

# ***Brodhead Water Works Water Quality Report 2024***

Water System ID: KY1020889  
Manager: Shannon Cash  
606-758-8635

CCR Contact: Shannon Cash  
606-758-8635

Mailing Address:  
P.O. Box 556  
Brodhead, KY 40409

Meeting location and time:  
Brodhead City Hall  
Second Mondays - 6:00 PM

Brodhead Water System purchases water from Mt. Vernon Water Works which treats surface water from Lake Linville. Activities and land uses upstream can pose potential risks to your drinking water. Under certain circumstances contaminants could be released that would pose challenges to water treatment, or even get into your drinking water. An analysis of the susceptibility of the Mt. Vernon water supply to contamination indicates that this susceptibility is generally moderate. Forestry and agricultural activities pose a risk due to pesticide and herbicide applications. Bridges, culverts, and highways are considered risks due to the potential of spills. Highway maintenance and construction can also pose a risk. The complete Source Water Assessment Plan including all potential sources of contamination and preventive measures is available for review at the Mt. Vernon Water Department during normal business hours.

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:** 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 water system is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact your local water system. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <http://www.epa.gov/safewater/lead>.

**Service Line Inventory Information:** To address lead in drinking water, EPA requires that all community water systems develop and maintain an inventory of service line materials. We have completed a service line inventory (SLI) and it is available for review at 11 West Main St., Brodhead, KY 40409.

**Lead Sample Results Availability Information:** We are required to periodically sample water from customer taps to determine lead and copper levels. EPA sets the lead action level at .015 mg/L (15 ppb). For a water system to be in compliance, at least 90% of tap water samples must have lead levels below this limit. This report contains the 90th percentile and range of our most recent sampling. The individual results for each location sampled can be reviewed at 11 West Main St., Brodhead, KY 40409.

We are only required to test for some contaminants periodically, so the results listed in this report may not be from the previous year. Only detected contaminants are included in this report. For a list of all contaminants we test for please contact us. Copies of this report are available upon request by contacting our office.

### **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.

To request a paper copy call (606)758-8635.

| Regulated Contaminant Test Results                  |          |           | Brodhead Water Works                |                                      |                |           |   |
|---|----------|-----------|-------------------------------------|--------------------------------------|----------------|-----------|---|
| Contaminant [code] (units)                          | MCL      | MCLG      | Report Level                        | Range of Detection                   | Date of Sample | Violation | Likely Source of Contamination            |
| Chlorine (ppm)                                      | MRDL = 4 | MRDLG = 4 | 1.41 (highest average)              | 0.95 to 1.98                         | 2024           | No        | Water additive used to control microbes.  |
| HAA (ppb) (Stage 2) [Haloacetic acids]              | 60       | N/A       | 41 (high site average)              | 31 to 54 (range of individual sites) | 2024           | No        | Byproduct of drinking water disinfection  |
| TTHM (ppb) (Stage 2) [total trihalomethanes]        | 80       | N/A       | 47 (high site average)              | 30 to 64 (range of individual sites) | 2024           | No        | Byproduct of drinking water disinfection. |
| Household Plumbing Contaminants                     |          |           |                                     |                                      |                |           |   |
| Copper (ppm) Round 1 sites exceeding action level 0 | AL = 1.3 | 1.3       | 0.257 (90 <sup>th</sup> percentile) | 0.015 to 0.313                       | Jul-23         | No        | Corrosion of household plumbing systems   |
| Lead (ppb) Round 1 sites exceeding action level 0   | AL = 15  | 0         | 2 (90 <sup>th</sup> percentile)     | 0 to 3                               | Jul-23         | No        | Corrosion of household plumbing systems   |

### Violation ID 2024-9427635 and 2024-9427637

Each month we are required to complete a Monthly Operation Report (MOR) and submit it to the Kentucky Division of Water by the tenth of the following month. This report includes daily testing results. We failed to submit our MORs in January and February 2024 by the tenth of the following month. We have since returned to compliance. We are working to make sure we submit our documentation on time to the state each month.

### Violation ID 2024-9427636 and 2024-9427638

For the months of January and February 2024 we failed to collect and report minimum daily chlorine residual samples throughout the distribution system on our Monthly Operating Reports. We are now recording the daily chlorine residuals at various points in our distribution system as required.

| Regulated Contaminant Test Results   |  |      | Mt. Vernon Water Works     |                               |                |                            |  |
|--|--|------|----------------------------|-------------------------------|----------------|----------------------------|--|
| Contaminant [code] (units)   | MCL  | MCLG | Report Level               | Range of Detection            | Date of Sample | Violation                  | Likely Source of Contamination   |
| Inorganic Contaminants   |  |      |                            |                               |                |                            |  |
| Barium [1010] (ppm)  | 2  | 2    | 0.019                      | 0.019 to 0.019                | Mar-24         | No                         | Drilling wastes; metal refineries; erosion of natural deposits                     |
| Fluoride [1025] (ppm)  | 4  | 4    | 0.81                       | 0.81 to 0.81                  | Mar-24         | No                         | Water additive which promotes strong teeth   |
| Nitrate [1040] (ppm)   | 10   | 10   | 0.637                      | 0.637 to 0.637                | Mar-24         | No                         | Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits |
| Volatile Organic Contaminants  |  |      |                            |                               |                |                            |  |
| Benzene [2990] (ppb)   | 5  | 0    | 0.125                      | 0 to 0.5                      | Mar-24         | No                         | Discharge from factories; gas storage tanks and landfills                          |
| Disinfectants/Disinfection Byproducts and Precursors   |  |      |                            |                               |                |                            |  |
| Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)  | TT*  | N/A  | 1.83 (lowest average)      | 1.25 to 2.34 (monthly ratios) | 2024           | 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 Constituents   |  |      |                            |                               |                |                            |  |
| Turbidity (NTU) TT<br>* Representative samples   | Allowable Levels   |      | Highest Single Measurement | Lowest Monthly %              | Violation      | Likely Source of Turbidity |  |
| Turbidity is a measure of the clarity of the water and not a contaminant.  | No more than 1 NTU*<br>Less than 0.3 NTU in 95% of monthly samples |      | 0.25                       | 100                           | No             | Soil runoff                |  |