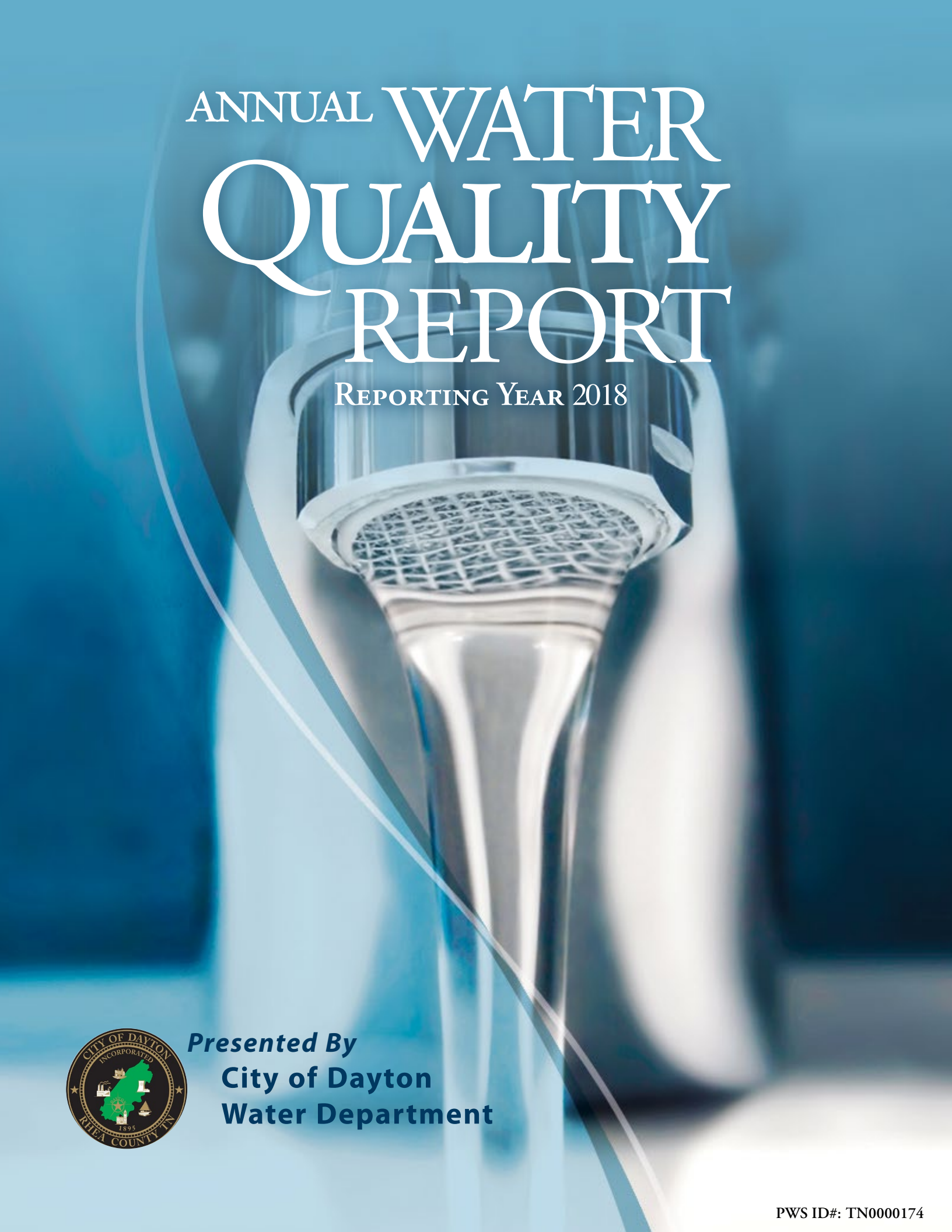
ANNUAL WATER QUALITY REPORT

Reporting Year 2018



Presented By

City of Dayton
Water Department

PWS ID#: TN0000174

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Source Water Assessment

The Tennessee Association of Utility Districts has conducted a source water assessment for the public water systems in the state of Tennessee. The goal of the assessment was to determine the water systems' vulnerabilities to possible source water contamination. The assessment determined that our surface water source (the Tennessee River) has been rated with a Higher Susceptibility ranking and is most vulnerable to historic and present-day land use activities, including agriculture, light industry, and commercial transportation along the railroad and highway routes. A copy of the assessment is available for viewing at the water department at 421 First Avenue or online at https://www.tn.gov/content/dam/tn/environment/documents/source_water_assessment_epa_report_aug_2003.pdf. More information is available at the Division of Water Resources Source Water Assessment webpage at www.tn.gov/environment/dws/dwassess.shtml.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or http://water.epa.gov/drink/hotline.

