

Analysis of the Water Quality Report Baltimore, MD 2019

Have you ever read your water quality report? If you did read it, did you understand it? This piece was written to help the average consumer understand the contaminants in Baltimore water and how they can affect health . . . and how a Multipure drinking water system can be your “firewall” against those contaminants.

To find your current water quality report, Google: Town, state, water quality report. This **Baltimore Analysis** was taken from the **Annual 2019 Baltimore Water Quality Report**, and the data is from 2019. The City of Baltimore meets all public health requirements for drinking water standards, set by the Maryland Health Authority and the EPA.

All water contains some level of contaminants. The EPA sets an “enforceable” regulation called a **Maximum Contaminant Level (MCL)**. Water utilities must consider the cost, benefits, and the ability of public water systems to detect and reduce contaminants using suitable treatment technologies. ***The MCLs are set on what is realistic for a water utility to achieve, not what is good for your health.*** If it is too expensive to remove contaminants from the water, they may not be removed.

According to the **Environmental Working Group (EWG.ORG)**, over 300 pollutants have been identified in US tap water. More than half of these chemicals detected are not subject to health or safety regulations and can be legally present in any amount. Check out the EWG website for contaminant health goals and more information about specific contaminants that may be present in YOUR water. [EWG Tap Water Database](#)

Baltimore has good water . . . and it still should be filtered. The Baltimore water supply is surface water from rainfall and snowmelt. There are three major sources: Gunpowder Falls, North Branch Patapsco River, and the Susquehanna River. The water is run through a filter bed of sand media which separates impurities. Water clarity is one indicator of the potential for water to harbor harmful microorganisms—the clearer the water, the better the water.

Because the water is relatively soft, it leaches **Lead** from the pipes in old houses (any home or apartment built before 1986), service lines, and from the city distribution system. **Lead** levels in homes can vary from day to day, depending on the pH, the temperature of the water coming through the pipes, and the routing system used that day.

Lead has no known functions or health benefit for humans. It is considered a metabolic poison and causes damage to the kidneys, liver, and to the nervous, reproductive, cardiovascular, immune, and gastrointestinal systems. **Lead** has a particularly damaging effect in children.

Lime (calcium oxide) is added to the treated water to raise the pH of the water so that it is less corrosive and leaches less **Lead**.

Fluoride is added to the filtered water at each of the plants, maintaining a **Fluoride** level of approximately 1.31 parts per million in the treated water. The EPA allows 4 ppm.

Baltimore occasionally has a parasite called **Cryptosporidium** which can cause **Cryptosporidiosis**.

The disinfection process does not kill **Cryptosporidium**. It is encapsulated in a little “cyst” and is chlorine resistant. During the past two decades, **Crypto** is recognized as one of the most common causes of waterborne disease (recreational water and drinking water) in humans in the United States.

Symptoms of **Cryptosporidiosis** and **Giardiasis** include stomach cramps and pain, dehydration, nausea, vomiting, fever, weight loss, and watery diarrhea. Symptoms generally begin 1 to 12 days after becoming infected. Immunologically healthy patients usually recover within a few days to weeks. The symptoms may go in cycles, in which you may seem to

get better for a few days, then feel worse before the illness ends. However, in an immune compromised individual with persistent symptoms and diarrhea lasting more than two weeks, treatment can be difficult and expensive.

Pregnant women, infants, the elderly, immune compromised people, and anyone with a serious life-threatening illness are at highest risk. Cryptosporidiosis can be fatal.

One of the most serious contaminants in Baltimore water is a series of chemicals called disinfection by-products—**Trihalomethanes (TTHMs)** and **Haloacetic Acids (HAA5)**. They occur in drinking water when organic matter combines with the chlorine.

These compounds have been linked to cancers (breast, bladder, colon, and rectal), miscarriages, low birth weight, stillbirths, and birth defects. The EPA allows 80 ppb. of TTHMs and 60 ppb. of HAA5s, *but studies show they are causing cancers (breast, bladder, colon, and rectal) and reproductive issues at levels as low as 20 ppb.* **Baltimore's TTHMs ranged up to 103.1 ppb. and the HAA5 up to 61.9 ppb. during 2019!** These are some of the highest in the nation!

The EPA regulation for these toxic chemicals is based on system-wide annual averages. But the **TTHMs** and **HAA5** fluctuate from day to day, and month to month, frequently rising above the 80 ppb. limit. The only effective protection is to drink water that is filtered by a system certified to reduce these contaminants every day for every drink.

Nitrates are present in the water, up to 2.87. **Nitrates** are often indicators that pesticides and herbicides are in the water, which the utility doesn't test for and can cause health issues.

Baltimore water contains **Arsenic**. **Arsenic** dissolves in water when it contacts the natural deposits in the earth. **Arsenic** is a mineral known to cause cancer in humans and is linked to other health effects such as skin damage and circulatory problems. **The EPA allows 10 ppb of Arsenic and Baltimore water ranges up to 3 ppb.**

Baltimore's aging infrastructure also contributes problems to the drinking water. The plan to upgrade its water infrastructure consists of replacing and rehabilitating 15 miles of mains each year. In 100 years, the 1,500 miles of water mains will be updated. **In January 2018, during the "big freeze", there were 559 water main breaks!**

When pipes break, **Bacteria** and/or **Viruses** can come into the Baltimore water and not be killed by the disinfection process. Biofilm also builds up in the city pipes and can harbor bacteria/viruses which can occasionally be sloughed off and released into a home-owner's water.

All Multipure systems are NSF-certified to reduce 82+ contaminants of health concern. That certification guarantees that the manufacturer's claims are true. Of those contaminants present in Baltimore water, the following lists the % of reduction:

Lead—99.3%

Cryptosporidium (cysts)—99.95%

Trihalomethanes—99.8%

Bacteria and Viruses (Aqualuxe)—Bacteria 99.999%, Viruses 99.99%

Arsenic (Aquaperform and Aqualuxe)— 95.8% to 99.9%, depending on pH

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