



Bay Area Water System

Annual Water Quality Report for 2022





A Message from Your Water Plant Superintendent

Dear Bay Area Water System Water User,

This is the annual report about your drinking water quality, also called a Consumer Confidence Report, or CCR. 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.

This report is intended to provide peace of mind and confidence in your drinking water. Here we 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. We are proud to report that in 2022 the water we provided you met all federal and state requirements.

If upon reading this report, you have any questions or don't feel that peace of mind, please reach out. You may contact us at 989-439-7245 or by emailing us at bawtp@baycodws.org.

Sincerely,

Ryan W. Goebel
Bay Area Water Treatment Plant Superintendent
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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 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. Raw water travels approximately 50 miles to the Bay Area Water Treatment Plant (BAWTP) for filtration and treatment.

Source Water Assessment

Making water safe to drink starts at the source. Saginaw-Midland employees work with EGLE (Michigan Department of Environment, Great Lakes, and Energy) scientists to take samples of water at our source. They look 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.

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

What Is in Your 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. 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.

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.

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.

Sampling and Testing

Last year over 24,000 tests were run on our water before it left the water plant. More than 2,000 water samples were also collected from locations throughout the water distribution system. We're looking for bacteria, metals, chemicals, and other contaminants to make sure the water is safe and continues to be safe to drink.

Bacteria

We look for bacteria regularly, as required by law. Water leaving the water plant is tested daily for bacteria. There are also 48 locations in the water system where we take samples for analysis. More thorough testing, evaluation, and action is required if bacteria is found in even a small percentage of tests. Test results from 2022 did not reveal any concerns regarding bacteria in the water.

Lead and Copper

Lead and copper are not naturally present in our 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 services and/or lead-containing plumbing or fixtures. In an effort to keep lead levels low, the water plant feeds phosphoric acid, a corrosion inhibitor. This forms a protective coating on service lines and plumbing that lessens the chance of metals dissolving into the drinking water. More information about lead can be found on page 6.

We take water samples from more than 250 different homes in our system every year and test them for lead and copper. Sample results from 2022 can be found on page 9.

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 have been found in the environment all over the world.

Our water was tested for PFAS in April 2022. PFAS was not detected in our water and has never been detected in our water in previous years. Annual PFAS testing will continue in 2023.

Disinfection by-products (Trihalomethane (THM) and Haloacetic Acids (HAA))

Trihalomethanes are compounds that can form in water over time when the chlorine used for disinfectant breaks down. 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.

Every month we look for these byproducts of the disinfection process. The legal limit in drinking water is 80 parts per billion for THMs and 60 parts per billion for HAAs. We test for these compounds at 32 different locations in the water system. Results can be found on page 12.

Turbidity

Turbidity is the measure of cloudiness of the water and has no health effects. However, too much turbidity can interfere with the disinfection process, making it easier for bacteria to grow. We monitor it because it is a good indicator of the effectiveness of our filtration system. Results can be found on page 10.

Water Rates

It costs money to treat, pump and test water. Other costs include system maintenance and equipment replacement. Money collected from water bills primarily pay for these things. Our goal is to keep your water rates as low as possible without sacrificing the quality of our water or putting off important maintenance. If you have any budgetary questions or would like to know more about how water rates are set, please contact us at bawtp@baycodws.org.



Your Water Meets All Standards

In the table starting on page 9, you will find all the substances that we detected in your drinking water in 2022. Substances that we tested for but didn't find in our water are not listed in the table. Dioxin, pesticides and herbicides are examples of contaminants tested for but not found in our water. Feel free to contact us if you'd like to know more about these sample results or our sampling program.

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

Your Role in Water Quality

We work hard to provide high-quality water when it arrives on your property. Once the water we provide passes through the meter on your property, however, it is exposed to a whole new environment in your home that we have no control over. But you do.