Substances That Could Be in Water

In order to ensure that tap water is safe to drink, U.S. EPA and the Tennessee Department of Environment and Conservation prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

> We remain vigilant in delivering the best-quality drinking water

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems;

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Community Participation

You are welcome to learn more and voice your concerns about your drinking water by attending Dayton City Council meetings on the first Monday of each month at 6 p.m. (or five minutes after the school board meeting) in the City Council Chambers at the Dayton Municipal Building located at 399 First Avenue.

Where Does My Water Come From?

The City of Dayton water system relies on surface water from the Tennessee River. The river pump station is located on the Chickamauga Lake Reservoir. To learn more about our lakes and watershed, visit the U.S. EPA's Surf Your Watershed at www.epa.gov/surf.

The water plant treats your water using disinfection and filtration to remove or reduce harmful contaminants that may come from the source water. The raw water is treated as follows: Coagulant, caustic soda, sodium permanganate, and sodium hypochlorite (bleach for disinfection) are added to the raw water. These chemicals react with smaller particles in the water to form larger particles called floc. The floc then settles out in the sedimentation basins before the water passes through the membrane filters. After the filtering process, more hypochlorite is added along with fluoride (used to prevent tooth decay) and sodium phosphate (a corrosion inhibitor used to protect distribution system pipes). The water is then pumped to water reservoirs in the system and into your home or business. The Dayton Water Treatment Plant treated approximately 990 million gallons of water to serve a population of approximately 25,000 people in Rhea and Bledsoe Counties in 2018.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call the City of Dayton Water Department at (423) 775-1818 or the water treatment plant at (423) 775-8415. You may also contact the water department by email at water@daytontn.net or postal mail at Water Superintendent, P.O. Box 226, Dayton, TN 37321. Please visit our Facebook page at Daytontn Water.

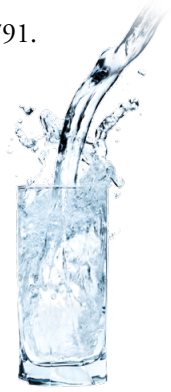
What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (back pressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (back siphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.



WATER QUALITY PARAMETERS FOR 2018 (AVERAGE DAILY TEST RESULTS)

SUBSTANCE	UNITS	AVG./DAY	RANGE
Alkalinity	mg/l	58	31 - 70
Hardness	mg/l	61	36 - 78
pH	SU	7.4	6.9 - 8.4
Temperature	˚C	19.8	7.0 - 28.0
Raw Turbidity	NTU	4.6	1.5 - 65.5

Water Conservation Tips

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So, get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you can save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Lead in Home Plumbing

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. We are 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 www.epa.gov/safewater/lead.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. We are pleased to report that your drinking water meets or exceeds all federal and state requirements.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the fourth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2018	[4]	[4]	2.3	1.6–2.9	No	Water additive used to control microbes
Fluoride (ppm)	2018	4	4	0.89	0.6–1.11	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2018	60	NA	45.6	29.4–58.0	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	0.173	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	58.9	35.3–72.9	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2018	TT	NA	1.21	1.09–1.35	No	Naturally present in the environment
Turbidity[1] (NTU)	2018	TT	NA	0.05	0.04–0.05	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2018	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2017	1.3	1.3	0.00528	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2017	15	0	0.5	0/30	No	Lead service lines, corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2018	10.2	10.2–10.2	NA

UNREGULATED CONTAMINANT MONITORING RULE - PART 4 (UCMR4)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
1-Butanol (ppb)	2018	0.67	NA
2-Methoxyethanol (ppb)	2018	0.13	NA
2-Propen-1-ol (ppb)	2018	0.17	NA
Bromide (ppb)	2018	23.5	NA
Bromochloroacetic Acid (ppb)	2018	3.3	2.9–4.2
Bromodichloroacetic Acid (ppb)	2018	3.4	3.1–4.2
Butylated Hydroxyl Anisole (ppb)	2018	0.0099	NA
Chlorodibromoacetic Acid (ppb)	2018	0.43	0.41–0.46
Dibromoacetic Acid (ppb)	2018	0.69	0.58–0.81
Dichloroacetic Acid (ppb)	2018	15.8	13.3–20.2
Germanium (ppb)	2018	0.10	NA
HAA9 (ppb)	2018	40	35.2–51.7
Manganese (ppb)	2018	2.7	NA
Monobromoacetic Acid (ppb)	2018	0.10	0.10–0.10
Monochloroacetic Acid (ppb)	2018	0.67	0.67–0.67
Quinoline (ppb)	2018	0.0066	NA
Total Organic Carbon [TOC] (ppm)	2018	1.38	NA
Tribromoacetic Acid (ppb)	2018	0.67	0.67–0.67
Trichloroacetic Acid (ppb)	2018	16.5	14.6–21.8
o-Toluidine (ppb)	2018	0.0023	NA

[1] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a 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.

NA: Not applicable.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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