What to know about Dallas water systems and new federal limits on 'forever chemicals'

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The city of Dallas' water system meets the U.S. Environmental

Protection Agency's recently announced limits for "forever chemicals." But that doesn't mean the drinking water is free of chemicals, experts say.

The EPA recently set the first-ever national, legally enforceable drinking water standard to protect communities from exposure to per- and polyfluoroalkyl substances (PFAS), chemicals that resist grease, oil, water and heat. They are known as "forever chemicals," because they break down slowly over time.

The new EPA standards set new limits for five of the more than 12,000 chemicals. The man-made chemicals perfluorooctanoic acid, or PFOA, and perfluorooctanesulfonic acid, or PFOS, have a limit of 4 parts per trillion. The PFNA and PFHxS—older versions of PFAS—and GenX chemicals, a newer generation of chemicals created as a replacement for PFOA, have a limit of 10 parts per trillion.

The Dallas Water Utilities Department sampled PFAS in treated water from each of its three water plants, Eastside, Bachman and Elm Fork, from March to December 2023. The results indicate that PFAS levels in Dallas Water Utilities' drinking water currently meet new regulatory limits, according to the current information on PFAS released by the city.

But at the Bachman plant, some levels of chemicals were detected, 3.8 for PFOA, 2.4 for PFOS, and 2.6 for PFHxS; they are all below the maximum contaminant level of 4, according to Xiujuan Chen, an assistant professor of environmental engineering at the University of Texas at Arlington.

Contaminant levels are measured on a scale of 1 to 4 parts per trillion. One part per trillion is equivalent to a single drop of water in 20 Olympic-sized swimming pools. The results were obtained by sampling

the water in an annual running average.

This doesn't mean the levels were found in the water every day, and because the levels are lower than EPA standards, the risks associated with health problems may be lower, according to Chen.

The Dallas Water Utilities Department said via email it is proactively incorporating PFAS monitoring into the source water sampling program, investigating possible PFAS sources to mitigate potential exposure, evaluating established and emerging treatment technologies and researching short and long-term strategies to reduce PFAS levels.

The water utilities department did not specify what type of treatments or approaches it would take to mitigate these chemicals.

There is no safe level of exposure to PFAS and they pose a risk to human health, said Chen. "The reason the EPA set these limits in the drinking water regulation is because they are the lowest of the lowest concentration levels that we can detect with our current analytical technology," said Chen.

PFAS are a group of synthetic chemicals that have been used in a wide variety of consumer products such as non-stick metal coatings for cookware, paper food packaging, facial creams and cosmetics and industrial applications like firefighting foams, since their development in the 1940s.

According to the U.S. Department of Health and Human Services, nearly all people in the United States have measurable amounts of PFAS in their blood.

Exposure to certain PFAS over a long period can cause cancer and other illnesses, according to the EPA. In addition, PFAS exposure during

critical life stages such as pregnancy or early childhood can also result in adverse health impacts, according to David Andrews, deputy director of investigations and a senior scientist at the Environmental Working Group, a national nonprofit and environmental advocacy organization.

The organization has been tracking chemicals in water and the lack of regulation for over two decades.

"Part of the reason these new standards are so historical and monumental is that the EPA has actually not set any new drinking water regulations for an unregulated contaminant since the Safe Drinking Water Act Amendments were passed in 1996," said Andrews.

All public water systems have three years to complete their initial monitoring for these chemicals. Under the new rule, they must inform the public of the level of PFAS measured in their drinking water in their annual consumer confidence report. Where PFAS is found at levels that exceed these standards, systems must implement solutions to reduce PFAS in their drinking water within five years.

"These regulations make it a very important step forward, but there's more work to be done to clean up this contamination and ensure that our regulatory system is robust enough so that this doesn't happen again," said Andrews.

What can the city of Dallas do?

Jennifer Guelfo, an assistant professor in the department of civil, environmental and construction engineering at Texas Tech University, said there are several ways for public water systems to combat these chemicals depending on the treatment plant.

"Two of the most common large-scale treatment approaches that are

used for PFAS are something people call GAC, which stands for granular activated carbon, and the other is ion exchange," said Guelfo, whose research is focused on investigating and managing the remediation of PFAS in drinking water systems.

These treatments essentially run water through a tank with these materials, according to Guelfo. As the water goes through the tank, the PFAS essentially sticks to the GAC or the ion exchange, which takes the chemical out of the water.

It's called sorption or adsorption. Sometimes, people call it a filtration process, but that's misleading because it's not like a particle that can't get through a strainer, said Guelfo. It's actually a dissolved molecule that leaves the water and instead attaches itself to these materials, Guelfo said.

These approaches can be expensive depending on the size of the public water systems. Water rates could increase to cover this cost, said Christopher Moody, a regulatory technical manager with the American Water Works Association, an international nonprofit that focuses on water solutions and water safety.

The EPA is making $21 billion available to improve the country's drinking water systems, including addressing PFAS contamination. Of that, $9 billion is specifically for tackling PFAS and emerging contaminants, according to the EPA news release.

"The vast majority of systems will have to cover that cost one way or another. It'll either be through water rate increases or the system is able to absorb the new costs into their existing budget," said Moody. "For a system of the size of Dallas, those costs could exceed $50 to $100 a year per household."

These approaches and compliance with new regulations could be expensive, but they are worth it to save lives, said Becky Rader, 67, a Dallas resident who has advocated for water regulations.

Rader became involved when her husband, Lester, a captain in the Army Rangers, died in 1985. He was healthy, served at Fort Benning, and then died of leukemia. Rader said she began to think about the chemicals her husband was exposed to while in the military, and she learned about PFAS and the consequences of long-term exposure.

She is concerned about the effects of these chemicals on people, wildlife and the environment. Rader wants the city of Dallas to be proactive and start thinking about these approaches before it is too late.

"If I have to spend a little more money to make sure my grandson is healthy later in life, it's worth it. Or I won't get sick," Rader said. "It's worth spending the extra money."

Where does Dallas water come from?

The Dallas Water Utilities Department, which serves 2.6 million people, obtains water from Elm Fork of the Trinity River and lakes Ray Hubbard, Lewisville, Grapevine, Ray Roberts and Tawakoni. The Dallas water supply comes from surface water, not from groundwater sources, such as wells, according to Dallas Water Utilities.

How is Dallas water treated?

The water utilities department uses chemical treatment, settling, filtering and disinfection to produce drinking water. After the water is treated, the water is pumped into the distribution system for delivery to users.

How often is the water tested, and what kind of tests are performed?

Dallas water treatment plants monitor the water production process 365 days a year. Nearly 7 million samples are analyzed and transmitted by the department each month, providing them with real-time data to ensure the process is operating correctly and, if necessary, to make operational adjustments to ensure water quality and regulatory compliance requirements are continuously met.

The types of testing include pH, temperature, alkalinity, turbidity and disinfectant residuals, according to a Dallas Water Utility communication spokesperson.

Additionally, the Dallas Water Utility's Water Quality section continuously monitors the quality of the drinking water through its distribution system to ensure quality and compliance with National Primary Drinking Water Regulations.

Samples are continuously collected and analyzed for various chemical, physical and microbiological parameters.

Water filters at home

Water filters are sold in stores for homes that can do the same process as the ones that water treatment plants use but on a smaller scale, said UT Arlington professor Xiujuan Chen.

Residents should look for filters that offer a granular activated carbon process and are certified to remove PFAS, according to Chen.

Consumer Reports recommends looking for a water filter with the code

NSF/ANSI 53 (or NSF/ANSI 58 for reverse osmosis systems) and the manufacturer's claim that the product can remove PFAS.