



May 2024

2023 WATER QUALITY REPORT

Friends & Customers of Warren County Water,

Warren County prides itself on providing quality water services to our customers in a cost-effective manner as we continue to meet all regulatory standards. The enclosed water quality report is a comprehensive summary of laboratory test results performed on Warren County's water produced in 2023. The report also provides information on our treatment process and water sources. We are proud to report that our water meets or exceeds all current regulatory standards issued by both the U.S. Environmental Protection Agency (EPA) and Ohio EPA, and our ongoing efforts will enable us to meet all recently adopted regulations.

On April 10, 2024, the U.S. EPA announced the final per- and polyfluoroalkyl substances (PFAS) maximum containment levels (MCL) rule for drinking water. The six regulated PFAS chemicals include perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX Chemicals), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS). These chemicals are referred to under the generic name of "PFAS" chemicals. The EPA expects that once fully implemented, the rule will prevent thousands of deaths and reduce tens of thousands of serious PFAS-attributable illnesses.

PFAS stands for perfluoroalkyl and polyfluoroalkyl substances. These are a group of manufactured chemicals that have been used in consumer products since the 1940's. They can be found in the manufacture of non-stick coatings, clothing, carpet, and food wrappers as well as in foam fire fighting agents. These compounds typically do not break down under normal environmental conditions, and as such have been called "forever chemicals". It is not uncommon for these chemicals to be found in microscopic traces in drinking water and in the bloodstream of people.

What is the EPA's PFAS National Primary Drinking Water Standard?

In the newly adopted rule, the U.S. EPA established stringent MCLs with several limits as low as 4.0 parts per trillion (ppt). For perspective, 1 part per trillion is equal to 1 drop of water in 20 Olympic size swimming pools. The new regulation requires all public water systems to monitor for PFAS, notify the public of the levels of these PFAS chemicals, and reduce the levels of PFAS in drinking water if they exceed the proposed standards. Water systems are required to take action to reduce the levels of these PFAS compounds if they exceed the regulatory standards and will have five years (by 2029) to implement solutions.

Compound	Maximum Contaminant Level (ppt ²)
PFOA	4
PFOS	4
PFHxS	10
PFNA	10
HFPO-DA (GenX Chemicals)	10
Hazard Index (Unitless) ¹	1

Note 1: Hazard Index accounts for co-occurring mixtures of the PFHxS, PFNA, HFPO-DA, and PFBS compounds with at least two of the compounds present.

Note 2: Parts Per Trillion (ppt)

What are the levels in Warren County's drinking water?

Although the unregulated use of PFAS chemicals in consumer products has been ongoing for decades, public health concerns regarding the long-term exposure to the chemical has only gained national attention in the past few years. Under Ohio's statewide PFAS Action Plan for Drinking Water, the County's water at both treatment plants was first tested for six (6) PFAS compounds on December 15, 2020. The PFAS compounds were not detected at the County's Franklin Area Treatment Plant, however one compound, perfluorooctane sulfonic acid (PFOS) was found to be present in low, measurable concentrations in the finished water and wellfields at the Richard Renneker Treatment Plant (RRTP).

In January 2023, Warren County completed our state-of-the-art nanofiltration membrane process used to soften our water. This process was installed at both treatment plants and is highly effective at removing PFAS compounds. With the use of the nanofiltration process and by making operational changes we are currently able to meet the requirements of the PFAS regulations. Recent testing in 2023 of our finished water at the RRTP resulted in nondetectable levels of the six regulated PFAS compounds. However, the County has determined that additional treatment will be required to reach our goal of full and total removal of PFAS compounds.

What is Warren County doing about these compounds?

Warren County is working closely with the regulators at Ohio EPA, experts from the U.S. EPA Office of Research and Development Response, and a nationally recognized water treatment engineering consultant to design and construct improvements to the RRTP. The design for the improvements will be completed this year and construction and start-up of the facility in Fall 2025. We hope to be finished four years ahead of the 2029 regulatory deadline.

Providing safe, reliable drinking water is the County's highest priority. We will continue to work diligently with the U.S. and Ohio EPA to quickly implement improvements to our treatment facilities that will meet the newly adopted regulations. For more information on PFAS please visit <https://www.epa.gov/pfas> or contact me at (513) 695-1193.

