Avon Lake Regional Water

2017 WATER QUALITY REPORT

For the 2016 calendar year

The Board of Municipal Utilities

Avon Lake's Board of Municipal Utilities is the steward of the money you pay for clean water and wastewater removal. Every two years, you elect representatives to Avon Lake's Board of Municipal Utilities in November's general election. These private citizens, fellow Avon Lakers, represent you in determining the future of Avon Lake Regional Water, including how the money you pay for water and wastewater services can best be used to ensure reliable water provision and collection now and for generations to come.

Here are the individuals that served you as Avon Lake's Board of Municipal Utilities in 2016:

John Dzwonczyk
Chair

Rob Berner

Dave Rickey

Tim Rush

Dana Schnabel

Be a part of the 2018 report. Submit your photos of Lake Erie to contact@avonlakewater.org.

Avon Lake Regional Water

Serving the region, protecting our resource.

Keeping you safe and working to make Lake Erie cleaner.

Safe? Healthy? Aren't those the jobs of police, fire, doctors, and nurses? Yes, but did you know that your water utility, Avon Lake Regional Water, is also responsible for your health and safety? Water utilities, like Avon Lake Regional Water, provide clean, safe drinking water to customers. Clean, safe drinking water not only provides you with hydration when consumed, it can help keep you healthy.

Did you know water utilities are partially or wholly credited for two of the U.S. Centers for Disease Control's Ten Great Health Achievements in the 20th Century? The first achievement is fluoridation of drinking water, which is credited to have significantly reduced cavities. The second achievement is control of infectious diseases. Outbreaks of cholera, dysentery, and typhoid fever used to be common before cities began providing chlorinated/disinfected drinking water.

Now, additional health issues could impact our water. You may have heard or seen news reports discussing lead (Flint, Michigan) and algal blooms (western Lake Erie) in water. You can rest knowing that Avon Lake Regional Water has been ahead of these issues. Our treatment processes remove pollutants ranging from mud to bacteria, to even microcystin from toxic algal blooms and is not overly aggressive (lead corrosion) so that you don't have to think twice about the water coming out of your tap.

More information on algal blooms on page 4.

This report provides the water quality statistics for 2016.

The articles throughout the report show how Avon Lake Regional Water focused on keeping your water safe and planning for the future.

The Year in Review

Improving safety, reliability, and the health of Lake Erie

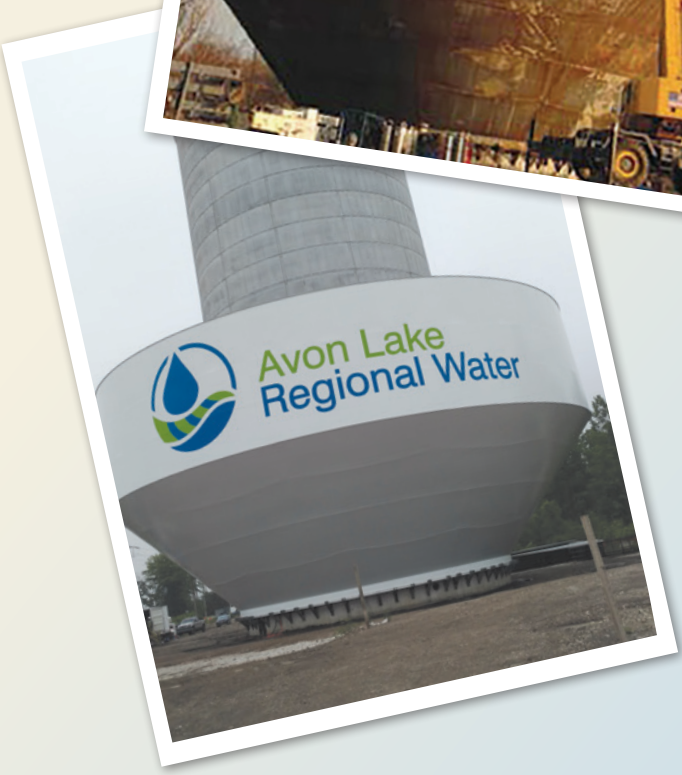
A safe, reliable supply of water is used for much more than just drinking. It is used to fight fires, provide water to hospitals, meet the needs of industry and the economy, and even irrigate sports fields. Here were some of the projects underway in 2016 at our water filtration plant and water pollution control center to help assure water is there when you need it.

