



A Service of The City of Cincinnati

**GREATER CINCINNATI
WATER WORKS**

*Using the most advanced technology to bring
you the cleanest, highest quality ...*



water

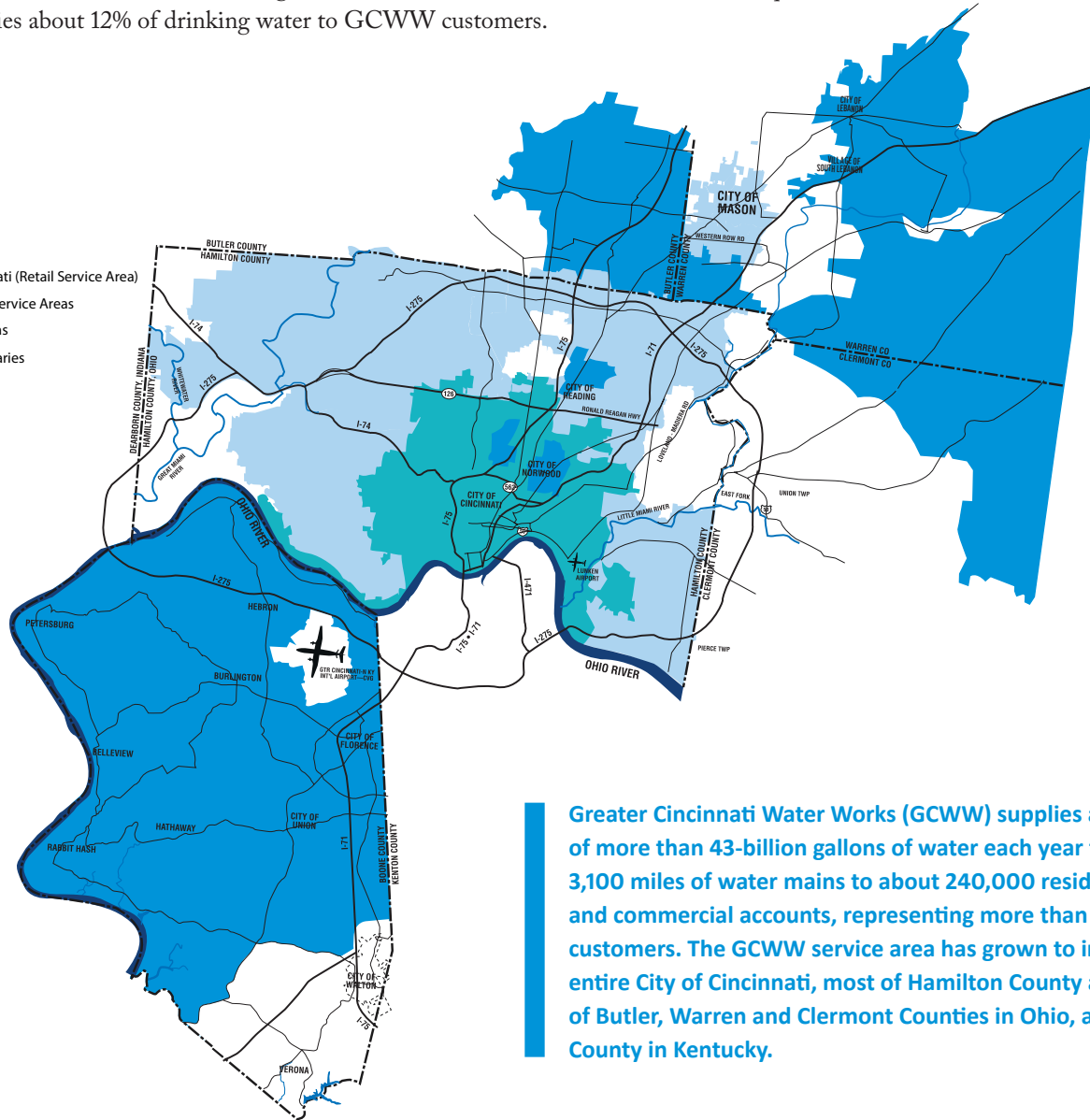
Our Most Essential Resource

Where your water comes from ...