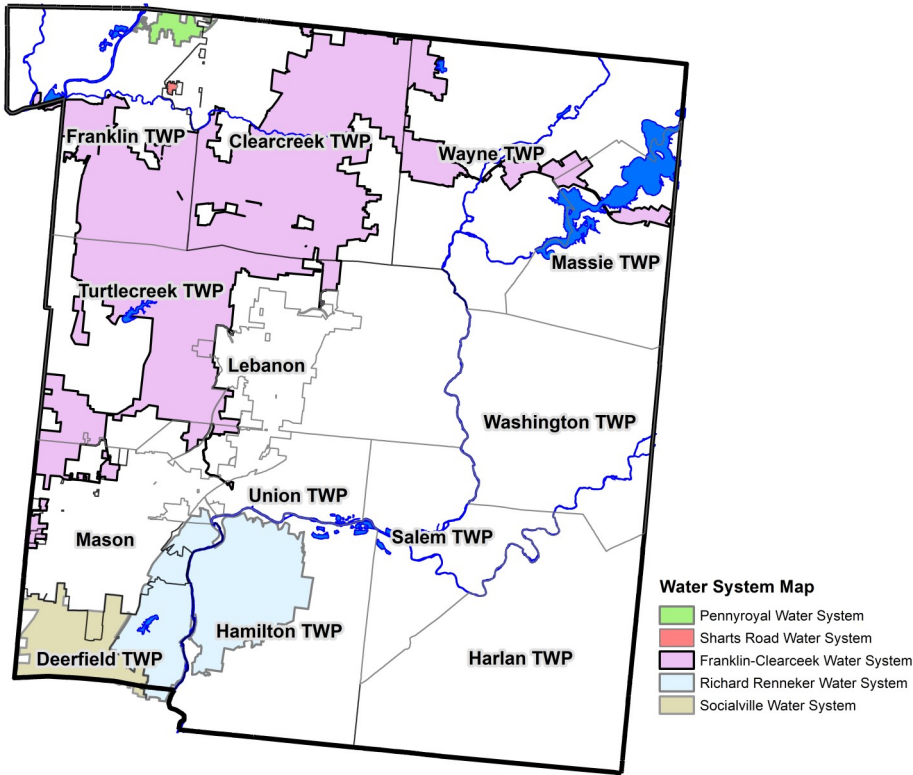


Chris G. Brausch, P.E.
Director & County Sanitary Engineer



Source Water – Where the County Gets Water

The County supplies water to a majority of its customers from two plants that treat water from wells along the Little Miami and Great Miami Buried Valley Aquifers. The 24 production wells in 5 different wellfields generate over 2 billion gallons of water to our customers each year. The County operated Richard Renneker and Franklin Area plants provide service to 85% of our customers. The remaining 15% of customers receive purchased water from the City of Springboro and Cincinnati Water Works that is resold to our customers.



WATER SYSTEM	WATER SOURCE	CUSTOMERS
Franklin-Clearcreek Water System	Great Miami Aquifer	15,065
Richard Renneker Water System	Little Miami Aquifer	14,440
Socialville Water System	Cincinnati Water Works	4,699
Pennyroyal Water System	City of Springboro	357
Sharts Road Water System	City of Springboro	54

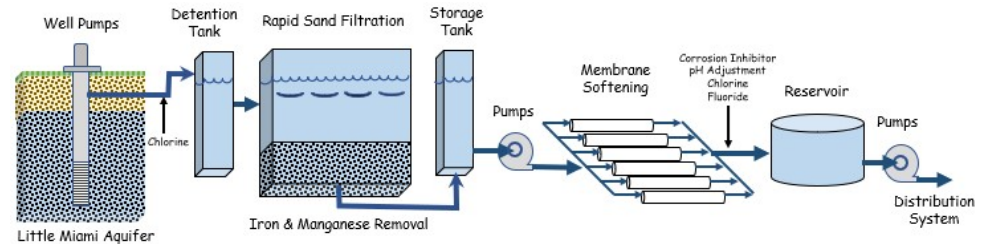
Warren County Facilities—World Class Water

The Franklin Area Treatment Plant (FATP) is located in Franklin Township and treats groundwater from 7 wells in the Great Miami Buried Valley Aquifer (GMBVA). The Richard Renneker Treatment Plant (RRWTP) is located in Hamilton Township and is supplied groundwater from four wellfields in the Little Miami Buried Valley Aquifer. Pursuant to Section 6109.21 of the Ohio Revised Code, Warren County has been granted an unconditional license to operate both facilities through the Ohio Environmental Protection Agency.