	What Improvements?	What it will do?
Water Filtration Plant	Finished construction of new three million gallon clear well (finished water storage) and pumping station. Rehabilitation of filters.	Increased storage allows for access to water if there is a reduction of water intake from Lake Erie. Making improvements to the filters allows for better water treatment.
Elevated Storage Tank	Initiated construction of a three million gallon clean-water storage tower.	The tower will hold up to three million gallons of clean water ready for use if there is a disruption affecting drinking water production at the plant.
Water Pollution Control Center	Began $35 million rehabilitation project.	This project will allow Avon Lake Regional Water to better meet effluent quality (discharge) requirements, which had been increasingly hard to do with aging infrastructure.

Your money at work

Ever wonder where your water bill dollars go? In 2016, Avon Lake Regional Water continued critical infrastructure improvements around Avon Lake, especially on Walker Road and in the Fairfield-Brookfield area, impacting Brookfield Road, Inwood Boulevard, Berkshire Road, Fairfield Road, and Redwood Boulevard. Here are where some of the dollars went:

- Repaired 87 water line breaks.
- Replaced 66 fire hydrants on Mull Avenue, Norman Avenue, Redwood Boulevard, Inwood Boulevard, and Walker Road.
- Replaced 18,004 feet of water lines including Mull Avenue, Norman Avenue, Walker Road, Inwood Boulevard, and Redwood Boulevard.
- Upgraded 3,492 feet of sanitary sewer lines including Mull Avenue and Norman Avenue.



School partnerships

Water Warriors

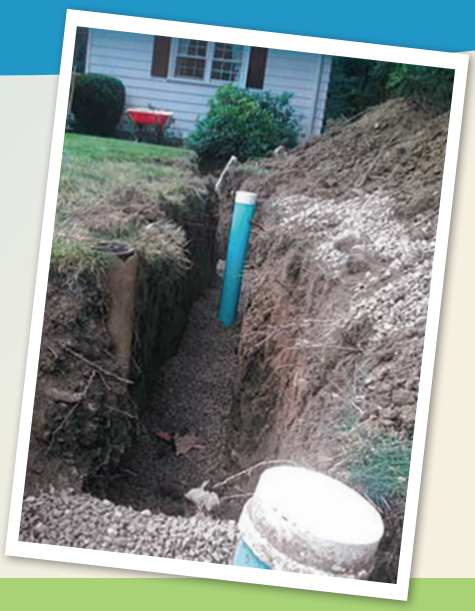
In connection with Troy Intermediate School, students learned how Avon Lake Regional Water provides clean water to the community. The three-day program allowed students to learn about water infrastructure and then see it firsthand at the water filtration and wastewater treatment plants.

Continuing to separate Avon Lake's combined sewers and residents to separate laterals

Avon Lake residents and Avon Lake Regional Water made significant progress in 2016 towards meeting the Ohio Environmental Protection Agency (EPA) mandate. According to the mandate, Avon Lake has until 2020 to prevent sanitary waste from discharging into Lake Erie. With your help, we are moving towards meeting the deadline.

In 2016, approximately 450 homeowners utilized the free home inspection. Almost 200 homes separated their combined laterals, and Avon Lake Regional Water completed the Mull-Norman rehabilitation project. We also began the Fairfield-Brookfield combined sewer separation. In addition, many residents utilized the new lateral loan program to assist with financing their separation.

For more information on the lateral loan program and/or if you have questions about the February 1, 2018 deadline, please call Avon Lake Regional Water at 440-933-6226.



The February 1, 2018 deadline is fast approaching.

If your home was built before 1972, please call us at 440-933-6226 to schedule a free inspection to see if you need to comply by the deadline.

Algal Bloom: What is it?

Over the past several years, you probably heard the phrase algal bloom. You may recall hearing about recent occurrences in Lake Erie near Toledo. What really is an algal bloom and how does it impact me? According to the U.S. EPA, an algal bloom is "an overgrowth of algae."[1] The colors of algal blooms range from green to blue or brown to red. Besides naturally occurring, algal blooms can occur from increased nutrients, like nitrogen and phosphorus, in the water.

The impact of these blooms is not only potentially harmful to your health, but also your wallet due to higher costs for treating your water. To ensure our drinking water is safe from algal blooms, Avon Lake Regional Water continually tests the water drawn into the treatment plant.

Avon Lake Regional Water stands ready to modify treatment methods and keeps millions of gallons of fresh water available if the plant must slow treatment.

[1]U.S. EPA, Harmful Algal Blooms, http://www.epa.gov/nutrientpollution/harmful-algal-blooms.

What are drinking water standards?

Avon Lake Regional Water treats water to meet EPA drinking water quality standards. Implementing measures to protect Lake Erie can further decrease the potential for water quality impacts. More detailed information is provided in the Drinking Water Source Assessment report, which can be obtained by calling Greg Yuronich at (440) 933-3229.

