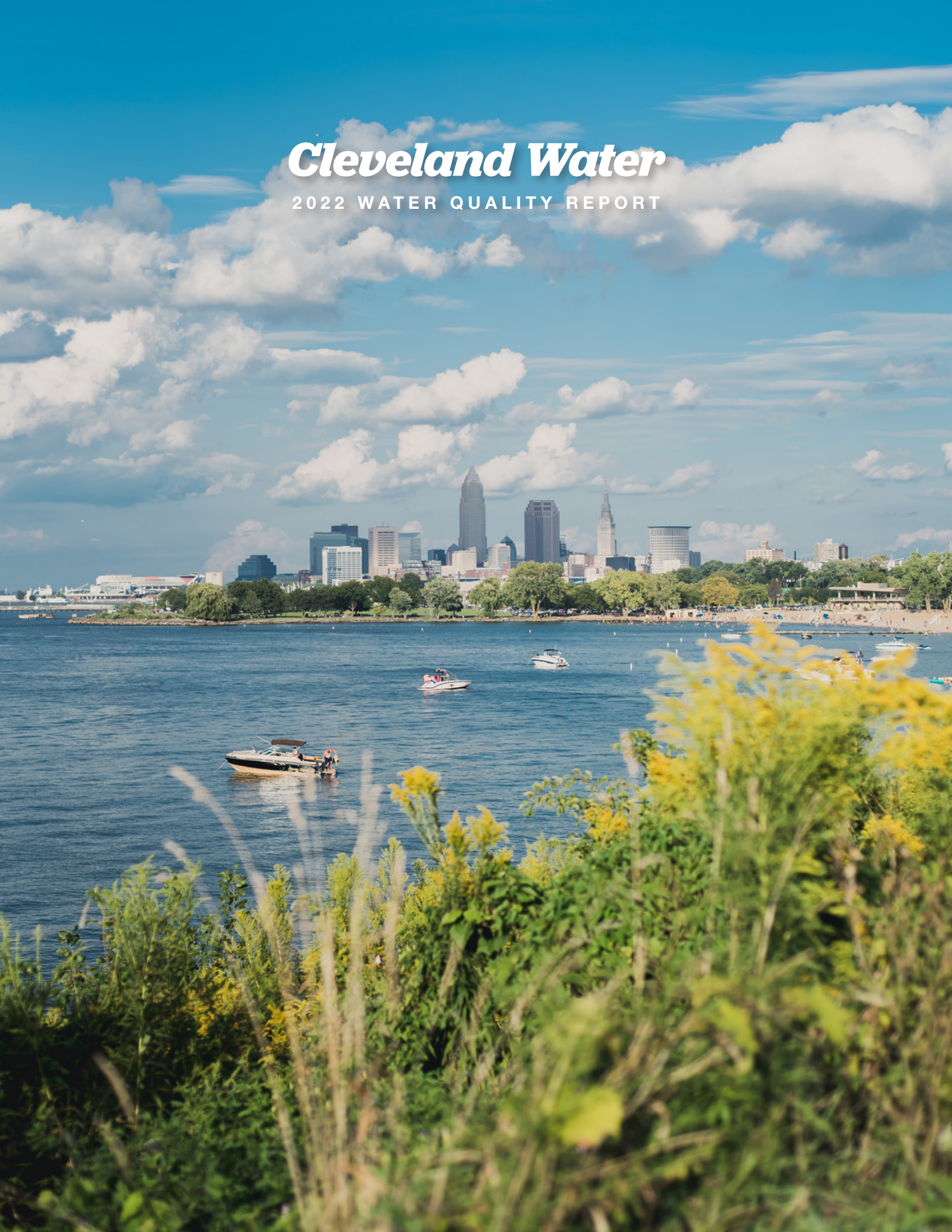


Cleveland Water

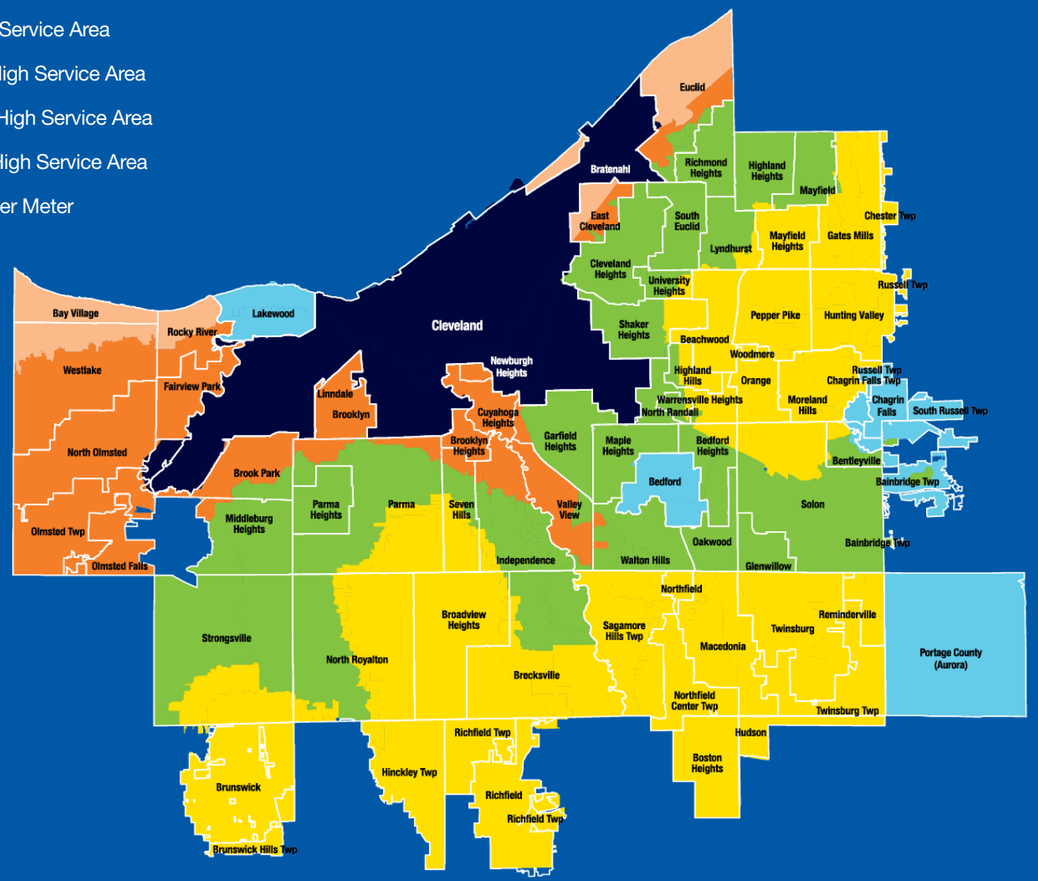
2022 WATER QUALITY REPORT

OUR SERVICE AREA

LEGEND

City & Suburbs

- Cleveland
- Low Service Area
- 1st High Service Area
- 2nd High Service Area
- 3rd High Service Area
- Master Meter



Cleveland Water provides direct, or retail, water service to 70 cities, townships, and villages; wholesale water service to 7 cities; and emergency backup water service to 3 communities. These communities are divided into 4 zones based on elevation relative to Lake Erie that determine the water rates for customers.

Martin J. Keane

Alex Margevicius

AT YOUR SERVICE

At Cleveland Water, we take seriously our role as a public service organization that provides essential services to our community. Safe, reliable water plays a vital role in all our daily lives, keeping our community healthy, supporting our economy, and contributing to our overall quality of life.

Since our founding in 1856, our top priority has always been the health and safety of our 1.4 million customers who depend on us to deliver quality water every day. Our mission is to provide customers with a reliable supply of safe drinking water and great customer service at an affordable price while embracing principles of environmental stewardship, openness, equity, and accountability.

This report contains important information about the quality of your drinking water. Included in this report is general health information, water quality test results, how to participate in decisions concerning your drinking water, and water system contacts. **In 2022, as in previous years, Cleveland Water met or surpassed all applicable federal and state drinking water standards.** In 2022, we had an unconditioned license to operate our water system issued by the Ohio Environmental Protection Agency (Ohio EPA).

Martin J. Keane
Director, Department of Public Utilities

Alex Margevicius
Commissioner, Cleveland Water

Cleveland Water
FAST FACTS

- **1.4 MILLION** customers
- **21** water tanks and towers
- **200+ MILLION** gallons of water produced each day
- **80** communities served
- **4** water treatment plants
- **5,300 MILES** of water mains
- **10th LARGEST** water system in the US and largest in Ohio
- **17** pump stations
- **$70 MILLION** per year invested in infrastructure

LAKE ERIE: OUR SOURCE OF DRINKING WATER

