

Knox County Utility Commission
Water Quality Report
January 1 through December 31, 2014
PWSID # KY0610110

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 our customers with a safe, clean, and reliable supply of drinking water. We want to assure that we will continue to monitor, improve, and protect the water system and deliver a high quality product. 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. If you have any questions or concerns you may contact Superintendent Marshall Ramey at P.O. Box 1630, Barbourville, KY 40906 or you can call the office at 606-546-5300. Office hours are Monday – Friday from 8:00 am until 4:30 pm. We also have regularly scheduled meetings the first Tuesday of each month at 5:30 pm at the Knox County Courthouse. The public is welcome to attend.

Our water supply is derived from four different surface water sources. Knox County Utility Commission has an intake in the Cumberland River. We also purchase water from three other utilities. Barbourville Utility Commission withdraws water from Laurel Lake and Cumberland River. Corbin City Utilities Commission withdraws from Corbin City Lake. Pineville Utility Commission withdraws water from Cannon Creek Lake. A Source Water Assessment has been completed for all four utilities. This assessment focuses on the susceptibility of the water source to contamination. All of the sources are under a moderate threat of contamination. The highest threats to these water supplies includes: accidental spills; untreated wastewater discharges; chemical management of right of ways; and siltation. Under certain circumstances contaminants could be released that would pose challenges to water treatment or even enter your drinking water. These activities and how they are conducted, are of interest to the entire community because they potentially affect your health and the cost of treating your water. The complete source water assessment plan can be reviewed at the Cumberland Valley Area Development District office in London, KY (606-864-7391).

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 (EPA) 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 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. 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/Centers for Disease Control (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).

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) - 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, ($\mu\text{g/L}$). 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.

Variations & 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.

Information about Lead:

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. Your local public water system 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 at <http://www.epa.gov/safewater/lead>.

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

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. Unless otherwise noted, the report level is the highest level detected.

	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	#1 0.08 #2 0.09 #3 0.26 #4 0.106	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
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Microbiological Contaminants

Total Coliform Bacteria # or % positive samples	1	0	#1 1 #3 2 *note below	N/A	Aug-14 Jul-14	No No	Naturally present in the environment
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Radioactive Contaminants

Beta photon emitters (mrem/yr)	4	0	#1 2.9	2.9 to 2.9	May-08	No	Decay of natural and man-made deposits
Alpha emitters [4000] (pCi/L)	15	0	#1 0.09 #2 0.40 #4 0.4	0.09 to 0.09 0.40 to 0.40 0.4 to 0.4	May-08 Oct. 2008 2008	No	Erosion of natural deposits
Combined radium (pCi/L)	5	0	#1 0.09 #2 1.0	0.09 to 0.09 1 to 1 One Sample	May-08 Oct. 2008	No	Erosion of natural deposits

Inorganic Contaminants

Arsenic [1005] (ppb)	10	0	#2 2.0	N/A	2014	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium [1010] (ppm)	2	2	#1 0.020 #2 0.015 #3 0.017	0.02 to 0.02 0.015 to 0.015 One Sample	Feb-14 2014 Feb-14	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	#1 0.1 #2 0.017 #3 0.230 #4 0.39 90th %tile	0 to 0.21 0 to 0.017 0.009 to 0.449	Aug-14 Sep-12 Sep-12 2011	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	#1 0.99 #2 1.0 #3 1.0 #4 0.8	0.74 to 1.18 0.7 to 1.2 0.7 to 1.15 0.78 to 1.22	Mar-14 2014 2014 2014	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level	AL = 15	0	#1 4 #2 0 #3 3.2 #4 1.0 90th %tile	0 to 6 0 to 7.2	Aug-14 2012 Sep-12 2011	No	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	#1 0.310 #2 0.20 #3 0.40 #4 0.05	0.21 to 0.31 0.2 to 0.2 One Sample	May-14 2014 May-14 2014	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Disinfectants/Disinfection Byproducts and Precursors

Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	#1 1.62 #3 1.20 #4 1.00 lowest avg	1.04 to 2.81 1 to 1.45 1 to 1 (monthly ratios)	2014	No	Naturally present in environment.
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*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average of the monthly ratios must be 1.00 or greater for compliance.

Chlorine (ppm)	MRDL =4	MRDLG =4	#1 1.54 #2 2.2 #3 1.43 #4 1.65 highest avg	0.8 to 2.2 0.5 to 2.2 0.52 to 2.24 0.58 to 2.25	2014	No	Water additive used to control microbes.
HAA (ppb) [Haloacetic acids]	60	N/A	#1 26 #2 23 #3 40.0 #4 36 system avg	10 to 38 0.012 to 0.042 15 to 76 13 to 65 range of system sites	2014	No	Byproduct of drinking water disinfection
TTHM (ppb) (all sites) [total trihalomethanes]	80	N/A	#1 45.2 #2 44 #3 64.75 #4 33 system avg	12 to 66 0.017 to 0.087 20 to 128 12 to 67 range of system sites	2014	No	Byproduct of drinking water disinfection.

#1 Knox Co. Utility Commission #2 Barbourville Utility Commission #3 Corbin City Utilities #4 Pineville Utility Commission

Maximum Contaminant Levels (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.

*Total Coliforms- July 2014 - 2 (two) samples results were positive for total coliforms and negative for Escherichia coli. All 6 (six) repeat samples were negative for total coliform. An additional 50 samples were collected in July; all were negative for Total Coliforms and Escherichia coli. All other months of 2014, 20 samples are collected from various sampling points throughout City Utilities Commission water distribution system and analyzed for Total Coliforms and Escherichia coli without any positive sample results. These bacteria - whose presence indicates that the water may be contaminated with human or animal wastes.