

Bardstown Municipal Water Department
PWSID#KY0900017
2012 Water Quality Report

We are pleased to present to you this Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. Our constant goal is to provide our customers 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. The City Water Department has invested in recent improvements to the Water Treatment Plant and a new transmission main. The Water Department also has ongoing maintenance programs to keep quality water on tap, such as tank inspection and maintenance, and performing a system wide flushing program. Recent water modeling has helped identify optimal tank level operation to shorten the water age within the system, improving water quality. A waterline replacement program is also being initiated to help combat aging infrastructure. Automated meter reading is being implemented as well in order to become more efficient and aid in leak detection. We appreciate your cooperation and support as we reach our goals.

We know that water is the most indispensable product in every home and we ask everyone to be conservative and help us in our efforts to protect the water source and the water system. Please report any suspicious activity that you may see around water storage tanks, fire hydrants, pump stations or Sympsom Lake to Law Enforcement Agencies or City Hall employees. Informed consumers are our best allies in maintaining safe drinking water. We encourage public interest and participation in our community's decisions affecting drinking water. Regular City Council meetings occur on the second and fourth Tuesdays, at the City Annex Building, 220 North Fifth Street at 7:00 P.M.

The staff at the Bardstown Water Treatment Plant work around the clock to provide top quality water to every tap. If you want further information or want to discuss matters included in this report, please contact Jessica Filiatreau at 502-348-5947, Wayne Kendall or Geronimo Afile at 502- 348-3064.

Water Source

Our water comes entirely from surface water sources – Sympsom Lake and the Beech Fork River. An 8.8 square mile area of the Buffalo Creek watershed feeds Sympsom Lake. A 669 square mile area extending upstream from Bardstown toward Chaplin, Springfield and Lebanon feeds the Beech Fork River Pumping Station. 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 and through the ground, it dissolves naturally occurring minerals, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in our source water include:

- a. Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- b. Inorganic contaminants, such as salts and metals, that 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.

To ensure that tap water is safe to drink, U.S. 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 that shall provide the same protection for public health.

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 five (5) million gallons per day of raw water from Sympsom 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*.

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 (1-800-426-4791).

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. This table shows the results of our required monitoring for the period of January 1st to December 31st, 2012. 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, are 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.

Additional Health Information

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).

Definitions and Abbreviations

Maximum Contaminant Level or 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 or MCLG - 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.

Maximum Residual Disinfectant Level or 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 or 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.

N/A – not applicable

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

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

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

The data presented in this report is 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. Unless otherwise noted, the report level is the highest level detected

	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Compliance Achieved	Likely Source
Turbidity (NTU) TT	No more than 1 NTU Less than 0.3 NTU in 95% of monthly samples	0.15	100	Yes	Soil runoff

Regulated Contaminant Test Results

Contaminant [code] (units)	MCL	MCLG	Level Found	Range of Detection	Date of Sample	Compliance Achieved Yes/No	Likely Source of Contamination
Microbiological Contaminants							
^a Total Coliform Bacteria No. of positive samples	1	0	7	N/A	June 2012	No	Naturally present in the environment
Radioactive Contaminants							
^b Alpha emitters [4000] (pCi/L)	15	0	0.02	0.02 to 0.02	2/14/10	Yes	Erosion of natural deposits
^b Uranium (µg/L)	30	0	0.09	0.09 to 0.09	2/14/10	Yes	Erosion of natural deposits
^b Beta/photon emitter (pCi/L)	50	0	4	4 to 4	2/14/10	Yes	Decay of natural and man made deposits

Contaminant [code] (units)	MCL	MCLG	Level Found	Range of Detection	Date of Sample	Compliance Achieved Yes/No	Likely Source of Contamination
Inorganic Contaminants							
Barium [1010] ppm	2	2	0.018	0.018 to 0.018	3/21/12	Yes	Drilling wastes; metal refineries; erosion of natural deposits
^c Copper [1022] (ppm) (# Sites exceeded the AL)	AL=1.3	1.3	0.025 (90 th percentile)	0 - 0.076 0 sites exceed AL	8/25/11	Yes	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives
Fluoride [1025] (ppm)	4	4	0.95	0.82 to 1.07	Sep 2012 (highest month)	Yes	Water additive which promotes strong teeth
^c Lead [1030] (ppb) (# sites exceeded the AL)	AL= 15	0	0 (90 th percentile)	0 – 7 0 sites exceed AL	8/25/11	Yes	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate [1040] (ppm)	10	10	1.61	0 – 1.61	3/21/12	Yes	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits.
Synthetic Organic Contaminants including Pesticides and Herbicides							
^d Atrazine [2050] (ppb)	3	3	0.14	BDL to 0.29	3/21/12 to 10/17/12	Yes	Runoff from herbicide used on row crops
^d Simazine [2037] (ppb)	4	4	0.016	BDL to 0.063	3/21/12 to 10/17/12	Yes	Herbicide runoff
Disinfectants/Disinfection Byproducts and Precursors							
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.91 (lowest average)	1.25 to 3.04 (monthly ratios)	Jan-Dec 2012	Yes	Naturally present in the environment
* Monthly ratio is the % TOC removal achieved to % TOC removal required. Annual average of the monthly ratio must be 1.00 or greater for compliance							
Chlorine (ppm)	MRDL 4	MRDLG 4	1.09 (highest average)	0.21 to 1.97	Jan. 1 st – Dec.31 st 2012	Yes	Water additive used to control microbes.
^e Haloacetic acids or HAA (ppb)	60	N/A	55 (system average)	20 to 75	1 st QTR-4 th QTR 2012	Yes	By-product of drinking water chlorination
^e TTHM [total trihalomethanes] (ppb)	80	N/A	42 (system average)	15 to 58	1 st QTR-4 th QTR 2012	Yes	By-product of drinking water chlorination

^a **Total Coliform.** Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other; potentially-harmful, bacteria may be present. Seven (7) positive samples were found in the month of June, out of fifty one (51) samples taken in June (over 360 samples were taken in 2012). Notice of this violation was sent to our customers in July of 2012.

We believe that the contamination was due to human error during the shipping and handling of the sampling bottles, or that we may have had contaminated bottles. We revised our Standard Operating Procedure to reduce the chances of contaminating samples in the future. We disposed the suspected sampling bottles that had moisture in them and replaced them with new ones.

^b **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. Our next Radionuclide compliance monitoring will be collected during the 2019 calendar year.

^c **Lead and Copper** - Bardstown Municipal Water Dept. qualifies for reduced monitoring at a frequency of once every three years. We did not exceed the action levels for Lead and Copper during the compliance year 2011. Our next sampling will be taken in the warm weather months of June, July, August or September of 2014.

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. Bardstown Municipal Water Dept. 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 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>.

^d The analyses of SOC's in May 2012 detected Atrazine and Simazine. Bardstown Municipal Water Dept. is required to sample the contaminants for a minimum of four consecutive quarters with results being less than their maximum contaminant level. The monitoring schedule for simazine and atrazine cannot be reduced until Bardstown Municipal Water Department receives a written approval from the Division of water.

^e The current MCL for **Haloacetic Acids** (HAA) is 60 ppb . The results shown above are reported in a rolling annual average, which is the average of the quarterly tests for the most recent quarters. Although the HAA's annual average in our water is below the MCL, it has been detected above the MCL at times in certain quarters. Some people who drink water containing Haloacetic Acids (HAA5) in excess of the MCL over many years may have increased risk of getting cancer.