

2020 Water Quality Report for the City of Swartz Creek

This report covers the drinking water quality for The City of Swartz Creek for the 2020 calendar year. This information is a snapshot of the quality of the water that we provided to you in 2020. Included are details about where your water comes from, what it contains, and how it compares to United States Environmental Protection Agency (U.S. EPA) and state standards.

Your water comes from the lower Lake Huron watershed. The State performed an assessment of our source water to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very-low" to "very-high" based on geologic sensitivity, well construction, water chemistry and contamination sources. The susceptibility of our source is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards.

If you would like to know more about this report, please contact the City of Swartz Creek water department at 810.635.4464.

Contaminants and their presence in water: 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 can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline (800-426-4791).

Vulnerability of sub-populations: 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 systems 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 (800-426-4791).

Sources of drinking water: The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from 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:

- **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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.



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

Water Quality Data

The table below lists all the drinking water contaminants that we detected during the 2020 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2020. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All the data is representative of the water quality, but some are more than one year old.

Terms and abbreviations used below:

Symbol	Abbreviation	Definition/Explanation
<, >	Less than, Greater than	
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
MCL	Maximum Contaminant Level	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.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
MRLD	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of contaminant in drinking water 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.
n/a	not applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity
ppb	Parts per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
RAA	Running Annual Average	The average of analytical results for all samples during the previous twelve months.
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.

2020 Regulated Detected Contaminant Tables

Inorganic Chemicals – Monitoring at the Plant Finished Water Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Fluoride	Daily	ppm	4	4	0.87	0.12 – 0.87	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Arsenic	4-22-20	ppb	10	10	0.46	n/a	No	Erosion of natural deposits; runoff from orchard; runoff from glass and electronics production wastes.
Barium	4-22-20	ppm	2	2	0.013	n/a	No	Erosion of natural deposits; discharge from petroleum and metal refineries' discharge from mines.

Disinfection By-Products – Monitoring in Distribution System, Stage 2 Disinfection By-Products								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	2020	ppb	n/a	80	47	28-110	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2020	ppb	n/a	60	25	14-32	No	By-product of drinking water disinfection

Disinfectant Residuals – Monitoring in Distribution System by Treatment Plant								
Regulated Contaminant	Test Date	Unit	Health Goal MRDL G	Allowed Level MRDL	Highest RAA	Quarterly Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2020	ppm	4	4	0.42	0.1-0.5	No	Water additive used to control microbes

2020 Turbidity – Monitored every 4 hours at Plant Finished Water				
Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)		Violation yes/no	Major Sources in Drinking Water
0.10 NTU	100 %		No	Soil Runoff
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.				

2020 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Regulated Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	>1 Positive monthly sample, or Presence of Coliform bacteria > 5% of monthly samples	0	No	Naturally present in the environment
<i>E. coli</i> Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E. coli</i> positive.	0	No	Human waste and animal fecal waste.

2020 Lead and Copper Monitoring at Customer Tap									
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	Range of Values	90 th Percentile Value*	Number of Samples over AL	Violation yes/no	Major Sources in Drinking Water
Lead (Jan-June)	2020	ppb	0	15	<0.001 to 0.027	2	1	No	Lead service lines, corrosion of household plumbing system; Erosion of natural deposits.
Lead (July-Dec)	2020	ppb	0	15	<0.001 to 0.0011	0	0	No	Lead service lines, corrosion of household plumbing system; Erosion of natural deposits.
Copper (Jan-June)	2020	ppm	1.3	1.3	0.0091 to 0.069	0.1	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
Copper (July-Dec)	2020	ppm	1.3	1.3	0.044 to 0.040	0	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.									

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no TOC removal requirement	Erosion of natural deposits

Radionuclides 2019							
Regulated contaminant	Test date	Unit	Health Goal MCLG	Allowed Level	Level detected	Violation Yes/no	Major Sources in Drinking water
Combined Radium 226 and 228	2/13/19	pCi/L	0	5	1.0 ± 0.50	no	Erosion of natural deposits
Gross Alpha	2/13/19	pCi/L	0	15	2.0 ± 1.0	no	Erosion of natural deposits

2020 Unregulated Detected Contaminant

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	9.0	Erosion of natural deposits

Additional Sampling results;

Every 5 years the United States Environmental Protections Agency (USEPA) establishes 30 unregulated contaminants for additional sampling. Unregulated contaminants are those for which the USEPA has not established drinking water standards. As required by the USEPA, Genesee County Drain Commissioner Division of Water & Waste (GCDC-WWS) Services began testing for several unregulated contaminants in 2013 and will continue additional sampling in 2019 and 2020. The purpose of unregulated contaminants monitoring is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Before USEPA regulates a contaminant, it considers adverse health effects, the occurrence of the contaminant in drinking water, and whether the regulation would reduce health risk. The following tables list the unregulated contaminants detected during the **2019** calendar year.

Unregulated Contaminants– Monitored at the Primary Source (AMI: metals, pesticides, alcohols, SVOCs) – tested for in 2019			
Contaminant	Units	Results	Source
Bromide	ppm	ND - 23.2	Naturally present in fossil fuel, coal, and shale.
Total Organic Carbon	ppm	2 - 2.4	Erosion of natural deposits.

Unregulated Contaminants– Monitored at the Treatment Plant and Entry Point into the System – tested for in 2019			
Contaminant	Units	Range	Source
Manganese, total	ug/l	2.1 – 10.6	Naturally present in the environment.

