BARDSTOWN

Municipal Water Department PWSID# KY0900017 Water Quality Report for Year 2025

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your sources of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. If you have any questions about this report or concerning your water, please contact Jessica Filiatreau at 502-348-5947 or Nic Hume at 502- 348-3064 or write to us at 220 N. 5th St. Bardstown, KY 40004. You can also find more information regarding water quality on our website https://www.cityofbardstown.org/government/departments/water

2025 WATER IMPROVEMENTS

In 2025 the City of Bardstown completed several water infrastructure projects that will help customers have safer and more reliable water for generations to come. The city completed a $9.6 million dollar capital improvement project consisting of 9,200 linear feet of sixteen (16) inch water transmission main, a 1,700 gallon per minute booster pumping station, and a 1.5 million gallon elevated composite water storage tank in the Nelson County Industrial Park. These improvements help meet the growing residential , commercial, and industrial water needs in the east portion of Bardstown and Nelson County. The project also improves service to existing customers by adding a second water feed and additional water storage for, improving flow, resiliency and reliability. The project was funded through a Kentucky Infrastructure Authority (KIA) loan and by contributions of private industrial partners. The capital reimbursements to the City of Bardstown Water Department were based on the capacity of the infrastructure being utilized by recent industrial expansion.



The new 1.5 Million Gallon East Bardstown Water Tank on Parkway Dr

The City also initiated a substantial upgrade of its water meters, switching old meters out for new Advanced Metering Infrastructure (AMI). See the back page of this report for more information including some of the benefits to our customers from this upgrade.



New 1,700 Gallon/min Booster Pump Station on My Old Kentucky Home State Park

RECORD FLOODING OF 2025

Nelson County experienced record rainfall in 2025. More rain fell in the first 5 months than typically received in a year. Flooding in April threatened to overwhelm the flood defenses at the Water Treatment Plant that were installed after the previous flood of record in 1997. The Operators at the Bardstown Water Plant as well as the City's Public Works department worked diligently to reinforce the levee walls. Sump & emergency bypass pumps were used to keep the rising water table and stormwater runoff from inundating electronic systems and treatment processes. The City's Emergency Response plan was followed and the City will use the experience to make further improvements to ensure resiliency and continuity of service through future extreme weather events.



Sand Bags installed to prevent flooding at the Bardstown Water Treatment Plant

WATER-QUALITY DATA TABLES

The Bardstown Municipal Water Department routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our required monitoring for the period of January 1st to December 31st, 2025.

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. Copies of this report are available upon request by contacting our office during business hours.

REGULATED CONTAMINANT TEST RESULTS - Bardstown (B) Louisville Water Company (L)

Contaminant [code] (units)	MCL	MCLG	Level Found	Source	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
RADIOACTIVE CONTAMINANTS								
[1]Combined Radium (*pCi/L)*	5	0	1.1 1.21	B L	1.1 to 1.1 BDL to 1.21	2025	No	Erosion of natural deposits
INORGANIC CONTAMINANTS								
Barium [1010] ppm	2	2	0.017 0.021	B L	0.017 to 0.02 One measure	2025	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.75 0.62	B L	0.75 to 0.77 One measure	2025	No	Water additive which promotes strong teeth
Chromium, Total (ppb)	100	100	BDL BDL	B L	BDL BDL	2025	No	Discharge from steel and pulp mills. Erosion of natural deposits.
Nitrite [1041] (ppm)	1	1	N/A 0.014	B L	N/A BDL to 0.014	2025	No	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
Nitrate [1040] (ppm)	10	10	1.2 0.96	B L	0.67 to 1.2 0.63 to 0.96	2025	No	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
DISINFECTANTS/DISINFECTION BYPRODUCTS AND PRECURSORS								
Total Organic Carbon (ppm)	TT*	N/A	2.15 (low avg) 1.52	B L	1.65 to 3.70 0.86 to 2.02	2025	No	Naturally present in the environment

*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.