Check Your Home or Business' Plumbing for Lead and Copper

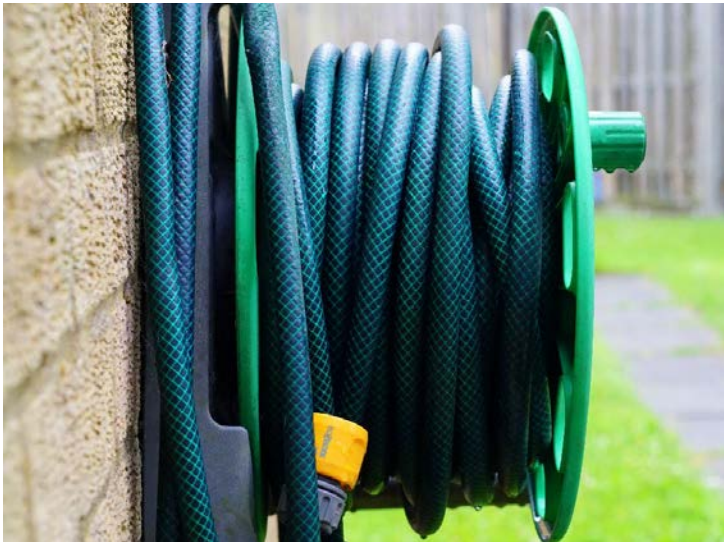
The water quality on your property can be affected by your plumbing/pipe material and how long you go without running the water. In particular, lead in your home plumbing can affect water quality. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and 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.

Run Water After Vacation

Another factor affecting your home's water quality is how "stale" the water is. When you leave your home or business for a long 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 days, bacteria can grow, and if you have lead or copper plumbing, those metals can start to seep into the water.



Flushing your water pipes can reduce this 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 EPA's Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.



Safely Connect Outdoor Hoses

Another factor that can influence water quality in your home is connections to the water outside your home. The outdoor spigot connection to a hose provides a potential way for pollutants to enter your plumbing. If you use the hose to spray chemicals on your yard by connecting the nozzle to a spray bottle, or if you have a sprinkler system connected, there is the potential for chemicals from the bottle or the lawn to be accidentally sucked back into your internal plumbing. We require

that you have a backflow prevention device installed to prevent that from happening.