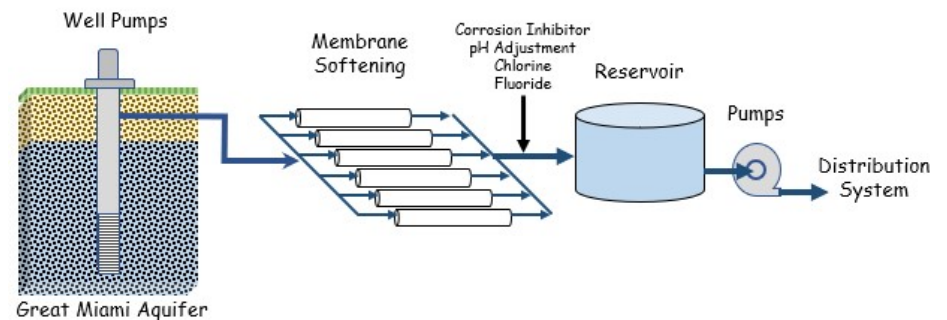
In 2022 Warren County added state-of-the-art nanofiltration membrane treatment to both facilities reducing the finished water hardness and improving the removal of potential contaminants including pesticides, herbicides, PFAS, organic and inorganic compounds.

After softening, the pH of the water at both plants is adjusted using sodium hydroxide and orthophosphate, a corrosion inhibitor, to create a stable water that minimizes the chance of lead and copper leaching out of home water piping and fixtures. Our final treatment process includes the addition of fluoride for the promotion of dental health and chlorine as a residual disinfectant.

Treatment Process at the Richard Renneker Treatment Plant



Treatment Process at the Franklin Area Treatment Plant



2023 WATER QUALITY REPORT

Warren County Water & Sewer Department

City of Springboro Purchased Water

The County purchases water for the Pennyroyal and Sharts Road service areas from the City of Springboro. The City obtains its public drinking water supply from the buried sand and gravel aquifers associated with the Great Miami Buried Valley Aquifer (GMBVA). The City currently utilizes six wells located on the west side of the Great Miami River along Dayton-Oxford Road. Well water is pumped directly to the water treatment plant at 3049 Pennyroyal Road, where the water is filtered and treated with chlorine and fluoride. The City currently does not soften their water.



The State of Ohio has classified the City's water source as highly susceptible to contamination based on the shallow depth (less than five feet below ground surface) of the aquifer, and the presence of significant potential contamination sources in the protection area. Complete details of the City's current Water Quality Report can be found at <https://www.cityofspringboro.com>

Greater Cincinnati Water Works Purchased Water



Water for the Socialville Water System is purchased by Warren County from the Cincinnati Water Works (GCWW). Cincinnati obtains water from two sources: the Ohio River and the GMBVA. Surface water from the Ohio River is treated at the Richard Miller Treatment Plant. This plant, located on the east side of Hamilton County, supplies about 88% of drinking water to GCWW customers. The Charles M. Bolton Treatment Plant treats groundwater from 13 wells in the GMBVA. It is located in the southern part of Butler County and supplies about 12% of drinking water to GCWW customers. Socialville also has an emergency backup system. The connection is located on Socialville-Foster Road and is with the Warren County Richard Renneker Water System.

As with all surface waters, The Ohio EPA has classified the Ohio River as highly susceptible to potential contamination. The Ohio EPA has also classified their portion of the Great Miami Buried Valley Aquifer as highly susceptible to contamination due to the lack of an overlying protective clay layer, the presence of low levels of nitrate in the groundwater, and the presence of nearby potential contamination sources. Complete details of the City's current Water Quality Report can be found at <https://www.cincinnati-oh.gov/water/water-quality-and-treatment/water-quality-reports/>

Protecting our Water Sources

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 human activity. The Ohio EPA has classified the Great Miami Buried Valley Aquifer and the Little Miami Buried Valley Aquifer as highly susceptible to contamination due to the presence of significant potential contamination sources in the protection area.

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 stormwater 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 stormwater runoff, and residential use.
- 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 stormwater runoff and septic systems.

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

Protecting our Drinking Water Source

Warren County recognizes the importance of protecting our valuable ground water resources and has Ohio endorsed source water protection plans for its wellfields along the Great and Little Miami Buried Valley Aquifers. Details of the plans can be found on the County's website.

Importance of Safe Drinking Water

In order to ensure that tap water is safe to drink, USEPA 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling U.S. EPA's safe drinking water hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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. USEPA/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).

2023 WATER QUALITY REPORT

Warren County Water & Sewer Department

Definitions

Action Level or AL:

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

Lead Threshold Level:

The concentration of lead in an individual tap water sample. The lead threshold level is exceeded at 0.015 milligrams per liter (15 ppb) concentration of lead in an individual tap water sample.

Maximum Contaminant Level Goal or 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 or 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 Disinfection Level or 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 Disinfection Level Goal or MRDLG:

The level of 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.

Treatment Technique or TT:

Method for treating water to achieve acceptable levels of the contaminants in lieu of establishing a maximum contaminant level.

