2021 Water Quality Report

for

 Charter Township of Genesee

This report provides a snapshot of the drinking water quality for Charter Township of Genesee for the calendar year 2021. Genesee County Drain Commissioner-Division of Water and Waste Services (GCDC-WWS) Water Treatment Plant are committed to meeting the state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, GCDC-WWS Treatment Plant consistently delivers safe drinking water to our community. Included are details about where our water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

**About our system:**

 Your source water comes from Lake Huron. The watershed includes numerous short, seasonal streams that drain to Lake Huron. GCDC-WWS voluntarily developed and received approval in 2017 for a source water protection program (SWIPP) for the Lake Huron Water Treatment Plant and GCDC-WWS Treatment Plant intake. The program includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential of source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation and education. If you would like to know more information about the Source Water Assessment or SWIPP, please contact the Public Works at (810) 640-2000.

**Special information available:**

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. 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.

**Health and safety information**:

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 **EPA’s Safe Drinking Water Hotline (800-426-4791)**.

**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 are 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, EPA prescribes regulations that 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 provide the same protection for public health.

**Lead Service Lines**

The Charter Township of Genesee has 1894 water service lines that are 4” or smaller in size. 1844 of which are considered unknown but not suspected to be lead. The Township will be working to verify water service line material.

 **2021 Regulated Detected Contaminant Tables**

**Inorganic Chemicals – Monitoring at the Plant Finished Water Tap**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Regulated** **Contaminate** | **Test****date** | **Unit** | **Health****Goal****MCLG** | **Allowed** **Level****MCL** | **Highest****Level****Detected** | **Range of****Detection** | **Violation****Yes/no** | **Major Sources in Drinking Water** |
| **Flouride\*** | Daily | ppm | 4 | 4 | 0.83 | 0.63-0.87 | NO | **Erosion of Natural Deposits: Water****Additive, which promotes strong** **Teeth: Discharge from fertilizer and****Aluminium factories** |
| **Arsenic** | 3-18-21 | ppb | 0 | 10 | 0.54 | N/A | NO | **Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes** |
| **Barium** | 3-18-21 | ppm | 2 | 2 | .014 | N/A | NO | **Erosion of natural deposits; discharge from metal refineries discharge from drilling wastes** |

\*Flouride is monitored daily in the finished water

**Disinfection By-Products- Monitoring in Distribution System**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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)** | **2021** | **ppb** | n/a | 80 | 49 | 37 – 62 | NO  | **By-Product of Drinking****Water Chlorination** |
| **Halocetic Acids****(HAA5)** | **2021** | **ppb** | n/a | 60 | 13 | 6 - 19 | NO | **By-Product of Drinking** **Water disinfection** |

 **Disinfection Residuals – Monitoring in Distribution System**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Regulated****Contaminant** | **Unit** | **Health** **Goal****MRDLG** | **Allowed****Level** | **Highest****RAA** | **Range of****Detection** | **Violation****Yes/no** | **Major Sources in Drinking Water** |
| **Total Chlorine****Residual** | **ppm** | **4** | **4** | .63 | .2 – 1.02 | NO | **Water Additive to control****Microbes** |

**2021 Turbidity – Monitored every 4 Hours at Plant Finished Water**

|  |  |  |  |
| --- | --- | --- | --- |
|  **Highest Single****Measurment 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** |
|   0.08 NTU |  100% |  NO |  **Soil Runoff** |

Turbidity is a measure of cloudiness of water. We monitor it because it is a good indicator of effectiveness of our filtration system

