

2019 Quality on Tap Report

CITY OF STURGIS WATER SYSTEM

We're pleased to present you with the 2019 Quality on Tap Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect your water resources. We are committed to ensuring the quality of your water. This report shows your water quality and what it means. We want our valued customers to be well informed about their water utility.

Este informe contiene informacion muy importante sobre su agua de beber. Si desea entender este reporte puede buscar alguien que lo traduzca para ud.

Source Water Information

Your source water comes from four groundwater wells located in the east and south areas of Sturgis, which pump the water from an underground aquifer. The State of Michigan performed an assessment of your source water in 2003 to determine the susceptibility or relative potential for contamination. The susceptibility rating is a seven-tiered scale from "very low" to "very high" based primarily on geological sensitivity, water chemistry, and contaminant sources. All four of the City's source wells have a moderately high susceptibility rating.

We continue to take measures to protect your source water. The City has an established Wellhead Protection Program (WHPP). The WHPP includes the following elements: identification of potential sources of contamination; wellhead protection area management, public education/participation, and contingency plans. In the summer of 2019, the City submitted a revised General Plan/Asset Management Plan to the Department of Environment, Great Lakes, and Energy (EGLE). The plan summarizes the City's water system assets and develops a long term plan to maintain and update them in a financially-viable way.

The City's Cross Connection Control Program currently has 719 industrial, commercial, institutional, residential, and governmental accounts which must be routinely re-inspected for cross connections. Cross Connection Control involves checking to see whether proper backflow prevention devices are in place, and testing those devices to verify proper operation. One hundred ninety seven of the 257 devices in the system, which require testing, were tested in 2019. Sixty two accounts received their initial inspection in 2019.

Your source water has three chemicals added to it before entering the water system. At each well, the following chemicals are added: chlorine, fluoride (hydrofluosilicic acid), and a polyphosphate polymer. Chlorine is a disinfectant added to prevent bacterial growth in the water supply system. Normal chlorine concentrations are 0.9 to 1.3 parts per million (ppm) at each well to maintain proper chlorine residual levels in your water supply system. Fluoride is added to your supply water to help prevent tooth decay. The polyphosphate polymer is used for aesthetics to minimize "red water". It also helps control corrosion and scale in your water supply system.

Water Quality Monitoring

The City of Sturgis routinely monitors for contaminants in your drinking water according to Federal and State laws. Table #1 shows all required monitoring results for the period of January 1st to December 31st, 2019. Required monitoring for some regulated contaminants occurs less often than annually. Testing results older than 5 years are not included. 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA Safe Drinking Water Hotline (1-800-426-4791).

Contaminant Monitoring Results

In Tables #1, #2, #3, and #4 below you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

- **Non-Detects (ND)** - not detectable at testing limit.
- **ppm** - parts per million or milligrams per liter.
- **ppb** - parts per billion or micrograms per liter.

- **Action Level (AL)** - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Level 1 Assessment:** A study of the water supply to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- N/A - Not Applicable
- **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 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.

Distribution System Material Inventory

The State of Michigan's revised Lead and Copper Rule, enacted in June 2018, requires water systems to report the pipe material type for all water service lines owned by the water system. The City of Sturgis has started keeping track of service line materials used and we will have a complete water service inventory by 2025. As of December 31, 2019, your water system had 163 known lead services and 3098 service lines of unknown material out of a total of 4295 water service lines.

Population Vulnerability & Contamination Sources

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. U.S. EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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 can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include all of the following:

- ◆ Microbial contaminants, such as viruses, and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ◆ Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ◆ Pesticides and herbicides, which may come from a variety of sources such as agriculture and residential uses.
- ◆ Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.
- ◆ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, and septic systems.