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

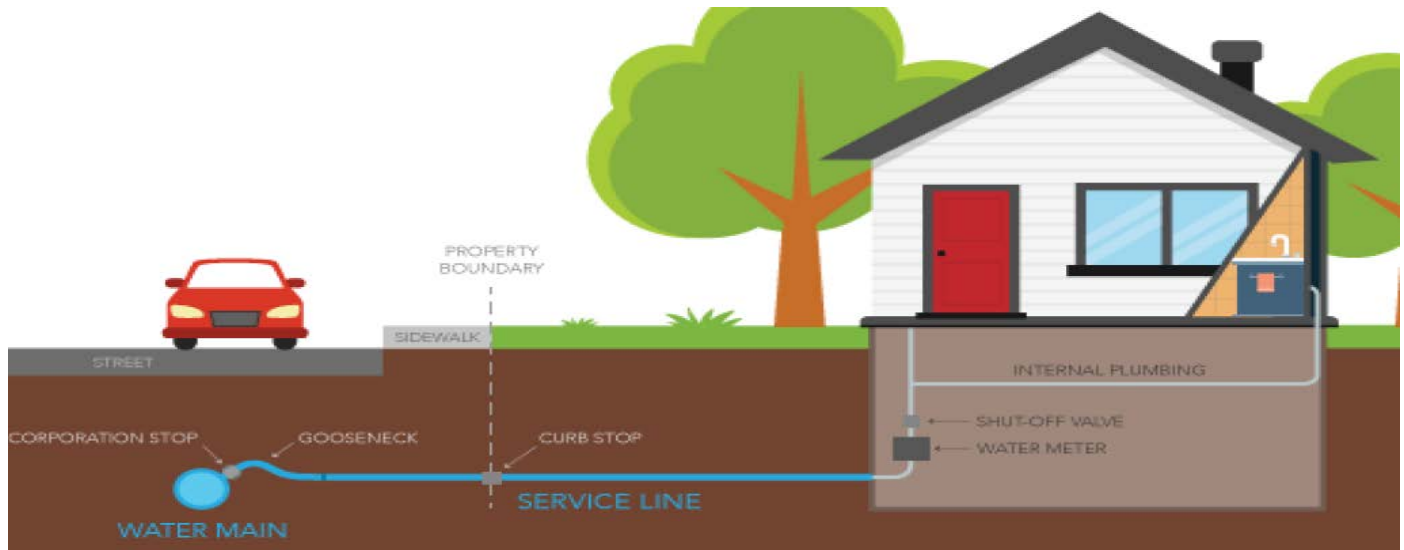


immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants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

Additional Resources

- CDC drinking water page: www.cdc.gov/healthywater/drinking/index.html
- Bay County Health Department: 989-895-4009 | www.baycounty-mi.gov/health/
- More information about your water, including water FAQs: www.baycodws.org/water/
- The Safe Drinking Water Act: www.epa.gov/sdwa
- CDC Guide to Understanding your CCR: http://www.cdc.gov/healthywater/drinking/public/understanding_ccr.html
- American Water Works Association: <http://www.awwa.org>
- Water Environment Federation: <http://www.wef.org>

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.

The table to the right shows all of the communities in the Bay Area Water System and the total number of service lines in that community.

The next column shows the number of known lead service lines 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 2022, Bay City replaced 528 lead services and Essexville replaced 65. Lead service line replacement is set to continue in 2023.

If a community is not absolutely certain what every section of the service is made of, it is listed as an 'unknown service line.' A full inventory of the service lines in our system is currently being performed and is expected to be completed by 2025.

Community	Total Service Lines	Known Lead Service Lines	Unknown Service Lines
Akron Township	99	0	0
Bangor Township	5,271	5	1,400
Bangor Monitor Metro. Water District	1,242	0	80
City of Bay City	14,571	5,100	795
Bay County Supply #1 (Frankenlust, Monitor, Portsmouth Township)	3,493	4	462
Beaver Rd. Water Association	284	0	0
Beaver Township	467	0	0
City of Essexville	1,605	113	946
Fraser Township	535	0	0
Hampton Township	3,026	11	2,578
Kawkawlin Metro.	428	0	380
Kawkawlin Township	1,303	0	0
Merritt Township	575	0	0
Monitor Township	2,222	0	0
City of Pinconning	662	0	539
Pinconning Township	611	0	0
Portsmouth Township	225	0	0
Williams Township	2,108	0	0
Wisner Township	250	0	0

Table of Water Data for 2022

The tables below list all the drinking water contaminants that we detected during the 2022 calendar year. 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 of the data is representative of the water quality, but some are more than one year old. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk.

Lead – Tested at multiple sites throughout the Bay Area Water System. Testing is done every year. Samples were collected between June 2022 - September 2022.