Cleveland Water gets its drinking water from Lake Erie, a surface water source. Cleveland Water has four water intakes that pull water from Lake Erie's Central Basin and send it to our four water treatment plants. These intakes are spread out over 15 miles and are 3 to 5 miles offshore where the water is cleaner and is less impacted by tributary runoff and coastal activities.

Our 1.4 million customers are part of the more than 11 million people who rely on Lake Erie as their source of drinking water. That's why being an environmental steward of Lake Erie is part of our mission. Keeping our source water clean is the first step in providing affordable, safe water to your tap. Protecting our drinking water source from contamination is also the responsibility of area residents. Here are some simple actions customers can take to help protect Lake Erie.

- Install a rain barrel to collect and reuse water runoff from your house, which can reduce your water bill and reduces stormwater runoff.
- 93% of debris on Lake Erie beaches is plastic. Reduce your use of disposable, single-use plastics by replacing items like grocery bags and to-go utensils with reusable options.
- Pick up litter and debris in your yard and community, including pet waste. By doing so, you're not only keeping your neighborhood beautiful, you're also keeping trash out of your local waterways and Lake Erie.
- Use pesticides and fertilizers carefully and sparingly. Get a soil test or check your soil type to determine what types of nutrients, if any, your soil needs before applying fertilizer to your lawn or garden.
- Properly dispose of hazardous household chemicals and medications. Follow your community's trash collection guidelines and look for local hazardous waste drop-off or collection events for safe disposal of things like pesticides, motor oil, and oil-based paint.
- Landscape with native plants and trees. Native plants are good for local wildlife and are easier and less costly to maintain since they are adapted to the Ohio climate.
- Plant trees, grass, or shrubs to prevent soil erosion and reduce impermeable surfaces. Every tree that is planted in a watershed can reduce stormwater runoff by 1,000 gallons per year, which reduces stress on sewer infrastructure.
- Get involved with local watershed groups and other organizations dedicated to protecting the environment. Visit ohiowatersheds.osu.edu/watershed-groups to find one near you.

