



Florence Public Services Department
Annual Drinking Water Quality Report
July 1, 2021

PWSID # KY0080135

CITY OF FLORENCE
KENTUCKY®
Public Services Department
8100 Ewing Blvd.
Florence, KY 41042

Annual Drinking Water Quality Report
July 1, 2021

The City of Florence presents this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you each day. The City of Florence Public Services Department routinely monitors for contaminants in your drinking water according to federal and state regulations. Our mission is to provide you with a safe and dependable supply of drinking water in a financially responsible manner.

During 2020, we purchased our water from the Boone-Florence Water Commission. The Boone-Florence Water Commission receives its water from Greater Cincinnati Water Works (GCWW), www.cincinnati-oh.gov/water, which is treated surface water from the Ohio River.

The City of Florence is pleased to report that our system has met all sampling, monitoring, and reporting requirements of the Federal and State Environmental Protection Agencies during the reporting year 2020. The tables on the following pages show the results of our monitoring for the period of January 1st to December 31st, 2020.

We want our customers to be informed about their water quality. If you want to learn more about your water quality, please contact our office at 859-647-5416 or visit our website at www.florence-ky.gov. Copies of this report are available at the Public Services Department, Florence Government Center, 8100 Ewing Blvd. Copies of the Greater Cincinnati Water Works Annual Drinking Water Quality Report is also available at the Public Services Department or their website at <https://www.cincinnati-oh.gov/water/water-quality-and-treatment/water-quality-reports/>.

THM (Trihalomethanes)

The current MCL for total trihalomethanes (TTHM) is 80 ppb. Although our water is below the MCL, we are including the following health effects language.

Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Stormwater Message

Pet waste is a health hazard and a water pollutant. Protect your health and our waterways by cleaning up after your pet. Do not leave pet waste on driveways, sidewalks or other impervious (hard) surfaces where it can wash into storm drains and waterways. Never place pet waste in a storm drain, stream or lake.

Storm Water Hotline: (859) 647-4623

Water Source Information Drinking Water Regulations

Greater Cincinnati Water Works performs an average of 300 tests per day throughout their system to ensure safe drinking water. Source waters are tested routinely to detect contaminants before they enter treatment plants. Water quality experts then test the water after each stage of the treatment process to ensure optimal treatment. Finally, water samples are collected in the distribution system to monitor the quality of the water once it has left the treatment plant.

The surface water source of raw water for GCWW is the Ohio River. A source water assessment has been completed. The following is a summary of the susceptibility analysis that is part of the source water assessment. Several areas of concern are related to the extensive development of transportation infrastructure, the potential for spills, high degree of impervious cover and polluted runoff. Areas of row crops and urban and recreational grasses introduce the potential for herbicide, pesticide, and fertilizer use – possible non-point source contaminants. Bridges, railroads, ports, waste handlers or generators, and Tier II hazardous chemical users in the area introduce the potential for spills or leaks of hazardous materials. Landfills and permitted discharges are relatively high in number for a supply area. Other areas of concern include several segments of streams already assessed as having impairments, power line right-of-way with potential herbicide use, and residential septic systems located throughout the watershed. Since the intake is in an urban area, the threat of underground storage tanks leaking must also be taken into account. The entire report is available at Northern Kentucky Area Development District, 22 Spiral Drive, Florence, Ky 41042. Phone: 859-283-1885.

Health Information

Cryptosporidium (Crypto) is a microscopic organism that, when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. GCWW has tested for Crypto in treated waters from the Miller and Bolton Treatment Plants throughout 2020 and has not detected it. The organism is found in GCWW source water and comes from animal wastes in the water shed. Crypto is eliminated by an effective treatment combination including sedimentation, filtration, and disinfection.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Information About Lead:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Florence 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 or at <http://www.epa.gov/safewater/lead>.

We at the City of Florence Public Services Department work diligently to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. For more information of our operations, visit our website at www.florence-ky.gov. Please call our office at 859-647-5416, if you have questions.

What contaminants could be in source 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.

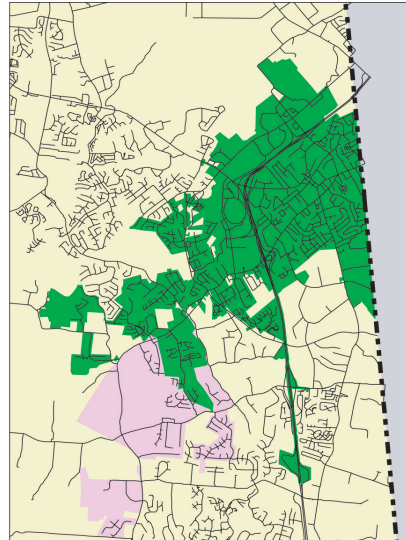
Contaminants that may be present in source water include: Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; Inorganic contaminants, such as salts and metals, that can be naturally-occurring 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 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.

