

Water Service Corporation of Kentucky

Middlesboro Water System

PWS ID: KY0070282

Annual Water Quality Report 2018

Message from Steve Lubertozzi, President

Dear Water Service Corporation of Kentucky (WCKY) Customers,

I am pleased to share your Annual Water Quality Report for 2018. This report is designed to inform you of the quality of water we delivered to you over the past year. As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

We are proud to share this report which is based on water quality testing through December 2018. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,



We are pleased to report that our drinking water meets all federal and state requirements.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

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Source of Drinking Water

Our source of water comes from Fern Lake, a surface water body located in southern Bell County, Kentucky and northern Claiborne County, Tennessee. While the lake receives much of its water from runoff of rainwater, it is partially spring fed. Currently, the land in the drainage basin is undeveloped with the exception of the fishing camp located at the northeast end of the lake. Because of the forested, undeveloped setting, the lake is a highly protected source of water.

Source Water Assessment

The Safe Drinking Water Act Amendments of 1996 requires every system to prepare a source water assessment that addresses the system's susceptibility to potential sources of contamination. Activities and land uses upstream of WCKY's source of water can pose potential risk to your drinking water. Under certain circumstances contaminants could be released that would pose challenges to water treatment or even get into your drinking water. These activities and how they are conducted, are of interest to the entire community. Activities upstream of your water supply intake are of special concern because they provide little response time for the water system operators.

An analysis of the susceptibility of the WCKY's water supply to contamination indicates that this susceptibility is high. The largest potential contaminant threat immediately upstream of the intake is land coverage. The predominant land cover is forest; this land cover could be subject to logging which may result in soil erosion if Best Management Practices (BMPs) are not carefully applied. The Management Recommendations for land coverage are: (1) Monitor to ensure compliance with Forestry Conservation Act; and (2) Require BMP (Best Management Practices) implementation per the Forest Landowners Handbook.

The Source Water Assessment has been completed and is available for inspection at the Water Service Corporation office. Contact Mr. Stephen Vaughn at 1-844-310-5556 for additional information.

The Process of Delivering Your Water

After pumping the water from Fern Lake, we treat it with processes that remove any objectionable tastes or odors. The water is then disinfected through a chlorination process to ensure the water is microbiologically safe (free from bacteria, viruses, and protozoan parasites). These processes primarily achieve filtration and disinfection of the water to remove any harmful chemicals, bacteria and other microorganisms that might be in the water. It is important to note that all drinking water contains some naturally occurring contaminants that are not harmful to our health. In fact, some minerals provide low levels of nutritional value and actually improve the taste of drinking water. After the drinking water has been thoroughly treated at the water treatment facility, we deliver it to homes and businesses through an underground network of pipes.

Individual homes use service lines to tap into larger, underground water main lines. The water is then passed through a water meter—either inside or outside the home—so that the amount of water the household uses can be accurately calculated. The water then flows throughout the home so whenever you turn on your faucet for a drink, you're assured clean, safe water for your entire family.

EPA Wants You To Know

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 by-products 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.

What measures are in place to ensure water is safe to drink?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The 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 the 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 1-800-426-4791.

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

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 (1-800-426-4791).

Information Concerning Lead in Water

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. WSCKY 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 www.epa.gov/safewater/lead.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps / solids for disposal.

Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: www.epa.gov/hw/household-hazardous-waste-hhw.

The Safe Drinking Water Act was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

Understanding This Report In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
EPA	Environmental Protection Agency.
Locational Running Annual Average (LRAA)	The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.
Maximum Contaminant Level (MCL)	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.
Maximum Contaminant Level Goal (MCLG)	The "goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's 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 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.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Indicates the substance was not found by laboratory analysis.
Parts per million (ppm) or Milligrams per liter (mg/l)	One part per million corresponds to one minute in two years or a single penny in \$10,000.
Parts per billion (ppb) or Micrograms per liter (ug/l)	One part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.
Picocuries per liter (pCi/L)	A measure of radioactivity in the water.
Nephelometric Turbidity Units (NTU)	A measure of water clarity. Turbidity in excess of 5 NTU is just noticeable to the average person.
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
Running Annual Average (RAA)	Calculated running annual average of all contaminant levels detected.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

⇒**Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.

⇒**Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!

⇒**Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

For more information visit www.epa.gov/watersense.

[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](#)

Monitoring Your Water

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that were

detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2018.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, maybe more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

If You Have Questions Or Want To Get Involved

Since WSCK is privately owned, there are no scheduled board meetings. This report is available to individual customers. For questions about the quality of our drinking water, or to obtain a copy of this report, contact Mr. Stephen Vaughn at 1-844-310-5556.

Visit us online at www.uiwater.com/kentucky to view the Water Quality Reports. Also visit our website for water conservation tips and other educational material.

Violations

In 2018, WSCK performed all required monitoring for contaminants and did not exceed any allowable levels of these contaminants. In addition, we received no violations and was in compliance with applicable testing and reporting requirements.