Ohio EPA Source Water Assessment

The state of Ohio performed an assessment of our four water intakes in the late 1990s. An updated Drinking Water Source Assessment and Protection Report was completed by Cleveland Water and Ohio EPA in July 2021. For the purposes of source water assessments, all surface waters are considered to be susceptible to contamination. By their nature, surface waters are accessible and can be easily contaminated by chemicals and pathogens from an upstream spill. Because Cleveland Water's intakes are located a considerable distance offshore, potential contamination from the Cuyahoga River and nearshore sources is minimized to a great degree. As a result, Ohio EPA considers Cleveland Water's source water (Lake Erie) to have a low susceptibility to contamination due to the location of our intakes.

Cleveland Water public water system treats the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. To address this, Cleveland Water uses the multiple barrier approach for protecting and treating our source water. Protection of source water is one of the barriers we use. The potential for water quality impacts can be further decreased by implementing measures to protect Lake Erie. More detailed information is provide in the Cleveland Water Drinking Water Source Assessment Report which can be obtained by calling our Risk Management Section at **216.664.2444 x 75838**.

Cleveland Water has interconnections with other area water systems, which are for emergency use only. These interconnections are designed for Cleveland Water to assist other water systems if needed. We received no emergency water in 2022.

THE WATER TREATMENT PROCESS

Cleveland Water uses a conventional treatment process at all four of our plants to ensure our water meets federal and state requirements as well as the higher industry standards of the Partnership for Safe Water. This process involves the primary steps of coagulation, flocculation, sedimentation, filtration, disinfection, and finishing to remove dirt, debris, bacteria, viruses, and other organic and inorganic materials from lake water and turn it into clean, safe drinking water.

TREATMENT CHEMICALS

A POTASSIUM PERMANGANATE
An oxidant that is added to condition the water so that coagulation and filtration can more effectively remove particulates.

B POWDERED ACTIVATED CARBON, "PAC"
Absorbs of organic material that can cause unpleasant tastes and odors.

C ALUMINUM SULFATE, "ALUM"
Added as a coagulant to help small particles stick together so that they can be removed more easily.

D SODIUM HYPOCHLORITE, "CHLORINE"
Added for disinfection. It must remain in contact with the water for prescribed amounts of time to ensure that bacteria, viruses, and other microbes are killed.

E HYDROFLUOSILICIC ACID, "FLUORIDE"
Added to promote good dental health.

F PHOSPHORIC ACID "ORTHOPHOSPHATE"
Inhibits lead corrosion of plumbing fixtures by forming a protective coating on the inside of pipes and plumbing, reducing the likelihood of lead dissolving into the water.

G SODIUM HYDROXIDE
Added as needed to raise the pH of the water to help reduce corrosion of metals like lead and ensure the efficacy of other chemicals.

TREATMENT STEPS/PROCESS

1 CRIB
Located 3 to 5 miles offshore in Lake Erie, a crib protects the top of the pipe into which lake water flows.

2 INTAKE TUNNEL
50-feet below the bed of Lake Erie, the intake tunnel brings water into the treatment plant.

3 SCREENS
Screens filter out mussel shells, fish, and other large debris before the water enters the treatment process.

4 RAW WATER PUMPS
Pumps move water from Lake Erie through the treatment process.

5 RAPID MIX
Quickly mixes treatment chemicals that help microscopic particles clump together into the water.

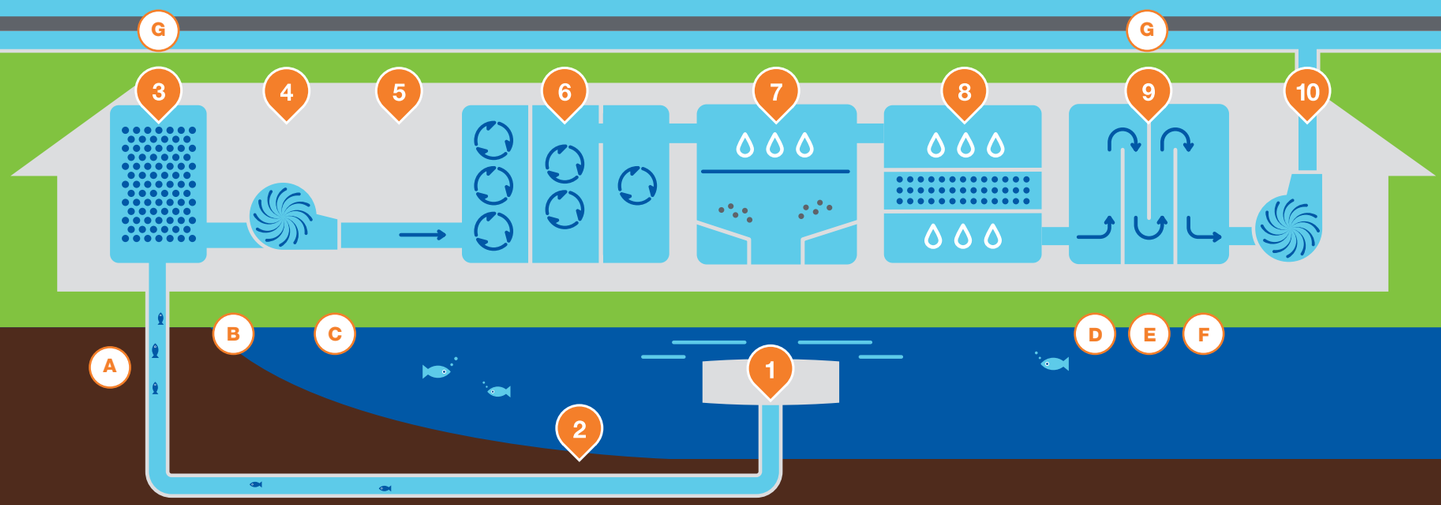
6 FLOCCULATION
Moves the water through three stages of decreasing speed to allow organic and inorganic material to clump together as floc.