Turbidity:

Utilities who treat surface water are required to report on turbidity as an indication of the effectiveness of the filtration system. Turbidity is a measure of the cloudiness of water. The turbidity limit set by the EPA is 0.3 NTU in 95% of the samples analyzed each month, and shall not exceed 1 NTU at any time.

Abbreviations

AL: Action Level

mg/L: milligrams per liter

N/A: Not Applicable

ND: Not Detected

NTU: Nephelometric Turbidity Units (measure of "Cloudiness")

ppb: parts per billion or micrograms per liter.

ppm: parts per million or milligrams per liter

ug/L: micrograms per liter.

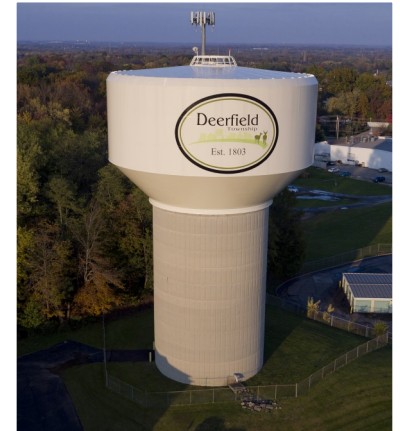
> : greater than

< : less than

Lead in Drinking Water

Prior to the start-up of the water softening treatment process in 2022, Warren County worked with nationally recognized experts and officials at Ohio EPA to complete a corrosion control study to develop a plan to methodically implement new treatment process. A lead and copper control strategy was implemented that includes strict pH control and monitoring and water testing at customer services. With softening in operation, the County is in full compliance with all US and Ohio EPA copper and lead regulations.

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 Warren County Water & Sewer Department 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 thirty seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. A list of laboratories certified in the State of Ohio to test for lead may be found at <http://www.epa.ohio.gov/ddagw> or by calling 614-644-2752. 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 800-426-4791 or at <http://www.epa.gov/safewater/lead.> and Ohio EPA: Learn About Lead: <http://epa.ohio.gov/pic/lead.aspx>.



20 Mile Elevated Water Tower

Warren County's Plan for Addressing PFAS

Recent testing of the County's wellfields has detected low levels of perfluoralkyl and polyfluoralkyl compounds at the Richard Renneker Treatment Plant. These are a group of manufactured chemicals that have been used in consumer products since the 1940's. They can be found in the manufacture of non-stick coatings, clothing, carpet, and food wrappers as well as in foam fire fighting agents. These compounds typically do not break down under normal environmental conditions, and as such have been called "forever chemicals".



The County's newly installed nanofiltration membranes are effective at removing the contaminants but additional treatment will be required to meet newly adopted USEPA regulations. The County is working with experts from the US Environmental Protection Agency Office of Research and Development Response to implement changes at our RRTP that will meet the recently issued drinking water regulations. The County is aggressively moving forward with these changes. More information on PFAS can be found at <https://www.co.warren.oh.us/Water> and at <https://www.epa.gov/pfas>

2023 WATER QUALITY REPORT

Warren County Treatment Plants Meet or Exceed MCL Standards for 2023

Warren County is proud to report that our water meets or exceeds all regulatory standards issued by both the USEPA and Ohio EPA. The data contained in this report are from the most recent testing done in accordance with Ohio EPA regulations. The test results of regulated contaminants are subject to Maximum Contaminant Levels (MCL), Action Level (AL), or Treatment Technique (TT). These standards protect drinking water by limiting the amount of certain substances that can adversely affect public health and are known or anticipated to occur in public water systems.