Sources of drinking water — for both tap water and bottled water — include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants in source water come from various places: microbial contaminants such as viruses and bacteria may originate in sewage plants, septic systems, livestock operations and wildlife; salts, metals and other inorganic substances can occur naturally or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; pesticides and herbicides enter the stream from agriculture, urban storm water runoff, and general residential use; while organic chemical contaminants are often by-products of industrial and petroleum production, they are also linked to gas stations, urban storm water runoff and septic systems; and finally, radioactive contaminants can occur naturally or via oil and gas production or mining activities.

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

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that 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 at (800) 426-4791.

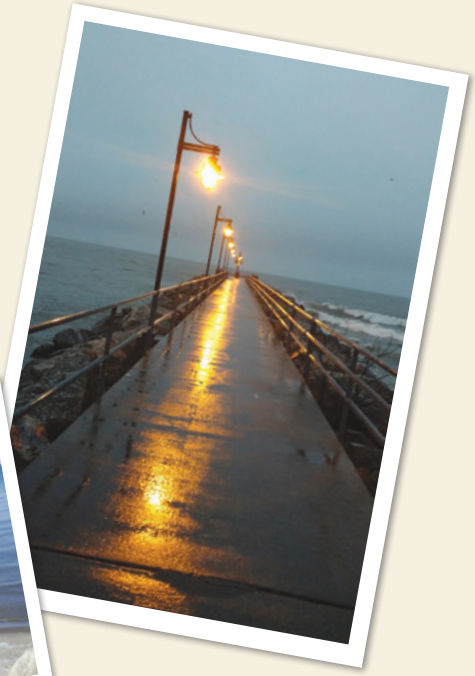
3 a.m. water main break repairs

It's 3 a.m. While you are sleeping, a water main break occurs on Electric Boulevard. Don't worry, Avon Lake Regional Water will take care of the issue. A team of dedicated professionals works through the early morning hours to repair the water break, keep you informed of the issue, and ensure clean water returns to customers. All in a day's work for Avon Lake Regional Water.

If you spot a water main break, call us at 440-933-6226 or 440-933-3229 (after hours). For more information on water main breaks or have basement backup, visit avonlakewater.org. Check out the Contact & Emergency tab.

Where does your water come from?

Our water filtration plant draws its water from Lake Erie. There are two separate intakes to ensure our ability to pump from this virtually endless source of quality raw water. The raw water is then treated with alum to aid in the removal of turbidity (dirt), and activated carbon is added to remove organics to improve taste and odor. Next, this treated water goes through flocculation, sedimentation, and filtration to remove turbidity and other contaminants. The water is then treated with chlorine for disinfection and fluoride for dental health prior to being pumped to your home. The Avon Lake water filtration plant is staffed around the clock with approximately 150 tests run on the drinking water every day and over 50,000 each year.



Avon Lake Table of Detected Contaminants in 2016

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation?	Year Sampled	Typical Source of Contaminants
Microbiological Contaminants							
Turbidity (NTU)[1]	n/a	TT	0.18	0.03 - 0.18	No	2016	Soil runoff
Turbidity (% samples meeting standard)	n/a	TT	100%	100%	No	2016	
Total Organic Carbon (ppm)[2]	n/a	TT	1.0	1.0 - 1.85	No	2016	Naturally present in the environment
Inorganic Contaminants							
Barium (ppm)	2	2	0.032	n/a	No	2016	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Copper (ppm)	1.3	AL=1.3	0.05	n/a	No	2016	Corrosion of household plumbing
90th percent sample result	**Zero out of thirty samples was found to have copper levels in excess of the copper action level of 1.3 ppm.**						
Lead (ppb)	0	AL=15	<3.0	n/a	No	2016	Corrosion of household plumbing
90th percent sample result	**Zero out of thirty samples was found to have lead levels in excess of the lead action level of 15 ppb.**						
Fluoride (ppm)	4	4	1.04	0.48 - 1.23	No	2016	Water additive which promotes strong teeth
Nitrate (ppm)	10	10	0.99	0.10 - 0.99	No	2016	Natural deposits, fertilizers, sewage
Volatile Organic Contaminants[3]							
Haloacetic Acids (ppb)[4]	n/a	60	18.2	12.1 - 22.3	No	2015-16	By-product of drinking water disinfection
Total Trihalomethanes (ppb)[4]	n/a	80	38.6	23.7 - 49.8	No	2015-16	By-product of drinking water disinfection
Residual Disinfectants	MRDLG	MRDL					
Chlorine (ppm)	4	4	1.51	1.15 - 1.58	No	2016	Water additive to control microbes

