



# The City of Ashland 2016 Annual Drinking Water Quality Report

## Overview

Since 1920, the City of Ashland has been providing the region with high quality drinking water at very affordable rates. The Ashland water system has grown to include a network of waterlines stretching approximately 300 miles, 12 water storage tanks, 18 pump stations and a state-of-the-art water treatment plant capable of producing up to 24 million gallons of crystal clear treated drinking water per day. With over 30 highly qualified certified water plant operators, water distribution operators and laboratory technicians on staff, we are committed to excellence in our stewardship of your water system.



Ashland Water Plant



This report is designed to inform the public about the quality of water and services provided on a daily basis. Our commitment is to provide a safe, clean, and reliable supply of drinking water. We want to assure you that we will continue to monitor, improve, and protect the water system and deliver a high quality product. The information contained within this report includes results from January through December of 2016.

### Ashland Board of Commissioners

The City of Ashland Board of Commissioners meet at 12:00pm on the second and fourth Thursday of each month in the commission chambers located at the City Building, 1700 Greenup Avenue, Ashland, KY 41101. Meetings are open to the public. For more information regarding the board meetings, please contact (606) 327-2001.

### Ashland Water Quality Management Team

Ryan Eastwood • Utility Director  
Joe Fliehm • Water Plant Superintendent  
Frank Worsley • Water Plant Chief Operator  
Reed Downs • Water Distribution Superintendent  
William Ott • Water Distribution Field Supervisor

City of Ashland  
P.O. Box 1839  
1700 Greenup Avenue  
Ashland, KY 41105

Office Hours M – F  
8:30am – 5:00pm

[www.ashlandky.gov](http://www.ashlandky.gov)

Ashland Water Works PWSID-KY0100011

### Contacts:

CCR contact: Ryan Eastwood (606) 327-2008  
Customer Service Phone: (606) 327-2018  
Water Plant (606) 327-2058  
(24 hour emergency number)

Water Distribution: (606) 327-2041  
Utility Director: (606) 327-2008



# 2016 Water Plant Filter Upgrade Complete

Water production capacity is now at the highest it has ever been.



In order to meet increasing water quantity and quality demands, the City of Ashland undertook a major plant expansion project which was completed in 2006. Although the newly upgraded water plant was able to produce extremely high quality water which exceeded EPA regulations, it became apparent, after a few years, that the "dual media"

filters were causing a constriction in water flow, not allowing the plant to produce the amount of water for which it was designed. The city diligently pursued improvements over the next few years achieving some success; however the plant production capacity continued to slowly deteriorate.



In January of 2014, an extremely cold winter "arctic blast" hit our region leading to a number of water breaks which drained the water tanks. Although the water breaks were repaired timely, the water plant was unable to produce the volume of water to meet demand and fill the water tanks which lead to extended outages.

To solve the problem, the City of Ashland hired leading filter experts and

engineers to diagnose and redesign the water plant filters. After over a year of diagnosis, design and construction, the City of Ashland is pleased to announce that the filter rehabilitation project was completed in early 2016.



*...The newly renovated filters are now capable of supplying the 24 million gallons per day design capacity, which is more than double the production capacity in 2014.*



# Our Source Water The Ohio River

The source of water for our drinking water treatment plant is surface water from the Ohio River. An analysis of the source water indicates that its susceptibility to contamination is moderately high. Within the Kentucky portion of the protection zone alone, there are 535 identified potential contaminant sources. Of these, 302 have a susceptibility rating of high, 205 are rated medium and 28 are rated low. Not all contaminants with a high rating threaten the water supply equally. Oil spills which receive a high rating may float by the intake without a noticeable effect; whereas chemicals that mix with the water present a different kind of threat. The City of Ashland also maintains a 25 million gallon reservoir allowing the intake to shut down for contaminants to pass. The reservoir provides a reliable source of raw water. The complete Source Water Assessment Plan is available for inspection at the FIVCO Area Development District office located in the Industrial Park at 32 FIVCO Court, Grayson, KY 41134.



