

2018 Quality on Tap Report

CITY OF STURGIS WATER SYSTEM

We're pleased to present you with the 2018 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. If you have any questions about this report or your water utility, please contact the Engineering Department at 659-7249. 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. At the end of 2017, the City submitted a General Plan/Asset Management Plan to Michigan's 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 779 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 back flow prevention devices are in place, and testing those devices to verify proper operation. One hundred eight two of the 230 devices in the system, which require testing, were tested in 2018. One hundred thirty four accounts received their initial inspection in 2018.

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, 2018. 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 EPA Safe Drinking Water Hotline (1-800-426-4791) or at EPA's web site (<http://www.epa.gov/safewater/hfacts.html>).

Contaminant Monitoring Results

In Tables #1, #2, and #3 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.
- **Parts per million (ppm)** - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion (ppb)** - one part per billion corresponds to one minute in 2,000 years, or a single penny in

\$10,000,000.

- **Picocuries per Liter (pCi/L)** - a unit of measurement for levels of radioactivity.
- **Action Level (AL)** - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **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 “Goal” is 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.
- **Trace** - A compound detected at levels above the detection limits, but at levels too low to quantify.
- **N/A** - Not Available
- **Maximum residual disinfectant level (MRDL)** - The highest level of a disinfectant allowed in drinking water.
- **Maximum residual disinfectant level goal (MRDLG)** - The level of drinking water disinfectant below which there is no known or expected risk to health.

TABLE #1. REGULATED CONTAMINANTS MONITORING RESULTS

Inorganic	Range of Values Detected	Maximum Level Detected	MCL	MCLG	Likely Sources of Contamination
Arsenic	ND - 1.5 ppb	1.5 ppb	10 ppb	zero	Erosion of natural deposits.
Barium	0.039 - 0.053 ppm	0.053 ppm	2 ppm	2 ppm	Discharge from metal refineries; erosion of natural deposits.
Beryllium	ND - 0.45 ppb	0.45 ppb	4 ppb	4 ppb	Discharge from metal refineries and cola burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium	ND - 0.86 ppb	0.86 ppb	5 ppb	5 ppb	Corrosion of galvanized pipe; erosion of natural deposits; discharge from metal refineries; runoff from waste paints.
Chromium	2.0 – 3.2 ppb	3.2 ppb	100 ppb	100 ppb	Discharge from steel and pulp mills; erosion of natural deposits.
Nitrate (as Nitrogen)	ND - 0.22 ppm	0.22 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Fluoride	0.71 - 0.73 ppm	0.73 ppm	4 ppm	4 ppm	Water additive promoting strong teeth.
Selenium	4.9 – 8.0 ppb	8.0 ppb	50 ppb	50 ppb	Discharge from petroleum and metal refineries; erosion of natural deposits.
Volatile Organic	Range of Values Detected	Highest Running Annual Average	MCL	MCLG	Likely Sources of Contamination
TTHM's -[Total trihalomethanes]	6.0 – 6.8 ppb	6.8 ppb	80 ppb	N/A	By-product of drinking water chlorination.
Radioactive	Range of Values Detected	Maximum Level Detected	MCL	MCLG	Likely Sources of Contamination
Radium 226 & 228-Combined*	0.40 – 2.46 pCi/L	2.46 pCi/L	5 pCi/L	zero	Erosion of natural deposits.
Gross Alpha*	1.2 - 1.4 pCi/L	1.4 pCi/L	15 pCi/L	zero	Erosion of natural deposits of certain minerals, which are radioactive.
Disinfectant	Range of Values Detected	Highest Quarterly Running Annual Average	MRDL	MRDLG	Likely Sources of Contamination
Chlorine Residual	0.03– 1.42 ppm	0.30 ppm	4 ppm	4 ppm	By-product of drinking water chlorination.

TABLE #1. REGULATED CONTAMINANTS MONITORING RESULTS, Continued

Inorganic Contaminant Subject to AL	AL	MCLG	Sturgis' Compliance Number	Year Sampled	# of Samples Above AL	Range of Individual Samples	Typical Sources of Contamination
January - June Lead (ppb)	15	0	1	2018	1	ND - 35	Corrosion of household plumbing systems; erosion of natural deposits.
January - June Copper (ppm)	1.3	1.3	0.3	2018	0	ND - 1.18	Corrosion of household plumbing systems; erosion of natural deposits.
July - Dec. 2018 Lead (ppb)	15	0	2	2018	0	ND - 11	Corrosion of household plumbing systems; erosion of natural deposits.
July - Dec. Copper (ppm)	1.3	1.3	0.37	2018	0	ND - 0.62	Corrosion of household plumbing systems; erosion of natural deposits.

* 2014 Results for Radium 226 & 228 – Combined and Gross Alpha

TABLE #2. SPECIAL CONTAMINANT MONITORING RESULTS

Special Contaminant	Range of Values Detected	Average of Values Detected	MCL	EPA Goal MCLG	Likely Sources of Contamination
Sodium	6.7 – 9.0 ppm	8.1 ppm	N/A	N/A	Erosion of Natural Deposits

Meaning of Testing Results

So what do the testing results mean? We are proud your drinking water meets or exceeds all Federal and State requirements. Water quality monitoring and testing detected fourteen regulated contaminants. These fourteen regulated contaminant detects are found in Table #1. (Note: Some regulated contaminants are tested on intervals longer than five years). Sodium monitoring results in Table #2 are required by 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 a Michigan Department of Environmental Quality initiative, the City's municipal wells were sampled and tested for PFAS in October. The results reported PFAS contaminants were not detected in Sturgis' municipal wells. PFAS are a group of industrial chemicals used world-wide 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 zero Total Coliform bacteria positive test results out of 168 routine distribution samples taken for Total Coliform bacteria in 2018. Results of routine distribution system monitoring are an indicator of whether or not your drinking water meets health standards. A positive test for Total Coliform bacteria indicates the potential presence of disease causing organisms. Coliforms are bacteria that are naturally present in the environment and are used as an indicator of other, potentially-harmful, bacteria. If Coliforms were found in more samples than allowed, it would be a warning of potential problems within your water system.

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

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 never kept track of service line materials used, and we are beginning the process of completing a water service inventory by 2025. Currently, the water system has 4199 water service lines. There are 129 known lead services, 164 known copper services, 7 known galvanized services, 1 plastic service, 6 other material services, and 3892 service lines of unknown material.

TABLE #3. 2015 UNREGULATED CONTAMINANT MONITORING 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

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. 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 (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, urban storm water runoff, and residential uses.
- ◆ 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.
- ◆ Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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

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 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/drink/info/lead/index.cfm>. 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.

For Additional Information

At this time, the City does not anticipate any meetings regarding the quality of your drinking water. If a meeting were scheduled, local media outlets, including the City's website (www.sturgismi.gov), the "E-wire" newsletter, and Facebook page (www.facebook.com/sturgismi) would have additional information. We hope our 2018 Quality on Tap Report has answered your questions regarding your water supply system and tap water quality. If you have any questions or wish to be notified of meetings or other opportunities for public participation in decisions that affects the quality of your drinking water, please call Barry Cox in the Engineering Department at 659-7249.