GCWW supplies water from two sources: the Ohio River and the Great Miami Buried Valley Aquifer. Surface water from the Ohio River is treated at the Miller Treatment Plant. This plant, located on the east side of Hamilton County, supplies about 88% of drinking water to GCWW's customers. The Bolton Treatment Plant treats groundwater from 13 wells in the Great Miami Aquifer. It is located in the southern part of Butler County and supplies about 12% of drinking water to GCWW customers.

Service Area Map

- City of Cincinnati (Retail Service Area)
- GCWW Retail Service Areas
- Wholesale Areas
- County Boundaries



Greater Cincinnati Water Works (GCWW) supplies an average of more than 43-billion gallons of water each year through 3,100 miles of water mains to about 240,000 residential and commercial accounts, representing more than 1.1 million customers. The GCWW service area has grown to include the entire City of Cincinnati, most of Hamilton County and parts of Butler, Warren and Clermont Counties in Ohio, and Boone County in Kentucky.

Only your tap water delivers these protective benefits:

PUBLIC HEALTH PROTECTION

A safe water supply is critical to protecting public health. In the United States, water utilities monitor for more than 100 contaminants and must meet close to 90 regulations for water supply and quality.

SPILL PROTECTION

GCWW takes great care to protect your water supply from spills into the Ohio River that may contaminate the drinking water supply. GCWW has the ability to shut down intakes and can utilize stored and supplementary water until the spill passes, and uses its advanced treatment system to remove contaminants.

FIRE PROTECTION

A well-maintained water system is critical in protecting communities from the threat of fire. The same system of water mains, pumps and storage tanks transports water to home faucets and fire hydrants.

Sources of your drinking water

The sources of drinking water - both tap and bottled - 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 (in some cases radioactive material) and can pick up substances resulting from the presence of animals or from human activity. 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 our portion of the Great Miami Aquifer as highly susceptible to contamination due to lack of an overlying protective clay layer, the presence of low levels of nitrate in the groundwater, and the presence of nearby potential contaminant sources.

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 variety of sources such as agriculture, urban stormwater runoff and residential uses;
- 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; and
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Protecting your drinking water

GCWW actively participates in two regional collaborative source water protection programs.

PROTECTION OF THE OHIO RIVER IN THE CINCINNATI AREA

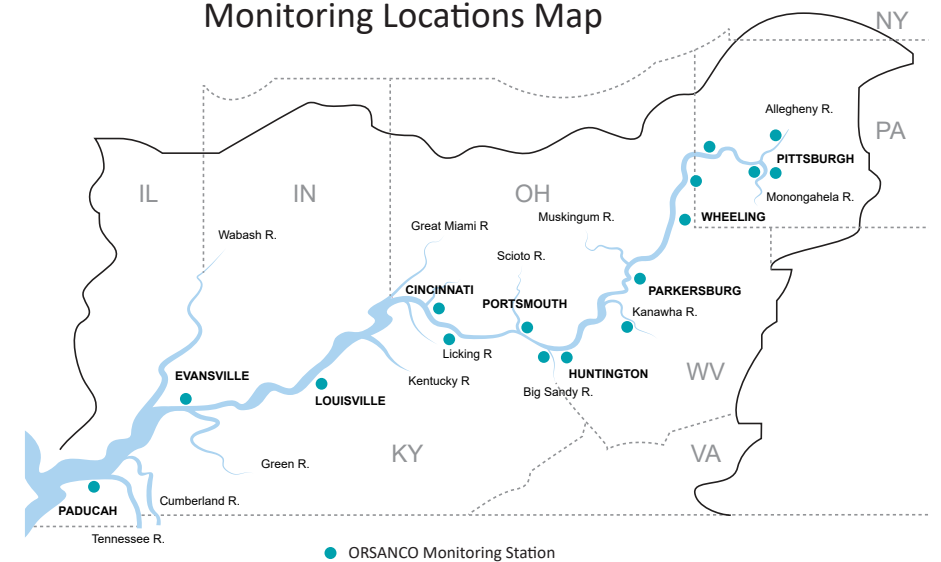
GCWW has partnered with the Northern Kentucky Water District and the Ohio River Valley Water Sanitation Commission (ORSANCO) to implement an Ohio EPA-endorsed source water protection program for the Ohio River near Cincinnati. ORSANCO maintains 16 monitoring stations strategically placed along the Ohio River to detect and warn treatment plants about spills. GCWW participates as one of the monitoring stations for this program.