Community	EPA's AL - for a Representative Sampling of Customer Homes	Ideal Goal (MCLG)	90% of customers' homes were less than	Range of Results	Number of Samples Above AL	Source of Lead
Akron Township	15 ppb	0 ppb	1 ppb	0 ppb-2 ppb	0	Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits
Bangor Township	15 ppb	0 ppb	6 ppb	0 ppb-240 ppb	1	
Bangor Monitor	15 ppb	0 ppb	0 ppb	0 ppb-0 ppb	0	
City of Bay City	15 ppb	0 ppb	7 ppb	0 ppb-31 ppb	1	
Bay County Supply #1	15 ppb	0 ppb	6 ppb	0 ppb-18 ppb	1	
Beaver Rd. Association	15 ppb	0 ppb	0 ppb	0 ppb-0 ppb	0	
Beaver Township	15 ppb	0 ppb	0 ppb	0 ppb-2 ppb	0	
City of Essexville	15 ppb	0 ppb	6 ppb	0 ppb-14 ppb	0	
Fraser Township	15 ppb	0 ppb	0 ppb	0 ppb-0 ppb	0	
Hampton Township	15 ppb	0 ppb	3 ppb	0 ppb-8 ppb	0	
Kawkawlin Metro.	15 ppb	0 ppb	0 ppb	0 ppb-0 ppb	0	
Kawkawlin Township	15 ppb	0 ppb	0 ppb	0 ppb-1 ppb	0	
Merritt Township	15 ppb	0 ppb	0 ppb	0 ppb-1 ppb	0	
Monitor Township	15 ppb	0 ppb	0 ppb	0 ppb-1 ppb	0	
City of Pinconning	15 ppb	0 ppb	0 ppb	0 ppb-0 ppb	0	
Pinconning Township	15 ppb	0 ppb	0 ppb	0 ppb-0 ppb	0	
Portsmouth Township	15 ppb	0 ppb	0 ppb	0 ppb-1 ppb	0	
Williams Township	15 ppb	0 ppb	0 ppb	0 ppb-0 ppb	0	
Wisner Township	15 ppb	0 ppb	0 ppb	0 ppb-1 ppb	0	

AL - Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCLG - Maximum Contaminant Level Goal: The goal level of a pollutant in drinking water. Below this amount, there is no known or expected health effect.

PPB - Part Per Billion = 1 drop of water in an Olympic size swimming pool

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 – Tested at multiple sites throughout the Bay Area Water System. Testing is done every year. Samples were collected between June 2022 - September 2022.

Community	EPA's AL - for a Representative Sampling of Customer Homes	Ideal Goal (MCLG)	90% of customers' homes were less than	Range of Results	Number of Samples Above AL	Source of Copper
Akron Township	1.3 ppm	1.3 ppm	0.2 ppm	0.1 ppm-0.3 ppm	0	Corrosion of household plumbing systems; Erosion of natural deposits
Bangor Township	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Bangor Monitor	1.3 ppm	1.3 ppm	0.1 ppm	0.0 ppm-0.1 ppm	0	
City of Bay City	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.4 ppm	0	
Bay County Supply #1	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Beaver Rd. Association	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Beaver Township	1.3 ppm	1.3 ppm	0.2 ppm	0.1 ppm-0.2 ppm	0	
City of Essexville	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Fraser Township	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Hampton Township	1.3 ppm	1.3 ppm	0.1 ppm	0.0 ppm-0.2 ppm	0	
Kawkawlin Metro.	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Kawkawlin Township	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Merritt Township	1.3 ppm	1.3 ppm	0.2 ppm	0.1 ppm-0.4 ppm	0	
Monitor Township	1.3 ppm	1.3 ppm	0.2 ppm	0.1 ppm-0.3 ppm	0	
City of Pinconning	1.3 ppm	1.3 ppm	0.1 ppm	0.1 ppm-0.1 ppm	0	
Pinconning Township	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.3 ppm	0	
Portsmouth Township	1.3 ppm	1.3 ppm	0.2 ppm	0.1 ppm-0.2 ppm	0	
Williams Township	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	
Wisner Township	1.3 ppm	1.3 ppm	0.2 ppm	0.0 ppm-0.2 ppm	0	

AL - Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCLG - Maximum Contaminant Level Goal: The goal level of a pollutant in drinking water. Below this amount, there is no known or expected health effect.

PPM - Part Per Million = 1 drop of water in a hot tub

Turbidity – A measure of clarity tested at the Bay Area Water Treatment Plant Filter Effluent

Treatment Technique Requirement:	Ideal Goal (MCLG)	Average	Range	Violation	Source of Turbidity
100% of samples must be at or below 1 NTU; 95% must be below 0.3 NTU	0 NTU	0.023 NTU	0.020 NTU-0.030 NTU	no	Soil runoff

Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

MCLG - Maximum Contaminant Level Goal: The goal level of a pollutant in drinking water. Below this amount, there is no known or expected health effect.