7 SEDIMENTATION
Water moves slowly through large settling basins where heavy clumps of floc settle to the bottom to be removed from the water.

8 FILTRATION
Gravity pulls water through filters made of two feet of anthracite over one foot of sand to remove finer impurities.

9 DISINFECTION & FINISHING
Ingredients that kill pathogens, protect dental health, and prevent pipe corrosion are added. Then water slowly moves through the finished water reservoir to ensure chlorine has adequate time to kill all pathogens.

10 TESTING & PUMPING
The finished water is tested to ensure it is safe to drink before it's pumped through the distribution system to customers.



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 stormwater 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 stormwater runoff, and residential uses;

D. 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;

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, USEPA prescribes regulations which 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 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**).

Who needs to take special precautions?

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 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**).

ABOUT YOUR DRINKING WATER: WATER QUALITY MONITORING & TESTING

In order to ensure that tap water is safe to drink, US EPA establishes drinking water standards and regulations for public water systems like Cleveland Water. The US EPA sets legal limits on drinking water contaminants that reflect the level that protects human health and that water systems can achieve using the best available technology. EPA rules also set water testing schedules and methods required for licensing.

The federal Safe Drinking Water Act (SDWA) allows individual states to set and enforce their own drinking water standards that are at least as stringent as EPA's national standards. Ohio EPA implements both state and federal drinking water laws and regulations adopted under the SDWA and ensures compliance.

To make sure we're meeting these standards and regulations, we test our water nearly 200,000 times per year. We continuously monitor more than 20,000 parameters of the water treatment process to ensure each of our four plants is functioning properly. We also collect more than 350 samples each month from across our distribution system to ensure the water remains safe after it has left our plants.

In total, Cleveland Water monitors for more than 200 regulated and unregulated contaminants, the significant majority of which are not detected. The Table of Detected Contaminants shows the types and levels of substances found at our plants in comparison to regulatory limits. The Table of Unregulated Contaminants shows substances that we tested for as part of a US EPA program to determine whether the US EPA needs to establish regulatory limits. The Average Chemical Values Table shows unregulated or undetected substances we regularly test for informational purposes.

Throughout 2022, we conducted sampling for bacteria, and for inorganic, synthetic organic, and volatile organic contaminants. We were not required to monitor for radiological parameters. 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.

Many substances that we test for do not appear in this report because they are not found in your drinking water, including cyanotoxins and PFAS. We have been monitoring for cyanotoxins in source and finished water since 2010. Cyanotoxins have never been detected in our finished water, therefore results are not included in this report. We have also tested for the six main PFAS chemicals in our source water and finished drinking water numerous times. There has not been a reportable detection level for any PFAS chemicals in nearly 300 tests. In 2020, Cleveland Water 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. For more information about PFAS, please visit **pfas.ohio.gov**

If you have questions about our water quality monitoring methods or parameters please call our Water Quality Line at **216.664.2639** or visit our website.

TABLE OF DETECTED CONTAMINANTS

This table shows information on those contaminants found in Cleveland Water's drinking water at each of our four treatment plants. The types and levels of contaminants are shown in comparison to regulatory limits set by Ohio EPA. Typical sources for each contaminant are also shown. Substances that were tested for but not detected are not included. The results were either collected during 2022 or were used for compliance in 2022. TTHMs, HAA5s, and TOC also include 9 months of 2021 data as required for the compliance calculations. **In 2022, Cleveland Water met or exceeded all regulatory requirements and had no violations.**

Abbreviations

AL = Action Level
MCL = Maximum Contaminant Level
µg/L = Micrograms per Liter
MCLG = Maximum Contaminant Level Goal
NTU = Nephelometric Turbidity Units
MRDL = Maximum Residual Disinfectant Level
MRDLG = Maximum Residual Disinfectant Level Goal
n/a = not applicable
ND = Not Detected
ppm = parts per million
ppb = parts per billion
< = less than
TT = Treatment Technique