Contaminant [code] (units)	MCL	MCLG	Level Found	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Chlorine Residual (Chloramines) (ppm)	MRDL = 4	MRDLG = 4	2.19 (highest average)	1.24 to 2.74	2025	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	38 (highest site average)	21 to 64 range of individual sites	2025	Yes	Byproduct of drinking water disinfection
TTHM (ppb) Stage 2 [total trihalomethanes]	80	N/A	41 (highest site average)	24.2 to 69.4 range of individual sites	2025	No	Byproduct of drinking water disinfection
HOUSEHOLD PLUMBING CONTAMINANTS							
[2] Copper [1022] (ppm) (0 Sites exceeded the AL)	AL=1.3	1.3	0.063 (90th percentile)	0 to 0.093	2025	No	Corrosion of household plumbing systems
[2]Lead [1030] (ppb) (2 site exceeded the AL)	AL= 15	0	0	0 to 32	2025	No	Corrosion of household plumbing systems

Turbidity (NTU) TT * Representative samples	Allowable Levels	Source	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source
Turbidity is a measure of the clarity of the water and not a contaminant	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	B L	0.29 0.06	100% 100%	No	Soil runoff

AN EXPLANATION OF THE WATER-QUALITY DATA TABLE

The Bardstown Municipal Water Department routinely monitors for constituents in your drinking water according to Federal and State laws. The table on page 2 shows the results of our required monitoring for the period of January 1st to December 31st, 2025.

It is important to remember that the presence of these constituents does not necessarily pose a health risk. The table shows the results of our water-quality analysis. Every regulated contaminant that we detected in the water, even in the minutest traces, is listed here. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health, the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement.

The table lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Maximum Contaminant Level (MCL's) 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.

Unregulated Contaminant Monitoring Rule (UCMR) Sampling

Unregulated contaminants are those that EPA has not yet established drinking water standards, or limits to the amount of contaminant deemed safe for drinking water. The purpose of UCMR is to establish the presence of contaminants and determine if/when they will need to be removed from your drinking water. In 2024 Bardstown Municipal Water Department participated in the fifth round (UCMR 5). There were no detections of these unregulated contaminants. If you are interested in examining the results, call (502) 348-3064.

Definitions and Abbreviations

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 the 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.

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

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

RTCR Level 1 Assessment - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

RTCR Level 2 Assessment - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

NTU – Nephelometric Turbidity Units. NTU is a measure of the cloudiness of water. Low turbidity is an indicator of the effectiveness of the filtration process.

BDL – below detection level

ppm – parts per million, or milligrams per liter (mg/l)

ppb – parts per billion, or micrograms per liter (ug/l)

pCi/L– picocuries per liter (a measure of radioactivity)

µg/L- micrograms per liter

LRAA – locational running annual average

RTCR – Revised Total Coliform Rule

N/A – not applicable

REGULATED CONTAMINANT INFORMATION

Coliforms- Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the past year we were required to conduct one (1) Level 1 assessment. One (1) Level 1 assessment was completed. In addition, we were required to take one (1) corrective action and we completed this one (1) of action.

Bardstown routinely monitors for the presence of drinking water contaminants. Drinking water standards require that no more than 1 sample per month may show the presence of coliform bacteria. During the month of June we took 30 samples for Coliform bacteria. Two (2) of our samples showed the presence of coliform bacteria exceeding the required standard.

When we detect coliform bacteria in any sample, we do follow -up testing to see if other bacteria of greater concern, such as fecal coliform or E. coli, are present. Upon receiving the positive test results, Bardstown took additional follow- up/repeat samples in that area as part of a Level 1 assessment. The subsequent water samples did not show bacteria present and all further testing has been free of total coliform bacteria. There was no E.coli found.

As corrective action we reviewed sampling techniques and we believe that the contamination was due to human error during the handling of sample bottles, or that we may have had contaminated bottles. We reviewed our Standard Operating Procedures to reduce the chances of contaminating samples in the future. We disposed the suspected sample bottles and replaced them with new ones completing the corrective actions.