Water Quality Test Results

Contaminant (units)	Sample Date	Report Level	Range of Detects	MCLG	MCL	MCL Violation	Typical Sources of Contaminants	Likely Source of Contamination
Microbiological Contaminants								
Total Organic Carbon TOC (ppm)	1/18-12/18	1.10	1.00-1.81	N/A	TT	No	Naturally present in the environment.	Water additive used to control microbes.
TOC measured as ppm, but reported as a ratio. Treatment Technique (TT) is based on the lowest running annual average of the monthly ratios of the % TOC removal achieved to the % of TOC removal required. A minimum ratio of 1.00 is required to meet TT.								
Turbidity (NTU)	1/18-12/18	0.058 Highest	0.020-0.058	N/A	**TT-95%	No	Soil and stormwater runoff.	By-product of drinking water disinfection.
*Highest annual measurement was 0.058 in which 100% of monthly sampling was <0.3 NTU. **TT – 95% of all monthly samples must be <0.3 NTU and never more than 1 NTU.								
Reason for measuring Turbidity: Turbidity is a measure of the cloudiness of the water. It is a good indicator of the effectiveness of the filter system								
Disinfectants (Based on a Running Annual Average (RAA))								
Contaminant (units)	Sample Date	Your Water (RAA)	Range of Detects	MCLG	MCL	MCL Violation	Typical Sources of Contaminants	
Chlorine (ppm)	2018	1.14	0.78 - 1.46	MRDLG=4	MRDL=4	N	Water additive used to control microbes.	
Stage 2 Disinfectants Byproducts (Based on a Locational Running Annual Average LRAA)								
Contaminant (units)	Sample Date	Your Water (LRAA)	Range of Detects	MCLG	MCL	MCL Violation	Typical Sources of Contaminants	
Haloacetic Acids - HAAs (ppb)	1/18-10/18	38	10 - 61*	N/A	60	N	By-product of drinking water disinfection.	
Trihalomethanes - THMs (ppb)	1/18-10/18	32	17.6 - 35.7	N/A	80	N	By-product of drinking water disinfection.	
*In January 2018, a sample collected at 1 of our 4 sample sites showed levels of Haloacetic Acids (HAA5's) above 60 ppb. Compliance is based on a four-quarter average; therefore, our system was not in violation. Our customers will be notified if the average were to exceed the MCL. For additional information, please see the following standard health effects language for Haloacetic Acids (HAAs): Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.								
Inorganic Contaminants								
Contaminant (units)	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination	
Barium (ppm)	8/1/18	0.013	N/A	2	2	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	
Fluoride (ppm)	8/1/18	0.80	0.70 - 0.80	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth.	
Nitrate	2018	0.18	0 - 0.18	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits.	
Lead and Copper - Regulated at the Customers' Tap								
Lead and Copper	Date Sampled	MCLG	Action Level (AL)	Report Level 90 th percentile	# Sites over AL	Violation	Likely Source of Contamination	
Copper (ppm)	June 2017	1.3	1.3	0.22	0	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.	
Lead (ppb)	June 2017	0	15	2	0	N	Corrosion of household plumbing systems; Erosion of natural deposits.	
Secondary Contaminants								
**Copper Free (ppm)	2018	0.033	N/A	N/A	1	N	Erosion of natural deposits, Leaching from wood preservatives	
**The copper sample was collected at the water plant and was not collected as part of the Lead and Copper rule.								

Other Water Quality Information: EPA requires us to inform you of the information presented in the table above. Additionally, some of the most often requested test results of our water supply are in the table below

Water Quality Parameter	Average Result in 2018
Hardness	8 ppm as calcium carbonate
Alkalinity	12 ppm as calcium carbonate
pH	7.03 standard units
Dissolved Solids	40 ppm
Sodium	2.46 ppm (an 8-ounce serving is free by FDA guidelines)
Sulfate	5.1 ppm
Iron	<0.02 ppm
Manganese	<0.002 ppm

**Availability of Monitoring Data for Unregulated Contaminants for
Water Service Corporation of Kentucky – Middlesboro, KY**

Our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. As our customers, you have a right to know that this data is available. If you are interested in examining the results, please contact Mr. Stephen Vaughn at 1-606-248-2306. Unregulated contaminants that were detected are provided in the tables below:

Unregulated Contaminants Monitoring Rule 4 (UCMR4) - Entry Point

Contaminant (units)	Sample Date	Report Level	Range of Detects	Sources of Contaminants
Manganese (ppb)	1/18 - 10/18	0.465	ND - 0.465	Naturally occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient.

Unregulated Contaminants Monitoring Rule 4 (UCMR4) - Maximum Retention

Haloacetic Acids 5 (ppb)	1/18 - 10/18	38	10 - 61	By-products of drinking water disinfection.
Haloacetic Acids 6 Brominated (ppb)	1/18 - 10/18	4.49	0.5 - 11.8	By-products of drinking water disinfection.
Haloacetic Acids 9 (ppb)	1/18 - 10/18	55.33	28.1 - 94.7	By-products of drinking water disinfection.
Organic Carbon, Total (ppb)	1/18 - 10/18	1.4	1.0 - 2.0	Naturally present in the environment.

The 1996 Safe Drinking Water Act (SDWA) amendments require that once every five years the Environmental Protection Agency (EPA) issues a new list of no more than 30 unregulated contaminants to be monitored by public water systems (PWSs). The fourth Unregulated Contaminant Monitoring Rule (UCMR4) was published in the Federal Register on December 20, 2016. UCMR4 requires monitoring for 30 chemical contaminants over the course of one year between 2018 and 2020. This monitoring assists the EPA in determining where certain contaminants occur, and whether the Agency should consider regulating those contaminants in the future. At present, no health standards (for example, MCLs) have been established for Unregulated Contaminants. However, we are required to publish the analytical results of our Unregulated Contaminant monitoring in our annual water quality report. If you would like more information on EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at 1-800-426-4791 or visit www.epa.gov/dwucmr.

