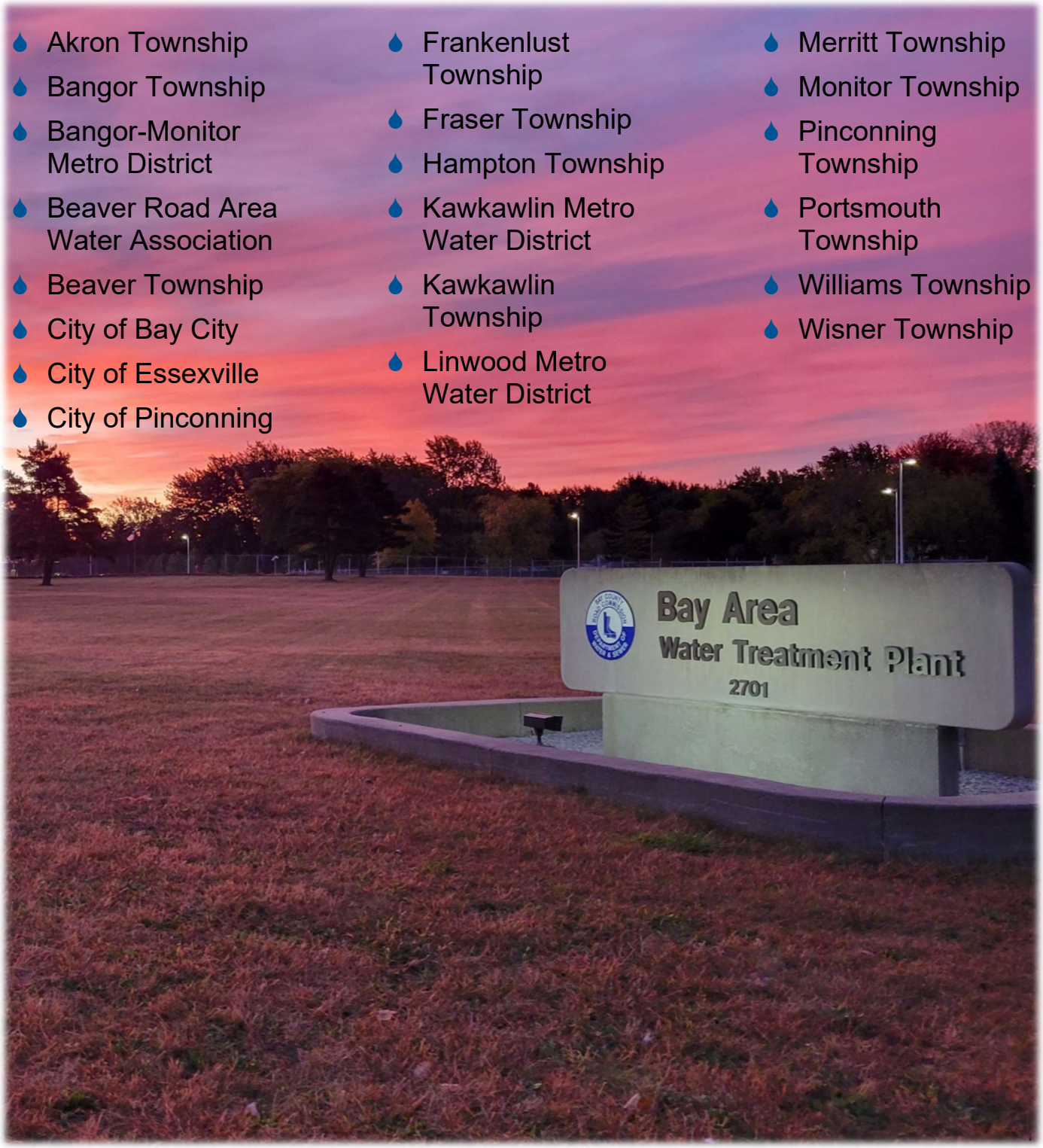
# Bay Area Water System

## Annual Water Quality Report for 2024

## Proudly Serving 20 Local Communities:

- Akron Township
- Bangor Township
- Bangor-Monitor Metro District
- Beaver Road Area Water Association
- Beaver Township
- City of Bay City
- City of Essexville
- City of Pinconning
- Frankenlust Township
- Fraser Township
- Hampton Township
- Kawkawlin Metro Water District
- Kawkawlin Township
- Linwood Metro Water District
- Merritt Township
- Monitor Township
- Pinconning Township
- Portsmouth Township
- Williams Township
- Wisner Township



# A Message from Your Water Plant Superintendent

Dear Bay Area Water System Water Customers,

For 10 years now, the Bay Area Water Treatment Plant has provided all of you with high-quality drinking water. I have been with the facility since the first gallon went out and I am honored to be serving as your Plant Superintendent.

The membrane treatment process our facility uses is a technical undertaking that requires constant attention. Its smooth and reliable operation wouldn't be possible without our team of dedicated professionals. Our facility produced 2.71 billion gallons in 2024 and every drop that left our facility met all federal and state requirements. Achieving this, and our continued success, is owed to our staff.