In order to ensure tap water is safe to drink, the U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Federal Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

TABLE #1. REGULATED CONTAMINANTS MONITORING RESULTS						
Inorganic Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Maximum Level Detected	Range of Values Detected	Violation Yes or No	Likely Sources of Contamination
Arsenic*	10 ppb	0 ppb	1.5 ppb	ND - 1.5 ppb	NO	Erosion of natural deposits.
Barium*	2 ppm	2 ppm	0.053 ppm	0.039 - 0.053 ppm	NO	Discharge from metal refineries; erosion of natural deposits.
Beryllium*	4 ppb	4 ppb	0.45 ppb	ND - 0.45 ppb	NO	Discharge from metal refineries and coal burning factories; discharge from electrical, aerospace, & defense industries.
Cadmium*	5 ppb	5ppb	0.86 ppb	ND - 0.86 ppb	NO	Corrosion of galvanized pipe; erosion of natural deposits; discharge from metal refineries; runoff from waste paints.
Chromium*	100 ppb	100 ppb	3.2 ppb	2.0 – 3.2 ppb	NO	Discharge from steel and pulp mills; erosion of natural deposits.
Nitrate (as Nitrogen)	10 ppm	10 ppm	0.63 ppm	ND - 0.63 ppm	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Fluoride	4 ppm	4 ppm	0.18 ppm	0.14 - 0.18 ppm	NO	Water additive promoting strong teeth.
Selenium*	50 ppb	50 ppb	8.0 ppb	4.9 – 8.0 ppb	NO	Discharge from petroleum and metal refineries; erosion of natural deposits.
Volatile Organic Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Running Annual Average	Range of Values Detected	Violation Yes or No	Likely Sources of Contamination
TTHM's -[Total trihalomethanes]	80 ppb	N/A	6.60 ppb	4.2 – 6.60 ppb	NO	By-product of drinking water chlorination.
Disinfectant	Highest Level of Disinfectant Allowed (EPA's MRDL)	Ideal Goal for Highest Level of Disinfectant Allowed (EPA's MRDLG)	Highest Quarterly Running Annual Average	Range of Values Detected	Violation Yes or No	Likely Sources of Contamination
Chlorine Residual	4 ppm	4 ppm	0.33 ppm	0.04– 1.00 ppm	NO	By-product of drinking water chlorination.

TABLE #1. REGULATED CONTAMINANTS MONITORING RESULTS, Continued								
Inorganic Contaminant Subject to AL	EPA's Action Level	Ideal Goal (EPA's MCLG)	Sturgis' Compliance Number	Year Sampled	# of Samples Above AL	Range of Values Detected	Violation	Typical Sources of Contamination
January - June Lead (ppb)	15	0	3	2019	0	ND - 11	NO	Corrosion of household plumbing systems; erosion of natural deposits.
January - June Copper (ppm)	1.3	1.3	0.3	2019	1	ND - 1.47	NO	Corrosion of household plumbing systems; erosion of natural deposits.
July - Dec. 2019 Lead (ppb)	15	0	4	2019	1	ND - 233	NO	Corrosion of household plumbing systems; erosion of natural deposits.
July - Dec. Copper (ppm)	1.3	1.3	0.20	2019	0	ND - 0.72	NO	Corrosion of household plumbing systems; erosion of natural deposits.

* 2018 Results for Metals

TABLE #2. SPECIAL CONTAMINANT MONITORING RESULTS					
Special Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Range of Values Detected	Average of Values Detected	Likely Sources of Contamination
Sodium	N/A	N/A	4.8 - 8.2 ppm	6.1 ppm	Erosion of Natural Deposits

Meaning of Testing Results

So what do the testing results mean? The State of Michigan and the U.S. EPA require us to test our water on a regular basis to ensure its safety. We met all the monitoring and reporting requirements for 2019. Water quality monitoring and testing detected the regulated contaminants listed in Table #1. (Note: Some regulated contaminants are tested on intervals longer than five years). Sodium monitoring results in Table #2 are required by U.S. EPA regulations while they consider setting a limit on it. The City of Sturgis is required to monitor your drinking water for specific contaminants.