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 may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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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 may 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, (sewage plants, septic systems, livestock operations, or wildlife). Inorganic contaminants, such as salts and metals, (naturally occurring or from stormwater runoff, wastewater discharges, oil and gas production, mining, or farming). Pesticides and herbicides, (stormwater runoff, agriculture or residential uses). Organic chemical contaminants, including synthetic and volatile organic chemicals, (by-products of industrial processes and petroleum production, or from gas stations, stormwater runoff, or septic systems). Radioactive contaminants, (naturally occurring or from oil and gas production or mining activities). In order 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 to provide the same protection for public health.

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 (800-426-4791).

## Information about Lead

The Ashland Water System has an ongoing lead and copper-monitoring program. The latest results for lead testing were completed in September 2014 and are scheduled again for June through September 2017. Lead and Copper tests are required every three years. Although the City of Ashland has never been in violation of lead and copper regulations, we continually monitor the corrosivity of the finished water and we are actively proceeding with removal of many potential sources of lead contamination within the public system.

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 Ashland 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>.



## Disinfection Byproducts

### How Much Risk?



One glass of untreated river water has the potential to contain bacteria, viruses and parasites that could be lethal to humans in just a few hours. Fortunately, chlorine disinfection has almost completely eliminated risks of deadly waterborne diseases such as typhoid fever, cholera, and dysentery. However, the chlorination process has also produced byproducts. These disinfection byproducts (DBPs) include groups of chemicals known as Trihalomethanes (THMs), and Haloacetic Acids (HAAs). Disinfection byproducts (DBPs) are a chronic contaminant, meaning their health effects only show up after continued long-term exposure. These byproducts have a very minimal risk; however the risk is great enough that the EPA has set Maximum Contaminant Levels (MCLs) for these byproducts as follows:

- MCL for Total Trihalomethanes (TTHM) = 0.080 mg/L (ppm)
- MCL for Haloacetic Acids (HAA) = 0.060 mg/L (ppm)

To understand the possible health effects described for many regulated contaminants including disinfection byproducts, EPA evaluated that 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.

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 system, and may have an increased risk of getting cancer. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

The EPA's established standards became more stringent in 2002, then again in 2013. Because of the more stringent standards, many water systems in Kentucky that did not previously have a problem meeting the old standards now find themselves in violation of the new requirements. This violation requires that water systems notify the public of the level of DBPs in their water, when the violation occurred, steps taken to lower the DBPs, and when the situation may be remedied.

Our water system violated drinking water requirements over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we are doing (did) to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During April 1, 2016 to June 30, 2016 we did not complete all monitoring by failing to report or correctly report testing results for Haloacetic Acids, and Trihalomethanes. Therefore, we could not verify the quality of your drinking water to the primacy agency during that time.

There is nothing you need to do at this time. The samples were taken at the correct time and location but were not reported to the Division of Water by the required deadline. The analytical results were submitted and the City of Ashland has since changed contract laboratory services to ensure this situation does not reoccur. Additionally the City of Ashland received two notices of violation for each THMs and HAAs covering July 1 to September 30 and October 1 to December 31 for exceeding the MCL. Public notifications were prepared and distributed. We anticipate returning to compliance within the next six months.

*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*



The City of Ashland is working with the Kentucky Division of Water (DOW) and the EPA to comply with the new rule. The City of Ashland has entered into an Agreed Order with the Division of Water which lays out a corrective action plan (CAP) and timelines for lowering the DBP levels. There are several ways to reduce THMs in drinking water including changing the disinfection process, filtration, chemical treatment, reduction of water age, installing aeration systems along with many other potential changes. Every solution does involve some cost and time to implement, and each solution has potentially negative consequences, therefore the City of Ashland is being very deliberate in the changes made so as not to cause different, more significant, problems to occur in our system while working toward compliance with the DBP rule.



If you are concerned about disinfection byproducts and have any questions about the risks and what you can do to reduce disinfection byproducts at your tap, please contact this office at (606) 327-2008.

If you are selecting a home treatment device for any purpose, it's good practice to select a device that has been independently certified to address the issue of concern. NSF International, the Water Quality Association, Underwriters Laboratories and CSA International all certify home treatment products for removal of contaminants and to address taste and odor problems.

