00 P.M. at the Piqua Municipal Government Complex located at 201 W. Water Street.

About your drinking water.
The EPA requires regular sampling to ensure drinking water safety. The Piqua Municipal Water System conducted sampling for bacteria, inorganic, synthetic organic, and volatile organic contaminant sampling during 2021. Samples were collected for a total of 87 different contaminants, most of which were not detected in the Piqua Municipal Water System's water supply. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, are more than one year old.

Who needs to take special precautions?
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/AID's or other immune system disorders, some elderly, and infants, can be particularly at risk from infection. 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 (1-800-426-4791).

What are sources of contamination to drinking water?
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: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) 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; (C) Pesticides and herbicides, which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses; (D) 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; (E) 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 water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 (1-800-426-4791).

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Elevated Lead Health Effects
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 Piqua 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 are concerned about lead in your drinking 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.

Disinfection By-Products
Some people who drink water containing TTHM's in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of gastrointestinal cancer. Prolonged exposure to HAA_5's in excess to the MCL has been determined to be a possible link to variants of bladder and colo-rectal cancers.

WATER QUALITY DATA

How to read the Water Data Table: EPA establishes the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The table shows the concentrations of detected substances in comparison to regulatory limits. Substances that were tested for, but not detected, are not included in this table.

Definitions: MCLG: Maximum Contaminant Level Goal, or 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. - MCL: Maximum Contaminant Level, or the highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. – AL: Action Level, or the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. – TT: Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

-"<": a symbol which means less than. A result of <5 means that the lowest level that could be detected was 5, and the contaminant in that sample was not detected. – NA: Not Applicable or no standard set. ND: Not Detected. Maximum Residual Disinfectant Level Goal (MRDLG): The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG'S do not reflect the benefits to the use of disinfectants to control microbial contaminants. 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.

Abbreviations: ppm: Parts per Million or Milligrams per Liter (mg/L) are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days. – ppb: Parts per Billion or Micrograms per Liter (µg/L) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Contaminants (Units)	MCLG	MCL	Level Found (Annual Avg.)	Range of Detection	Violation	Sample Year	Typical Source of Contaminants
Microbiological Contaminants							
Turbidity(NTU)	NA	TT	0.19 (Highest Level)	0.03 – 0.19	NONE	2021	Soil runoff
Turbidity (% samples meeting Standards)	NA	TT	99.9%	99.9% - 100%	NONE	2021	
Radioactive Contaminants							
Alpha emitters (pci/l)	15	0	ND	NA	NONE	2021	Erosion of Natural Deposits
Inorganic Contaminants							
Fluoride (ppm)	4	4	0.96	0.80 – 1.21	NONE	2021	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer & aluminum factories
Lead (ppb)	0	AL=15	<0.5	<0.5-18.7	NONE	2021	Corrosion of household plumbing systems.
	Zero out of Thirty samples was found to have lead in excess of the Action Level of 15 ppb. Results based on 90% Lead Level						
Copper (ppm)	1.3	AL=1.3	0.0331	<0.005 – 0.0739	NONE	2021	Corrosion of household plumbing systems.
	Zero out of Thirty samples was found to have copper levels in excess of the Action Level of 1.3 ppm. Results based on 90% Copper Level						
Barium (ppm)	2	2	0.039 (Single Sample)	NA	NONE	2021	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate (ppm)	10	10	2.81 (Highest Level)	0.39 – 2.81	NONE	2021	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Synthetic Organic Contaminants including Pesticides and Herbicides							
Atrazine (ppb)	3	3	<0.074	<0.072 – <0.078	NONE	2021	Runoff from herbicide used on row crops
Simazine (ppb)	4	4	<0.050	<0.052– <0.053	NONE	2021	Herbicide runoff
Volatile Organic Contaminants							
TTHMs (Total trihalomethanes) (ppb)	N/A	80	68.48	24.1 – 91.3	NONE	2021	By-product of drinking water chlorination
Bromodichloromethane (ppb)	NA	NA	9.32	3.7-14.4	NONE	2021	Component of Total Trihalomethane
Dibromochloromethane (ppb)	NA	NA	4.0	1.0-7.7	NONE	2021	Component of Total Trihalomethane
Bromoform (ppb)	NA	NA	0.41	<0.5-1.5	NONE	2021	Component of Total Trihalomethane
Chloroform (ppb)	NA	NA	38.39	12.1-78.3	NONE	2021	Component of Total Trihalomethane
HAA5's (Haloacetic Acids) (ppb)	N/A	60	16.29	7.4 – 39	YES*	2021	By-product of drinking water chlorination
Dichloroacetic Acid (ppb)	NA	NA	13.36	6.2 – 31.2	NONE	2021	Component of Haloacetic Acids
Trichloroacetic Acid (ppb)	NA	NA	2.3	1.2 – 4.5	NONE	2021	Component of Haloacetic Acids
Monochloroacetic Acid (ppb)	NA	NA	0.62	<2.0 –2.9	NONE	2021	Component of Haloacetic Acids
Dibromoacetic Acid (ppb)	NA	NA	1.25	<1.0 –2.5	NONE	2021	Component of Haloacetic Acids
Total Organic Carbon (ppb)	NA	NA	2.48	1.95 – 3.53	NONE	2021	Naturally occurring Organic material in water
Residual Disinfectants							
Chlorine (ppm)	MRDL=4	MRDLG=4	1.06	0.83 –1.19	NONE	2021	Water additive used to control microbes

The City of Piqua tested for microcystins (toxins produced by some types of blue green algae) in both our source water and finished water throughout 2021. All sampling came out as non- detectable. Microcystins Action Levels are based on U.S. EPA's health levels of > 0.3 ug/L for children under 6 and > 1.6 ug/L for children over 6 and adults.

