

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.

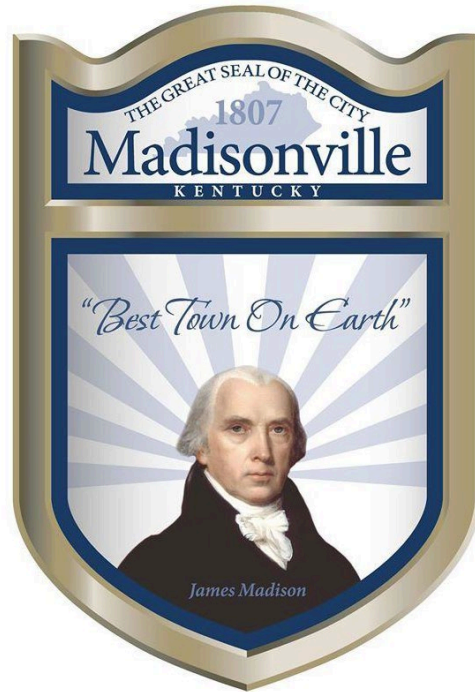
Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

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.



Madisonville 2021 Water Quality Report

To request a paper copy call 270-824-2102.

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Madisonville, KY 42431

Meeting location and time:
Madisonville City Council Chambers
1st and 3rd Monday monthly at 4:30 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.

Madisonville treats surface water from Lake Pee Wee and the Green River. A source water assessment that addresses the system's susceptibility to potential sources of contamination has been completed and is available for review at the Madisonville Water Treatment Plant. The assessment states that there are seven hundred fifty-nine potential contaminant sites with the possibility of contaminating the water supply located within the watershed. Sources of high potential impact include seventy-nine chemical storage/use facilities and five hundred fifty-two oil/gas wells which have the potential for contamination due to leaching, leaks and spills. The Calhoun, Central City, Sacramento, Island, Livermore and four small scale wastewater treatment facilities have the potential of contamination from the possibility of untreated materials wastewater discharges. Potential contaminants from chemical use and storage are present at various industrial sites, coal mines, marinas, and landfills. Other potential areas of concern located within the watershed are roads, bridges and highways which pose a risk due to the possibility of hazardous entering the water supply from traffic accidents, spills, and illegal dumping. Households which are not connected to a public wastewater system present a source of contamination due to the possibility of failing septic systems. Farms located within the watershed present the possibility of siltation, pathogens, pesticides and fertilizer to enter the water supply.

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>.

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.**

Regulated Contaminant Test Results							
Madisonville Water Department							
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
E.coli Bacteria % positive samples	0%	0	1	N/A	2021	Yes	Human and animal fecal waste
Barium [1010] (ppm)	2	2	0.021	0.021 to 0.021	Feb-21	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.67	0.67 to 0.67	Feb-21	No	Water additive which promotes strong teeth
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.32 (lowest average)	1.08 to 1.67 (monthly ratios)	2021	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	1.47 (highest average)	0.2 to 2.5	2021	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	33 (high site average)	12 to 45 (range of individual sites)	2021	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	58 (high site average)	18 to 99 (range of individual sites)	2021	No	Byproduct of drinking water disinfection.
Household Plumbing Contaminants							
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.067 (90 th percentile)	0.004 to 0.128	Jul-21	No	Corrosion of household plumbing systems
Other Constituents							
Turbidity (NTU) TT * 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* Less than 0.3 NTU in 95% of monthly samples		0.04	100	No	Soil runoff	

Fluoride (added for dental health)	Average	Range of Detection
	0.7	0.67 to 0.78
Sodium (EPA guidance level = 20 mg/L)	8.6	8.55 to 8.55

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	Report	Range	Date of	
	Maximum Allowable Level	Level	of Detection	Sample
Chloride	250 mg/l	9.8	9.8 to 9.8	Feb-21
Copper	1.0 mg/l	0.0018	0.0018 to 0.0018	Feb-21
Corrosivity	Noncorrosive	-0.861	-0.861 to -0.861	Feb-21
Fluoride	2.0 mg/l	0.68	0.68 to 0.68	Feb-21
Manganese	0.05 mg/l	0.002	0.002 to 0.002	Feb-21
pH	6.5 to 8.5	7.7	7.7 to 7.7	Feb-21
Sulfate	250 mg/l	41.1	41.1 to 41.1	Feb-21
Total Dissolved Solids	500 mg/l	126	126 to 126	Feb-21

Violation 2022-9905922

On September 13, 2021 one of our bacteriological samples indicated the presence of coliform bacteria and E.coli bacteria. An additional sample on the following day still tested positive for coliform bacteria. Samples collected on 9/15/2021 indicted no presence of bacteria. The Division of Water was consulted and a public notification was distributed immediately. Assessments conducted for this issue revealed that the sample station had deteriorated and caused the contamination and needed to be replaced. Plans were implemented to replace all of the similar type sample stations in our system.

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

During the past year we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. In addition, we were required to take two corrective actions and we completed two of these actions.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

We were required to complete a Level 2 assessment because we found E. coli in our water system. In addition, we were required to take two corrective actions and we completed two of these actions.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found E. coli bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.