[1] **Radioactive Contaminants** - The data presented in this report are from the most recent testing done in accordance with the administrative regulations in 401 KAR Chapter 8:550 Section 1. Samples were taken June 2019 yielded the above results and the next sample needs to be collected from the entry point to the distribution system during any quarter in the 2025 calendar year

[2] **Lead and Copper** - Bardstown Municipal Water Department had fulfilled Standard Monitoring procedure with the post disinfectant change in December of 2018. The data presented above reflects the most recent sampling event. We have completed the Standard Monitoring period (two (2) six months monitoring with increased samples] and are now on the first step of reduced monitoring.

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. The City of Bardstown is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period. If you are concerned about lead in your water and wish to have your water tested, contact Nic Hume at 502-348-3064 or nhume@bardstownconnect.com. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at *https://www.epa.gov/safewater/lead*.

The City has completed an initial inventory of all the service lines served by our water system. The results can be provided on request (see contact information on the first page of this report). For more information about our continuing progress and also a guide to identifying the service line material yourself, please visit www.cityofbardstown.org/watersli

Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Nitrate. Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Disinfectants/Disinfection Byproducts and Precursors.

Disinfection By-products (DBPs) compliance regulation monitors Total Haloacetic Acids (HAA5s) and Total Trihalomethanes (TTHMs) at designated locations in the water distribution system. These TTHMs and HAA5s are by-products of the chlorine disinfection process. The regulatory annual quarterly average for HAA5 is 0.06 ppm (parts per million) and 0.08 ppm for TTHMs. We have remained in compliance with the regulation but want to further improve water quality for our Bardstown water customers and our wholesale water districts' customers.

A MESSAGE FROM THE EPA

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 (800-426-4791).

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.

A. Contaminants that may be present in source water include:

B. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

C. Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

D. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

E. 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 storm water runoff, and septic systems.

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

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. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Do I need to take special precautions?

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).

WATER SOURCE

Our water comes entirely from surface water sources – Sympson Lake and the Beech Fork River. An 8.8 square mile area of the Buffalo Creek watershed feeds Sympson Lake. A 669 square mile area extending upstream from Bardstown toward Chaplin, Springfield and Lebanon feeds the Beech Fork River Pumping Station. Supplemental connection with North Nelson Water District comes from Louisville Water Company with a source water supply from the Ohio River.

Source Water Assessment

Bardstown

A source water assessment of the system's susceptibility to potential sources of contamination has been completed. Following is a summary of the system's susceptibility to contamination, which is a part of the completed Source Water Assessment Plan (SWAP). The completed plan is available for inspection at the Lincoln Trail Area Development District, 613 College St. Rd., Elizabethtown, KY 40601, or by telephone at (270) 769-2393. The Bardstown Municipal Water Department withdraws approximately four and a half (4 ½) million gallons per day of raw water from Sympson Lake. Areas of high concern at the intake consist of row crops, bridges and culverts, urban and recreational grasses. These high areas of concern do not represent a danger to the environment. It is the potential for chemical spills, leaks or hazardous material accidentally spilling into the water source that gives these sites the susceptibility ranking of high. However, when all aspects of the source assessment are analyzed, the overall ranking for Bardstown's water source is moderate.



Sympson Lake

Louisville Water (from North Nelson)

Crescent Hill TPA serves Bullitt County, Spencer County, and Nelson County. Louisville Water Company treats surface water from the Ohio River. A Source Water Assessment Plan for Jefferson County identified spills of hazardous materials and permitted discharges of sanitary sewers as the highest contamination risks. In Jefferson County, land use in the protection area is primarily zoned for residential and commercial use, with only a few industrial sites. In Oldham and Trimble Counties land use is primarily zoned for residential and agricultural use. Therefore source water contamination risks are relatively low. To view the entire Source Water Assessment and Protection Plan contact Jeremy Raney at 502-569-3600 x2328.