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that shall provide the same protection for public health.

For an opportunity to participate in public discussions regarding items which might affect water quality, we invite you to attend the weekly meetings of the Florence City Council which are held every Tuesday at the Florence Government Center at 6:30pm. For more information on dates and times please visit www.florence-ky.gov or call (859) 647-5416 on weekdays between 8:30am and 5:00pm.

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

(This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.)



Florence Public Services Department

8100 Ewing Blvd.
Florence, KY 41042

Green..... Florence
Purple..... Union
Gray..... Kenton County
Tan..... Unincorporated Boone County
Black Lines..... Street Centerlines

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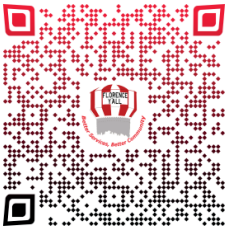


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Protecting your drinking water

GCWW has helped establish two 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 create a 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 ground water.

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



2020 GCWW WATER QUALITY REPORT

GCWW Meets or Exceeds All State and Federal Health Standards

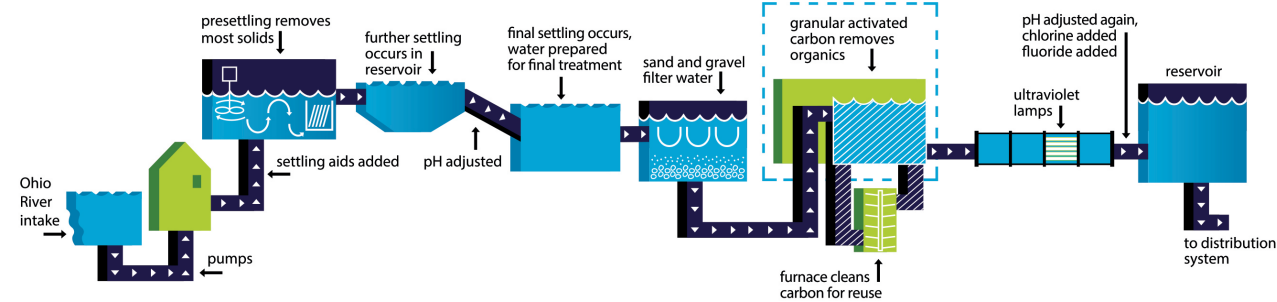
Regulated Contaminants (Table A): Substances subject to a Maximum Contaminant Level (MCL), Action Level (AL), or Treatment Technique (TT). These standards protect drinking water by limiting the amount of certain substances that can adversely affect public health and are known or anticipated to occur in public water systems.