Having clean, safe water is one of the most important services we provide, and we want you to be as informed as possible about your drinking water. The following is the annual water quality report about your drinking water in 2024. This report is called a Consumer Confidence Report or CCR and is intended to provide peace of mind and confidence in your drinking water. The report will explain where your water comes from, the results of sampling that we have performed, and what we are doing to protect you and your family. If upon reading this report, you have any questions or don't feel peace of mind, please reach out. You may contact us at 989-439-7245 or by emailing us at bawtp@baycountydwsmi.gov

I believe that peace of mind and confidence are the results of knowledge and understanding. Knowledge and understanding often don't happen by accident. The staff at the Bay Area Water Treatment Plant made it a priority to increase our public engagement during 2024. Staff attended public events, hosted industry trainings, and piloted plant tours for the public. Staff's efforts were well received and we are looking to continue building off that success.

Lastly, I would like to welcome the residents of the Linwood Metro Water District into the Bay Area Water System. In 2023, Linwood's water plant was reaching the end of its useful life and they began working towards a partnership with the Bay County Department of Water and Sewer. This partnership was finally realized on January 3rd, 2024 when they started receiving our water.

Sincerely,

Carl J. Overly
Bay Area Water Treatment Plant Superintendent
*2701 N. Euclid Avenue, Bay City, MI 48706*
*989-439-7245 or* bawtp@baycountydwsmi.gov

# About Your Water


## Where Your Drinking Water Comes From

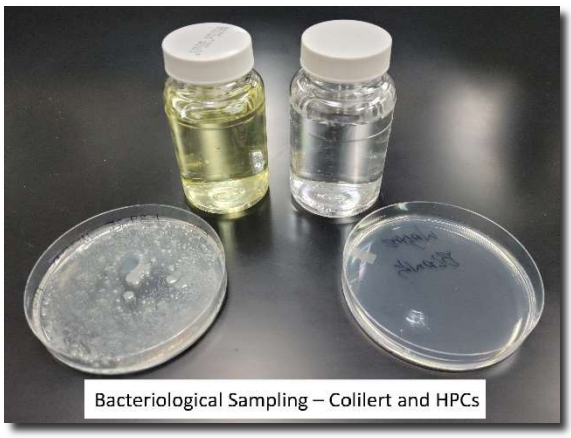
Most drinking water in the United States comes from a river, a lake, or an underground well. The water we provide to you comes from Lake Huron through the Saginaw-Midland Municipal Water Supply Corporation (jointly owned by the cities of Saginaw and Midland). SMMWSC's intake is located near Whitestone Point. This location was selected in the 1940s after an engineering study showed that water at this location was high quality. SMMWSC pumps raw water approximately 50 miles to the Bay Area Water Treatment Plant (BAWTP) for filtration and treatment.

## Source Water Assessment and Protection

Safe drinking water starts with the source. SMMWSC employees worked with EGLE (Michigan Department of Environment, Great Lakes, and Energy) scientists to take samples of water at the source. They looked for possible pollutants and determine the potential of contamination. This is called a Source Water Assessment. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based on geologic sensitivity, water chemistry and contaminant sources. The last EGLE Source Water Assessment report determined that the susceptibility of the Saginaw-Midland raw water source was rated **"Moderately Low"**. This rating is the best a surface water source can achieve. In their continued effort to monitor and protect our source water, SMMWSC recently funded a study to create a Surface Water Intake Protection Program or SWIPP. The SWIPP was published in early 2024 and its finding will be used for years to come to help ensure the safety of our source water.

If you would like to know more about these reports or about our water source, please contact us at 989-439-7245.

## What Is in Your Drinking Water


Bacteriological Sampling – Colilert and HPCs

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from a lake. 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 stormwater 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 stormwater runoff, and residential uses.

- **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 stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

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 at 800-426-4791.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the levels of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. In addition to federal regulations, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) prescribe state regulations that limit the levels of certain contaminants in water provided by public water systems.

The drinking water regulations prescribed by the EPA can be categorized into primary and secondary categories. The National Primary Drinking Water Regulations (NPDWR) are legally enforceable primary standards and treatment techniques that apply to public water systems. Primary standards and treatment techniques protect public health by limiting the levels of contaminants in drinking water. The National Secondary Drinking Water Standards (NSDWS) set non-mandatory water quality standards for 15 contaminants. EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL. For more information follow the QR codes on the right.

NPDWR

NSDWS

# Your Water and Achieving Standards

Before wading through the rest of this report, it's worth acknowledging that Bay City had treatment technique violation in early 2024. This violation was due to a water quality parameter for corrosion control being lower than a designated optimization range (see the addendum on the last page for more details). Outside of this single event, the water in every community met all federal and state regulations and standards throughout 2024. The following pages in this report will discuss what was sampled for, what the results were, and any associated health concerns that consumers should be aware of. In the tables starting on page 10, you will find all the substances that we detected in your drinking water. The majority of these substances are tested for monthly or annually. Some substances that we test for are on monitoring schedules greater than a single year. If any of those substances were previously detected, they would also be included within the tables with a date of when it was detected. For clarity purposes, substances that were not detected from the most recent round of testing are not included in the tables. Feel free to contact us, bawtp@baycountydwsmi.gov or 989-439-7245, if you'd like to know more about these sample results or our sampling program.

# Testing and Sampling

In 2024, tens of thousands of tests were run on the water before it left the Water Treatment Plant. Thousands of additional tests were run on water samples collected from locations throughout the water distribution system. We are constantly looking for bacteria, metals, disinfection byproducts and changes in water quality parameters to make sure that the water is safe and continues to be safe to drink.

## Bacteria

Water leaving the water plant is tested daily for bacteria. We gather samples from over 50 locations throughout the distribution system. Over 100 bacteriological samples are collected every month from these locations. By the end of the year, our lab has processed almost 2,000 bacteriological samples. More thorough testing, evaluation, and action is required if bacteria are found in even a small percentage of tests. Test results from 2024 did not reveal any concerns regarding bacteria in the water.