NTU - Nephelometric Turbidity Units: Turbidity is measured with an instrument called a nephelometer. Measurements are given in nephelometric turbidity units.

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

Chemicals Detected	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Highest Result	Range of Test Results for the Year	Violation	Source of IOC
Fluoride	4.0 ppm	4.0 ppm	0.69 ppm	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	10 ppm	10 ppm	0.25 ppm	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium	N/A	N/A	7.1 ppm	NA	No	Erosion of natural deposits
The results below are from 2021						
Total Barium	2 ppm	2 ppm	.016 ppm	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Total Chromium	100 ppb	100 ppb	1.4 ppb	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits
Total Selenium	50 ppb	50 ppb	1.2 ppb	NA	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines

MCL - Maximum Contaminant Level: This is the highest level allowed of a pollutant in drinking water. MCLs are set as close as possible to the goal using the best available technology.

MCLG - Maximum Contaminant Level Goal: The goal level of a pollutant in drinking water. Below this amount, there is no known or expected health effect.

PPM - Part Per Million = 1 drop of water in a hot tub

PPB - Part Per Billion = 1 drop of water in an Olympic size swimming pool

Fluoride level reported is from annual regulatory sampling. The plant also performs daily sampling. Results for 2022 averaged 0.77 mg/L, with a range of 0.69 mg/L - 1.05 mg/L.

Sodium is not a regulated contaminant but is required to be reported annually.

Free Chlorine Residual – Tested at multiple sites throughout the Bay Area Water System.

Highest Level Allowed (MRDL)	Ideal Goal (MRDLG)	Maximum Distribution System Running Annual Average (Year)	Distribution System Running Annual Average Range (Year)	Violation	Source of Free Chlorine
4.0 ppm	4.0 ppm	0.69 ppm	0.53 ppm – 0.72 ppm	no	Water additive used to control microbes

MRDL - Maximum Residual Disinfectant Level: This is the highest level of disinfectant allowed in drinking water. MRDLs are set as close as possible to the goal using the best available technology.

MRDLG - Maximum Residual Disinfectant Level Goal: The goal is to not exceed this amount. Below this amount, there is no known or expected health effect.

RAA - Running Annual Average: The average of sample results during the previous four calendar quarters, calculated quarterly.

PPM - Part Per Million = 1 drop of water in a hot tub

Disinfection By-products-TTHMs – Tested throughout the Bay Area Water System

Community	Highest Level Allowed (MCL) – One-Year Average	Maximum Locational Running Annual Average (Year)	System-Wide Range of Results	Violation	Source of TTHMs
Akron Township	80 ppb	61 ppb	NA	No	Byproduct of drinking water disinfection
Bangor Township	80 ppb	38 ppb	16 ppb–54 ppb	No	
Bangor Monitor	80 ppb	28 ppb	14 ppb-41 ppb	No	
City of Bay City	80 ppb	33 ppb	15 ppb-47 ppb	No	
Bay County Supply #1	80 ppb	40 ppb	25 ppb-49 ppb	No	
Beaver Rd. Association	80 ppb	60 ppb	35 ppb-83 ppb	No	
Beaver Township	80 ppb	48 ppb	30 ppb-63 ppb	No	
City of Essexville	80 ppb	29 ppb	13 ppb-42 ppb	No	
Fraser Township	80 ppb	33 ppb	20 ppb-40 ppb	No	
Hampton Township	80 ppb	44 ppb	18 ppb-61 ppb	No	
Kawkawlin Metro.	80 ppb	35 ppb	20 ppb-34 ppb	No	
Kawkawlin Township	80 ppb	32 ppb	19 ppb-35 ppb	No	
Merritt Township	80 ppb	48 ppb	30 ppb-67 ppb	No	
Monitor Township	80 ppb	29 ppb	15 ppb-28 ppb	No	
City of Pinconning	80 ppb	39 ppb	17 ppb-56 ppb	No	
Pinconning Township	80 ppb	50 ppb	29 ppb-68 ppb	No	
Portsmouth Township	80 ppb	55 ppb	35 ppb-84 ppb	No	
Williams Township	80 ppb	38 ppb	24 ppb-48 ppb	No	
Wisner Township	80 ppb	38 ppb	24 ppb-45 ppb	No	