2023 REPORTING YEAR - REGULATED CONTAMINATES			FRANKLIN-CLEARCREEK PLANT				RICHARD RENNEKER WATER PLANT				Typical Source of Contamination
Substance (Unit)	Maximum Allowed (MCL)	Ideal Goals (MCLG)	Highest Level Detected	Range of Detection	Violation	Year Sampled	Highest Level Detected	Range of Detection	Violation	Year Sampled	
Testing at the Treatment Plant											
Fluoride ¹ (ppm)	4	4	1.15	0.8 - 1.3	No	2023	1.13	0.8 - 1.3	No	2023	Additive which promotes strong teeth. May also come from natural deposits in the aquifer
Nitrate (ppm)	10	N/A	1.48	1.48 - 1.48	No	2023	0.503	0.503 - 0.503	No	2023	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
1,1,1-Trichloroethane (ppb)	0.2	0.2	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
1,1,2-Trichloroethane (ppb)	0.005	0.006	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
1,1-Dichloroethane (ppb)	0.007	0.01	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
1,2,4-Trichlorobenzene (ppb)	0.07	2	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
1,2-Dichlorobenzene (ppb)	0.005	0.004	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
1,2-Dichloroethane (ppb)	0.005	0.005	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
1,2-Dichloropropane (ppb)	0.05	0.1	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
1,4-Dichlorobenzene (ppb)	0.6	0.002	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Benzene (ppb)	0.005	0.005	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Carbon Tetrachloride (ppb)	0.005	0.05	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Chlorobenzene (ppb)	0.005	0.002	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
cis-1,2-Dichloroethene (ppb)	0.07	0.07	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Ethylbenzene (ppb)	0.7	0.7	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Methylene Chloride (ppb)	0.005	0.005	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Styrene (ppb)	0.1	1	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Tetrachloroethene (ppb)	0.005	0.005	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Toluene (ppb)	1	1	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
trans-1,2-Dichloroethene (ppb)	0.1	0.1	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Trichloroethene (ppb)	0.005	0.005	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Vinyl Chloride (ppg)	0.02	0.02	<0.5	N/A	No	2023	<0.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Xylene, (ppb)	10	10	<1.5	N/A	No	2023	<1.5	N/A	No	2023	Solvents, Degreasers, Cleaning Solutions
Asbestos, (Microfibers per Liter)	7 (MFL)	7 (MFL)	< 0.18	N/A	No	2022					Decay of cements, erosion natural deposits
Alachlor, Lasso, (ppb)	2	0	< 0.10	N/A	No	2023					Manufactured organic (Carbon Based) chemicals
Atrazine, (ppb)	3	3	< 0.10	N/A	No	2023					Manufactured organic (Carbon Based) chemicals
Simazine, (ppb)	4	4	< 0.10	N/A	No	2023					Manufactured organic (Carbon Based) chemicals
Bromoform, (ppb)	80	0	1	0.4 - 1.0	No	2023	1.8	1.6 - 1.8	No	2023	By-product of drinking water chlorination
Bromodichloromethane, (ppb)	80	0	3.9	3.0 - 3.9	No	2023	4.3	3.9 - 4.3	No	2023	By-product of drinking water chlorination
Dibromochloromethane, (ppb)	80	0	3.2	2.3 - 3.2	No	2023	4.2	4.0 - 4.2	No	2023	By-product of drinking water chlorination
Chloroform, (ppb)	80	0	11.3	0.93 - 24.3	No	2023	4.4	3.3 - 4.4	No	2023	By-product of drinking water chlorination
Testing at Customer's Tap											
Copper (Sampled Jan-June), (ppm)	AL = 1.3 (the 90th percentile must be less than 1.3 ppb)	1.3	90th percentile 0.034	0.077 - 0.096	No	2023	90th percentile 0.0612	0.032 - 0.053	No	2023	There is no detectable lead in the water as it leaves the treatment plants. However, corrosion and deterioration of household plumbing, solder, and brass plumbing fixtures is a source of lead and copper contamination.
Copper (Sampled Jul-Dec), (ppm)			(0 of 60 samples tested were > AL)	90th percentile 0.147	0.012 - 0.313	No	2023	90th percentile 0.0866	0.005 - 0.259	No	
Lead (Sampled Jan-June), (ppb)	AL = 15 (the 90th percentile must be less than 15 ppb)	0.0	90th percentile 1.18	0 - 12.4	No	2023	90th percentile 2.8	0 - 11.2	No	2023	
Lead (Sampled Jul-Dec), (ppb)			(0 of 60 samples tested were > AL)	90th percentile 1.56	0 - 5.7	No	2023	90th percentile 1.36	0 - 40.4	No	
			(0 of 62 samples tested were > AL)				(1 of 62 samples tested above AL)				
Testing in the Water Distribution System											
Chlorine ² (ppm)	MRDL = 4	MRDLG = 4	1.6	0.2 - 2.0	No	2023	1.6	0.2 - 2.0	No	2023	Water additive used to control microbes.
Total Coliform Bacteria (% positive)	5%	0	All 486 samples collected in 2023 were negative for total coliform and E. coli.				All 489 samples collected in 2023 were negative for total coliform and E. coli.				Naturally present in the environment.
Total Trihalomethanes (THMs) (ppb)	80	N/A	17.6	9.8 - 17.6	No	2023	14.2	13.1 - 14.2	No	2023	By-product of drinking water chlorination.
Haloacetic Acids (HAAs) (ppb)	60	N/A	2.6	< 6.0 - 2.6	No	2023	ND	ND	No	2023	By-product of drinking water chlorination.

Note: 1. Fluoride range reflects the regulatory required range for treatment which is 0.8 ppm minimum and 1.3 ppm maximum.
 2. Chlorine range reflects the regulatory requirement for treatment which is 0.2 ppm minimum and 2.0 ppm maximum.

