

## 2017 Water Quality Report

Manager: JASON ARNOLD

Address: PO BOX 294

Public Meetings: City Hall 325 W. Second Street Calhoun, KY SECOND TUESDAY EACH MONTH AT 6:00 PM

## CALHOUN WATER WORKS

Contact: JASON ARNOLD

CALHOUN, KENTUCKY 42327

KY0750055

Phone: 270-273-9936

"The City of Calhoun draws water from the Green River which is a surface water source. Brief Source Water Assessment Summary indicates overall susceptibility is generally moderate. Potential contamination sources of concern include: 2 bridges, 1 hazardous chemical user, 8 underground injection sites, 1 area sewer line, 1 waste generator or transporter, and 1 statewide coverage of row crops, 1 water plant, 6 major roads, 14 oil and gas wells, statewide coverage of forest and woodlands, statewide coverage of pasture and hay, statewide coverage of power lines, and statewide coverage of residential land, 11 bridges, 1 port, 1 railroad, 3 sewer collection systems, 1 superfund site, 8 hazard chemical sites, 4 underground storage tank facilities, 1 landfill, 2 waste transfer stations, 10 major roads, 38 oil and gas wells and 2 oil and natural gas facilities. The source water assessment can be reviewed by contacting Jason Arnold (270-273-9936), at the water office located in Calhoun, Kentucky.

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).

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

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.

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	0.278	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
<b>Inorganic Contaminants</b>							
Barium [1010] (ppm)	2	2	0.028	0.028 to 0.028	Feb-17	No	Drilling wastes; metal refineries; erosion of natural deposits
Chromium [1020] (ppb)	100	100	0.3	0.3 to 0.3	Feb-17	No	Discharge from steel and pulp mills; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.053 (90 <sup>th</sup> percentile)	0.0015 to 0.0978	July-15	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	0.4	0.4 to 0.4	Feb-17	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 1	AL = 15	0	0 (90 <sup>th</sup> percentile)	0 to 35	July-15	No	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	1.5	1.5 to 1.5	Feb-17	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	1.57 (lowest average)	1.27 to 1.79 (monthly ratios)	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.

Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.57 (highest average)	0.94 to 1.79	2017	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	68 (high site average)	1 to 132 (range of individual sites)	2017	YES	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	93 (high site average)	19 to 84 (range of individual sites)	2017	YES	Byproduct of drinking water disinfection.

**Violation : 2017-9626016** We exceeded the TTHM MCL of 0.080 mg/l during the compliance period of 10/01/16-12/31/16. Our result for that period was 0.086 mg/l and we received a Notice of Violation (NOV). We have adopted a flushing procedure to help mitigate this concern. Chemical feed rates at the Water Treatment Plant have been optimized. Our distribution operators are also monitoring Free and Total Chlorine residuals to judge water quality. TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

**Violation : 2017-9626017** We exceeded the HAA5 MCL of 0.060 mg/l during the compliance period of 01/01/17-03/31/17. Our result for that period was 0.061 mg/l and we received a Notice of Violation (NOV). We have adopted a flushing procedure to help mitigate this concern. Chemical feed rates at the Water Treatment Plant have been optimized. Our distribution operators are also monitoring Free and Total Chlorine residuals to judge water quality. Haloacetic acids, or HAA. Some people who drink water containing Haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

**Violation : 2017-9626018** We exceeded the TTHM MCL of 0.080 mg/l during the compliance period of 01/01/17-03/31/17. Our result for that period was 0.088 mg/l and we received a Notice of Violation (NOV). We have adopted a flushing procedure to help mitigate this concern. Chemical feed rates at the Water Treatment Plant have been optimized. Our distribution operators are also monitoring Free and Total Chlorine residuals to judge water quality. TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

**Violation : 2017-9626019** We exceeded the TTHM MCL of 0.080 mg/l during the compliance period of 04/01/17-06/30/17. Our result for that period was 0.093mg/l and we received a Notice of Violation (NOV). We have adopted a flushing procedure to help mitigate this concern. Chemical feed rates at the Water Treatment Plant have been optimized. Our distribution operators are also monitoring Free and Total Chlorine residuals to judge water quality. TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

**Violation : 2018-9626020** We exceeded the TTHM MCL of 0.080 mg/l during the compliance period of 07/01/17-09/30/17. Our result for that period was 0.083mg/l and we received a Notice of Violation (NOV). We have adopted a flushing procedure to help mitigate this concern. Chemical feed rates at the Water Treatment Plant have been optimized. Our distribution operators are also monitoring Free and Total Chlorine residuals to judge water quality. TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

**Violation : 2018-9626021** We exceeded the HAA5 MCL of 0.060 mg/l during the compliance period of 10/01/17-12/31/17. Our result for that period was 0.068 mg/l and we received a Notice of Violation (NOV). We have adopted a flushing procedure to help mitigate this concern. Chemical feed rates at the Water Treatment Plant have been optimized. Our distribution operators are also monitoring Free and Total Chlorine residuals to judge water quality. Haloacetic acids, or HAA. Some people who drink water containing Haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

**Notice of Violation 2018-9626022 - Failure to Submit OEL REPORT FOR HAA5**

Our water system violated one or more drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

*We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During compliance period 10/01/17-12/31/17 we did not complete all monitoring or testing for Operational Evaluation Levels (OEL's) and therefore cannot be sure of the quality of your drinking water during that time.*

There is nothing you need to do at this time. You do not need to use an alternative (e.g., bottled) water supply.

What happened? Who is at risk? What is being done?

**Violation : 2018-9626022** / We received a Notice of Violation (NOV) from our primacy agency, Kentucky Division of Water. We neglected to send in our first quarter OEL's during the compliance period of 04/01/16-07/31/16. The OEL is a trigger that assesses the Disinfection By Products and the trend in the distribution system. There were no health effects due to this administrative oversight. Remedial actions included performing public notification and the required certification. The missing report was sent to our primacy agency.

*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

**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.

**This report will not be sent to individual customers. It will be available upon request at City Hall.**