

(Christian County Water District) Water Quality Report (2016)

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Meeting Location and Time: 1940 Dawson RD. Hopkinsville KY, 42240 1st Thursday Each Month

Source Information:

This report is to inform the public about the quality of water and service provided on a daily basis. During 2016 the Christian County Water District purchased water from three sources. Customers who live in the Gracey area, Hwy 117, Hwy 272, Hwy 164, and all side roads in these areas were supplied with water purchased from Barkley Lake Water District which is treated surface water drawn from Barkley Lake. Customers who live on the Todd County side of west fork red river on Barkers Mill and Chapel Hill were supplied with surface water purchased from Todd County Water District. All other customers in Christian County were supplied with water purchased from Hopkinsville Water Environment Authority (HWEA) has treated surface water which is drawn from Barkley Lake, the North Quarry and the South Quarry.

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>.

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.

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

Christian County Water District

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.

Turbidity	Allowable Levels	Highest Single Result	Lowest Monthly Percent	Date of Sample	Violation	Likely Source of Contamination
(NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples					Naturally present in the environment

Lead and Copper [code] (units)	Action Level (AL)	MCLG	90 th Percentile	Sites Exceeding Action Level	Date of Sample	Violation	Likely Source of Contamination
Copper [1022] (ppm)	1.3	1.3	0.436	0.010 to 0.436	July 2015	NO	Corrosion of household plumbing systems
Lead [1030] (ppb)	15	0	4	2 to 7	July 2015	NO	Corrosion of household plumbing systems

Regulated 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	2	N/A	Feb/Sept	NO	Naturally present in the environment
E.coli Bacteria % positive samples	0%	0		N/A			Human and animal fecal waste
Beta photon emitters (pCi/L)	50	0					Decay of natural and man-made deposits
Alpha emitters [4000] (pCi/L)	15	0					Erosion of natural deposits
Combined radium (pCi/L)	5	0					Erosion of natural deposits
Uranium (µg/L)	30	0					Erosion of natural deposits
Antimony [1074] (ppb)	6	6					Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic [1005] (ppb)	10	N/A					Natural erosion; runoff from orchards or glass and electronics production wastes
Asbestos (MFL)	7	7					Decay of asbestos cement water mains; erosion of natural deposits
Barium [1010] (ppm)	2	2					Drilling wastes; metal refineries; erosion of natural deposits
Beryllium [1075] (ppb)	4	4					Coal-burning factories; metal refineries; electrical, defense, and aerospace industries
Cadmium [1015] (ppb)	5	5					Natural deposits; corrosion of galvanized pipes; metal refineries; batteries and paints
Chromium [1020] (ppb)	100	100					Discharge from steel and pulp mills; erosion of natural deposits
Cyanide [1024] (ppb)	200	200					Discharge from steel/metal factories; plastic and fertilizer factories
Fluoride [1025] (ppm)	4	4					Water additive which promotes strong teeth; erosion of natural deposits
Mercury [1035] (ppb)	2	2					Erosion of natural deposits; refineries and factories; landfills; runoff from cropland

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1,2,4-Trichlorobenzene [2378] (ppb)	70	70					Discharge from textile-finishing factories
1,1,1-Trichloroethane [2981] (ppb)	200	200					Discharge from metal degreasing sites; factories
1,1,2-Trichloroethane [2985] (ppb)	5	3					Discharge from industrial chemical factories
Trichloroethylene [2984] (ppb)	5	0					Discharge from metal degreasing sites; factories
Toluene [2991] (ppm)	1	1					Discharge from petroleum factories
Vinyl Chloride [2976] (ppb)	2	0					Discharge from plastics factories; PVC piping
Xylenes [2955] (ppm)	10	10					Discharge from petroleum factories; chemical factories
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	(lowest average)	(monthly ratios)			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.

Bromate (ppb)	10	0					Byproduct of drinking water chlorination
Chloramines (ppm)	MRDL = 4	MRDLG = 4	(highest average)				Water additive used to control microbes.
Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.17 (highest average)	0.69 to 2.01		NO	Water additive used to control microbes.
Chlorite (ppm)	1	0.8	(average)				Byproduct of drinking water disinfection
Chlorine dioxide (ppb)	MRDL = 800	MRDLG = 800					Water additive used to control microbes
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	49 (high site average)	32 to 67 (range of individual sites)		NO	Byproduct of drinking water disinfection
HAA (ppb) (Stage 2) [Haloacetic acids] (Annual Sample)	60	N/A	67 (high site)	32 to 67 (range of individual sites)	1QTR	NO	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	61 (high site average)	33 to 86 (range of individual sites)		NO	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes] (Annual Sample)	80	N/A	86 (high site)	33 to 86 (range of individual sites)	3QTR	NO	Byproduct of drinking water disinfection

Cryptosporidium [oocysts/L]	0	TT (99% removal)	(positive samples)	(number of samples)			Human and animal fecal waste
Radon	N/A	N/A	(positive samples)	(number of samples)			Naturally present in the environment

Unregulated Contaminants (UCMR 3)	average	range (ppb)	date
1,2,3-trichloropropane			
1,3-butadiene			
chloromethane			
1,1-dichloroethane			
bromomethane			
chlorodifluoromethane (HCFC-22)			
bromochloromethane (Halon 1011)			
1,4-dioxane			
vanadium			
molybdenum			
cobalt			
strontium			
chromium-6			

Hopkinsville Water Environment Authority

2016 Water Quality Data

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	Allowable Levels	Highest Single Level	Lowest Monthly %	Violation	Likely Source
1. Turbidity (NTU) TT	Never more than 1 NTU Less than 0.3 NTU 95% of samples each month. (Population >10,000)	0.38	99%	No	Soil runoff
		Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration.			