PROTECTION OF THE GREAT MIAMI BURIED VALLEY AQUIFER

The Hamilton to New Baltimore Groundwater Consortium is comprised of seven public and industrial ground water producers/suppliers in southwest Ohio. The Consortium maintains a network of early-warning monitoring stations, works with facilities that store hazardous substances to minimize the risk of spills, and educates the public on what they can do to protect groundwater.

For more information about source water protection or to find out what you can do to help, visit myGCWW.org, email info@gcww.cincinnati-oh.gov, call GCWW at (513) 591-7700, or call the Groundwater Consortium at (513) 785-2464.

ORSANCO Monitoring Locations Map



GCWW meets or exceeds all state and federal health standards

GCWW is proud to say that our water meets or exceeds every health standard developed by both the USEPA and Ohio EPA. In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount

of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health.

REGULATED CONTAMINANTS

Substances subject to a Maximum Contaminant Level (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.

2018 Report			Miller Water (from the Ohio River)				Bolton Water (from the Great Miami River)				Typical Source of Contamination (for more details, visit www.epa.gov/safewater/hfacts.html)
Substance (Unit)	Maximum Allowed (MCL*)	MCLG*	Highest Compliance Level Detected	Range of Detection	Violation	Year Sampled	Highest Compliance Level Detected	Range of Detection	Violation	Year Sampled	
Fluoride (ppm)	4	4	0.87	0.68-0.98	No	2018	0.88	0.70-0.99	No	2018	Additive which promotes strong teeth. May come from erosion of natural deposits.
Nitrate (ppm)	10	10	1.04	0.40-1.04	No	2018	1.24	na	No	2018	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits.
TTHMs (ppb) [Trihalomethanes] ²	80	na	56.5	11.9-65.9	No	2018	56.5	11.9-65.9	No	2018	Byproduct of drinking water chlorination.
HAA5 (ppb) [Haloacetic Acids] ²	60	na	11.6	4.73-17.0	No	2018	11.6	4.73-17.0	No	2018	Byproduct of drinking water chlorination.
Turbidity (NTU)	TT1 < 1 NTU Max and TT2 < 0.3 NTU 95% of the time	na na	0.25 100% < 0.3 NTU	0.03-0.25	No	2018	nr	nr	No	na	Soil runoff.
Lead ² (ppb)	AL = 15 (the 90th percentile must be less than 15 ppb)	0	90th percentile 7.28 ppb (7 out of 158 samples tested during the most recent compliance period were > the AL) ³	nd-44.7	No	2018	90th percentile 7.28 ppb (7 out of 158 samples tested during the most recent compliance period were > the AL) ³	nd-44.7	No	2018	May come from erosion of natural deposits. There is no detectable lead in our water as it leaves the treatment plants. However, corrosion of household plumbing is a source of lead and copper contamination. GCWW test water samples collected at customer taps, as required by the Safe Drinking Water Act to ensure safe water.
Copper ² (ppm)	AL = 1.3 (the 90th percentile must be less than 1.3 ppm)	1.3	90th percentile 0.024 ppm (0 out of 158 samples tested during the most recent compliance period were > the AL)	nd-0.090	No	2018	90th percentile 0.024 ppm (0 out of 158 samples tested during the most recent compliance period were > the AL)	nd-0.090	No	2018	
Total Organic Carbon	TT ¹	na	2.07	1.85-3.34	No	2018	nr	nr	No	na	Naturally present in the environment.
Total Chlorine ² (ppm)	MRDL = 4	MRDLG = 4	1.09	0.98-1.20	No	2018	1.09	0.98-1.20	No	2018	Water additive used to control microbes.
Barium (ppm)	2	2	0.032	na	No	2018	0.013	na	No	2018	Erosion of natural deposits; Discharge of drilling wastes; Discharge from metal refineries.
Total Coliform Bacteria ² (% positive)	TT (< 5% positive)	na	0.4% ⁴	0-0.4%	No	2018	0.4% ⁴	0-0.4%	No	2018	Naturally present in the environment.

UNREGULATED CONTAMINANTS

Substances for which EPA requires monitoring to determine where certain substances occur and whether it needs to regulate those substances.