**2021 Lead and Copper at Consumer Tap**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Regulated****Contaminate** | **Unit** | **Health****Goal****MCLG** | **Action****Level****AL** | **90th****Percentile****Value\*** | **Range of individual results** | **Number of****Samples** **Over AL** | **Violation****Yes/no** | **Major Sources in Drinking Water** |
| **Lead (Jan-June)** | **ppb** | **0** | **15** | **0** | **0 - 2** | **0** | **NO** | **Corrosion of household plumbing including fittings and fixtures, lead service lines, erosion of natural deposits** |
| **Lead (July-Dec)** | **ppb** | **0** | **15** | **0** | **0 - 0** | **0** | **NO** | **Corrosion of household plumbing including fittings and fixtures, lead service lines, erosion of natural deposits** |
| **Copper (Jan-June)** | **ppm** | **1.3** | **1.3** | **0.0** | **0.0 – 0.1** | **0** | **NO** | **Corrosion of household plumbing including fixtures and fittings, lead service lines, erosion of natural deposits** |
| **Copper (July-Dec)** | **ppm** | **1.3** | **1.3** | **0.0** | **0.0 – 0.1** | **0** | **NO** | **Corrosion of household plumbing including fittings and fixtures, lead service lines, erosion of natural deposits** |

**\*90th percentile value is the concentration of lead and copper in tap water exceeded by 10 percent of the sites sampled during a monitoring period. 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 ratioBetween 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 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Microbial****Contaminants** | **MCL** | **MCLG** | **Number****Detected** | **Violation****Yes/no** | **Typical Source of** **Contaminant** |
| **Total Coliform****Bacteria** | >1 positive monthly sample(>5% of monthly samplesPositive) | 0 | ND | NO | **Naturally present in the****environment** |
|  **E.coli bacteria** | Routine and repeat sampleTotal coliform positive, and isAlso fecal or E.coli positive | 0  | ND | NO | **Human and Animal fecal****Waste** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Radionuclides 2019 |  |  |  |  |  |  |  |
| Regulated contaminant | Test date | Unit | HealthGoalMCLG | Allowed Level | Level Detected | ViolationYes/No | Major sources in Drinking  Water  |
| **Combined Radium****226 and 228** | 2-13-19 | pCi/L | 0 | **5** | 1.1 +- 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** |

 **2021 Unregulated Detected Contaminant**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **Unregulated Parameters** |  **MCLG** |  **MCL** |  **Level Detected** | **Source of Contamination** |
|  **Sodium** (ppm**)** |  n/a |  n/a | 11.0 | Erosion of natural deposits |

**Unregulated Contaminants**

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of

Unregulated monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and

Whether future regulation is warranted. Before EPA regulates a contaminant, it considers adverse health effects, the

Occurrence of the contaminant in drinking water, and whether the regulation would reduce health risk. GCDC-WWS

Began monitoring for Unregulated contaminants in 2013 and willcontinue additional sampling in 2019 and 2020. The Charter Township of Genesee began Monitoring for Unregulated Contaminates in 2018 and continued sampling into 2019. The following tables list the Unregulated substances detected during the **2019** calendar year.

 **Unregulated Contaminants – Monitored at the primary source (AM1 : metals, pesticides, alcohols, SOVCs) – 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 |

 **2019 Unregulated Contaminants- Monitored at the Treatment Plant and entry Point into System – tested for in 2019**

|  |  |  |  |
| --- | --- | --- | --- |
| **Contaminant** | **Units** | **Range** | **Source** |
| **Manganese, total** | ug/l | 2.1 – 10.6 | Naturally present in the environment |

 **2019 Unregulated Contaminants-Monitored in distribution system(AM1 : Entry Point)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Contaminant** | **Units** | **Range** | **Source** |
| **Manganese** | **Ug/l** | **4.56 – 4.72** | **Disinfection by products group** |

**2019 Unregulated Contaminants – HAA’s Monitored in the distribution system ( AM2 : DBP1,DBP2 ) – tested for in 2019**

|  |  |  |  |
| --- | --- | --- | --- |
| **Contaminant** | **Units** | **Range** | **Source** |
| Bromochloroacetic acid | ug/l | 3.00 – 3.33 | By-product of drinking water disinfection |
| Bromodichloroacetic acid | ug/l | 3.52 – 4.56 | By-product of drinking water |
| Chlorodibromoacetic acid | ug/l | 0.623 – 0.915 | By-product of drinking water |
| Dibromoacetic acid | ug/l | 0.432 – 0.493 | By-product of drinking water |
| Dichloroacetic acid | ug/l | 7.61 – 12.3 | By-product of drinking water |
| Monobromoacetic acid | ug/l | <0.300 – 0.311 | By-product of drinking water |
| Trichloroacetic acid | ug/l | 7.85 – 12.7 | By-product of drinking water |

