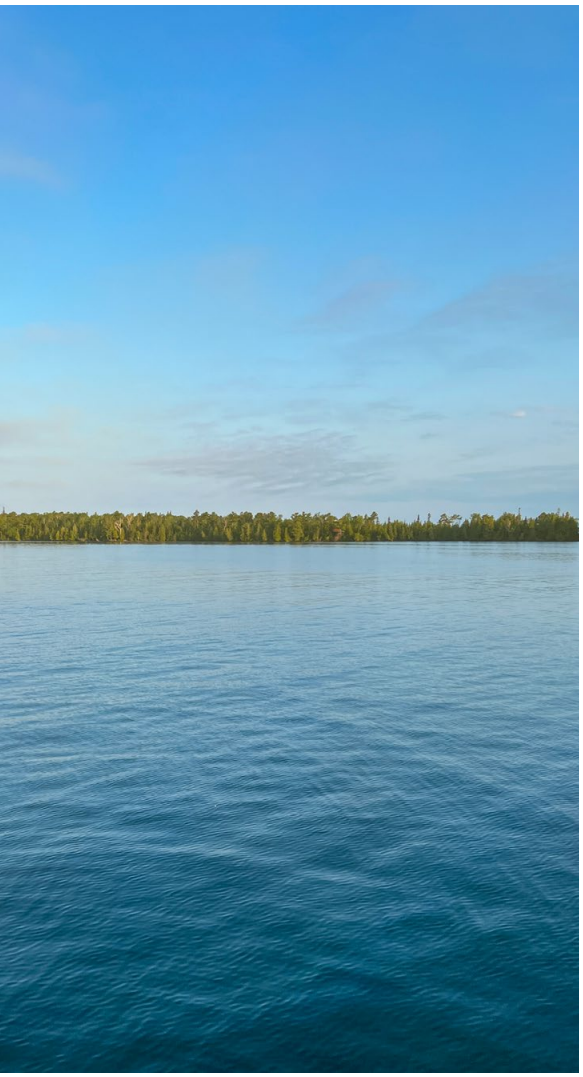
ANNUAL WATER QUALITY REPORT

Reporting Year 2024



Presented By
Beaver Borough
Municipal Authority

PWS ID#: 5040009

Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2024. Included are details about your source of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing you with this information because informed customers are our best allies.

Where Does My Water Come From?

The BBMA water treatment plant is supplied from four groundwater wells located along the northerly side of the Ohio River. The BBMA draws water from four active wells located on borough-owned property. The wells combine in a common header, and water flowing from the common header is treated with liquid chlorine before it enters an underground wet well. Liquid chlorine is automatically dosed and continuously monitored. Three vertical turbine pumps distribute water to the Lion Lane storage tank and the distribution system. The BBMA is working hard to identify water leakage in the system and make repairs to stop any leaks. Daily water production is continuously monitored, which helps to identify problems in the system. In an older system such as ours, keeping the system free of leaks is an ongoing battle! If you notice water in streets, yards, or alleys, please call our office at (724) 773-6700 to report it. We thank you for your assistance in identifying these leaks.

Important Health Information

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 women 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, or kidney or nervous system problems.

Nitrate in drinking water at levels above 10 parts per million (ppm) is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health-care provider.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 health-care providers. U.S. Environmental Protection Agency (U.S. EPA)/Centers for Disease Control and Prevention (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 at (800) 426-4791 or epa.gov/safewater.

Water Treatment Process

The treatment process in Beaver consists of pulling groundwater from our underground aquifer with our well pumps and applying chlorine disinfection to this raw water in our waterworks. Continuous monitoring of the disinfection residual is an integral part of our process. BBMA does not currently filter this groundwater; however, we are investigating the installation of a reverse osmosis system at our drinking water plant. This system would improve water quality by filtering out some of the hardness present in the groundwater. This is an ongoing process, but we are hoping to complete this analysis in 2025. Any changes to the treatment process will increase the cost of producing water and could result in a restructuring of rates within the borough. For this reason, completing the analysis of implementing a treatment such as reverse osmosis is multifaceted.

Community Participation

You are invited to participate in our public forum and ask questions about your drinking water. The Beaver Borough Municipal Authority (BBMA) meets the first Tuesday and third Wednesday of each month at the Beaver Borough Municipal Building, 469 Third Street, Beaver.

