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Forever Chemicals in Delaware Waters

Water quality is a top tier environmental issue world-wide, America-wide, and in the State of Delaware. When we turn on the water faucet we count on clean, safe water coming out of the tap. We bathe in it, cook with it, swim in it, fish in it, and boat in it. We all rely upon having clean water. Polluted water makes people sick, kills fish and wildlife species, and kills or degrades vegetation in our natural areas, in our yards, and on our farmlands. Like many environmental issues, we rarely think about them until we experience deleterious effects. "Water quality", in general, is a very large and complex topic, much too large for the BBLA Environmental Corner to cover adequately. Therefore, this writing focuses on what scientists and policy-makers refer to as "forever chemicals".

"Forever chemicals", or polyfluorinated alkyl substances (PFAS), have been found in Delaware water wells and in fish caught locally. If untreated, these chemicals can wreak havoc with our health, our quality of life, and the health of the ecosystem within which we live. Mr. Kristian Jaimie, published an article in the *Salisbury Times* on February 16, 2022, which also appeared in *The Wave* on February 22, 2022, that does a good job reporting on PFAS in Delaware and how these chemicals, can remain in the environment for a very long time, hence the moniker "forever chemicals." Mr. Jaimie reports that these dangerous chemicals, in low levels, were found throughout the State of Delaware in water wells sampled during a recent study. "*The four most frequently detected PFAS in this study were PFOA; perfluorohexanoic acid, known as PFHxA; PFOS; and perfluorohexane sulfonate, known as PFHxS*". The U.S. Environmental Protection Agency (USEPA) has identified 18 kinds of PFAS in Delaware water. The U.S. Environmental Protection Agency, the U.S. Geological Survey, Delaware Department of Natural Resources and Environmental Control (DNREC), DE Geological Survey, and local jurisdictions are working to better understand where these chemicals occur so that efforts can be made to warn the public, treat contaminated water, and eliminate or ameliorate adverse effects.

Where do PFAS come from? They come from industrial uses, paints, varnishes, sealants, fire-fighting products, dental floss, shampoo, nail polish, some makeup, non-stick cookware, carpets, stain repellants, some grease-resistant paper, fast food containers, candy wrappers, water resistant clothing, myriad cleaning products, and --- yes, pizza boxes.

The Agency for Toxic Substances and Disease Registry (ATSDR) reports that PFAS levels from consumer products today is relatively low, especially when compared to products made before PFAS were recognized as a health and environmental hazard. The ATSDR also reports that PFAS can accumulate in fish, for example, and then cause problems for people who consume contaminated fish. Click here for more information.

DNREC (Division of Waste and Hazardous Substances) is actively working with federal agencies to identify and respond to PFAS in Delaware's waters. Information on how DNREC is working on the PFAS issue can be found here. This link also provides information on private wells, PFAS testing for these wells, and in-home filtration systems. PFAS in water can be treated with carbon filters and reverse osmosis.

On October 26, 2021, Mr. Kristian Jaimie reported that "Results from samples taken from the water system serving residents of the Bethany Crest community near Millville returned test results that were below the U.S. Environmental Protection Agency Health Advisory Level of **70 parts per trillion (ppt)** for PFAS in drinking water. The full article can be viewed here.

Information on the Bethany Beach Water Department can be found here. At this time, no issues with PFAS have been reported in the Town's drinking water.