**2019 Unregulated contaminate – Monitored in Distribution system (AM3 : Entry Point – tested for in 2019**

|  |  |  |  |
| --- | --- | --- | --- |
| **Contaminate** | **Units** |  **Range** | **Source** |
| CVTM | Percent CV |  .800 – 8.60 | Naturally present in the environment |

**Information about lead:**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The water that the GCDC-

WWS Water Treatment **plant** delivers to our community does not contain lead. Lead in drinking water is primarily from materials and components

associated with service lines and home plumbing. The Charter Township of Genesee 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 are concerned about lead in your water,

you may want 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 **(800-426-4791)** or at http;//www.epa.gov/safewater/lead.

**How do I read this Chart?**

Our water is tested to assure that it is safe and healthy. These Tables are based on tests conducted by Genesee Township 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 table. Sources of Contaminants show where this substance usually originates.

 **Key to Detected Contaminants Table**

|  |  |  |
| --- | --- | --- |
| **AL** | Action Level | The concentration of a contaminant, which, if exceeded, triggers treatmentOr other requirements which a water system must follow. |
| **HAA5** | Halo Acetic Acids | HAA5 is the total of bromoacetic, chloroacetic, dibromo acetic, 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 duringthe previous four quarters. |
| **MCL** | Maximum Contaminant Level | The highest level of contaminant that is allowed in drinking water. MCLs are set as closeto 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 expectedrisk to health. MCLG’s allows for a margin of safety. |
| **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. MRDLG’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 | Result is not detectable at or below the laboratory detection level |
| **NTU** | Nephelometric Turbidty 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 milligrams |
| **ug/L** | Micrograms per Liter | A microgram = 1/1000 milligrams. 1 microgram per liter is equal to1 part per billion |
| **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 takenduring the previous twelve months. |
| **TT** | Treatment Technique | A required process intended to reduce the level of 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 100under standard conditions.  |
| **>** | Greater Than |  |
|  | 90th Percentile | The concentration of lead or copper in tap water exceeded by 10 percent of sites sampled during a monitoring period. |

Genesee Township, and the GCDC-WWS Treatment Plant are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. 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 Genesse Township Hall, 7244 N. Genesee Rd. Genesee MI 48437. We invite public participation in decisions that affect drinking water quality. For more information about your water, or the contents of this report, contact Public Works at (810) 640-2000 ext. #5. For more information about safe drinking water visit the U.S. Environmental Protection Agency at www.epa.gov/safewater/.

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 The Charter Township of Genesee within the last five calendar years. We conduct many tests throughout the year ,however, only testes that show the presence of contaminant are shown here. The table on this page is key to the terms used in the following table. Sources of Contaminants show where this substance usually originates.

 **Key to Detected Contaminates Table**

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Non-Abbreviated Symbol or Term** |  **Definition/Explanation** |
| **AL** | Action level | The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow. |
| **HAA5** | Halocetic Acids | HAA5 is the total of bromoacetic, chloroacetic, dibromo acetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total. |
| **LRAA** | Locational Running Annual Average | The average of analytical results for samples at 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. MCLGs allows for a margin of safety. |
| **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 no known or expected risk to health. MRDLG’s do not reflect the benefits of use of disinfectants to control microbial contaminants. |
| **N/A** | Not Applicable | Does not apply |
| **ND** | Not Detected | Result is not detectable at or below the laboratory detection 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 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 equivalent 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 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 total. |
| **C** | Celsius | A scale of temperature in which water freezes at 0 and boils at 100 under standard conditions. |
| **>** | Greater than | Mathematical symbol that denotes a value “greater than” another value. |
|  | 90TH Percentile Value | The concentration of lead or copper in tap water exceeded by 10 percent of sites sampled during a monitoring period. |