## Turbidity

Turbidity is the measure of cloudiness of the water and has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Turbidity is measured in Nephelometric Turbidity Units or NTU. Results can be found on page 15.

## Disinfection By-Products (DBPs)

DBPs are compounds that can form in water when that water is exposed to various disinfectants over an extended period of time. Different disinfectants can form different DBPs. Our system uses chlorine as its disinfectant which leads to the formation of various trihalomethanes (THM) and haloacetic acids (HAA). Since there are multiple forms of THMs and HAAs, these are grouped together and referred to as Total THM (TTHM) and HAA5.

Every month we look for these byproducts of the disinfection process. The regulatory limit in drinking water is 80 parts per billion for TTHMs and 60 parts per billion for HAA5s. We test for these compounds at over 30 different locations in the water system. Results can be found on page 14.

Some people who drink water containing trihalomethanes in excess of the Maximum Contaminant Level (MCL) over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. Similar to trihalomethanes, some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer

## Lead and Copper

Lead and copper are not naturally present in our source water and are not detected in the tap water leaving the plant. However, low levels of lead are sometimes detected in samples collected from houses in our system. This is because some homes have lead service lines and/or lead-containing plumbing or fixtures. In an effort to keep lead levels low, the water plant is required to implement and maintain an approved corrosion control technique. The water plant feeds phosphoric acid to achieve corrosion control. Phosphoric acid forms a protective film on the inside of service lines and plumbing that lessens the chance of metals dissolving into the drinking water. We take water samples from more than 325 different homes throughout our system every year and test them for lead and copper.

More information about lead and copper can be found on pages 11 through 13.

### PFAS

Per- and polyfluoroalkyl substances (PFAS) are a large group of manmade chemicals that are resistant to heat, water, and oil. For decades, they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, personal care products, fire-fighting foams, and metal plating. PFAS are prevalent and have been found in the environment all over the world.

In compliance with the EPA's current Unregulated Contaminant Monitoring Rule (UCMR) and EGLE's Monitoring Schedule requirements, our system's water was tested for PFAS twice in 2024. The distribution system in Bay City was sampled in January and the water leaving the treatment plant was sampled in February. Both samples were tested for 29 different PFAS related compounds, 7 of which are regulated by EGLE. Results from both rounds of testing showed non-detects for all 29 compounds.

### Radioactive Contaminants

Through consistent testing, our source water has shown that it doesn't contain radioactive contaminants. The historical data and lack of potential sources of contamination reduces our need to test for these contaminates on an annual basis. The testing cycle is currently set for every 9 years and in 2024, the Bay Area Water System completed this testing. Testing in 2024 looked for Gross Alpha, Radium-226, Radium-228, and Uranium. We are happy to report that all four contaminates came back as non-detectable. Even though testing has shown that the radioactive contaminates aren't in our water, it is worth highlighting their health concerns. Some people who drink water containing radioactive contaminates in excess of their MCLs over many years may have an increased risk of getting cancer and kidney toxicity.

## Water Rates


Putting out high quality water that meets today's regulations comes at a cost. Pumping water, filtering it, treating it, testing it, and having the professional staff on hand 24/7 to keep the process running are everyday expenses for the Bay Area Water System.

Beyond the regular daily expenses, we also need to plan for the future. Preventative maintenance, emergency repairs, customer service calls, and capital improvements are additional expenses that need to be considered when setting rates to ensure the functionality, reliability, and longevity of our system. Our goal is to keep our water rates as low as possible without sacrificing the quality of our water or level of service you have come to expect from our system.

The rate you see and how billing is accomplished is different in each community throughout our system. It is common practice to have a readiness to service fee or a fixed charge and usage fee or a variable charge. To fund other system improvements, communities often add small additional fees. The water you receive is only half of the water cycle, similar charges for sewer often apply to water bills. These charges are often equal to if not more than the charges for water. If you have any questions or would like to know more about how water rates are set, please contact us at bawtp@baycountydwsmi.gov

# Stay Informed About Your Water

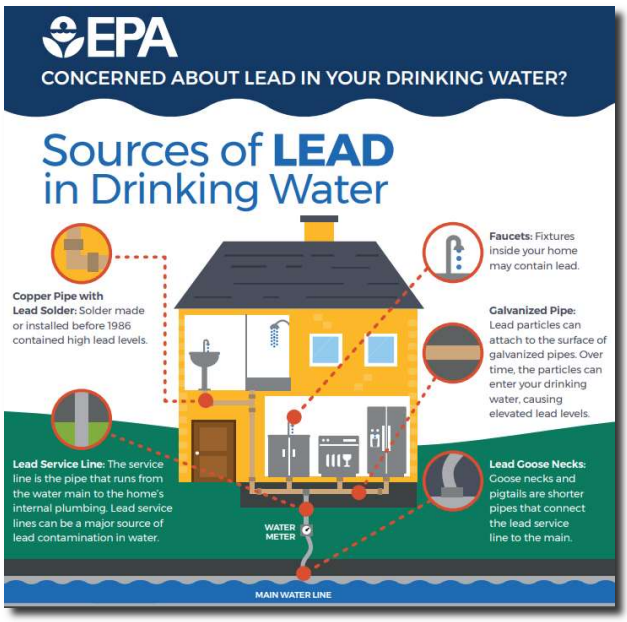
## Monthly Board Meetings

We need your understanding and support to be successful, so we hope you will get involved with us in all the ways you can. You are welcome to attend any of the board meetings listed below. We always make time to hear from guests and answer questions so please join us to learn more about what we're working on. We value your input!

