

# Sturgis Water Works

## Water Quality Report 2023

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Meeting Location and Time: City Hall, 106 W 6<sup>th</sup> St, First Mondays 6:00 PM

Sturgis Water Works treated surface water from the Ohio River until August 2023. All water is now purchased from Union County Water District. Union County purchases water from Morganfield whose source is the Ohio River. Activities and land uses upstream of Morganfield's source of water can pose potential risks to 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. An analysis of the Ohio River surface water supply to contamination indicates that its susceptibility is generally moderate. However, there are a few areas of high concern. Potential contaminant sources of concern include bridges, railway lines, row crops, forest, woodlands and roads. Each of these is rated as high in the susceptibility analysis because of the contaminant type, their proximity to the intake and chance of release. The complete source water assessments for both water treatment plants are available for review at the Green River Area Development District. Their office is located at 300 GRADD Way, Owensboro, KY 42301.

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>.

### 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 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.

<b>Regulated Contaminant Test Results</b>								<b>Sturgis Water Works</b>	
<b>Contaminant [code] (units)</b>	<b>MCL</b>	<b>MCLG</b>	<b>Report Level</b>	<b>Range of Detection</b>	<b>Date of Sample</b>	<b>Violation</b>	<b>Likely Source of Contamination</b>		
Barium [1010] (ppm)	2	2	0.035	0.035 to 0.035	Aug-23	No	Drilling wastes; metal refineries; erosion of natural deposits		
Fluoride [1025] (ppm)	4	4	0.78	0.78 to 0.78	Aug-23	No	Water additive which promotes strong teeth		
Nitrate [1040] (ppm)	10	10	0.994	0.994 to 0.994	Feb-23	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits		
Dalapon [2031] (ppb)	200	200	BDL	BDL to 2.39	Aug-23	No	Runoff from herbicide used on rights of way		
<b>Disinfectants/Disinfection Byproducts and Precursors</b>									
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.48 (lowest average)	0.97 to 2.21 (monthly ratios)	2023	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	1.30 (highest average)	0.5 to 1.97	2023	No	Water additive used to control microbes.		
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	42 (high site average)	30 to 51 (range of individual sites)	2023	No	Byproduct of drinking water disinfection		
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	89 (high site average)	30 to 147 (range of individual sites)	2023	YES	Byproduct of drinking water disinfection.		
<b>Household Plumbing Contaminants</b>									
Copper [1022] (ppm) Round sites exceeding action level 0	AL = 1.3	1.3	0.015 (90 <sup>th</sup> percentile)	0 to 0.118	Sep-23	No	Corrosion of household plumbing systems		
Lead [1030] (ppb) Round 1 sites exceeding action level 0	AL = 15	0	0 (90 <sup>th</sup> percentile)	0 to 8	Sep-23	No	Corrosion of household plumbing systems		
<b>Other Constituents</b>									
Turbidity (NTU) TT * Representative samples	<b>Allowable Levels</b>		<b>Highest Single Measurement</b>		<b>Lowest Monthly %</b>	<b>Violation</b>	<b>Likely Source of Turbidity</b>		
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		0.171		100	No	Soil runoff		

At the beginning of August 2023 the water treatment plant for Sturgis was closed down. All water for Sturgis is now treated by Morganfield and purchased from Union County Water District.

Regulated Contaminant Test Results			Morganfield, City of				
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Barium [1010] (ppm)	2	2	0.043	0.043 to 0.043	Oct-23	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.82	0.82 to 0.82	Oct-23	No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	0.516	0.516 to 0.516	Feb-23	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	1.24 (lowest average)	0.65 to 1.79 (monthly ratios)	2023	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 * 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		0.167	100	No	Soil runoff	

Violations 2024-9916638 & 2024-9916642

Testing results showed that our system exceeded the standard, or maximum contaminant level (MCL), for trihalomethanes (THM). The standard for trihalomethanes is 0.080 mg/L. It is determined by averaging all samples at each sampling location for the previous 12 months. Violations for trihalomethanes:

0.083 mg/L 7/1/23 through 9/30/23

0.089 mg/L 10/1/23 through 12/31/23

We are working to minimize the formation of trihalomethanes while ensuring we maintain an adequate level of disinfectant. We have taken additional steps to monitor water storage tank levels and water flow patterns within the distribution system. 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 system, and may have an increased risk of getting cancer. Public notices were distributed for each quarter we were out of compliance.

Violations 2024-9916639 & 2024-9916640 & 2024-9916641

We are required to submit to the Division of Water a Monthly Operating Report (MOR) by the 10<sup>th</sup> of each month. We received these violations because our MORs for October and November 2023 failed to be submitted by the required deadline and the daily minimum chlorine results from the distribution system (reported within the MOR) failed to be received by the Division of Water. We submitted the MORs electronically each month by the required deadline but some of the pages failed to be transmitted correctly. All missing pages for the reports have been submitted and we have taken steps to prevent similar situations.