City of Mt. Morris

May, 2021

2020 ANNUAL DRINKING WATER QUALITY REPORT

THE CITY OF MT. MORRIS IS PLEASED TO REPORT THAT OUR DRINKING WATER MEETS ALL STATE AND FEDERAL REQUIREMENTS

How to obtain additional information.

If you have questions about this report or concerning the City of Mt. Morris Water System, please contact:

Vicki Corlew,

City Manager

810-686-2160

- Paul Zumbach,

DPW Superintendent

810-686-8380

If you need information on billing practices, rates, etc., please contact:

- April Smith

Water Clerk

810-686-2160

The City wants our valued customers to be informed about their water utility. If you want to learn more about the Mt. Morris water system or express an opinion on the system, please attend any of our regularly scheduled City Council meetings. The meetings are normally held at 7:15 p.m. each second and fourth Monday of the month at City Hall, 11649 N. Saginaw, Mt. Morris, MI 48458.

The City of Mt. Morris is proud to present to the citizens our 2020 Water Quality Report. In complying with recent legislation, the City developed this report to provide you with valuable information about your drinking water. From this report, you will realize what the City has always known– *your water supply meets all state and federal requirements.* The City of Mt. Morris purchased its water from the Genesee County Water and Waste System. Your source water for GCDC-WWS is the Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The MDEQ in partnership with the U.S. Geological Survey, the Detroit Water and Sewage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Genesee County/Lake Huron source water treatment plant has historically provided satisfactory treatment of the source water to meet drinking water standards.

The Bottom Line

The City is pleased to report that during the past year, the water delivered to your home or business complied with, or did better than, all state and federal drinking water requirements. For your information, the GCDC-WWS has compiled the lists of substances detected in the water supply. Although all of the substances listed below are under the Maximum Containment Level (MCL) set by the U.S.EPA, and therefore not expected to cause any health risks, we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

Contaminants that may be present in source water:

- 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 may also 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.

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

Substances expected to be in Drinking Water

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.

Substances that may be present in source water include microbial contaminants, such as viruses and bacteria; inorganic contaminants, such as salts and metals; pesticides and herbicides; organic chemical contaminants; and, radioactive contaminants. 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.

Some people may be more vulnerable to contaminants in drinking water that the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other im-mune system disorders, some elderly, and infants can be particularly at risk for 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).**

How will I know if there is a problem with the water?

We are committed to providing you safe, reliable and healthy water. We will update this report annually, and will also keep you informed of any problems that may occur throughout the year, as they happen. State and Federal drinking water regulations require us to notify you within 72 hours in situations with significant potential to have serious adverse effects on human health as a result of short-term exposure. The U.S. EPA is considering decreasing that time frame to 24 hours.

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, run off from orchard, runoff from glass and electronics, production waste
Barium	4-22-20	ppm	**2**	**2**	**0.013**	**N/A**	No	Erosion from natural deposits, discharge from petroleum an 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 Quarterly	**ppb**	n/a	**80**	**0.0390**	**0.0287-0.0687**	No	By-product of drinking water chlorination.
Haloacetic Acids (HAA5)	2020 Quarterly	**Ug/l**	n/a	**60**	**22**	**11-30**	No	By-product of drinking water disinfection.

Disinfection Residuals - Monitoring in Distribution System

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	RAA	Range of Detection	Violation Yes/No	Major Sources in Drinking Water
Total Chlorine Residual	April 2019 to December 2020	**ppm**	**4**	**4**	**.734**	**.30-1.04**	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 Lead and Cooper Monitoring at Customer Tap

Regulated Contaminant	Unit	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples over AL	Violation yes/no	Range	Major Sources in Drinking Water
Lead (Jan-June)	**ppb**	**0**	**15**	**4ppb**	**0**	no	**0-5**	Corrosion of household plumbing system; Erosion of natural deposits
Lead (July-Dec)	**ppb**	**0**	**15**	**8ppb**	**0**	no	**0-3**	See above.
Copper (Jan-June)	**ppm**	**1.3**	**1.3**	**0.0ppm**	**0**	no	**0-0.07**	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
Copper (July-Dec)	**ppm**	**1.3**	**1.3**	**0.10ppm**	**0**	no	**0-0.14**	See above.

***The 90th percentile value means 90 percent of the home tested have lead and copper levels below the given 90th percentile value.**

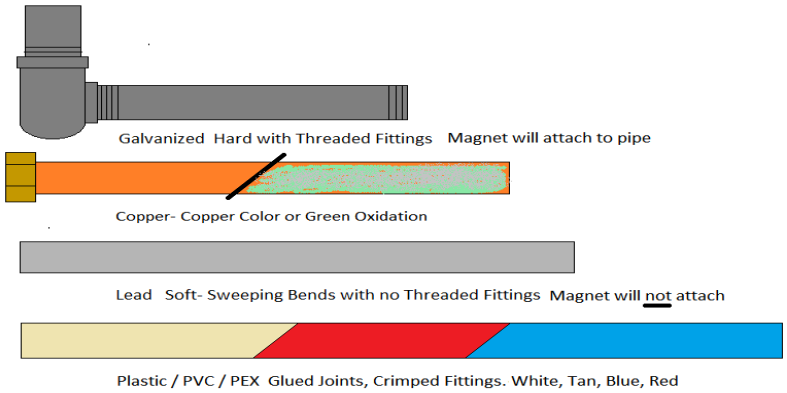
If the 90th percentile value is above the AL additional requirements must be met.