Source Water Assessment

A source water assessment of the groundwater supplying the BBMA water treatment plant was completed in 2003 by DEP. The assessment found that our source is potentially most susceptible to accidental spills from roadways, railroads, and a nearby fuel storage facility. Overall, our source has a moderate risk of significant contamination. Summary reports are available by writing to Beaver Borough, 469 Third Street, Beaver, PA 15009; the report is also available on the DEP website at https://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/srceprot/sourceassessment/default.htm (search "DEP source water"). Complete reports were distributed to municipalities, water suppliers, local planning agencies, and DEP offices and are available for review at the DEP Southwest Regional Office, Records Management Unit. For more information, call (412) 442-4000.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call the Beaver Municipal Authority office at (724) 773-6700 or visit beaverboroughwater.us.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA and Pennsylvania Department of Environmental Protection (DEP) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration and DEP 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA Safe Drinking Water Hotline at (800) 426-4791.

Additional Monitoring

The BBMA has been monitoring a level of chloride in the drinking water that is higher than normal. Chloride does not have adverse health effects. If you would like more information, please contact us at (724) 773-6700.

What Are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit bit.ly/3Z5AMm8.

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water is needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water is used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water is required to produce one quart of milk, and 4,200 gallons of water is required to produce two pounds of beef.

According to the U.S. EPA, the average American uses over 180 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet, twice the global per capita average. With water use increasing sixfold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish. To check out your own water footprint, go to watercalculator.org.

Residential Water Service Line Insurance

Starting in October 2024, BBMA implemented a residential water service line insurance program. This insurance was added without additional rate implementation. If you would like more information, please visit beaverboroughwater.us.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through them.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use, and avoid using hot water to prevent sediment accumulation in your hot water tank. Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

About Our Monitoring Violation

Due to a clerical error, a monitoring plan was on file with DEP that incorrectly identified a higher number of samples the BBMA was required to complete in 2024. Sampling was completed on all contaminants as required, and all results were below DEP monitoring contaminant levels. This error in the monitoring plan was revised after it was identified, and the correct number of samples have been completed so far in 2025. Following is the list of contaminants that were incorrectly sampled:

Inorganic contaminants: antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, mercury, nickel, selenium, thallium

Volatile organic contaminants: 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,2-dichloroethane, 1,2-dichloropropane, 1,2,4-trichlorobenzene, benzene, carbon tetrachloride, cis-1,2-dichloroethylene, dichloromethane, ethylbenzene, monochlorobenzene, o-dichlorobenzene, para-dichlorobenzene, styrene, tetrachloroethylene, toluene, total xylenes, trichlorethylene

Synthetic organic contaminants: benzo(a)pyrene, di(ethylhexyl) pthalate

Nitrate/nitrite

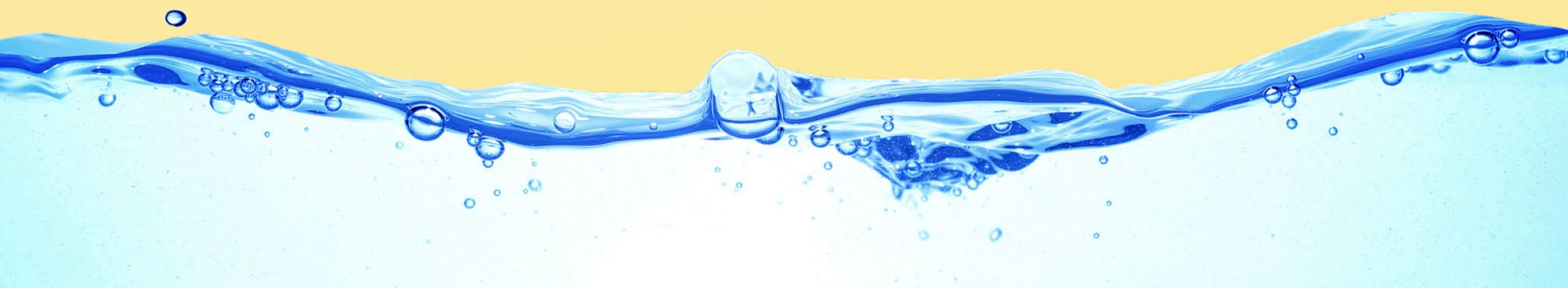
The BBMA also had a reporting error from our lab on a standard drinking water coliform sample in February that was recoded and submitted correctly. All samples were completed as required, and all results were normal.

For more information, please contact our office at (724) 773-6700.

Lead in Home Plumbing

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 Beaver Borough Municipal Authority is responsible for providing high-quality drinking water and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, or doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute-accredited certifier to reduce lead in drinking water. If you are concerned about lead and wish to have your water tested, contact the BBMA at (724) 773-6700. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.