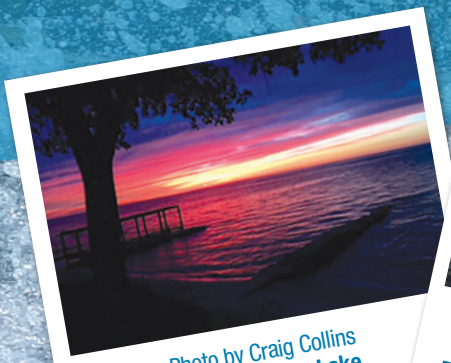


Photo by Craig Collins
2016 Love Your Lake Photography Contest Winner

Photo by Lori Sherwood
2016 Love Your Lake Photography Contest Entrant

Photo by Ken Lewis
2016 Love Your Lake Photography Contest Entrant

Photo by Carol O'Toole
2016 Love Your Lake Photography Contest Entrant

Definitions

- AL (Action level) – The concentration of a contaminant that, if exceeded, triggers a treatment or other requirement that a water system must follow.
- Contaminant – Any physical, chemical, biological, or radiological substance or matter in water.
- MCL (Maximum Contaminant Level) – The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- MCLG (Maximum Contaminant Level Goal) – The level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
- MRDL – Maximum Residual Disinfectant Level
- MRDLG – Maximum Residual Disinfectant Level Goal
- ND – Not Detected
- NTU – Nephelometric Turbidity Units
- Parts per billion (ppb) or Micrograms per Liter (ug/L) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.
- Parts per million (ppm) or Milligrams per Liter (mg/L) are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.
- TOC (Total Organic Carbon) has no health effects. However, TOC provides a medium when the water is disinfected for the formation of disinfection byproducts. TOC removal early in the treatment plant is required.
- TT (Treatment technique) – A required process intended to reduce the level of a contaminant in drinking water. For example, we add lime to increase the pH of our finished water in order to maintain compliance with the lead and copper rule.
- VOC – Volatile Organic Chemicals
- WTP – Water Treatment Plant

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. Avon Lake is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for thirty seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. A list of laboratories certified in the State of Ohio to test for lead may be found at http://www.epa.ohio.gov/ddagw/labcert.aspx, or by calling 614-644-2752. Information on lead in drinking water, testing methods, and steps you take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4719 or at http://www.epa.gov/safewater/lead. Avon Lake Water Filtration Plant monitored for Cryptosporidium in the source water during 2016. Cryptosporidium was detected in 1 sample of 12 collected from the raw water from Lake Erie. It was not detected in the finished water. Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Monitoring of source water indicates the presence of these organisms. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease. However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease and it may be spread through means other than drinking water.

Avon Lake has a current, unconditioned license to operate our water system from the Ohio EPA.

[1]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 daily samples and shall not exceed 1 NTU at any time. As reported above the Avon Lake WTP highest recorded turbidity result for 2016 was 0.18 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%.

[2]The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. This removal ratio is calculated as the ratio between the actual TOC removal and the TOC rule removal requirements and other parameters. A value of at least one (1) indicates that the water system is in compliance with TOC removal requirements.

[3]These contaminants' level found is the highest compliance value based on a running annual average. This average includes results from 2015 & 2016.

[4]Disinfection byproducts are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection byproducts are grouped into two categories: Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). USEPA sets standards for controlling the levels of disinfectants and disinfectant byproducts in drinking water, including both TTHMs and HAA5s.

A source water assessment was conducted by Ohio EPA for the Avon Lake Regional Water system in 2002. We use surface water drawn from Lake Erie. For the purposes of source water assessments, all surface waters in Ohio are considered to be susceptible to contamination. Due to the vast size and dilution capabilities of Lake Erie, Ohio EPA evaluated our water's contamination potential based on a Critical Assessment Zone (CAZ) and determined there was no direct source of pollution. Ohio EPA further determined that our source water analysis and emergency operation plan would minimize undetected contamination.

Avon Lake Regional Water

201 Miller Road
Avon Lake, Ohio 44012

Is there a risk?

Although Avon Lake Regional Water's drinking water is better than all state and federal water quality standards, some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. 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 at (800) 426-4791.

Have questions? Call us at (440) 933-6226.

During the day, Monday-Friday, you may reach a representative from Avon Lake Regional Water at (440) 933-6226. If you experience an emergency after hours, please call (440) 933-3229.

For non-emergencies, email us at contact@avonlakewater.org, like us on Facebook (where you'll see daily Avon Lake beach bacteria counts Tuesday through Friday, Memorial Day until Labor Day), follow us on Twitter or Instagram (avonlakewater) or visit our website at avonlakewater.org.