	Contaminants (Units) [Typical Sources in Drinking Water]	Year Sampled	MCLG	MCL	BALDWIN			CROWN			MORGAN			NOTTINGHAM		
					Level Found	Range of Detections	Violation	Level Found	Range of Detections	Violation	Level Found	Range of Detections	Violation	Level Found	Range of Detections	Violation
Microbiological	**Turbidity* (NTU)** [soil runoff]	2022	n/a	"TT (< 1 NTU)"	0.14	0.02 - 0.14	No	0.08	0.03 - 0.08	No	0.1	0.04 - 0.10	No	0.25	0.02 - 0.25	No
	Turbidity* (% meeting standard) [soil runoff]	2022	n/a	TT (%)	100% compliant	n/a	No	100% compliant	n/a	No	100% compliant	n/a	No	100% compliant	n/a	No
Inorganic	**Fluoride (ppm)** [water additive which promotes dental health]	2022	4	4	1.01	0.82 - 1.26	No	0.97	0.72 - 1.17	No	1.01	0.80 - 1.20	No	0.99	0.80 - 1.25	No
	Nitrate as Nitrogen (ppm) [runoff from farm fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits]	2022	10	10	0.64	ND - 0.64	No	0.84	ND - 0.84	No	0.52	ND - 0.52	No	0.86	ND - 0.86	No
	Cyanide# (µg/L) [discharge from plastic and fertilizer factories]	2022	200	200	ND	n/a	No	ND	n/a	No	ND	n/a	No	12	0-12	No
Organic	**Total Trihalomethanes^ (TTHM) (ppb)** [byproduct of drinking water chlorination]	2022	n/a	80	35.88	10.40 - 47.70	No	35.88	10.40 - 47.70	No	35.88	10.40 - 47.70	No	35.88	10.40 - 47.70	No
	Haloacetic Acids^ (HAA5) (ppb) [byproduct of drinking water chlorination]	2022	n/a	60	19.6	6.6 - 20.30	No	19.6	6.6 - 20.30	No	19.6	6.6 - 20.30	No	19.6	6.6 - 20.30	No
	Total Organic Carbon† [naturally present in the environment]	2022	n/a	TT	1.45	1.37 - 1.61	No	1.37	1.31 - 1.46	No	1.52	1.51 - 1.61	No	1.34	1.27 - 1.40	No
Disinfectant	**Total Chlorine (ppm)** [Water additive used to control microbes]	2022	MRDLG 4	MRDL 4	1.13	1.03 - 1.23	No	1.12	1.03 - 1.21	No	1.16	1.08 - 1.26	No	1.21	1.15 - 1.32	No

* Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. 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 for each of our water treatment plants. As reported above, Cleveland Water's highest recorded turbidity result for 2022 was 0.25 NTU and we met the turbidity limits 100% of the time.

The reported value for Cyanide is 200 µg/L, which is barely above the ability for the laboratory to measure it (10 µg/L). The MCL is 200 µg/L or 17 times higher than what was measured. We have not had a cyanide detection in many years, and our other 3 plants had no detection. While the result for Nottingham is legitimate, we believe it to be an anomaly with no apparent cause. Future monitoring will determine if this result requires further investigation.

^Cleveland Water has a combined distribution system. Data listed represents this and therefore is identical for each treatment plant.

† The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest running annual average ratio between the percent of TOC actually removed to the percent of TOC required to be removed. A value of greater than one (1) indicates compliance with TOC removal requirements. A value of less than one (1) indicates a violation of TOC removal requirements. The values reported under "Range of Detection" is the lowest monthly ratio to the highest monthly ratio.

UNREGULATED CONTAMINANTS

Unregulated contaminants are substances for which USEPA has not established drinking water standards. USEPA requires public water systems to monitor these substances in order to determine where certain substances occur and whether the USEPA needs to regulate those substances in the future. Between December 2018 and September 2019, Cleveland Water participated in the fourth round of the Unregulated Contaminant Monitoring Rule (UCMR4). Contaminants in the below table were detected during UCMR4. Additional contaminants were monitored and not detected. For additional information on UCMR4 results, please call the Cleveland Water Quality line at 216-664-2639. More information about UCMR monitoring requirements can be found on the USEPA website: **epa.gov/dwucmr**

	Contaminants (Units) [Typical Sources in Drinking Water]	Year(s) Sampled	MCLG	Level Found	Range of Detections	Sample Location
Unregulated Contaminant Monitoring Rule (UCMR4)	**Manganese (ppb)** [naturally occurring in water]	2018-19	n/a	1.13	ND - 3.8	Raw Water
	Germanium (ppb) [naturally occurring in water]	2018-19	n/a	0.073	ND - 1.15	Raw Water
	Total Organic Carbon (ppb) [naturally present in the environment]	2018-19	n/a	2133	1860 - 2290	Raw Water
	Bromide (ppb) [naturally occurring in water]	2018-19	n/a	31.1	26.1 - 35.1	Raw Water
	Haloacetic Acids (HAA5) (ppb) [byproducts of drinking water disinfection]	2018-19	n/a	13.2	7. 0 - 22.53	Distribution System
	Haloacetic Acids (HAA9) (ppb) [byproducts of drinking water disinfection]	2018-19	n/a	20.49	11.99 - 32.63	Distribution System
	Haloacetic Acids (HAA6Br) (ppb) [byproducts of drinking water disinfection]	2018-19	n/a	7.97	5.38 - 11.18	Distribution System
Unregulated Contaminants	**Bromodichloromethane (ppb)** [byproducts of drinking water disinfection]	2022	n/a	4.5	3.5 - 5.8	Entry Point
	Chloroform (ppb) [byproducts of drinking water disinfection]	2022	n/a	4	2.7 - 5.8	Entry Point
	Dibromochloromethane (ppb) [byproducts of drinking water disinfection]	2022	n/a	1.93	1.7 - 2.1	Entry Point

Definitions and Notes for Average Chemical Values Table (right)

ND = Not Detected; NR = Not Regulated; NA = Not Applicable; NM = Not Monitored this year

