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EPA Releases Health Advisories for Emerging Compounds

Advanced Treatment Provides Quality Drinking Water for Customers

Erlanger, KY - On June 15, 2022, United States Environmental Protection Agency (EPA) released drinking water health advisories for the following four per- and polyfluoroalkyl substances (PFAS) compounds: PFOA, PFOS, HFPO (GenX), and PFBS. EPA's health advisories are non-enforceable and non-regulatory and provide information on compounds that are known or anticipated to occur in drinking water. States and utilities may use these levels as references for addressing unregulated compounds in drinking water.

PFAS are a group of manufactured chemicals that have been used in industry and consumer products since the 1940s. There are thousands of different PFAS, some of which have been more widely used and studied than others. These synthetic chemicals can be used in firefighting foams, coating additives for non-stick cookware (Teflon™), paper and cardboard food packaging (microwave popcorn bags), dental floss, stain-resistant carpets and fabrics, and cleaning products. One common concern is that PFAS generally break down very slowly, meaning that concentrations can accumulate in people, animals, and the environment over time. Studies show that human exposure to PFAS is widespread and that most people have some level in their blood. These compounds may be referenced as “forever chemicals” because they do not break down readily and can be present in the human body for years after exposure.

Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) are two of the most widely used and studied chemicals in the PFAS group. Most uses of PFOA and PFOS were

Northern Kentucky Water District (NKWD) serves approximately 85,600 customer accounts, or nearly 300,000 people in Campbell and Kenton Counties, portions of Boone, Grant and Pendleton Counties, and the Greater Cincinnati Northern Kentucky International Airport. NKWD operates from its headquarters in Erlanger, Kentucky and operates three water treatment facilities: Taylor Mill, Fort Thomas, and Memorial Parkway.



voluntarily phased out by U.S. manufacturers, although there are a limited number of ongoing uses, and these chemicals remain in the environment due to their lack of degradation. PFOA and PFOS have been replaced in the United States with other PFAS in recent years. In chemical and product manufacturing, hexafluoropropylene oxide (HFPO) dimer acid and its ammonium salt (“GenX” chemicals) are considered a replacement for PFOA, and perfluorobutane sulfonate (PFBS) is considered a replacement for PFOS.

EPA's lifetime health advisories are intended, with a margin of safety, to represent levels at which adverse health effects are not expected to occur over a lifetime of exposure. These advisories indicate the level of drinking water contamination below which adverse health effects are not expected to occur. EPA's lifetime health advisories identify levels to protect all people, including sensitive populations, from adverse health effects resulting from exposure throughout their lives to these PFAS in drinking water. The health advisory levels were calculated to offer a margin of protection against adverse health effects. EPA's lifetime health advisories also take into account other potential sources of exposure to these PFAS beyond drinking water (for example, food, air, consumer products, etc.), which provides an additional layer of protection.

EPA released interim updated health advisories for PFOA and PFOS that replace those EPA issued in 2016 and that will be in place until EPA's forthcoming PFAS National Primary Drinking Water Regulation is in effect. EPA intends to release a drinking water regulation for PFOA and PFOS in the fall of 2022. For the first time, EPA is issuing final health advisories for perfluorobutane sulfonic acid and its potassium salt (PFBS) and for hexafluoropropylene oxide (HFPO) dimer acid and its ammonium salt (“GenX” chemicals).

- Interim updated Health Advisory for PFOA = 0.004 parts per trillion (ppt)
- Interim updated Health Advisory for PFOS = 0.02 ppt
- Final Health Advisory for GenX chemicals = 10 ppt
- Final Health Advisory for PFBS = 2,000 ppt

These levels are trace amounts. For perspective, a part per trillion equals 1 gallon of water in 1,514,570 Olympic sized swimming pools or 1 second in 32,000 years. The health advisory for PFOA converts from 0.004 ppt to 4 parts per quadrillion. A part per quadrillion equals 1 second in 32 million years. The ability to test compounds at these minute levels is relatively new.

The Northern Kentucky Water District (NKWD) provides advanced treatment processes of granular activated carbon and ultraviolet disinfection as part of a multi-barrier approach that also includes coagulation, sedimentation, filtration, and chlorine disinfection. This approach is effective in treating broad categories of compounds. The EPA has deemed that granular activated carbon is a best-available technology for removing PFAS. EPA indicates that granular activated carbon can remove 99% of PFOA and PFOS, but for other PFAS such as GenX, the removal rates can vary from 77% to 99%.

The NKWD participated in a PFAS study conducted by the Kentucky Division of Water in June of 2019. With this monitoring, the Kentucky Division of Water collected finished water samples from the two plants that treat water from the Ohio River and analyzed them for eight PFAS compounds, including the four compounds with newly released



health advisories. PFOA and PFOS and five other PFAS were not detected. GenX was detected at below 12 parts per trillion, which is slightly above the new health advisory of 10 parts per trillion. The EPA's health advisory announcement does not affect NKWD's continuing compliance with drinking water regulations.



NKWD will participate in monitoring outlined in EPA's fifth Unregulated Contaminant Monitoring Rule, which will improve the understanding of the frequency that a list of these and other PFAS compounds are found in drinking water and at what levels.

NKWD's takes drinking water quality very seriously, and we will continue to review the status of emerging compounds including PFAS. Our water consistently meets state and EPA regulations, and we will continue to look to the State and EPA for further information and guidance on important issues such as the emerging compounds.

Additional information on emerging compounds may be found at the EPA's website <http://www.epa.gov> or by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791, and the American Water Works Association's sponsored website <http://www.drinktap.org/water-info/whats-in-my-water>.

For more information please call (859) 578-9898.