| Community | Board Meeting Monthly Schedule | Time | Location of Meeting |
|---|---|---|---|
| Akron Township | 3rd Thursday | 7:00 PM | Township Hall, 4280 Bay City Forestville Rd. |
| Bangor Township | 2nd Tuesday | 6:00 PM | Township Admin. Office, 180 State Park Dr. |
| Bangor-Monitor Metro. Water District | 2nd Wednesday | 9:00 AM | Bangor-Monitor Hall, 2523 E. Midland Rd. |
| Beaver Township | 2nd Monday (typically) | 6:30 PM | Township Hall, 1850 S. Garfield Rd. |
| Bay County Road Commission/DWS | 1st & 3rd Wednesday (typically) | 9:00 AM | Road Commission, 2600 E. Beaver Rd. |
| City of Bay City | 1st & 3rd Monday | 6:00 PM | City Hall, 301 Washington Ave. |
| City of Essexville | 2nd Tuesday | 6:00 PM | City Hall, 1107 Woodside Ave. |
| City of Pinconning | 3rd Monday | 5:30 PM | City Hall, 208 S. Manitou St. |
| Frankenlust Township | 2nd Tuesday | 4:00 PM | Township Hall, 2401 Delta Rd. |
| Fraser Township | 2nd Monday | 7:00 PM | Township Hall, 1474 N. Mackinaw Rd. |
| Hampton Township | 1st Monday | 7:00 PM | Township Hall, 801 W. Center Rd. |
| Kawkawlin Metro Water District | 1st Tuesday | 7:00 PM | 405 Old Beaver Road |
| Kawkawlin Township | 2nd Monday | 7:00 PM | Administrative Building, 1836 E. Parish Rd |
| Linwood Metro Water District | 3rd Tuesday | 6:00 PM | 201 E. Benjamin St. |
| Merritt Township | 2nd Tuesday | 7:30 PM | Township Hall, 48 E. Munger Rd. |
| Monitor Township | 4th Monday (typically) | 5:00 PM | Township Hall, 2483 Midland Rd. |
| Pinconning Township | 2nd Tuesday | 4:00 PM | Township Hall, 1751 E. Cody Estey Rd |
| Portsmouth Township | 3rd Monday | 6:00 PM | Township Hall, 1711 W. Cass Ave. |
| Williams Township | 2nd Tuesday | 7:00 PM | Township Hall, 1080 W. Midland Rd. |
| Wisner Township | 3rd Monday | 7:00 PM | Township Hall, 7894 Bay City Forestville Rd. |

# Your Role in Water Quality

## Check Your Home or Business' Plumbing for Lead and Copper




The water quality on your property can be affected by your plumbing/pipe material and how long you go without running the water. In particular, lead in your home plumbing can affect water quality.

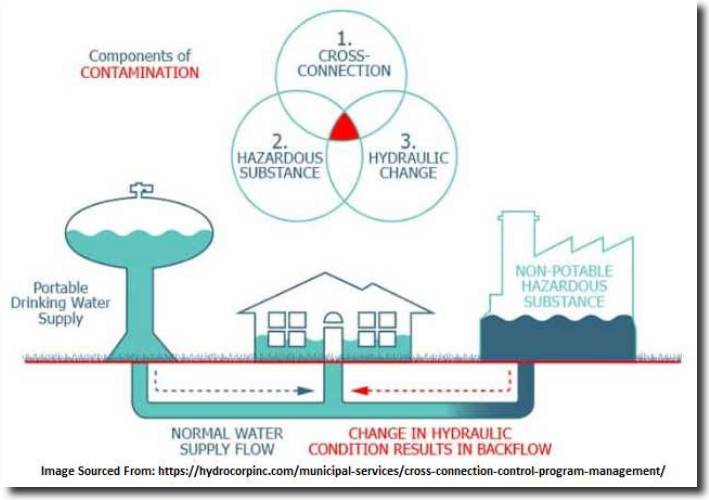
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Bay Area Water System is responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components. Identifying and removing lead materials within your home plumbing is a great step to reduce your family's risk.

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, 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 Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or at http://www.epa.gov/safewater/lead.

## Run Water After Vacation

When you leave your home or business for a long period of time, as you may when you take a vacation, the water in the pipes and plumbing doesn't move. When water has been sitting in the pipes for a few days, bacteria can start to grow, various metals can start to leach into the water, and any chlorine residual will start to fade away.

Flushing your water pipes is a great way to not only improve quality, but reduce many of the risks associated with stagnant water. Flushing efforts should focus on the primary points of consumption. As mentioned above, flushing for just a couple of minutes will bring fresh water from the main to your tap. If you have any water quality concerns or would like to know more, please contact us at bawtp@baycountydwsmi.gov




## Potential for Contamination

Another factor that can influence water quality in your home are connections to sources of potential contamination. These sources can include connections to equipment like boilers or water driven sump pumps. Even outdoor spigots for hoses can be potential entry points for contaminants. In the event that the water supply system experiences a large drop in pressure like those potentially seen during main breaks or extensive firefighting efforts, these connections can act like siphons and pull contaminants into the water system.

Due to the serious health risk that improper plumbing connections can pose to public health, it's a regulatory requirement that commercial and residential plumbing systems throughout the water distribution system get regularly inspected. This requirement is called a Cross Connection Program, and it is a sizable undertaking. To ensure the program gets done in a timely fashion, portions of it are contracted out to third party companies like HydroCorp.

