

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

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



## Water Quality Report 2017



**To request a paper copy call (270) 422-5006.**

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Manager: Tim Gossett

270-422-5006

CCR Contact: Tim Gossett

270-422-5006

Mailing address:

1003 Armory Place

Brandenburg, KY 40108

Meeting location and time:

Water District Office – 1003 Armory Place

Fourth Tuesday each month at 6:00 PM

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 that we will continue to monitor, improve, and protect the water system and deliver a high quality product.

### **Water Purchased From Hardin Co. #1**

Hardin County Water District #1 owns and operates three treatment plants. The sources for the Pirtle Springs Plant is Pirtle Spring and Head of Rough Spring, both classified as groundwater under the influence of surface water. The source for the Ft. Knox Central Plant is surface water from McCracken Spring. The source for the Ft. Knox Muldraugh Plant is groundwater from wells in the West Point aquifer near the Ohio River. The overall susceptibility to contamination for these sources can be considered moderate but there are a few areas of concern. Potential contaminant sources for the springs include transportation corridors, urban areas, and agricultural activities. Potential contaminant sources for the wells include underground storage tanks, permitted outfalls, abandoned oil and gas wells, illegal dump sites, solvents, degreasing agents, and petroleum based products. A Source Water Assessment Plan for the Ft. Knox plants is available for review by contacting the Fort Knox Environmental Office, Building 1110. A Source Water Assessment for the Pirtle Spring Plant is available for review at the Hardin County Water District #1 office or by contacting the Lincoln Trail Area Development District Office in Elizabethtown, KY.

### **Water Purchased From Brandenburg**

The City of Brandenburg treats ground water from wells near the Ohio River in Flippin Run Park. A Wellhead Protection Plan and a Source Water Assessment has been completed for these wells. The susceptibility to contamination is considered moderate to high. Potential sources of contamination include above ground storage tanks and agricultural activities. The complete Source Water Protection Plan is available for review at Brandenburg City Hall.

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).

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/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:**

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 or at <http://www.epa.gov/safewater/lead>.

**Hardin County #1 Test Results (Pirtle Springs and Ft Knox Treatment Plants A & B)**

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	Source	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity
Turbidity (NTU) TT	No more than 1 NTU	A=	0.16	100	No	Soil runoff
* Representative samples of filtered water	Less than 0.3 NTU in 95% monthly samples	H=	0.076			

**Regulated Contaminant Test Results A= Ft Knox Plant A; B= Ft Knox Plant B; H=Hardin Co #1 (Pirtle Springs)**

Contaminant [code] (units)	MCL	MCLG	Source	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Beta photon emitters (pCi/L)	50	0	B=	6.5	6.5 to 6.5	2017	No	Decay of natural and man-made deposits
Alpha emitters [4000] (pCi/L)	15	0	B=	3.4	3.4 to 3.4	2017	No	Erosion of natural deposits
Combined radium (pCi/L)	5	0	H=	1.3	1.3 to 1.3	2014	No	Erosion of natural deposits
Barium [1010] (ppm)	2	2	H=	0.031	0.031 to 0.031	2017	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	A= B= H=	0.8 0.6 0.4	0.8 to 0.6 to 0.4	2017	No	Water additive which promotes strong teeth
Nickel (ppb) (US EPA remanded MCL in February 1995.)	N/A	N/A	H=	2.6	2.6 to 2.6	2017	No	N/A
Nitrate [1040] (ppm)	10	10	B= H=	0.5 0.8	0.5 to 0.8	2017	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Total Organic Carbon (ppm) (report level=lowest avg. range of monthly ratios)	TT*	N/A	A= B= H=	2.81 2.24 1.3	1 to 4.54 to 2.5	2017	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.

**Other Contaminants**

Cryptosporidium [oocysts/L]	0	TT	A=	3	12	2017	See Note Below	Human and animal fecal waste
	(99% removal)			(positive samples)	(no. of samples)			

Our water producers were required to monitor the source of your drinking water for Cryptosporidium in order to determine whether treatment at the water treatment plants is sufficient to adequately remove Cryptosporidium from your drinking water. Cryptosporidium is a microbial pathogen found in surface water. Cryptosporidium was detected in some of the samples collected from the raw water sources for our water system. It was not detected in the finished water. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Cryptosporidium must be ingested to cause disease and it may be spread through means other than drinking water.

**Regulated Contaminant Test Results - Brandenburg and Meade County**

Contaminant [code] (units)	MCL	MCLG	Source	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Total Coliform Bacteria # or % positive samples	TT	N/A	MC	1	N/A	2017	No	Naturally present in the environment
Barium [1010] (ppm)	2	2	BB	0.034	0.034 to 0.034	2017	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	MC	0.387 (90 <sup>th</sup> percentile)	0.0077 to 0.769	2016	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	BB	0.88	0.88 to 0.88	2017	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	MC	3 (90 <sup>th</sup> percentile)	0 to 7	2016	No	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	BB	0.22	0.22 to 0.22	2017	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Chlorine (ppm)	MRDL = 4	MRDLG = 4	MC	1.18 (highest average)	0.50 to 1.91	2017	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	MC	29 (average)	2 to 47 (range of individual sites)	2017	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	MC	41 (average)	7 to 48 (range of individual sites)	2017	No	Byproduct of drinking water disinfection.

**Violation 2018-9668716**

Our 2016 CCR contained many mistakes and was missing the notice of availability that the CCR would be distributed electronically. The web link provided did not take customers directly to the CCR in one click as required. Proof of how customers were notified of the website was not provided. The CCR did not contain information on a Tier 1 E.coli violation that occurred that year. The information for Hardin County #1 source assessment was missing potential contaminant sources and how to view a copy of the assessment. Required language for unregulated contaminants was missing. The table in the CCR did not contain all of the data for the water systems that provide water to our system. These issues were also present in the 2014 and 2015 CCRs. To assure that our CCRs meet all regulatory requirements and are easily found and easier to understand we have requested assistance from Kentucky Rural Water Association to develop our CCRs.