2018 Report		Miller Water				Bolton Water				Typical Source of Contamination	
Substance (Unit)	MCLG*	Avg. Level Detected	Range of Detection	Violation	Year Sampled	Avg. Level Detected	Range of Detection	Violation	Year Sampled		
Chloroform (ppb) ²	70	12.8	1.69-37.6	na	2018	12.8	1.69-37.6	na	2018	Byproducts of drinking water disinfection, measured at representative points in the distribution system.	
Bromodichloromethane (ppb) ²	0	9.79	1.98-18.1	na	2018	9.79	1.98-18.1	na	2018		
Dibromochloromethane (ppb) ²	60	9.87	3.79-17.9	na	2018	9.87	3.79-17.9	na	2018		
Bromoform (ppb) ²	0	4.31	0.55-10.9	na	2018	4.31	0.55-10.9	na	2018		
Monochloroacetic Acid (ppb) ²	30	nd	nd-nd	na	2018	nd	nd-nd	na	2018		
Monobromoacetic Acid (ppb) ²	na	2.81	1.16-5.12	na	2018	2.81	1.16-5.12	na	2018		
Dichloroacetic Acid (ppb) ²	0	4.82	1.26-10.1	na	2018	4.82	1.26-10.1	na	2018		
Trichloroacetic Acid (ppb) ²	20	2.57	1.03-4.79	na	2018	2.57	1.03-4.79	na	2018		
Dibromoacetic Acid (ppb) ²	na	2.63	1.01-4.61	na	2018	2.63	1.01-4.61	na	2018		
Sulfate (ppm)	na	57	49-67	na	2018	49	46-51	na	2018		Erosion of natural deposits.
Chlorate (ppb)	na	23	nd-41	na	2013	nd	nd	na	2013		These contaminants were detected during Unregulated Contaminant monitoring. Additional contaminants were monitored and not detected. If you would like additional information on results of unregulated contaminant monitoring, please call (513) 591-7700.
Hexavalent Chromium Dissolved (ppb)	na	0.071	0.048-0.099	na	2013	0.21	0.2-0.22	na	2013		
1,4-Dioxane (ppb)	na	0.326	nd-0.575	na	2013	0.545	0.276-0.814	na	2013		
Molybdenum (ppb)	na	1.6	1.0-2.9	na	2013	4.2	3.5-4.9	na	2013		
Strontium (ppb)	na	204	170-240	na	2013	170	160-180	na	2013		
Vanadium (ppb)	na	0.26	nd-0.56	na	2013	0.64	0.60-0.72	na	2013		

The tables below show the substances detected in GCWW drinking water while performing the most up-to-date monitoring required by the EPA. The Ohio EPA requires GCWW to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Because of this,

some of our data, though accurate, is more than one year old. For a complete listing of GCWW test results and additional water quality information, visit the "About GCWW & Your Water" tab at myGCWW.org or call (513) 591-7700.

Abbreviations

ppb: parts per billion or micrograms per liter **ppm:** parts per million or milligrams per liter **nr:** not regulated **na:** not applicable
NTU: Nephelometric Turbidity Unit, used to measure clarity in drinking water **nd:** not detectable at testing limits **TTHMs:** Total Trihalomethane **HAA5:** Haloacetic Acids

*Definitions

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.

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

Treatment Technique or TT: A required process intended to reduce the level of a contaminant in drinking water.

Maximum Residual Disinfection Level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of 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.

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. As reported in the table, GCWW's highest turbidity result for 2018 was 0.25 NTU (Miller Water) and lowest monthly percentage of samples meeting the turbidity limits was 100%.

The < symbol: 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.

Lead Threshold Level: The concentration of lead in an individual tap water sample. The lead threshold level is exceeded at 15 ppb of lead in an individual tap water sample.

Footnotes

1. The value reported under "Highest Compliance Level Detected" for Total Organic Carbon (TOC) is the lowest ratio between percentage 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. **2.** Miller and Bolton were considered as one distribution system for regulatory purposes by Ohio EPA during 2018. Data listed for each system represents the combined distribution system. **3.** 12 out of 294 samples were found to have lead levels in excess of the lead threshold level⁶ of 15 ppb during 2018: 5 results were between 15-20 ppb; 4 between 20-30 ppb; 2 between 30-40 ppb; 1 between 40-50 ppb. **4.** In 2018, only 1 of 3,132 samples were total coliform positive.

A leader in water quality treatment and technology

GCWW uses state-of-the-art water treatment processes that include multiple barriers to protect public health.