In July of 2020, HydroCorp was contracted to begin inspecting the majority of our communities. With over 15,349 residential services to inspect, they have a lot of work to do. As of October of 2024, HydroCorp is about 59% done and found that 93% of the residential services are in compliance. If you have any questions about our Cross Connection Program or would like to know more, please contact us at bawtp@baycountydwsmi.gov

## Look Out for Special 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 system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.

## Additional Resources

- CDC drinking water page: https://www.cdc.gov/drinking-water/index.html
- Bay County Health Department: 989-895-4009 | www.baycounty-mi.gov/health/
- More information about your water, including water FAQs: https://baycountydwsmi.gov/water/
- The Safe Drinking Water Act: www.epa.gov/sdwa
- CDC Guide to Understanding your CCR: https://www.cdc.gov/drinking-water/about/how-to-read-drinking-water-quality-reports.html
- American Water Works Association: http://www.awwa.org

# Water Quality Data for 2024

The data tables over the next few pages list all the drinking water contaminants that we detected during the 2024 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 these tables is from testing done January 1 through December 31, 2024. 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.

Before diving into the data tables, some definitions need to be established. When confined to just a sheet of paper, space becomes a challenging boundary. In an effort to help everything fit and improve readability, abbreviations will be used. Below are the definitions of the abbreviations that you will encounter throughout the data tables.

| Terms and Abbreviations | DEFINITIONS |
|---|---|
| **AL** | Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. |
| **LRAA** | Locational Running Annual Average: The average of sample results taken at a particular monitoring location during the previous four calendar quarters, calculated quarterly. |
| **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 a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. |
| **MRDL** | Maximum Residual Disinfectant Level: 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. |
| **MRDLG** | Maximum Residual Disinfectant Level Goal: The level of a 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. |
| **NA** | Not applicable |
| **ND** | Not detected at testing limit |
| **NTU** | Nephelometric Turbidity Units: Turbidity is measured with an instrument called a nephelometer. Measurements are given in nephelometric turbidity units. |
| **PPB** | Part Per Billion or nanograms per liter. Equal to 1 second in 31.7 years |
| **PPM** | Part Per Million or milligrams per liter. Equal to 1 second in 11.57 days. |
| **RAA** | Running Annual Average: The average of sample results during the previous four calendar quarters, calculated quarterly. |
| **Bay County Supply #1** | Frankenlust, Monitor, and Portsmouth Township |
| **TT** | Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water. |

## Lead and Copper – Tested throughout the Bay Area Water System.

Lead and copper are normally not detected in our source water. These metals are often leached into drinking water from the plumbing system that carry it. Type of service line materials, corrosion of household plumbing including fittings and fixtures, and erosion of natural deposits are common sources for both lead and copper.

A sample gathered from the system is used to test for both Lead and Copper. When, how many, and how often these samples are gathered are unique to each of our communities. All of our communities had to test for Lead and Copper during 2024. Most communities gather one round of Lead and Copper samples from June 1st to September 30th. In 2024, there was 1 community that gathered 2 rounds of sampling between January 1st to June 30th and July 1st to December 31st. Next year, a few communities with historically low levels of Lead and Copper, will transition to being able to test for Lead and Copper every 3 years between June 1st to September 30th.

| Community | 2024 Sampling | Lead | | | Copper | | |
|---|---|---|---|---|---|---|---|
| | | Action Level (AL) = 15 ppb MCLG = 0 ppb | | | Action Level (AL) = 1.3 ppm MCLG = 1.3 ppm | | |
| | | Results[a] in ppb | Range of Results in ppb | Number of Samples Above AL | Results[a] in ppm | Range of Results in ppm | Number of Samples Above AL |
| Akron Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.1 | 0.1 - 0.2 | 0 |
| Bangor Township | June 1st to Sept 31st | 1 | 0 - 6 | 0 | 0.1 | 0.0 - 0.3 | 0 |
| Bangor Monitor | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.1 | 0.0 - 0.2 | 0 |
| City of Bay City | July 1st to Dec 31st | 11 | 0 - 27 | 2 | 0.2 | 0.0 - 0.4 | 0 |
| Bay County Supply #1 | June 1st to Sept 31st | 4 | 0 - 5 | 0 | 0.1 | 0.0 - 0.2 | 0 |
| Beaver Rd. Association | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.2 | 0.0 - 0.2 | 0 |
| Beaver Township | June 1st to Sept 31st | 0 | 0 - 1 | 0 | 0.1 | 0.0 - 0.1 | 0 |
| City of Essexville | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.2 | 0.0 - 0.2 | 0 |
| Fraser Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.1 | 0.1 - 0.1 | 0 |
| Hampton Township | June 1st to Sept 31st | 8 | 0 - 12 | 0 | 0.1 | 0.0 - 0.1 | 0 |
| Kawkawlin Metro. | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.1 | 0.0 - 0.1 | 0 |
| Kawkawlin Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.2 | 0.1 - 0.2 | 0 |
| Linwood Metro Water District | Jan 1st to June 30th | 0 | 0 - 1 | 0 | 0.3 | 0.1- 0.3 | 0 |
| | July 1st to Dec 31st | 0 | 0 - 0 | 0 | 0.2 | 0.0 - 0.2 | 0 |
| Merritt Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.2 | 0.1 - 0.3 | 0 |
| Monitor Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.2 | 0.0 - 0.2 | 0 |
| City of Pinconning | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.1 | 0.1 - 0.2 | 0 |
| Pinconning Township | June 1st to Sept 31st | 0 | 0 - 3 | 0 | 0.1 | 0.0 - 0.2 | 0 |
| Portsmouth Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.2 | 0.0 - 0.2 | 0 |
| Williams Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.1 | 0.1 - 0.2 | 0 |
| Wisner Township | June 1st to Sept 31st | 0 | 0 - 0 | 0 | 0.2 | 0.0 - 0.2 | 0 |