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. At the time of this report the City of Mt. Morris has identified 59 residential connections that have lead service lines. The City of Mt. Morris 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 5 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**.

We are currently in the process of identifying all the distribution materials in the water system. Below is a summary of the line materials. Water mains in the City consist of Cast Iron, Ductil Iron, Plastic, and Transite. This table will change as more materials are identified.

Known	Unknown	Lead	Galvanized	Total Connections
809	301	59	10	1179

Customers are urged to help identify the type of plumbing materials in their home. Please contact us at dpw@cityofmtmorris.org for more information.



Regulated Contaminants Continued

Regulator 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 quarter and because the level was low there is no TOC removal required.	Lead service lines, corrosion of household plumbing including fittings and fixtures; erosion of natural deposits

Radionuclides 2020

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	02/13/2019	pCi/L	0	5	**1.0 ± 0.50**	no	Erosion of natural deposits
Gross Alpha	02/13/2019	pCi/L	0	15	**2.0 ± 1.0**	no	Erosion of natural deposits

2020 Unregulated Contaminates

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 and Waste (GCDC-WWS) Services began testing for several unregulated contaminants in 2013 and continued 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 (AM1: metals, pesticides, alcohols, SVOCs)- tested for in 2019

Contaminant	Units	Result	Source
Bromide	ppm	ND-23.2	**Naturally present in fossil fuels, 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 dichloroaceic acid (BDCAA)	ug/l	1.6 – 16.5	**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 Contaminates:

Germanium, Chlorpyrifos, Dimethipin, Ethoprop, alpha-Hexachlorocylohexane, Oxfluorfen, Total Permethrin, Profenophos, Tebuconazole, Tribfos, butylated hydroxyl anisole, o-toluidine, Quinoline, 1-butanol, 2-methoxyethanol, 2-propen-1-ol, MonoChloroacetic acid, MonoBromoAcetic acid, TriBromo Acetic acid, PFAS/PFOS

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

Tested for but not detected Unregulated Contaminants:
Anatixin-a, Cylindrospermospsin, Total Microcystins, PFAS/PFOS

Per-and Polyfluoroalkyl Substances (PFAS)

Per-and Polyfluoroalky 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 (USEPA) as an emerging contaminant of 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, firefighting foams and metal plating. They are still used today. PFAS have been found at low level 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 effects in humans are supported be epidemiological studies and by laboratory studies in animal model.

Are there health advisory levels?

The USEPA has not established enforceable drinking water standards, called maximum contaminant levels for these chemicals. However, the USEPA has set a lifetime health advisory (LHA) level in drinking water for two PFAS; perfluoroctanoic acid (PFOA) and perfluorocatanesulfonic acid (PFOS). The PFOA and PFOS LHA is the level or amount, *below which no harm is expected for these chemicals.* The LHA level is 70 parts per trillion (ppt) for PFOA and 70ppt for PFOS. If both POFA 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-Detected), 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.stsdr.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, 8:00AM to 4:30 PM.

How do I read this chart?

It's easy! Our water is tested to assure that it is safe and healthy. These tables are based on tests conducted by Genesee County Drain Commissioner – Division of Water & Waste Services (GCDC-WWS) within the last five (5) calendar years. We conduct many tests throughout the year, however, only tests that show the presence of a contaminant are shown here. The table on this page is a key to the terms used in the following table. Sources of Contaminants show where this substance usually originates.

Key to Detected Contaminants Table		
Symbol	**Abbreviation**	**Definition/Explanation**
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment of other requirements which a water system must follow.
HAA5	Haloacetic Acids	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 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.
MRDL	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 a drinking water disinfectant below which there is no known or expected risk to health. MRLDG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	not applicable	Does not apply.
ND	Not detected	Zero or result below the laboratory level.
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
ug/L	Micrograms per liter	A microgram = 1/1000 milligrams. 1 microgram per liter is equal to 1 part per billion (ppb).
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 taken 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.
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
>	Greater than	

For the Monitoring Period Calendar Year 2020, There were No Contaminants Above the MCL Detected in the Mt. Morris Water Supply

Drinking water, including bottled water, may be reasonably 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 **EPA's Safe Drinking Water Hotline at (800-426-4781).**

Drinking Water Improvement Projects

The City of Mt. Morris has a continuing program of improving its water system. The City Council is studying the reports on the water system and considering which projects should be implemented from the water master plan.

Working hard for you.

Under the Safe Drinking Water Act (SDWA), EPA is responsible for setting national limits for hundreds of substances in drinking water and also specifies various treatments that water systems must use to remove these substances. Similarly, FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Each system continually monitors for these substances and reports directly to the EPA if they were detected in the drinking water. The EPA uses this data to ensure that consumers are receiving clean water and verifying that states are enforcing the laws that regulate drinking water. The publication of this report conforms to the new federal regulation under SDWA requiring water utilities to provide detailed water quality information to their customers annually. Individual copies of this report will not be mailed but if you would like a copy of this report they can be obtained from the Mt. Morris City Hall, 11649 N. Saginaw, Mt. Morris, MI 48458.

We are committed to providing you with this information about your water supply, because customers who are well informed are our best allies in supporting improvements necessary to maintain the highest drinking water standards.

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