[1] EPA considers 50 pCi/L to the level of concern for beta emitters and an MCL of 4 mrems/year
[2] Up to 5% monthly of all samples can be positive.
[3] Nephelometric Turbidity Unit - 95% of all samples taken must be less than 0.3 NTU and no sample may be above 1 NTU.
[4] Treatment technique required rather than the necessity to meet a Maximum Contaminant Level. Required to be > 1.0
[5] Based on first draw samples from customer taps. These are Action Levels rather than Maximum Contaminant Levels.
[6] Ohio EPA considers 0.05 mg/L to be an aesthetic concern, 0.3 mg/L to be a health concern to infants, and 0.3 mg.L for 10 days or 1.0 mg/L for one day to be a health concern to all persons.
[7] Cyanide was not detected at 3 plants, one sample at the Nottingham plant was barely above the instrument detection level and is questionable. Lake Erie raw Sulfate (SO4) level ~ 24 mg/L; treated SO4 ranges from 28-40 mg/L, usually 35-40 mg/L

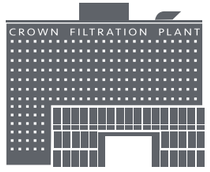
AVERAGE CHEMICAL VALUES

Contaminant	MCL	Cleveland Water	Contaminant	MCL	Cleveland Water
Volatile Organics			**Synthetic Organics**		
Benzene	0.005	ND	Alachlor	0.002	ND
Bromobenzene	NR	ND	Atrazine	0.003	ND
Bromochloromethane	NR	ND	Simazine	0.004	ND
Bromomethane	NR	ND	**Inorganics**		
Carbon tetrachloride	0.005	ND	Aluminum (Secondary MCL)	0.05-0.2	ND
(mono) Chlorobenzene	0.1	ND	Antimony	0.006	ND
Chloroethane	NR	ND	Arsenic	0.01	ND
Chloromethane	NR	ND	Barium	2	ND
2-Chlorotolulene	NR	ND	Berylium	0.004	ND
4-Chlorotoluene	NR	ND	Cadmium	0.005	ND
Dibromomethane	NR	ND	Chromium	0.1	ND
1,2-Dichlorobenzene (o-dichlorobenzene)	0.6	ND	Copper (90th percentile)[5]	1.3	0.1
1,3-Dichlorobenzene (m-dichlorobenzene)	NR	ND	Cyanide[7]	0.2	0
1,4-Dichlorobenzene (p-dichlorobenzene)	0.075	ND	Fluoride	4	0.99
Dichlorodifluoromethane	NR	ND	Iron	NR	ND
1,1-Dichloroethane	NR	ND	Lead (90th percentile)[5]	0.015	0.00228
1,2-Dichloroethane (-ethylene)	0.005	ND	Manganese[6]	0.05/0.3/1.0	ND
1,1-Dichloroethene (-ethylene)	0.007	ND	Mercury	0.002	ND
cis-1,2-Dichloroethene (-ethylene)	0.07	ND	Molybdenum	NR	NA
trans-1,2-Dichloroethene (-ethylene)	0.1	ND	Nickel	NR	ND
Dichloromethane	0.005	ND	Nitrate	10	0.36
1,2-Dichloropropane	0.005	ND	Potassium	NR	NM
1,3-Dichloropropane	NR	ND	Selenium	0.05	ND
2,2-Dichloropropane	NR	ND	Silica	NR	1.8
1,1-Dichloropropene	NR	ND	Silver (Secondary MCL)	0.1	NA
1,3-Dichloropropene	NR	NA	Sodium	NR	8.4
Ethylbenzene	0.7	ND	Strontium	NR	NA
Hexachlorobutadiene	NR	ND	Thallium	0.002	ND
Isopropylbenzene	NR	ND	Vanadium	NR	NM
4-Isopropyltoluene	NR	ND	Zinc (Secondary MCL)	5	ND
Napthalene	NR	ND	**Miscellaneous**		
n-Propylbenzene	NR	ND	Chloride	250	13.3
Styrene	0.1	ND	Total Dissolved Solids	500	150
1,1,1,2-Tetrachloroethane	NR	ND	Odor (Threshold Odor No.)	3	NA
1,1,2,2-Tetrachlorethane	NR	ND	Magnesium	NR	7.8
Toluene	1	ND	Calcium	NR	32
1,1,1-Trichloroethane	0.2	ND	Total Organic Carbon[4]	TT	1.42
Tetrachloroethene (-ethylene)	0.005	ND	pH	> 7.0	7.1 - 7.7, ave. 7.32
1,2,3-Trichlorobenzene	NR	ND	Alkalinity	NR	83
1,2,4-Trichlorobenzene	0.07	ND	Orthophosphate	> 0.8	0.87-1.56, ave. 1.19
Trichloroethene	0.005	ND	Hardness (as CaCO3)	NR	113-125, ave. 118
1,1,2-Trichloroethane	0.005	ND	Turbidity (NTU)[3]	0.3	0.04
Trichlorofluoromethane	NR	ND	Total Coliform[2]	< 5%	0.00%
1,2,3-Trichloropropane	NR	ND	**Disinfection Byproducts**		
Vinyl chloride	0.002	ND	Total Trihalomethanes	0.08	0.026
Xylenes, total	10	ND	Haloacetic Acids 5	0.06	0.015
Bromodichloromethane	NR	0.0045	**Radionuclides**		
Chloroform	NR	0.004	Beta Emitters (pCi/L)[1]	50	NM
Dibromochloromethane	NR	0.0019	Alpha Emitters (pCi/L)	15	NM
Results and MCLs in ppm unless noted			Radium 226/228 (pCi/L)	5	NM

PARTNERSHIP FOR SAFE WATER

Our dedication to public health and safety means we hold ourselves to a higher standard than what's required. Cleveland Water participates in the Partnership for Safe Water. The Partnership is a voluntary effort between six drinking water organizations and more than 250 water utilities to maintain higher water quality standards than those required by law.