Disinfection Byproducts-THAAs –Tested throughout the Bay Area Water System

Community	Highest Level Allowed (MCL) - One Year Average	Maximum Locational Running Annual Average (Year)	System Wide Range of Results	Violation	Source of THAAs
Akron Township	60 ppb	17 ppb	NA	No	Byproduct of drinking water disinfection
Bangor Township	60 ppb	28 ppb	1.7 ppb-49 ppb	No	
Bangor Monitor	60 ppb	26 ppb	12 ppb-43 ppb	No	
City of Bay City	60 ppb	23 ppb	12 ppb-32 ppb	No	
Bay County Supply #1	60 ppb	21 ppb	13 ppb-34 ppb	No	
Beaver Rd. Association	60 ppb	23 ppb	12 ppb-28 ppb	No	
Beaver Township	60 ppb	22 ppb	15 ppb-21 ppb	No	
City of Essexville	60 ppb	26 ppb	11 ppb-43 ppb	No	
Fraser Township	60 ppb	23 ppb	17 ppb-27 ppb	No	
Hampton Township	60 ppb	28 ppb	15 ppb-43 ppb	No	
Kawkawlin Metro.	60 ppb	24 ppb	15 ppb-24 ppb	No	
Kawkawlin Township	60 ppb	26 ppb	16 ppb-24 ppb	No	
Merritt Township	60 ppb	25 ppb	14 ppb-25 ppb	No	
Monitor Township	60 ppb	26 ppb	13 ppb-22 ppb	No	
City of Pinconning	60 ppb	31 ppb	16 ppb-50 ppb	No	
Pinconning Township	60 ppb	25 ppb	15 ppb-26 ppb	No	
Portsmouth Township	60 ppb	23 ppb	13 ppb-25 ppb	No	
Williams Township	60 ppb	22 ppb	17 ppb-21 ppb	No	
Wisner Township	60 ppb	22 ppb	13 ppb-22 ppb	No	

TTHMs - Total Trihalomethanes

THAAs – Total Haloacetic Acids

MCL - Maximum Contaminant Level: This is the highest level allowed of a pollutant in drinking water.

PPB - Part Per Billion = 1 drop of water in an Olympic size swimming pool

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

Testing Done	Average	Range	Definition of Substance
pH	7.6	7.4-7.8	A measure of acidity and alkalinity
Hardness (as CaCO ₃) (ppm)	100 ppm	74 ppm-112 ppm	A measure of the total concentration of calcium and magnesium ions
Alkalinity (as CaCO ₃) (ppm)	79 ppm	70 ppm-89 ppm	A measure of the capacity of water to neutralize an acid
Calcium (as CaCO ₃) (ppm)	75 ppm	66 ppm-90 ppm	Inorganic substances often found in water
Sulfates (ppm)	10 ppm	7 ppm-14 ppm	
Chloride (ppm)	11 ppm	8 ppm-14 ppm	
Conductivity (µS/cm)	239 µS/cm	208 µS/cm-286 µS/cm	A measure of the ability to carry an electrical current
Orthophosphate- PO ₄ (ppm)	3.38 ppm	3.25 ppm -3.48 ppm	Corrosion inhibitor added to water to prevent corrosion of plumbing materials

PPM - Part Per Million = 1 drop of water in a hot tub

CaCO₃ – Calcium Carbonate

µS/cm – Microsiemens Per Centimeter

Definitions

ACRONYMS	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. PPB = 1 drop of water in an Olympic size swimming pool
PPM	Part Per Million or milligrams per liter. PPM = 1 drop of water in a hot tub
RAA	Running Annual Average: The average of sample results during the previous four calendar quarters, calculated quarterly.
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.