*a) Ninety (90) percent of the samples collected were at or below the level reported for our water.*

## Water Service Lines

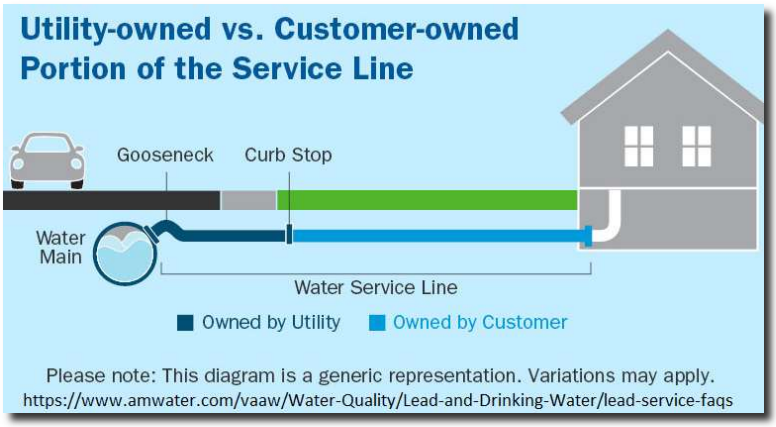
A service line is the pipe that connects a house or business to a water main. The city or township that supplies the water owns the line from the water main to a water shutoff valve called a curb stop, and the homeowner owns the section of service line between the curb stop and the house.

Over the course of 2024, each community had to do a Complete Distribution System Material Inventory (CDSMI). This required each community to verify customer service line materials and document the findings in a report. The table to the right shows the results of those efforts and details of the service lines found in each community.

A service line is listed as being a lead service if any part of the line is lead. The communities that have lead services are working hard to remove them. In 2024, Essexville got all of their lead out and replaced their last 59 lead services. As always, Bay City has been hard at it too. In 2024 they replaced 680 lead service lines throughout their distribution system.

If a community was not absolutely certain what every section of the service was made of, it is listed as an unknown service line. Since an unknown service line has the potential to contain lead materials, they are treated like lead service lines.

One of the goals of the CDSMI process was to identify service line materials so accurate lead service line removal plans could be created. These plans require that a certain percentage of lead services are pulled every year. Those communities with lead service lines continue to test and monitor their systems and are working hard towards removal




| Community | Total Service Lines | Known Lead Service Lines | Unknown Service Lines |
|---|---|---|---|
| Akron Township | 98 | 0 | 0 |
| Bangor Township | 4,770 | 24 | 0 |
| Bangor Monitor Metro. Water District | 1,246 | 0 | 0 |
| City of Bay City | 14,519 | 4,049 | 0 |
| Bay County Supply #1 | 3,045 | 16 | 0 |
| Beaver Rd. Water Association | 283 | 0 | 0 |
| Beaver Township | 471 | 0 | 0 |
| City of Essexville | 1,501 | 0 | 0 |
| Fraser Township | 537 | 0 | 0 |
| Hampton Township | 3,645 | 58 | 0 |
| Kawkawlin Metro. | 428 | 0 | 0 |
| Kawkawlin Township | 1,295 | 0 | 0 |
| Linwood Metro Water District | 383 | 0 | 0 |
| Merritt Township | 578 | 0 | 0 |
| Monitor Township | 2,238 | 0 | 0 |
| City of Pinconning | 639 | 2 | 429 |
| Pinconning Township | 612 | 0 | 0 |
| Portsmouth Township | 225 | 0 | 0 |
| Williams Township | 2,104 | 0 | 0 |
| Wisner Township | 250 | 0 | 0 |

## Lead Advisory


### Adverse Health Effect from Lead

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. Bay Area Water System is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes 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 and wish to have your water tested, contact Bay Area Water System at bawtp@baycountydwsmi.gov or call 989-439-7245. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at https://www.epa.gov/safewater/lead.

### Homes with Action Level Exceedances

There is no safe level of lead in drinking water. Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of persons who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney, or nervous system problems.

### Communities with Lead Service Lines

Some of the communities in our water supply system have lead service lines and or service lines of unknown material. The table on page 11 shows the total number of each and how they relate to the total of service lines. If you would like to know more about this report, please contact the Bay Area Water System at bawtp@baycountydwsmi.gov or call 989-439-7245.

### Lead Educational Videos

Through grant funding from EGLE and support from Bay City and the Water System Advisory Council, the Bay Area Water System was able to create a 5 part mini-video series supporting lead education in our area. Follow the QR code to learn more by viewing those videos.