Turbidity is a measure of the cloudiness of the water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU's in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported above, the Piqua Municipal Water System's highest recorded turbidity result for 2021 was 0.19 NTU and

the lowest monthly percentage of samples meeting the turbidity limit was 99.9%.

The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percent of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.

In 2020, our PWS was sampled as part of the State of Ohio's Drinking Water Per- and Polyfluoroalkyl Substances (PFAS) Sampling Initiative. Six PFAS compounds were sampled, and none were detected in our finished drinking water. (PFAS) are a group of man-made chemicals applied to many industrial, commercial and consumer products to make them waterproof, stain resistant, or nonstick. Also, previously used in firefighting foam. For more information about PFAS, please visit pfas.ohio.gov.

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detection	Violation	Sample Year	Typical Source of Contaminants
Combined Raw Water Sample (Composited Data)							
Cryptosporidium (Oocysts/liter)	NA	NA	NA	0.0 – 4.00	No	2018	Human and animal activity; combined sewer overflows

The City of Piqua Water Department monitored for Cryptosporidium in the source water starting June 2017-October 2018. Cryptosporidium was detected in 1 sample collected from the raw water in 2018. **It was not detected in the finished water that was sent to our consumers**.. 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% removal. Monitoring of source water indicates the presence of these organisms. Currently test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease. However, immuno-compromised people 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.

Unregulated Contaminant Monitoring Rule.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. In 2020 the Piqua Public Water System participated in the fourth round of the Unregulated Contaminant Monitoring Rule (UCMR4). For a copy of the results please call Todd Hone at the Piqua Water Treatment Plant.

TABLE OF UNREGULATED CONTAMINANTS

Contaminants	Sample Year	Average Level Found	Range of Detections	Sample Location
Haloacetic Acids (HAA5) (ppb)	2020	12.5	9.4-25.5	Distribution
Haloacetic Acids (HAA9) (ppb)	2020	17.1	12.9-30.6	Distribution
Haloacetic Acids (HAA6Br) (ppb)	2020	5.6	4.1-6.8	Distribution

Source water information.

The Piqua Municipal Water System receives its drinking water from the following three surface water sources:
The Piqua Hydraulic System- 4.0 % The Gravel Pit- 41.9 % The Great Miami River- 54.1 %

Source Water Assessment.

In June of 2003 the Ohio EPA performed an assessment of our source water. The City of Piqua Public Water System uses surface water drawn from the Piqua Hydraulic System, a gravel pit, and the Great Miami River. For the purposes of source water assessments, in Ohio all surface waters are considered to be susceptible to contamination. By their nature, surface waters are readily accessible and can be contaminated by chemicals and pathogens, which may rapidly arrive at the public drinking water intake with little warning or time to prepare. The City of Piqua drinking water source protection area contains a number of potential contaminant sources, which include runoff from row crop agriculture, septic systems, housing and commercial development in the watershed of the Hydraulic System. Potential spills at numerous road and rail bridges crossing the Great Miami River and its tributaries are also a threat.

The City of Piqua Public Water System uses a multiple barrier system to treat the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. Implementing measures to protect the City's drinking water sources can further decrease the potential for water quality impacts. More detailed information is provided in the City of Piqua Drinking Water Source Assessment Report, which can be viewed by calling Todd Hone, Water System Superintendent at 937-778-2090.
Should you need to find your Source Water Assessment Information, contact Ohio EPA. Please keep in mind that Ohio EPA cannot provide this information to residents directly. Residents should be instructed to contact their PWS.

- **We have a current, unconditional license to operate our water system.**

***For 2nd Quarter 2021 (April-June), the City of Piqua received a <u>reporting violation</u> for Haloacetic Acids (HAA5) monitoring from Ohio EPA.**

This violation was the result of a laboratory error by Pace Analytical, the third party laboratory contracted (at the time) to analyze HAA5's for Piqua's water system. Here is a rundown of the events leading to the reporting violation:

- The 2nd Quarter HAA5 samples were collected by Piqua Water Department staff on June 9th, 2021.
    - The window for collection of these samples, per Ohio EPA guidance, was June 8th – 14th
- The HAA5's were delivered to Pace Analytical on the same day they were collected (June 9th).
- Pace Analytical did not analyze the HAA5 samples until July 1st. Due to a laboratory accident, one of the four HAA5 samples was unable to be analyzed.
- Pace Analytical did not notify the City of Piqua of their Laboratory error until July 9th, well beyond the resampling window for 2nd Quarter 2021.

The laboratory error was for only one of the four HAA5 samples collected that day. The other three samples were analyzed without incident, and the concentration for those samples was well below 60 ppb (the established Maximum Contaminant Level for HAA5's).

The City of Piqua no longer uses Pace Analytical for HAA5 analysis.