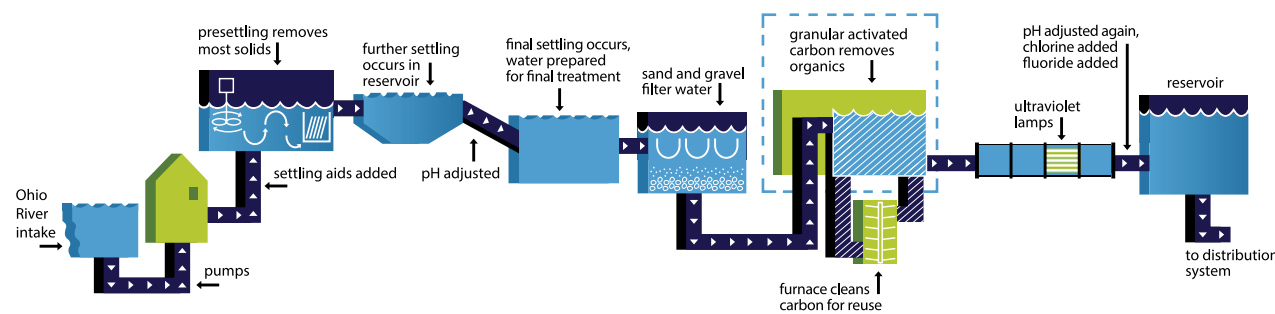
GCWW treatment processes include Sand Filtration, Granular Activated Carbon (GAC), Powdered Activated Carbon (PAC), and ultraviolet (UV) light to remove and treat for natural and man-made contaminants from our drinking water. It is one of the first in the nation to use a combination of all four treatment methods.

GCWW also treats the drinking water specifically to minimize the amount of lead that may leach into the drinking water — this treatment process is called corrosion control. This process ensures there is no lead in the water as it leaves GCWW treatment plants and minimizes the chance that lead can be picked up from home plumbing.

More than 600 daily tests ensure that all the aforementioned treatments are effective.

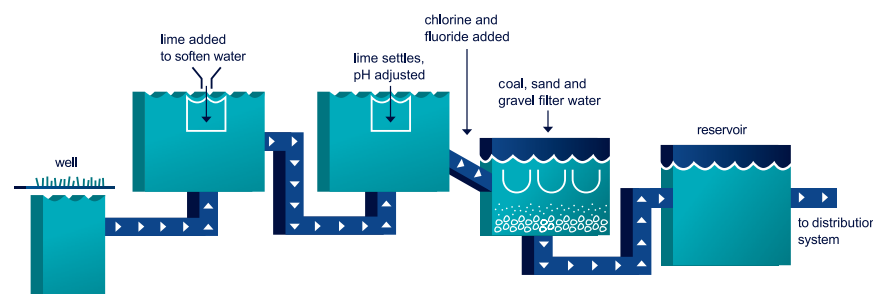
GCWW typically
treats 120
million gallons
of water a day.

TREATMENT PROCESS AT THE MILLER PLANT ON THE OHIO RIVER



Backwash water from the sand filters and plant recycle water is returned to the beginning of the treatment process.

TREATMENT PROCESS AT THE BOLTON PLANT ON THE GREAT MIAMI AQUIFER



GRANULAR ACTIVATED CARBON

GCWW's Miller Treatment Plant is one of only a few water treatment plants in the nation that incorporates granular activated carbon (GAC) with on-site reactivation into its water treatment process. This state-of-the-art technology uses granular carbon, which contains numerous microscopic cavities. When water is passed through the GAC, impurities adhere to the carbon and are removed from the water. Benefits of GAC are: barrier against potential chemical spills in the Ohio River; barrier against impurities in raw source water; less chlorine required for disinfection; reduced disinfection-byproducts; and improved control of taste and odor.

ULTRAVIOLET DISINFECTION

GCWW is the largest water utility in North America to use UV disinfection following rapid sand filtration and GAC adsorption. UV disinfection, which uses rays of intense light to disinfect water, is one of the most effective methods used to protect against microorganisms such as Cryptosporidium. GCWW's rapid sand filtration, granular activated carbon (GAC) and UV treatment processes create a multi-barrier to protect public health.

FREQUENTLY ASKED QUESTIONS

IF THERE ARE REPORTED CONTAMINANTS, HOW CAN MY WATER BE SAFE?