2023 WATER QUALITY REPORT

Water Purchased from the City of Cincinnati for the Socialville Service Area Meets or Exceeds MCL Standards for 2023

GCWW reports that their water meets or exceeds every health standard developed by both the USEPA and Ohio EPA. The data contained in the below table is a summary of testing performed at GCWW's treatment plants and in Warren County's Socialville area distribution system and customer connections. All testing was completed in certified laboratories in accordance with Ohio EPA regulations. The test results of regulated contaminants are subject to Maximum Contaminant Levels (MCL), Action Level (AL), or Treatment Technique (TT). These standards protect drinking water by limiting the amount of certain substances that can adversely affect public health and are known or anticipated to occur in public water systems.

PURCHASED WATER FOR THE SOCIALVILLE WATER SYSTEM											
2023 REPORTING YEAR - REGULATED CONTAMINATES			GCWW RICHARD MILLER WATER (from the Ohio River)				GCWW BOLTON WATER (from the GMBVA)				Typical Source of Contamination
Substance (Unit)	Maximum Allowed (MCL)	Ideal Goals (MCLG)	Highest Compliance Level Detected	Range of Detection	Violation	Year Sampled	Highest Compliance Level Detected	Range of Detection	Violation	Year Sampled	
Testing at the Wholesale Water Provider's Treatment Plant											
Fluoride ¹ (ppm)	4	4	0.86	0.73 - 1.0	No	2023	0.88	0.75 - 0.95	No	2023	Additive which promotes strong teeth. May also come from natural deposits in the aquifer.
Nitrate (ppm)	10	N/A	1.15	0.56 - 1.15	No	2023	1.37	nd - 1.37	No	2023	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Barium (ppm)	2	2	0.03	na	No	2023	0.02	na	No	2023	Natural occurring element.
Total Organic Carbon	TT	N/A	2.38	2.06 - 3.26	No	2023	nr	nr	No	N/A	Naturally present in the environment
Turbidity (NTU)	TT1 < 1 NTU Max and TT2 < 0.3 NTU 95% of the time	N/A	0.9 100% < 0.3 NTU	0.04 - 0.09	No	2023	nr	nr	No	N/A	Soil Runoff
Testing at Customer's Tap in the Socialville System											
Copper, (ppm)	AL = 1.3 (the 90th percentile must be less than 1.3 ppb)	1.3	90th percentile 0.0474 (0 of 32 samples tested were > AL)	0.0 - 76.7	No	2021					There is no detectable lead in the water as it leaves the treatment plants. However, corrosion and deterioration of household plumbing, solder, and brass plumbing fixtures is a source of lead and copper contamination.
Lead, (ppb)	AL = 15 (the 90th percentile must be less than 15 ppb)	0.0	90th percentile 3.5 (1 of 32 samples tested were > AL)	0 - 17	No	2021					
Testing in the Socialville Water Distribution System											
Chlorine ² (ppm)	MRDL = 4	MRDLG = 4	1.3	0 - 2.0	No	2023					Water additive used to control microbes.
Total Coliform Bacteria (% positive)	5%	0	All 183 samples collected in 2023 were negative for total coliform and E. coli.								Naturally present in the environment.
Total Trihalomethanes (THMs) (ppb)	80	N/A	70.8	23.5 - 70.8	No	2023					By-product of drinking water chlorination.
Haloacetic Acids (HAA5) (ppb)	60	N/A	12	3.5 - 12.0	No	2023					By-product of drinking water chlorination.

- Note: 1. Fluoride range reflects the regulatory required range for treatment which is 0.8 ppm minimum and 1.3 ppm maximum.
 2. Chlorine range reflects the regulatory requirement for treatment which is 0.2 ppm minimum and 2.0 ppm maximum.
 3. nr: not regulated

2023 WATER QUALITY REPORT

Water Purchased from the Springboro for the Pennyroyal & Sharts Road Areas Meets or Exceeds MCL Standards for 2023

Maintaining water quality is the number one priority of the City of Springboro's water treatment plant. Constant testing by the dedicated staff of certified operators and laboratory personnel ensure the highest standards for drinking water quality are being met at all times. The data contained in the below table is a summary of testing performed at the Springboro's treatment plant and in Warren County's Pennyroyal and Sharts Road distribution system and customer connections. All testing was completed in certified laboratories in accordance with Ohio EPA regulations. The test results of regulated contaminants are subject to Maximum Contaminant Levels (MCL), Action Level (AL), or Treatment Technique (TT). These standards protect drinking water by limiting the amount of certain substances that can adversely affect public health and are known or anticipated to occur in public water systems.