## Disinfection Byproducts (DBPs) – Tested throughout the Bay Area Water System

With our water system using chlorine for its disinfectant, our system is susceptible to the formation of TTHMs and HAA5s. When, how many, and how often these samples are gathered are unique to each of our communities. Most communities in our system are on a quarterly sampling schedule. Samples are pulled from areas within each community that are prone to DBP formation.

| Community | Total Trihalomethanes | | | Total Haloacetic Acids (HAA5) | | |
|---|---|---|---|---|---|---|
| | TTHM MCL = 80 ppb | | | HAA5 MCL = 60 ppb | | |
| | Highest LRAA in ppb | Range of Results in ppb | Violation | Highest LRAA in ppb | Range of Results in ppb | Violation |
| Akron Township | 62 | 62 | No | 24 | 24 | No |
| Bangor Township | 43 | 20 - 54 | No | 19 | 0 - 35 | No |
| Bangor Monitor | 45 | 45 | No | 14 | 14 | No |
| City of Bay City | 34 | 19 - 49 | No | 17 | 11 - 25 | No |
| Bay County Supply #1 | 51 | 31 - 77 | No | 18 | 11 - 24 | No |
| Beaver Rd. Association | 58 | 38 - 83 | No | 16 | 8.9 - 22 | No |
| Beaver Township | 54 | 36 -78 | No | 20 | 16 -23 | No |
| City of Essexville | 35 | 35 | No | 13 | 13 | No |
| Fraser Township | 52 | 52 | No | 29 | 29 | No |
| Hampton Township | 45 | 29 - 58 | No | 18 | 12 - 27 | No |
| Kawkawlin Metro. | 46 | 46 | No | 20 | 20 | No |
| Kawkawlin Township | 43 | 43 | No | 26 | 26 | No |
| Linwood Metro Water Disctrict | 62 | 49 - 83 | No | 10 | 1.4 - 22 | No |
| Merritt Township | 55 | 37 - 82 | No | 18 | 10 - 24 | No |
| Monitor Township | 49 | 49 | No | 25 | 25 | No |
| City of Pinconning | 48 | 23 - 76 | No | 22 | 13 - 36 | No |
| Pinconning Township | 59 | 37 - 80 | No | 20 | 14 - 25 | No |
| Portsmouth Township | 53 | 34 - 81 | No | 17 | 9 - 23 | No |
| Williams Township | 58 | 58 | No | 22 | 22 | No |
| Wisner Township | 59 | 59 | No | 24 | 24 | No |

## Free Chlorine Residual – Tested at multiple sites in each Community

Every month, each community is required to monitor for bacterial contamination. The number of required samples depends on the population in each community. When these samples are gathered, the water is also tested for its free chlorine residual.

To safe guard against bacterial contamination, it is a regulatory requirement that these samples have a detectable free chlorine residual. These results are also one of the easiest ways to help characterize the water. As water spends time in the distribution system, its chlorine residual begins to fall. A low residual could be an indicator that the water is aging or something in the water is using up the chlorine. Low residuals often spur additional lab testing and system maintenance like flushing.

The free chlorine residual table to the right shows the highest running annual average (RAA) and range for each community. The RAA is an annual average that is calculated on a quarterly basis. This calculation requires data from 2024 and 2023. The range results are gathered just from 2024.

| Community | Free Chlorine Residual | | |
|---|---|---|---|
| | MCL, MRDL, and MRDLG = 4 ppm | | |
| | Max RAA in ppm | Range of Results in ppm | Violation |
| Akron Township | 0.23 | 0.04 - 0.4 | no |
| Bangor Township | 0.63 | 0.18 - 1.22 | no |
| Bangor Monitor | 0.94 | 0.59 - 1.19 | no |
| City of Bay City | 0.72 | 0.15 - 1.36 | no |
| Bay County Supply #1 | 0.73 | 0.30 - 1.25 | no |
| Beaver Rd. Association | 0.85 | 0.52 - 1.08 | no |
| Beaver Township | 0.40 | 0.12 - 0.58 | no |
| City of Essexville | 0.98 | 0.64 - 1.2 | no |
| Fraser Township | 0.65 | 0.24 - 0.89 | no |
| Hampton Township | 0.51 | 0.15 - 0.89 | no |
| Kawkawlin Metro. | 0.82 | 0.37 - 1.27 | no |
| Kawkawlin Township | 0.69 | 0.46 - 0.9 | no |
| Linwood Metro Water Disctrict | 0.78 | 0.15 - 0.8 | no |
| Merritt Township | 0.47 | 0.21 - 0.7 | no |
| Monitor Township | 0.76 | 0.42 - 1.13 | no |
| City of Pinconning | 0.52 | 0.29 - 0.67 | no |
| Pinconning Township | 0.57 | 0.2 - 0.82 | no |
| Portsmouth Township | 0.52 | 0.25 - 0.65 | no |
| Williams Township | 0.57 | 0.21 - 0.82 | no |
| Wisner Township | 0.37 | 0.2 - 0.56 | no |

## Turbidity – Tested at the Bay Area Water Treatment Plant Combined Filter Effluent

Turbidity is carefully monitored throughout every stage of the treatment process at the Bay Area Water Treatment Plant. Most importantly are the individual effluents from each filter and the combination of all the filter effluents. Online analyzers allow turbidity to be monitored in almost real time. The table below shows the results of over 35,000 samples, 96 daily samples over the course of a whole year.

| Treatment Technique Requirement: | MCLG | Average | Range of Test Results in NTU | Violation | Source of Turbidity |
|---|---|---|---|---|---|
| 100% of samples must be at or below 1 NTU; 95% must be below 0.3 NTU | 0 NTU | 0.028 NTU | 0.019 - 0.083 | no | Soil runoff |

