

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.

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 (270) 527-3208.



North Marshall Water District 2023 Water Quality Report

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Meeting location and time:

Water District Office – 96 Carroll Road

Draffenville, KY

Third Thursday each month at 9:00 AM

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.

North Marshall Water District operates two water treatment plants. Groundwater is pumped from a regional aquifer through seven wells. The raw groundwater requires very little treatment. The water is pH adjusted then a disinfectant is added to further protect public health. As part of our multi-barrier approach to safeguard the public we have developed a Wellhead Protection Plan to better understand potential impacts to water quality and to assign a susceptibility rating of potential contaminant sources. The susceptibility is based on several factors. The well depth and type of aquifer, the proximity of the contaminant sources to the well field, and the nature of the contaminant source. Overall, the susceptibility rating for our source is low. There are a few potential contaminant sources that could have a higher impact. Located within the wellhead protection areas are fuel storage tanks, a closed landfill, and an onsite sewage treatment plant. The greatest threat comes from roads that transect the protection zones where an accident could cause contaminants to be released and enter the aquifer. Activities and land use within the watershed can pose potential risks to your drinking water. Under certain circumstances, contaminants could be released that would pose challenges to water treatment or contaminate 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. A copy of the complete Wellhead Protection Plan may be reviewed at the Water District Office 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).

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>.

Regulated Contaminant Test Results								North Marshall Water District - Plant A and Distribution System							
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection		Date of Sample	Violation	Likely Source of Contamination							
Fluoride [1025] (ppm)	4	4	0.70	0.7	to 0.7	Aug-21	No	Water additive which promotes strong teeth							
Nitrate [1040] (ppm)	10	10	0.65	0.65	to 0.65	Nov-23	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits							
Disinfectants/Disinfection Byproducts and Precursors															
Chlorine (ppm)	MRDL = 4	MRDLG = 4	0.89 (highest average)	0.5	to 2.2	2023	No	Water additive used to control microbes.							
TTHM (ppb) (Stage 2) [total trihalomethanes] (Annual Sample)	80	N/A	7 (high site)	5	to 7 (range of individual sites)	2023	No	Byproduct of drinking water disinfection.							
Household Plumbing Contaminants															
Copper [1022] (ppm) Round sites exceeding action level 1	AL = 1.3	1.3	0.69 (90 th percentile)	0.0051	to 1.6	Jun-23	No	Corrosion of household plumbing systems							
Lead [1030] (ppb) Round 1 sites exceeding action level 0	AL = 15	0	1.6 (90 th percentile)	0	to 14	Jun-23	No	Corrosion of household plumbing systems							

Your drinking water has been sampled for a series of unregulated contaminants. Unregulated contaminants are those that EPA has not established drinking water standards. There are no MCLs and therefore no violations if found. The purpose of monitoring for these contaminants is to help EPA determine where the contaminants occur and whether they should have a standard. As our customers, you have a right to know that these data are available. If you are interested in examining the results, please contact our office during normal business hours.

	Average	Range of Detection
Fluoride (added for dental health)	0.7	0.26 to 1.1

Secondary contaminants do not have a direct impact on the health of consumers. They are being included to provide additional information about the quality of the water.

Secondary Contaminant	Maximum Allowable Level	Report Level	Range of Detection	Date of Sample
Chloride	250 mg/l	3.9	3.9 to 3.9	Nov-23
Copper	1.0 mg/l	0.088	0.088 to 0.088	Nov-23
Corrosivity	Noncorrosive	-1.01	-1.01 to -1.01	Nov-23
Fluoride	2.0 mg/l	0.71	0.71 to 0.71	Nov-23
pH	6.5 to 8.5	7.1	7.1 to 7.1	Nov-23
Sulfate	250 mg/l	4.1	4.1 to 4.1	Nov-23
Total Dissolved Solids	500 mg/l	130	130 to 130	Nov-23

Regulated Contaminant Test Results								North Marshall Water District - Plant B							
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection		Date of Sample	Violation	Likely Source of Contamination							
Fluoride [1025] (ppm)	4	4	0.90	0.9	to 0.9	Aug-21	No	Water additive which promotes strong teeth							
Nitrate [1040] (ppm)	10	10	0.24	0.24	to 0.24	Sep-22	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits							

	Average	Range of Detection
Fluoride (added for dental health)	0.9	0.52 to 1.2
Sodium (EPA guidance level = 20 mg/L)	7.1	7.1 to 7.1

Secondary contaminants do not have a direct impact on the health of consumers. They are being included to provide additional information about the quality of the water.

Secondary Contaminant	Maximum Allowable Level	Report Level	Range of Detection	Date of Sample
Chloride	250 mg/l	6.1	6.1 to 6.1	Sep-22
Copper	1.0 mg/l	0.052	0.052 to 0.052	Sep-22
Corrosivity	Noncorrosive	0.33	0.33 to 0.33	Sep-22
Fluoride	2.0 mg/l	0.84	0.84 to 0.84	Sep-22
pH	6.5 to 8.5	7.6	7.6 to 7.6	Sep-22
Sulfate	250 mg/l	6.9	6.9 to 6.9	Sep-22
Total Dissolved Solids	500 mg/l	120	120 to 120	Sep-22

The USEPA has introduced proposed regulations with MCLs for PFAS in drinking water. “PFAS,” are a group of manufactured chemicals that have been used in industry and consumer products since the 1940s in products including food packaging, cookware, clothing, cosmetics, carpet and furniture treatments, even dental floss, and toilet paper. PFAS have been found in water, air, and soil throughout the U.S. and around the world and, as a result, they can end up in drinking water sources. It is important to note that PFAS are not used in drinking water treatment processes, and they are not produced during drinking water treatment processes. Samples were obtained from all the wells used by NMWD and PFAS was detected above the proposed MCL in wells supplying Plant B (Carter Brien WTP) which serves the northern portion of the district's service territory. Plant B was removed from service on October 3, 2023 to allow us to perform an assessment of the wells and evaluate treatment options for the plant to attain compliance with the proposed regulatory standard. All wells remaining in service are in compliance with the proposed EPA standards for PFAS based on testing conducted by the district and by the Kentucky Environmental Protection Cabinet. More information concerning PFAS is available by clicking the line on the district's webpage at <http://www.northmarshallwater.com>.

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.

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. Copies of this report are available upon request by contacting our office during business hours.