UPGRADING TO SMART METERS FOR BETTER SERVICE

The City of Bardstown water utility has been hard at work over the past year upgrading our water meters to new advanced metering infrastructure (AMI) smart meters. To date, we have changed out over 6,000 customer water meters with this new technology.

This meter replacement project has provided valuable work experience for several local high school students. These students have been employed during school holidays and on a part-time basis to assist with the meter installations. We're proud to be able to offer this hands-on learning opportunity to the youth in our community.

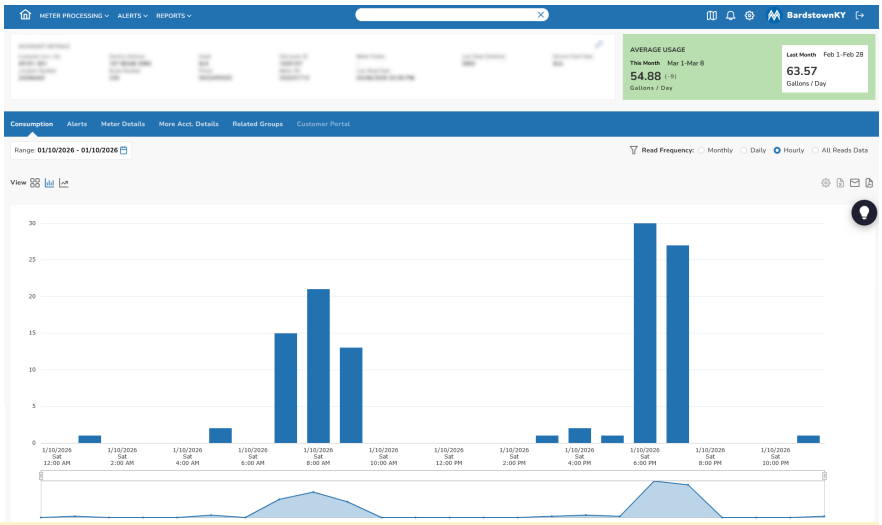
In addition to upgrading customer meters, we are also installing zone meters at strategic points throughout our distribution system. These zone meters will help us better compare the overall flow of water in our pipes compared to the water usage recorded by customer meters. This will improve our ability to quickly identify and address any potential leaks in the system.

The new AMI smart meters provide a host of benefits for our customers as well. Soon, customers will be able to conveniently view their own hourly, daily, and monthly water usage through a dedicated website or mobile app. This real-time data will empower customers to better monitor and manage their water consumption.



Highschool Intern Aiden Boles installing AMI smart meter

We're excited about the improvements these smart meter upgrades bring to our water utility operations and the value they provide to our customers in Bardstown. This is just one of the many ways we are working to deliver reliable, efficient, and transparent water service to the community.





Above Picture: The Harmony Meter Data Management software showing real-time water usage monitoring. Left:: An AMI Water Meter Lid with antenna.

LIST OF VIOLATIONS 2025

Violation #2026-9950653 during Compliance Period of 10/1/2025 to 12/31/2025 Group 953 Fourth Quarter Stage 2 Disinfection Biproduct (DBP) sampling is scheduled to occur the first week of November. Sampling for the fourth quarter was overlooked in November 2025 during the specified sampling window. Once made aware of missed sampling, samples were immediately taken. At the time samples were pulled, one of the required sampling locations had water shutoff, thus the sample was taken at another location. Results were submitted to the Division of Water. All samples results were under the regulated limit. Although the sampling was performed within the regulated quarter, a monitoring violation occurred due to the delay and the location change of a sample.

What Should You Do?

There is nothing you need to do at this time. You may continue to drink the water. If a situation arises where the water is no-longer safe to drink, you will be notified within 24 hours.

What is being done?

The sampling schedule is now posted on the critical information board for all operators to see and checks and balances have been added with additional employees as back-ups.

For more information, please contact Nic Hume at 502-348-3064 or nhume@bardstownconnect.com.