## Inorganic Chemicals – Tested at the Bay Area Water Treatment Plant Tap

| Chemicals Detected | MCL | MCLG | Result | Range of Test Results | Violation | Source of Inorganic Chemicals |
|---|---|---|---|---|---|---|
| Barium [a] | 2 ppm | 2 ppm | 0.02 ppm | NA | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Fluoride [b] | 4.0 ppm | 4.0 ppm | 0.72 ppm | NA | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Sodium [c] | NA | NA | 5.6 ppm | NA | No | Erosion of natural deposits |

a) *Barium falls under Complete Metals testing which has a sampling interval of every 9 years. The last round of testing was on July 11th, 2023. Previous results were 0.016 ppm in 2021 and 0.01 in 2017.*
b) *Fluoride level reported is from annual regulatory sampling pulled on May 16th, 2024. In addition, the plant also performs daily sampling. Results for 2024 averaged 0.71 mg/L, with a range of 0.65 mg/L to 0.81 mg/L.*
c) *Sodium is not a regulated contaminant but is required to be reported annually. This sample was pulled on May 16th, 2024.*

## Additional Water Quality Testing – Tested at Bay Area Water Treatment Plant

| Analyte | Average | Range | Definition of Substance |
|---|---|---|---|
| pH | 7.61 | 7.3 - 7.8 | A measure of acidity and alkalinity |
| Hardness (as $CaCO_3$) [a] | 102 ppm | 92 ppm - 118 ppm | A measure of the total concentration of calcium and magnesium ions |
| Alkalinity (as $CaCO_3$) | 79 ppm | 70 ppm - 88 ppm | A measure of the capacity of water to neutralize an acid |
| Calcium (as $CaCO_3$) | 74 ppm | 64 ppm - 88 ppm | Inorganic substances often found in water |
| Sulfates | 11 ppm | 8 ppm - 15 ppm | |
| Chloride | 11 ppm | 7 ppm - 17 ppm | |
| Conductivity (µS/cm) [b] | 239 µS/cm | 204 - 288 µS/cm | A measure of the ability to carry an electrical current |
| Orthophosphate - $PO_4$ | 3.38 ppm | 3.1 ppm - 3.9 ppm | Corrosion inhibitor added to water to prevent corrosion of plumbing materials |

a) *$CaCO_3$ is the chemical abbreviation for Calcium Carbonate*
b) *uS/cm is a unit if measurement that stands for Microsiemens Per Centimeter*

## Bay Area Water System Flow Data – Finished Water Production

| 2024 | Bay Area Water Treatment Plant Production in Millions of Gallons | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Minimum Day | 5.8 | 6.0 | 6.0 | 5.7 | 6.0 | 7.6 | 7.6 | 7.4 | 7.5 | 6.2 | 6.0 | 6.0 |
| Average Day | 6.5 | 6.4 | 6.4 | 6.2 | 7.6 | 9.2 | 8.9 | 8.7 | 8.6 | 7.3 | 6.5 | 6.6 |
| Maximum Day | 7.2 | 7.0 | 7.0 | 6.5 | 9.2 | 11.6 | 10.0 | 10.9 | 9.9 | 8.2 | 7.0 | 7.2 |
| Monthly Total | 200.1 | 184.7 | 199.5 | 187.5 | 236.1 | 277.4 | 277.3 | 271.2 | 258.2 | 225.4 | 194.1 | 203.3 |
| Yearly Total | 2,714.9 | | | | | | | | | | | |

# Addendum to the 2024 Annual Water Quality Report

## Bay City, WSSN: 0470:

## Treatment Technique Violation for Water Quality Parameter (WQP) result.

Bay City's distribution system violated a drinking water standard in 2024. Although this situation did not require that you take immediate action, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct this situation.

Bay City purchases water from the Bay Area Water Supply (BAWS) that is treated for control corrosion to minimize lead and copper in the pipes from dissolving into the water. To ensure corrosion control is optimized, samples of the water are routinely gathered from the distribution system to test for water quality parameters such as pH and orthophosphate. Bay City is required to maintain these parameters above state-designated minimum values. Bay City collected a sample from a monitoring site that did not meet these parameters during the January through June 2024 monitoring period.

### What does this mean?

This situation did not require that you take immediate action. If it had, you would have been notified immediately. This was considered a treatment violation, but it does not mean there is lead or copper in your drinking water. The most recent monitoring indicates that lead and copper levels were below the action levels at least 90 percent of residential drinking water taps sampled. However, it is important that everyone takes measures to control lead and copper levels in the water because ingesting lead or copper can cause serious health consequences.

### What should I do?

This situation did not require you to take corrective actions like boiling your water. The Bay Area Water Treatment plant provided the appropriate corrosion control during this monitoring period.

### What happened?

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) set ranges for our water quality parameters on April 15, 2022. After these ranges were designated, we have been regularly collecting samples from 10 sites within the distribution system. On January 30$^{th}$, 2024, we collected a single sample with results below the minimum designated value for orthophosphate. Ten excursion days were accumulated between the dates of January 30$^{th}$ and February 8$^{th}$, 2024.

Based on water system staff's interpretation of EGLE's 2022 designation letter, it was the understanding of the water system operators that compliance was based on the average of all samples taken during the sampling period. Staff's immediate response to the low sample was to review the system as a whole and corrosion control appeared to be working. Staff continued with routine quarterly sampling and found the low sample site was back within parameters on April 22$^{nd}$, 2024.

### What is being done?

However, it was later determined that compliance is site specific and the delay in resampling the low result site was a treatment technique violation. We are working on operational techniques and on following up with all water quality parameter results timely to prevent this from happening again. If you would like further information about this event, please don't hesitate to contact the Bay City Water Department