**Some or all of these definitions may be found in this report:**

**Maximum Contaminant Level (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.

**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 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.

**Below Detection Levels (BDL)** - laboratory analysis indicates that the contaminant is not present.

**Not Applicable (N/A)** - does not apply.

**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, (µg/L). One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Parts per trillion (ppt)** - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

**Parts per quadrillion (ppq)** - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

**Picocuries per liter (pCi/L)** - a measure of the radioactivity in water.

**Millirems per year (mrem/yr)** - measure of radiation absorbed by the body.

**Million Fibers per Liter (MFL)** - a measure of the presence of asbestos fibers that are longer than 10 micrometers.

**Nephelometric Turbidity Unit (NTU)** - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

**Variances & Exemptions (V&E)** - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

**Action Level (AL)** - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow.

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

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old.

	Allowable Levels			Highest Single Measurement			Lowest Monthly %	Violation	Likely Source
Turbidity (NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples			0.22			100	No	Soil runoff
Regulated Contaminant Test Results									
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection			Date of Sample	Violation	Likely Source of Contamination
Total Coliform Bacteria # or % positive samples	TT	N/A	1	N/A			2016	No	Naturally present in the environment
Barium [1010] (ppm)	2	2	0.034	0.034	to	0.034	Mar-16	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.0624 (90 <sup>th</sup> percentile)	0.0024	to	0.97	Aug-14	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4 of	4	0.5	0.5	to	0.5	Mar-16	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15 0.00	0	4 (90 <sup>th</sup> percentile)	0	to	12	Aug-14	No	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	0.7	0.7	to	0.7	Feb-16	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.12 (lowest average)	0.85	to	1.70 (monthly ratios)	2016	No	Naturally present in environment.
*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.									
Chlorine (ppm)	MRDL = 4	MRDLG = 4	0.98 (highest average)	0.22	to	2	2016	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	68 (high site average)	14	to	90 (range of individual sites)	2016	Yes	Byproduct of drinking water disinfection
THM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	98 (high site average)	14	to	160 (range of individual sites)	2016	Yes	Byproduct of drinking water disinfection.

Two of our sample site locations exceeded the THM MCL. The locational running annual averages were as follows:

THM (ppb) Individual Site	Qtr 3	Qtr 4
AR2	84.50	81.25
TM3	98.25	90.50

Cryptosporidium [oocysts/L]	0	TT	0	12	2016	No	Human and animal fecal waste
	(99% removal)		(positive samples)				



Secondary contaminants do not have a direct impact on the health of consumers and are not required in the Consumer Confidence Report. They are being included to provide additional information about the quality of the water.

Secondary Contaminant	Maximum Allowable Level	Report Level	Range of Detection			Date of Sample
Aluminum	0.05 to 0.2 mg/l	0.02	0.02	to	0.02	2016
Chloride	250 mg/l	25.2	25.2	to	25.2	2016
Copper	1.0 mg/l	0.0019	0.0019	to	0.0019	2016
Corrosivity	Noncorrosive	-0.548	N/A			2016
Fluoride	2.0 mg/l	0.5	0.5	to	0.5	2016
Iron	0.3 mg/l	0.033	0.033	to	0.033	2016
Odor	3 threshold odor number	2	2	to	2	2016
pH	6.5 to 8.5	7.9	7.9	to	7.9	2016
Sulfate	250 mg/l	68	68	to	68	2016
Total Dissolved Solids	500 mg/l	217	217	to	217	2016

Our system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. 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 these data are available. If you are interested in examining the results, please contact Joseph Fliehm at 606-327-2058 or 4040 Winchester Ave, Ashland, KY 41101 during normal business hours.

### Unregulated Contaminants (UCMR 3)

	Average	Range (ppb)			Date
1,4-dioxane	0.16	0	to	0.36	Dec-15
vanadium	0.14	0	to	0.319	Jun-15
molybdenum	1.181	0	to	2.46	Sep-15
strontium	226.5	115	to	307	Mar-15
chromium-6	0.049	0.04	to	0.07	Dec-15
chlorate	124.45	63.5	to	234	Sep-15

EPA has not established drinking water standards for unregulated contaminants. There are no MCL's and therefore no violations if found. Sampling for the UCMR3 was completed in 2015, however results were not received until 2016.

	Average	Range of Detection		
Fluoride (added for dental health)	0.85	0.57	to	1.28
Sodium (EPA guidance level = 20 mg/L)	23.6	23.6	to	23.6

Copies are available at our office. If you desire a copy to be mailed to you please contact our office.

Spanish (Español) Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