As part of our participation in the Partnership, we conduct annual performance and operational assessments of all four of our water treatment plants. These assessments are peer-reviewed by a team of utility peers and optimization experts to determine whether the information meets the criteria for advanced certification. The Director's Award, also called Phase III certification, establishes utilities as high-performing providers of safe drinking water. The Excellence Award, or Phase IV certification, recognizes treatment plants that have achieved the highest possible levels of performance and demonstrate full optimization.



Crown Water Treatment Plant

- Phase 3 certification 2004 to present.
- Phase 4 certification 2014 to present.
- In operation since 1958
- Averaging 41.4 million gallons of water made daily

Garrett A. Morgan Water Treatment Plant

- Phase 3 certification 2004 to present.
- In operation since 1918
- Averages 41 million gallons of water made daily

Baldwin Water Treatment Plant

- Phase 3 certification 2006 to present.
- In operation since 1925
- Averages 60.6 million gallons of water made daily

Nottingham Water Treatment Plant

- Phase 3 certification 1997 to present.
- In operation since 1951
- Averages 58.4 million gallons of water made daily

DEFINITIONS OF SOME TERMS CONTAINED WITHIN THIS REPORT

Contaminant: Anything in the water that is not a water molecule (H2O), including naturally occurring elements or compounds like calcium and magnesium.

Maximum Contaminant Level (MCL): 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.

Maximum Contaminant Level Goal (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 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.

Maximum Residual Disinfectant Level Goal (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.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Applies to lead and copper monitoring

Lead Threshold Level (LTL): The concentration of lead in an individual tap water sample that is at or greater than 0.015 ppm.

Master Meter: A master meter is one that connects a wholesale public water system to consecutive public water system(s). This type of meter monitors the amount of water being sent to the consecutive system(s) and can also be used to determine the quality of water being delivered to the consecutive system(s).

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

Turbidity: A measure of the cloudiness of water and an indication of the effectiveness of filtration. Measured in Nephelometric Turbidity Units(NTU).

Parts per Million (ppm) or milligrams per Liter (mg/L): Units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.

Parts per Billion (ppb) or micrograms per Liter (µg/L): Units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Parts per Trillion (ppt) or nanograms per Liter (ng/L): Units of measure for concentration of a contaminant. A part per trillion corresponds to one second in 31,500 years.

PFAS: Per- and polyfluoroalkyl substances (PFAS): A group of man-made chemicals applied to many industrial, commercial, and consumer products to make them waterproof, stain resistant, or nonstick. PFAS are also used in products like cosmetics, fast food packaging, and a type of firefighting foam called aqueous film forming foam (AFFF) which are used mainly on large spills of flammable liquids, such as jet fuel. PFAS are classified as contaminants of emerging concern, meaning that research into the harm they may cause to human health is still ongoing.

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.

Putting in it Perspective

1 ppm = four drops of water in a 55 gallon rain barrel.

1 ppb = 1 drop in a 30-foot diameter 4-foot deep swimming pool (21,000 gallons)

1 ppt = 2.3 rain barrels of water in all of Lake Erie's 127.7 trillion gallons.

LEAD INFORMATION

Cleveland Water customers can be confident that the water delivered to your home is safe. While some homes and buildings in our service area have lead service lines or plumbing that contains lead, we take several actions to protect you and your family from the risk of lead in drinking water.

Add Orthophosphate: We add orthophosphate during the water treatment process. It forms a protective coating on the inside of pipes and plumbing, reducing the likelihood of lead dissolving into the water.

Control pH: We control corrosion by keeping the pH of water leaving our treatment plants above 7.

Replace: We replace lead service lines during main replacement and repair projects.

Monitor: We regularly test the water in homes with lead in plumbing to ensure our efforts are effective. See additional information below.

Research: We are researching innovative and cost-saving ways to identify lead service lines in order to develop a complete and accurate inventory.

Educate: We provide resources to educate customers on how to identify in-home sources of lead and reduce the risk of exposure to lead if present.

Lead and Copper Monitoring

Cleveland Water regularly monitors for lead and copper at homes in our service area that meet Tier 1 requirements. The results shown below are the most recent compliance results from water samples taken between June and September 2021. Our monitoring results have been below the federal action level for lead of 15 part per billion (ppb) for 25 years. These consistently low levels are the result successful water treatment techniques and enable us to be on a reduced monitoring schedule.

For lead, the action level is exceeded if the concentration of lead in more than 10% of tap water samples collected during the monitoring period is greater than 0.015 ppm. For copper, the action level is exceeded if the concentration of lead in more than 10% of tap water samples collected during the monitoring period is greater than 1.3 ppm.

Contaminants (Units) [Typical Source of Contaminant]		Year Sampled	Action Level (AL)	Individual Results over AL	90% of test levels were less than	Violation
Lead and Copper	**Lead (ppb)** [corrosion of household plumbing; erosion of natural deposits] [soil runoff]	2021	15	0	2.28	No
		0 out of 58 samples were found to have lead levels in excess of the lead action level of 15 ppb.				
	Copper (ppm) [corrosion of household plumbing; erosion of natural deposits]	2021	1.3	0	0.1	No
		0 out of 58 samples were found to have copper levels in excess of the lead action level of 1.3 ppb.				