2023 REPORTING YEAR - REGULATED CONTAMINATES			PURCHASED WATER FOR THE PENNYROYAL SYSTEM				PURCHASED WATER FOR THE SHARTS ROAD SYSTEM				Typical Source of Contamination
Substance (Unit)	Maximum Allowed (MCL)	Ideal Goals (MCLG)	CITY OF SPRINGBORO (from the GMBVA)				CITY OF SPRINGBORO (from the GMBVA)				
			Highest Level Detected	Range of Detection	Violation	Year Sampled	Highest Level Detected	Range of Detection	Violation	Year Sampled	
Testing at the Wholesale Water Provider's Treatment Plant											
Fluoride ¹ (ppm)	4	4	1.1	1.1	No	2023	1.1	1.1	No	2023	Additive which promotes strong teeth. May also come from natural deposits in the aquifer.
Nitrate (ppm)	10	N/A	0.78	0.78	No	2023	0.78	0.78	No	2023	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Barium (ppm)	2	2	0.17	0.17	No	2023	0.17	0.17	No	2023	Natural occurring element.
			Testing at Customer's Tap in the Pennyroyal Water System				Testing at Customer's Tap in the Sharts Road Water System				
Copper, (ppm)	AL = 1.3 (the 90th percentile must be less than 1.3 ppb)	1.3	90th percentile 0.1640	0.016 - 0.164	No	2023	0.183	0.011 - 0.229	No	2023	There is no detectable lead in the water as it leaves the treatment plants. However, corrosion and deterioration of household plumbing, solder, and brass plumbing fixtures is a source of lead and copper contamination.
Lead, (ppb)	AL = 15 (the 90th percentile must be less than 15 ppb)	0.0	90th percentile 0.90	< 0.6 - 3.9	No	2023	90th percentile 1.06	0 - 2.1	No	2023	
			Testing in the Pennyroyal Water Distribution System				Testing in the Sharts Road Water Distribution System				
Chlorine ² (ppm)	MRDL = 4	MRDLG = 4	1.5	0 - 2.0	No	2023	1.4	0 - 2.0	No	2023	Water additive used to control microbes.
Total Coliform Bacteria (% positive)	5%	0	All 24 samples collected in 2023 were negative for total coliform and E. coli.				All 12 samples collected in 2023 were negative for total coliform and E. coli.				Naturally present in the environment.
Total Trihalomethanes (THMs) (ppb)	80	N/A	12.4	N/A	No	2023	22.5	N/A	N/A	2023	By-product of drinking water chlorination.
Haloacetic Acids (HAA5) (ppb)	60	N/A	<6.0	N/A	No	2023	< 6.0	N/A	N/A	2023	By-product of drinking water chlorination.

- Note: 1. Fluoride range reflects the regulatory required range for treatment which is 0.8 ppm minimum and 1.3 ppm maximum.
 2. Chlorine range reflects the regulatory requirement for treatment which is 0.2 ppm minimum and 2.0 ppm maximum.

2023 WATER QUALITY REPORT

Unregulated Contaminant Monitoring

In 2023 Warren County and the Greater Cincinnati Water Works participated in the fifth round of the Unregulated Contaminant Monitoring Rule (UCMR5). U.S. EPA issues a list of unregulated contaminants that may be present in drinking water but are not yet subject to U.S. EPA drinking water standards. The contaminants listed in the below tables were analyzed during UCMR5 monitoring. Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of these contaminants in drinking water and whether future regulation is warranted. For more information on UCMR5 please call the Warren County office at (513) 695-1377.

2023 REPORTING YEAR - UNREGULATED CONTAMINATES			PURCHASED WATER FOR THE SOCIALVILLE WATER SYSTEM								Typical Source of Contamination
Substance	Units	Reporting Limit	Miller Water PLANT				Bolton WATER PLANT				
			Average Level Detected	Range of Detection	Violation	Year Sampled	Average Level Detected	Range of Detection	Violation	Year Sampled	
Perfluorobutanoic Acid (PFBA)	ppt	5	ND	N/A	No	2023	5.2	5.1 - 5.2	No	2023	Perfluoroalkyl and polyfluoroalkyl substances (PFAS compounds) are manmade chemicals that have been used in consumer products since the 1940s, usually in the manufacture of non-stick coatings, clothing, carpet, and food wrappers. Research into the harm that PFAS compounds may cause to human health is ongoing.
Perfluorobutanesulfonic Acid (PFBS)	ppt	3	ND	N/A	No	2023	3.9	3.7 - 4.1	No	2023	
Perfluorooctanoic Acid (PFOA)	ppt	4	ND	N/A	No	2023	ND	N/A	No	2023	
Perfluorooctanesulfonic Acid (PFOS)	ppt	4	ND	N/A	No	2023	5.2	4.2 - 6.1	No	2023	
hexafluoropropylene oxide dimer acid (HFPO-DA or GenX)	ppt	5	ND	N/A	No	2023	ND	N/A	No	2023	