To address lead in drinking water, public water systems were required to develop and maintain an inventory of service line materials by October 16, 2024. Developing an inventory and identifying the location of lead service lines (LSL) is the first step for beginning LSL replacement and protecting public health. The lead service inventory may be accessed at beaverboroughwater.us/consumer-notification-of-a-lead-service-line/. Please contact us if you would like more information about the inventory or any lead sampling that has been done.



BY THE NUMBERS

3.4 BILLION

The daily volume gallons of water recycled and reused in the U.S., reducing waste and conserving resources.

28%

The percent reduction in per capita water use in the U.S. since 1980, thanks to efficiency improvements.

99.9%

The percent effectiveness of modern water treatment plants in removing harmful bacteria and viruses from drinking water.

1.2 MILLION

The length in miles of drinking water pipes in the U.S., delivering clean water to millions of homes and businesses daily.

1.7 MILLION

The number of jobs supported by the U.S. water sector.

2

How often in minutes a water main breaks.

Protecting Your Water

Bacteria are a natural and important part of our world. There are around 40 trillion bacteria living in each of us; without them, we would not be able to live healthy lives. Coliform bacteria are common in the environment and generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016 the U.S. EPA passed a regulation called the Revised Total Coliform Rule, which requires water systems to take additional steps to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and E. coli. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have procedures in place that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment and correct any problems quickly. The U.S. EPA anticipates greater public health protection under this regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

Though we are fortunate in having the highest-quality drinking water, our goal is to eliminate all potential pathways of contamination into our distribution system, and this requirement helps us accomplish that goal.

Q & A

Why save water?

Although 80 percent of the Earth's surface is water, only 1 percent is suitable for drinking. The rest is either saltwater or permanently frozen, and we can't drink it, wash with it, or use it to water plants.

Which household activity wastes the most water?

Most people would say the majority of water use comes from showering or washing dishes; however, toilet flushing is by far the largest single use of water in a home (accounting for 40% of total water use). Toilets use about 4 to 6 gallons per flush, so consider an ultra-low-flow (ULF) toilet, which requires only 1.5 gallons.

Should I be concerned about what I'm pouring down my drain?

If your home is served by a sewage system, your drain is an entrance to your wastewater disposal system and eventually to a drinking water source. Consider purchasing environmentally friendly home products whenever possible, and never pour hazardous materials (e.g., car engine oil) down the drain. Check with your health department for more information on proper disposal methods.

How long can I store drinking water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria prior to filling up with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water can be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

How long does it take a water supplier to produce one glass of treated drinking water?

It can take up to 45 minutes to produce a single glass of drinking water.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data is included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2024	2	2	0.118	0.118–0.118	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chloramines [distribution] (ppm)	2024	[4]	[4]	NA	0.72–0.92	No	Water additive used to control microbes
Chloramines [entry point] (ppm)	2024	MinRDL: SW=0.2/ GW=0.4	NA	NA	0.39–1.26	No	Water additive used to control microbes
Chromium (ppb)	2021	100	100	ND	NA	No	Discharge from steel and pulp mills; erosion of natural deposits
Nitrate (ppm)	2024	10	10	6.22	5.22–7.53	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Perfluorooctanesulfonic Acid [PFOS] (ppt)	2024	18	NA	3.26	1.95–5.08	No	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives, and photographic films
Perfluorooctanoic Acid [PFOA] (ppt)	2024	14	NA	4.75	3.91–5.92	No	Used in the production of Teflon, firefighting foams, cleaners, cosmetics, greases and lubricants, paints, polishes, adhesives, and photographic films
Tetrachloroethylene (ppb)	2024	5	0	ND	NA	No	Discharge from factories and dry cleaners

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.233	NA	0/20	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2022	15	0	5,280[1]	NA	0/20	No	Corrosion of household plumbing systems; erosion of natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppm)	2024	0.00261	0.00261–0.00261	NA
Bromoform (ppm)	2024	0.00704	0.00704–0.00704	NA
Chlorodibromomethane (ppm)	2024	0.00665	0.00665–0.00665	NA

[1] Action level not exceeded.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

GW: Groundwater source.

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.

MinRDL (Minimum Residual Disinfectant Level): The minimum level of residual disinfectant required at the entry point to the distribution system.

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): Indicates that the substance was not found by laboratory analysis.

ppb (µg/L) (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (mg/L) (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (ng/L) (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SW: Surface water source.