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. Cleveland Water 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 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 at **800.426.4791** or at **http://www.epa.gov/safewater/lead**

There are simple actions you can take to know the potential for lead in your home's plumbing and, if present, reduce the risk of exposure to lead in drinking water.

Check: Check the type of material your city-owned service line is made from using the Lead Lookup Tool at **clevelandwater.com/lead**

Test: Use the magnet and penny test to determine what type of material your customer-side service line is made from and record the results at **clevelandwater.com/lead**

Date: Know the date of installation of the plumbing in your home to help you understand the risk of lead exposure through pipes, solder, faucets, and fixtures. Plumbing or fixtures installed before 1986 could contain lead, as could and faucets manufactured between 1986 and 2014.

Clean, Flush and Consume Cold are the actions all customers should implement to help ensure the highest quality of water is coming out of your tap, especially if there is the possibility of lead in your plumbing system. In some situations, a water system repair/replacement may temporarily increase lead levels in water and/or cause discoloration. As a standard practice the USEPA recommends these actions (clean, flush, consume cold) which are important to take when water has been restored after a disruption of service.

Clean: Clean your faucet aerators screens regularly. Small particles of solder and other material can accumulate in faucet aerators and in some circumstances can release lead into the water. Aerators should be cleaned at least twice a year and after work on your plumbing.

Flush: Flush your cold water lines before consuming water when water has not been used for 6 or more hours. The goal is to have cold, fresh water from the main in the street come out of your tap before drinking the water. To flush the plumbing, run water until you feel a temperature change then run water for an additional 30 seconds to 3 minutes. The time depends on the length and diameter of your service line. The farther your home is from the street, the longer you need to flush. **When in doubt, flush it out.**

Consume Cold: Always use cold water for cooking, drinking and preparing baby formula. Hot water corrodes pipes faster and is more likely to contain lead. If you need hot water for food or drinks, get water from the cold water tap then heat the water.

For additional information about lead, visit drinktap.org or epa.gov/safewater/lead, or call the National Lead Center at 1.800.424.LEAD.

FAQS

Why does my water looks cloudy?

Milky or cloudy looking water is usually the result of tiny air bubbles and occurs more often during cold weather. Cold water holds more oxygen than warm water. When cold water enters your home from the pipe outside and warms up, the extra oxygen escapes in the form of tiny bubbles when you turn on the tap. If you fill a glass with water, and the cloudiness disappears from bottom to top in a few minutes, it is air bubbles.

What can cause discolored water and what should I do about it?

Discolored water is common whenever the water velocity or flow direction changes, like during hydrant flushing or repair work on water mains. Iron sediment from cast iron mains is picked up by the water and shows up as orange or brown discoloration. In these situations, the water is safe to drink. However, you should avoid doing laundry as the iron sediment can stain light-colored clothing. Once any work or flushing is complete, run your cold water faucet until the water is clear again.

Do I need to filter the water coming into my house?

No. We take great pride in consistently delivering safe, high-quality water to our customers. However, if you choose to install a filter, please keep in mind that it must be properly maintained in order to be effective. If a filter is not properly maintained, it can actually cause your water quality to become worse. It should also be independently certified by NSF/ANSI or the Water Quality Association (WQA).

How can I get my water tested?

The Ohio EPA Division of Drinking & Ground Waters maintains a list of laboratories certified to test drinking water on their website at **epa.ohio.gov**.

How can I maintain the quality of the water coming from my tap?

Your plumbing also plays an important role in maintaining water quality. Many of the inquiries Cleveland Water receives about water quality issues can be traced back to home plumbing. Here are a few tips to make sure the best quality tap water reaches your glass.

- Always use cold water for drinking, cooking, or making baby formula.
- Flush your water lines after water hasn't been used for 6 hours or more and after doing any plumbing work. Do this by turning on the cold water faucet and letting the water run for a few minutes until it feels colder.
- Remove and clean your faucet aerator screens at least twice a year.
- Maintain your water heater by flushing the tank, checking the tank's temperature and pressure relief valve (TPR valve), and checking the anode rod. These actions should be performed at least yearly according to the manufacturer's recommendations.
- Check your plumbing for cross-connections and make sure you have a backflow prevention device installed if required. Learn more at **clevelandwater.com/backflow**.

PUBLIC PARTICIPATION AND CONTACT INFORMATION

Cleveland Water does not hold regular public meetings. However, the public may participate by attending Utilities Committee meetings of Cleveland City Council. Committee and Council meetings are listed on the Cleveland City Council website (**clevelandcitycouncil.org**) and can be watched live on TV20 and YouTube. For more information on your drinking water, contact us at **216.664.2639**.

Customer Service
216.664.3130
websiteinquiries@clevelandwater.com

Emergency
216.664.3060

Lead Inquiry
216.664.2882
leadlookup@clevelandwater.com

Water Quality
216.664.2639

Education & Outreach
216.664.3173
educationandoutreach@clevelandwater.com

Please share this information with all other people who drink Cleveland Water, especially those who may not have received this Water Quality Report directly. For example, apartments, nursing homes, schools, restaurants, churches, and businesses. You can do this by posting the report in a public place or distributing copies by hand or in the mail. This report is also available at **clevelandwater.com/2022WQR**

Este informe contiene información importante sobre su agua potable. Si tiene preguntas o necesita este document traducido, llámenos al **216.664.2639**.

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