2023 REPORTING YEAR - UNREGULATED CONTAMINATES			RICHARD RENNEKER WATER PLANT				Typical Source of Contamination
Substance	Units	Reporting Limit	Average Level Detected	Range of Detection	Violation	Year Sampled	
Lithium	ppb	9	ND	ND	No	2023	Lithium mining, landfill leachate, oil and gas development
Perfluorobutanoic Acid (PFBA)	ppb	0.004	ND	ND	No	2023	Perfluoroalkyl and polyfluoroalkyl substances (PFAS compounds) are manmade chemicals that have been used in consumer products since the 1940s, usually in the manufacture of non-stick coatings, clothing, carpet, and food wrappers. Research into the harm that PFAS compounds may cause to human health is ongoing.
Perfluorobutanesulfonic Acid (PFBS)	ppb	0.003	ND	ND	No	2023	
Perfluorooctanoic Acid (PFOA)	ppb	0.003	ND	ND	No	2023	
Perfluorooctanesulfonic Acid (PFOS)	ppb	0.003	ND	ND	No	2023	
Perfluorononanoic Acid (PFNA)	ppb	0.003	ND	ND	No	2023	

2023 WATER QUALITY REPORT

Warren County Water & Sewer Department

Additional Information.....

Customers are encouraged to contact the Warren County Water and Sewer Department for additional information on water treatment, source water protection, and drinking water quality.

Website: <https://co.warren.oh.us/Water/>

Email: waterdept@co.warren.oh.us

Phone: (513) 695-1377

Participate in Public Discussions....

The Water and Sewer Department operates under the authority and administration of the Warren County Commissioners. The Department meets routinely with the Commissioners on issues that affect water quality. The Board of County Commissioners Meeting is held on Tuesdays at 9:00 am and the 2nd and 4th Thursday of every month at 5:00 pm. Thursday meetings are on an "as needed" basis and the Board may schedule or cancel as deemed necessary. If you plan to attend a Thursday meeting, please call (513) 695-1250 to confirm the meeting has not been cancelled.



Where can I learn more about the County's source water?

Ohio EPA endorsed source water protection plans for the Franklin Area and Richard Renneker Water Treatment plant can be found online at:

<https://co.warren.oh.us/Water/DrinkingWater/>

How hard is Warren County's water?

The County's water hardness is similar to that of other nearby communities including Dayton, GCWW, Butler County and Western Water. Water from our plants has a average hardness of 140 mg/L or 8 grains of hardness.

My house has copper pipes with lead solder, does the County offer free lead testing of water at my house?

Yes. The County typically offers free testing for lead and copper twice per year and will provide customers with sample bottles and instructions for collecting samples. If you need testing please contact our lab at (513) 583-3091 for details and scheduling.



Why is fluoride added to the water?

The County adds fluoride to the water supply to promote good oral health and reduce tooth decay. Given the dramatic decline in tooth decay during the past 70 years since community water fluoridation was initiated, the Centers for Disease Control and Prevention (CDC) named fluoridation of drinking water to prevent tooth decay as one of Ten Great Public Health Interventions of the 20th Century. The Ohio General Assembly passed a law in 1969 requiring all water systems serving more than 5,000 persons to fluoridate if their naturally occurring fluoride is below 0.8 mg/L.

Does the County have lead pipes?

Since it's early start in the 1960's the Water and Sewer Department has never permitted the use of lead pipe in their distribution system or customer service laterals. Customers with older homes and copper piping may have pipe joints that contain 30% tin and 70% lead solder. The use of lead solder was banned for plumbing applications in the 1980s.

Does the County issue boil water advisories during main breaks?

Not all main breaks require boil water advisories. Our repair crews follow Ohio Administrative Code Section 3745-83-02 which identifies when boil water advisories are necessary. The majority of small main breaks can be repaired quickly and safely without the need to issue precautionary boil or water use advisories. Our on-call crews respond to main breaks at all hours and often have repairs completed and service restored within 2 to 4 hours of the break.

Why does my water look cloudy sometimes?

Cloudy water that clears quickly from the bottom up is caused by tiny air bubbles in the water similar to gas bubbles in soda. The bubbles rise to the top and disappear. This cloudiness occurs more often in the winter when drinking water is cold. Air does not affect the safety of the water.