As part of an EGLE initiative, the City's municipal wells were sampled and tested for PFAS in October 2018. The results show PFAS contaminants were not detected in Sturgis' municipal wells. PFAS are a group of industrial chemicals used worldwide in consumer products and manufacturing processes. This group of industrial chemicals have potential health implications when present in drinking water at concentrations above health advisory levels. Visit www.sturgismi.gov/pfas or <http://michigan.gov/pfasresponse> for more information regarding PFAS in your community or in the State of Michigan.

Your water system had one Total Coliform bacteria positive test result out of 165 routine distribution samples taken in 2019. Results of routine distribution system monitoring are an indicator of whether or not your drinking water meets health standards. The positive test result occurred July 1st in a routine monitoring sample. Repeat samples were collected at the site, upstream and downstream of the site, and at three municipal wells supplying water prior to the positive test result. One of the three samples also returned a positive test for Total Coliform. This resulted in a localized boil water notice being issued. During the past year we were required to conduct one Level 1 Assessment. One Level 1 Assessment was completed. We were required to take no corrective actions after EGLE reviewed our Level 1 Assessment. 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 an assessment to identify problems and to correct the problems that were found during the assessment.

The City of Sturgis water system was required to monitor for twenty unregulated contaminants during 2019 as part of the U.S. EPA's Unregulated Contaminant Monitoring Rule 4 (UCMR4). Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. Monitoring helps U.S. EPA to determine where these contaminants occur and whether it needs to regulate those contaminants. The 2015 results for UCMR3 and the 2019 results for UCMR4 can be found in Table 3 and Table 4, respectively, below. Only detected contaminants are listed in Table 3 and Table 4. Previous unregulated contaminant monitoring results can be obtained by contacting Rick Miller at 659-7291.

TABLE #3. 2015 UNREGULATED CONTAMINANTS MONITORING (UCMR3) RESULTS

Contaminant	Range of Values Detected	Average Level Detected	Method Detection Limit
Molybdenum	ND – 1.9 ppb	1.5 ppb	1.0 ppb
Strontium	ND – 100 ppb	67.6 ppb	0.3 ppb
Vanadium	ND – 0.2 ppb	0.2 ppb	0.2 ppb
Chlorate	ND – 150 ppb	91.3 ppb	20 ppb

TABLE #4. 2019 UNREGULATED CONTAMINANTS MONITORING (UCMR4) RESULTS

Contaminant	Range of Values Detected	Average Level Detected	Method Detection Limit
Manganese	ND – 144 ppb	65.7 ppb	0.400 ppb
1-Butanol	ND – 4.12 ppb	4.12 ppb	2.00 ppb
2-Methoxyethanol	ND – 0.879 ppb	0.879 ppb	0.400 ppb
Bromide	27.2 – 35.9 ppb	30.0 ppb	20.0 ppb
HAA5	ND – 0.825 ppb	0.525 ppb	N/A
HAA6Br	ND – 1.855 ppb	1.096 ppb	N/A
HAA9	ND – 2.277 ppb	1.419 ppb	N/A

Risk Assessment & Health Effects

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters (about 2 quarts) 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.

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. The City of Sturgis 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 the water for drinking or cooking. If you have a lead service line it is recommended that you run your water for at least 5 minutes to flush water from your home plumbing and the lead service line. 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

For Additional Information

We invite public participation in decisions that affect drinking water quality. City Commission meetings are held in Sturgis City Hall on the second and fourth Wednesday of each month at 6:00pm. Notice for any specific meetings on your drinking water quality would be provided through local media outlets, including the City's website (www.sturgismi.gov) and Facebook page (www.facebook.com/sturgismi). We will update this report annually and will keep you informed of any problems that may occur throughout the year, as they happen. Copies are available at City Hall. This report will not be sent to you.

We hope our 2019 Quality on Tap Report has answered your questions regarding your water supply system and tap water quality. For more information about your water, or the contents of this report, contact Barry Cox at 269-659-7249 or bcox@sturgismi.gov. For more information about safe drinking water, visit the U.S. EPA at <http://www.epa.gov/safewater>.