Drinking water, including bottled water, may reasonably be expected to contain small amounts of contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. However, 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 healthcare providers. More information about contaminants and potential health effects can be obtained by calling the United States Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline at (800) 426-4791.

WHAT IS CRYPTOSPORIDIUM?

Cryptosporidium (Crypto) is a microscopic organism, that when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. Crypto is found in surface waters and comes from animal and human waste. GCWW routinely tests for Crypto and did not detect it in our finished water in 2018. GCWW also tested for Crypto in the Ohio River surface water and it was detected in 2 of 12 samples during 2018. 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 at (800) 426-4791.

WHY IS FLUORIDE ADDED TO MY WATER?

Fluoride is added to the water to protect teeth as required by state law passed in 1969. According to the American Dental Association, persons who drink fluoridated water have a 20% to 40% reduction in the amount of cavities that would have occurred without fluoride. Some home filtration devices remove fluoride. Bottled water may not contain fluoride.

WHAT IS THE AMOUNT OF SODIUM IN MY WATER?

GCWW has tested for sodium in treated water as it leaves the treatment plants and has found 20 mg (milligrams) per liter in the Miller Water and 30 mg per liter in the Bolton Water. There are approximately 4 cups in a liter.

IS THERE LEAD IN MY WATER?

There is no detectable lead in drinking water as it leaves the treatment plants. 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. GCWW 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 3 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 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 (800) 426-4791 or at www.epa.gov/safewater/lead. GCWW offers lead information online at lead.myGCWW.org or call the lead hotline (513) 651-LEAD. Our lead program is being used to meet a portion of the notification requirements in OAC Rule 3745-83-02.

SOMETIMES MY WATER IS REDDISH-BROWN. IS THIS SAFE?

The reddish-brown color can be caused by rust from corrosion in GCWW's pipes, the pipes in your home or from corrosion in your home's water heater. If you have rusty water, try running cold water for several minutes. If you have questions or your laundry is stained from rusty water, call GCWW at (513) 591-7700. We will deliver a laundry aid to remove the rust. Do NOT put stained laundry in the dryer.

WHY DOES DRINKING WATER SOMETIMES LOOK CLOUDY?

Cloudy water that clears quickly from the bottom up is caused by tiny air bubbles in the water similar to gas bubbles in soda. After a while, 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 water.

HOW HARD IS GCWW'S WATER?

Hard water is water that contains more minerals, such as calcium and magnesium. Water from GCWW's Miller Plant has an average hardness of 115 mg per liter or 7 grains per gallon. Water from the Bolton Plant averages 134 mg per liter or 8 grains per gallon. Hardness does not affect the safety of water.



Contact Us

For more information about water quality, customer billing, or to request additional copies or submit comments about this report, call (513) 591-7700 or visit myGCWW.org.

For more information about ...

Lead Awareness: lead.myGCWW.org | (513) 651-LEAD (5323)

USEPA Safe Drinking Water Hotline: water.epa.gov | (800) 426-4791

The Food and Drug administration (FDA): www.fda.gov | (888) 723-3366

National Sanitation Foundation (NSF): www.nsf.org | (800) 673-8010

Participate in water decisions by attending the following meetings:

- **City of Cincinnati Council** — www.cincinnati-oh.gov | (513) 352-3246
- **ORSANCO** — www.orsanco.org | (513) 231-7719
- **OKI Regional Council of Governments Groundwater Committee** — (513) 621-6300

Educational Resources

Two online Teacher Resource areas are available for teachers, students and parents. These sites are full of educational resources, videos, activity ideas, links, and more -- schedule a group tour of the Water Museum or Historic Old River Station online as well!

Water Quality:

www.cincinnati-oh.gov/water/about-greater-cincinnati-water-works/teacher-resources

Stormwater:

www.cincinnati-oh.gov/stormwater/teacher-resources

Notice Under the ADA

The City of Cincinnati will not discriminate against qualified individuals with disabilities in its programs, services, or activities. If you require any special accommodations or communication aids visit www.cincinnati-oh.gov/manager/ada.

City of Cincinnati is an Equal Opportunity/Affirmative Action Employer.

GCWW has a current unconditioned license to operate.

This report meets the Ohio and USEPA's National Primary Drinking Water Regulation for Consumer Confidence Reports.