TABLE A: Regulated Contaminants			Miller Water (from the Ohio River)				Bolton Water (from the Great Miami Valley Buried Aquifer)				Typical Source of Contamination	
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	0.88	0.68 - 1.04	No	2020	0.89	0.73 - 1.01	No	2020	Additive which promotes strong teeth. May come from erosion of natural deposits.	
Nitrate (ppm)	10	10	1.00	0.50 - 1.00	No	2020	1.60	na ³	No	2020	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits.	
TTHMs (ppb) [Trihalomethanes] ¹	80	na	57.0	12.8 - 56.9	No	2020	57.0	12.8 - 56.9	No	2020	Byproduct of drinking water chlorination.	
HAA5 (ppb) [Haloacetic Acids] ²	60	na	12.3	1.89 - 15.6	No	2020	12.3	1.89 - 15.6	No	2020	Byproduct of drinking water chlorination.	
Turbidity (NTU)	TT1 < 1 NTU Max and TT2 < 0.3 NTU 95% of the time	na	0.09 100% < 0.3 NTU	0.01 - 0.09	No	2020	nr	nr	No	na	Soil runoff.	
1st Compliance Period (Jan - June)	Lead ¹ (ppb)	AL = 15 (the 90th percentile must be less than 15 ppb)	0	90th percentile 5.00 ppb (1 out of 134 samples tested during the first compliance period was > the AL) ⁴	nd - 30.5	No	2020	90th percentile 5.00 ppb (1 out of 134 samples tested during the first compliance period was > the AL) ⁴	nd - 30.5	No	2020	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 tests water samples collected at customers taps, as required by the Safe Drinking Water Act to ensure safe water.
	Copper ¹ (ppm)	AL = 1.3 (the 90th percentile must be less than 1.3 ppm)	1.3	90th percentile 0.022 ppm (0 out of 134 samples tested during the first compliance period were > the AL)	nd - 0.066	No	2020	90th percentile 0.022 ppm (0 out of 134 samples tested during the first compliance period were > the AL)	nd - 0.066	No	2020	
2nd Compliance Period (July - Dec)	Lead ¹ (ppb)	AL = 15 (the 90th percentile must be less than 15 ppb)	0	90th percentile 6.00 ppb (5 out of 110 samples tested during the second compliance period were > the AL) ⁴	nd - 41.4	No	2020	90th percentile 6.00 ppb (5 out of 110 samples tested during the second compliance period were > the AL) ⁴	nd - 41.4	No	2020	
	Copper ¹ (ppm)	AL = 1.3 (the 90th percentile must be less than 1.3 ppm)	1.3	90th percentile 0.021 ppm (0 out of 110 samples tested during the second compliance period were > the AL)	nd - 0.043	No	2020	90th percentile 0.021 ppm (0 out of 110 samples tested during the second compliance period were > the AL)	nd - 0.043	No	2020	
Total Organic Carbon ³	TT	na	2.23	1.92 - 3.25	No	2020	nr	nr	No	na	Naturally present in the environment.	
Total Chlorine ¹ (ppm)	MRDL = 4	MRDLG = 4	1.17	1.05 - 1.27	No	2020	1.17	1.05 - 1.27	No	2020	Water additive used to control microbes.	
Barium (ppm)	2	2	0.028	na ³	No	2020	0.013	na ³	No	2020	Erosion of natural deposits; Discharge of drilling wastes; Discharge from metal refineries.	

Unregulated Contaminants (Table B): Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. (Refer to page 7 for abbreviations.)

TABLE B: Unregulated Contaminants		Miller Water (from the Ohio River)					Bolton Water (from the Great Miami Buried Valley Aquifer)					Typical Source of Contamination
Substance (Unit)	MCLG	Average Level Detected	Range of Detection	Violation	Year Sampled	Average Level Detected	Range of Detection	Violation	Year Sampled			
Chloroform (ppb) ¹	70	8.37	nd - 28.86	na	2020	8.37	nd - 28.86	na	2020	Byproducts of drinking water disinfection, measured at representative points in the distribution system.		
Bromodichloromethane (ppb) ¹	0	7.27	1.95 - 13.45	na	2020	7.27	1.95 - 13.45	na	2020			
Dibromochloromethane (ppb) ¹	60	9.60	3.06 - 19.81	na	2020	9.60	3.06 - 19.81	na	2020			
Bromoform (ppb) ¹	0	6.22	nd - 16.08	na	2020	6.22	nd - 16.08	na	2020			
Monochloroacetic Acid (ppb) ¹	70	nd	nd - nd	na	2020	nd	nd - nd	na	2020			
Monobromoacetic Acid (ppb) ¹	na	nd	nd - 1.88	na	2020	nd	nd - 1.88	na	2020			
Dichloroacetic Acid (ppb) ¹	0	3.32	nd - 10.0	na	2020	3.32	nd - 10.0	na	2020			
Trichloroacetic Acid (ppb) ¹	20	nd	nd - 3.72	na	2020	nd	nd - 3.72	na	2020			
Dibromoacetic Acid (ppb) ¹	na	3.02	1.45 - 6.08	na	2020	3.02	1.45 - 6.08	na	2020			
Sulfate (ppm)	na	58	43 - 76	na	2020	42	42 - 43	na	2020		Erosion of natural deposits.	

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.

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 or public health. The tables on pages 6-9 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 cincinnati-oh.gov/water/waterquality-and-treatment 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 Trihalomethanes; HAA5: Haloacetic Acids (Refer to pages 8-9 for definitions and footnotes.)

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

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 2019 was 0.14 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 0.015 milligrams per liter (15 ppb) concentration 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 2019. Data listed for each system represents the combined distribution system. 3. 7 out of 156 samples were found to have lead levels in excess of the lead threshold level of 15 ppb during the first compliance period of 2019 (Jan-June); 3 results between 15-20 ppb; 1 result between 20-30 ppb; 2 results between 30-40 ppb; 1 result between 60-70 ppb. 9 out of 132 samples were found to have lead levels in excess of the lead threshold level of 15 ppb during the second compliance period of 2019 (July-Dec); 4 results between 15-20 ppb; 3 results between 20-30 ppb; 1 result between 30-40 ppb; 1 result between 50-60 ppb.