Unregulated Contaminants– Monitored in the Distribution System – tested for in 2019			
Contaminant	Units	Range	Source
Dichloroacetic acid (DCAA)	ug/l	1.2 -13.2	By-product of drinking water disinfection.
Trichloroacetic acid (TCAA)	ug/l	1.6 – 16.5	By-product of drinking water disinfection.
Bromo chloroacetic acid (BCAA)	ug/l	0.3 – 3.9	By-product of drinking water disinfection.
Bromo dichloroacetic acid (BDCAA)	ug/l	ND – 3.1	By-product of drinking water disinfection.
Dibromo acetic acid (DBAA)	ug/l	ND – 0.8	By-product of drinking water disinfection.
ChloroDiBromoAcetic acid	ug/l	ND – 0.6	By-product of drinking water disinfection.
HAA5 Group	ug/l	2.8 – 22.6	By-product of drinking water disinfection.
HAA6Br Group	ug/l	0.6 – 8.1	By-product of drinking water disinfection.
HAA9 Group	ug/l	3.7 – 29.9	By-product of drinking water disinfection.

Tested for but not Detected Unregulated Contaminants:

Germanium, Chlorpyrifos, Dimethipin, Ethoprop, alpha-Hexachlorocyclohexane, Oxyfluorfen, Total Permethrin, Profenophos, Tebuconazole, Tribufos, butylated hydroxy anisole, o-toluidine, Quinoline, 1-butanol, 2-methoxyethanol, 2-propen-1-ol, MonoChloroacetic acid, MonoBromoAcetic acid, TriBromoAcetic acid, PFAS/PFOS

During the **2020** calendar year, the Unregulated Contaminants that were sampled for, were not detected.

Tested for but not Detected Unregulated Contaminants:

Anatoxin-a, Cylindrospermospsin, Total Microcystins, PFAS/PFOS

Per- and Polyfluoroalkyl Substances (PFAS):

Per- and polyfluoroalkyl substances (PFAS), area group of chemicals that are resistant to heat, water and oil. PFAS have been classified by the United States Environmental Protection Agency (US EPA) as an emerging contaminant on the national landscape. For decades, they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, fire-fighting foams and metal plating. They are still used today. PFAS have been found at low levels both in the environment and blood samples from the general US population.

These chemicals are persistent, which means they do not break down in the environment. They also accumulate, meaning the amount builds up over time in the blood and organs. Although our understanding of these emerging contaminants is constantly evolving, elevated levels of PFAS have the potential to cause increased cholesterol, changes in the body’s hormones and immune system, decreased fertility, and increased risk of certain cancers. Links to these health effects in humans are supported by epidemiologic studies and by laboratory studies in animal model.

Are there health advisory levels?

The US EPA has not established enforceable drinking water standards, called maximum contaminant levels, for these chemicals. However, the US EPA has set a lifetime health advisory (LHA) level in drinking water for two PFAS: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The PFOA and PFOS LHA is the level or amount, *below which no harm is expected from these chemicals*. The LHA level is 70 parts per trillion (ppt) for PFOA and 70 ppt for PFOS. If both PFOA and PFOS are present, the LHA is 70 ppt for the combined concentration.

The amount of PFOA and PFOS combined in the sample collected from our raw water intake was ND (Non-Detectable), for these two chemicals. There are other PFAS compounds that currently do not have LHA level. For information on PFOA, PFOS, and other PFAS, including possible health outcomes, you may visit these websites: <https://www.epa.gov/pfas>; <https://www.atsdr.cdc.gov/pfas/>; or <http://www.michigan.gov/pfasresponse>.

If any resident has additional questions regarding this issue, the State of Michigan Environmental Assistance Center can be contacted at 800-662-9278. Representatives may be reached to assist with your questions Monday through Friday, 8:00 AM to 4:30 PM.

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. The City of Swartz Creek 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 have a lead service line, galvanized service line previously connected to lead, or unknown but likely lead service line it is recommended that you run your water for at least 5 minutes to flush water from both 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 or at <http://www.epa.gov/safewater/lead>.

Infants and children who drink water containing lead 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.

Monitoring and Reporting to the Department of Environment, Great Lakes, and Energy (EGLE) Requirements: 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 2020.

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 the Paul D. Bueche Municipal Building, 8083 Civic Drive, Swartz Creek, MI 48473. This report will not be sent to you.

Opportunities for Public Participation: We invite public participation in decisions that affect drinking water quality. City Council meetings are the second and fourth Mondays of each month. For more information about your water, or the contents of this report, contact Andrew J. Harris, P.E. at (810) 635-4464 or visit www.cityofswartzcreek.org. For more information about safe drinking water, visit the U.S. EPA at <http://www.epa.gov/safewater>.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for the City of Swartz Creek

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During November 1 to November 30, 2020, we did not complete all monitoring or testing for total coliform bacteria and, therefore, cannot be sure of the quality of your drinking water during that time.

What should I do?

There is nothing you need to do at this time. This is not an emergency. You do not need to boil water or use an alternative source of water at this time. Even though this is not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

The table below lists the contaminant we did not properly test for, how often we are supposed to sample for this contaminant, how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date we collected follow-up samples.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	Dates additional samples were taken
Total Coliform Bacteria	6 samples per month	5	November 1, 2020 to November 30, 2020	December 7, 2020 and December 14, 2020

What happened? What is being done?

We inadvertently missed taking a sample within this required sampling period. We are making every effort to ensure this does not happen again. We returned to compliance on December 14, 2020, after collecting all six required routine samples for December 2020.

For more information, please contact Andrew J. Harris, P.E. at (810) 635-4464.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Swartz Creek.