Regulated Contaminant Test Results

Contaminant [code] (units)	MCL	MCLG	Highest Level	Range	Date of Sample	Violation Yes/No	Likely Source of Contamination
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Microbial Contaminants

2. Total Coliform Bacteria # or % positive samples	TT	N/A	11%	N/A	2016	No	Human and animal fecal waste
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Radioactive Contaminants

3. Alpha emitters [4000] (pCi/l)	15	0	0.2	0.2-0.2	July 2008	No	Erosion of natural deposits
4. Uranium (ug/l)	30	0	0.1	0.1-0.1	July 2008	No	Erosion of natural deposits

Inorganic Contaminants

5. Copper [1022] (ppm) (0 sites exceeded the AL)	AL= 1.3	1.3	0.452 (90th percentile)	0.0073 - 0.548	July- Sept 2015	No	Corrosions of household plumbing systems
6. Lead [1030] (ppb) (0 sites exceeded the AL)	AL= 15	0	2.0 (OOH percentile)	NO-14	July-Sept 2015	No	Corrosion of household plumbing systems

Lead and Copper monitoring is done together during the months of July, August and September.

7. Nitrate [1040] (ppm)	10	10	2.9	0.6-2.9	Jan 2016	No	Fertilizer runoff; leaching from septic tanks; sewage; erosion of natural deposits
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Hopkinsville Water Environment Authority

2016 Water Quality Data

Regulated Contaminant Test Results							
Contaminant [code] (units)	MCL	MCLG	Highest Level	Range	Date of Sample	Violation Yes/No	Likely Source of Contamination
Inorganic Contaminants (continued)							
8. Barium {1010} (ppm)	2.0	2.0	0.041	0.041- 0.041	January 2016	No	Drilling wastes; metal refineries; erosion of natural deposits
9. Fluoride {1025} (ppm)	4.0	4.0	0.2	0.2-0.2	January 2016	No	Water additive which promotes strong teeth
Disinfectants/Disinfection Byproducts and Precursors							
10. Total Organic Carbon (measured as ppm, but reported as a ratio*)	TT	N/A	1.48 (lowest average)	0.83-2.44 (monthly ratios*)	2016	No	Naturally present in environment.
*The monthly ratio of the % TOC annual average to the % TOC in month required. Lowest annual average of the monthly ratios must be 1.00 or greater in order to meet the trihalomethane standard.							
11. Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.51 (highest average)	0.21-2.9	2016	No	Water additive used to control microbes.
12. Haloacetic acids or HAA (ppb) Individual Sites	60	N/A	47 (annual average)	6-55	1 per quarter	No	By-product of drinking water disinfection
13. Total Trihalometh- anes or TTHM (ppb)	80	N/A	69 (annual average)	24-76	1 per quarter	No	By-product of drinking water disinfection

	Average	Range of Detection
Fluoride (added for dental health)	0.8	0.6 - 1.03
Sodium (EPA guidance level = 20 mg/l)	5.2	4.44 - 6.03

Barkley Lake Regional Water District

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	0.28	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
Microbiological Contaminants							
Total Coliform Bacteria # or % positive samples	TT	N/A	1	N/A	2016	No	Naturally present in the environment
Radioactive Contaminants							
Alpha emitters [4000] (pCi/L)	15	0	0	0 to 4.7	Jul-14	No	Erosion of natural deposits
Inorganic Contaminants							
Barium [1010] (ppm)	2	2	0.032	0.032 to 0.032	Aug-16	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.286 (90 th percentile)	0 to 0.425	Oct-14	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	0.4	0.4 to 0.4	Aug-16	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	0 (90 th percentile)	0 to 3	Oct-14	No	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	0.7	0.3 to 0.7	Jul-16	No	Fertilizer runoff; 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	1.2 (lowest average)	1.00 to 2.80 (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	1.21 (highest average)	0.48 to 1.9	2016	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	35 (high site average)	18 to 57 (range of individual sites)	2016	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	52 (high site average)	24 to 72 (range of individual sites)	2016	No	Byproduct of drinking water disinfection.

Todd County Water District 2016 Water Quality Data

KY1100944

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	0.078	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	2	N/A	2016		Naturally present in the environment
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Inorganic Contaminants

Barium [1010] (ppm)	2	2	0.0219	0.0219 to 0.0219	Jun-16	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	(90 th percentile)	0 to 0			Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	0.648	0.648 to 0.648	Jun-16	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	(90 th percentile)	0 to 0			Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	0.18	0.18 to 0.18	Feb-16	No	Fertilizer runoff; 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	1.51 (lowest average)	1.00 to 1.91 (monthly ratios)	2016	No	Naturally present in environment.
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*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	1.30 (highest average)	0.31 to 1.87	2016	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	47 (high site average)	28 to 47 (range of individual sites)			Byproduct of drinking water disinfection
THM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	95 (high site average)	32 to 95 (range of individual sites)			Byproduct of drinking water disinfection.