Boone Florence Water Commission Annual Water Quality Report Data Table						
Stage 2 Compliance Monitoring						
Regulated Contaminant (units)	MCL*	MCLG**	Highest Compliance Level Detected	Range Of Detection	Violation Y/N	Likely Source of Contamination
Total Trihalomethanes (ppb)	80	N/A	40	40 to 40	N	By-product of drinking water chlorination
Haloacetic Acids (ppb)	60	N/A	7	7 to 7	N	By-product of drinking water chlorination
*maximum contaminant level **maximum contaminant level goal						

2019 Chlorine Data						
Substance (units)	MRDL*	MRDLG**	Highest Annual Average	Range Of Detection	Violation Y/N	Possible Health Effects
Free Chlorine (mg/l)	4	4	1.28	0.98 to 1.46	N	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
During 2019 the BFWC had 0 out of 24 Routine Total Coliform Samples that were positive. *maximum residual disinfectant level **maximum residual disinfectant level goal						

(UCMR4) Unregulated Contaminant Monitoring Rule							
Detected Results							
Regulated Contaminant (units)	MRL*	Average	Minimum	Maximum Level Detected	Range Of Detection	Violation Y/N	Typical Sources of Contamination
Manganese (ppb)	0.4	0.14	0	0.55	0 to 0.55	N/A	Naturally present in the environment
2-Propen-1-ol (ppb)	0.5	0.22	0	0.89	0 to 0.89	N/A	By-product of drinking water chlorination

City of Florence Annual Water Quality Report Data Table						
Stage 2 Compliance Monitoring						
Regulated Contaminant (units)	MCL*	MCLG**	Highest Compliance Level Detected	Range Of Detection	Violation Y/N	Likely Source of Contamination
Total Trihalomethanes (ppb)	80	N/A	42	20 to 41	N	By-product of drinking water chlorination
Haloacetic Acids (ppb)	60	N/A	11	1 to 12	N	By-product of drinking water chlorination
*maximum contaminant level **maximum contaminant level goal						

2020 Chlorine Data						
Substance (units)	MRDL*	MRDLG**	Highest Annual Average	Range Of Detection	Violation Y/N	Possible Health Effects
Free Chlorine (mg/l)	4	4	1.28	0.52 to 1.81	N	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
During 2020 the City of Florence had 0 out of 504 Routine Total Coliform Samples that were positive. *maximum residual disinfectant level						
**maximum residual disinfectant level goal						

Lead & Copper Data						
Regulated Contaminant (units)	Action Level (AL)	MCLG	90th Percentile Levels	Range Of Detection	Violation Y/N	Typical Sources of Contamination
Lead (ppb)	15 ppb	0	1	1 to 1.4	N	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservations
Copper (mg/l)	1.3 mg/l	0	0.021	0.005 to .025	N	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservations

(UCMR4) Unregulated Contaminant Monitoring Rule Detected Results						
UnRegulated Contaminant (units)	MRL**	Average	Maximum Level Detected	Range Of Detection	Violation Y/N	Typical Sources of Contamination
Anatoxin- A (ppb)	N/A	BDL*	BDL*	BDL*	N/A	Anatoxin-a is a neurotoxin produced by certain species of cyanobacteria (formerly referred to as "blue-green algae")
Total Microcystin (ppb)	N/A	BDL*	BDL*	BDL*	N/A	Microcystins are toxins released by cyanobacteria A type of unicellular bacteria (formerly referred to as "blue-green algae")
Cylindrospermopsis (ppb)	N/A	BDL*	BDL*	BDL*	N/A	Cylindrospermopsis is a cyanotoxin produced by certain species of cyanobacteria (formerly referred to as "blue-green algae")

Your drinking water has been sampled for a series of unregulated contaminants. Unregulated contaminants are those that EPA has not established drinking water standards. There are no MCLs and therefore no violations if found. The purpose of monitoring for these contaminants is to help EPA determine where the contaminants occur and whether they should have a standard. As our customers, you have a right to know that these data are available. If you are interested in examining the results, please contact our office during normal business hours. *BDL = "below detectable level" **minimum reporting level.