PUBLIC RISK

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SHERRI ADAMS

The 2024 Public Risk Manager of the Year came to Kansas City 'just when we needed her most.'

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ALSO IN THIS ISSUE

NEW FEDERAL LIMITS ON 'FOREVER CHEMICALS'

How the EPA's new National Primary Drinking Water Regulation for PFAS will impact public water systems.

BY LISA HAMMOND

T'S HARD NOT TO NOTICE more frequent headlines about per- and polyfluoroalkyl substances (PFAS) these days.

PFAS are a group of approximately 15,000 known manufactured compounds that have been used in industry and consumer products for more than 70 years. They are referred to as "forever chemicals" because components of PFAS break down very slowly and can build up in people, animals, and the environment over time. They can be present in our water, soil, food, and air.

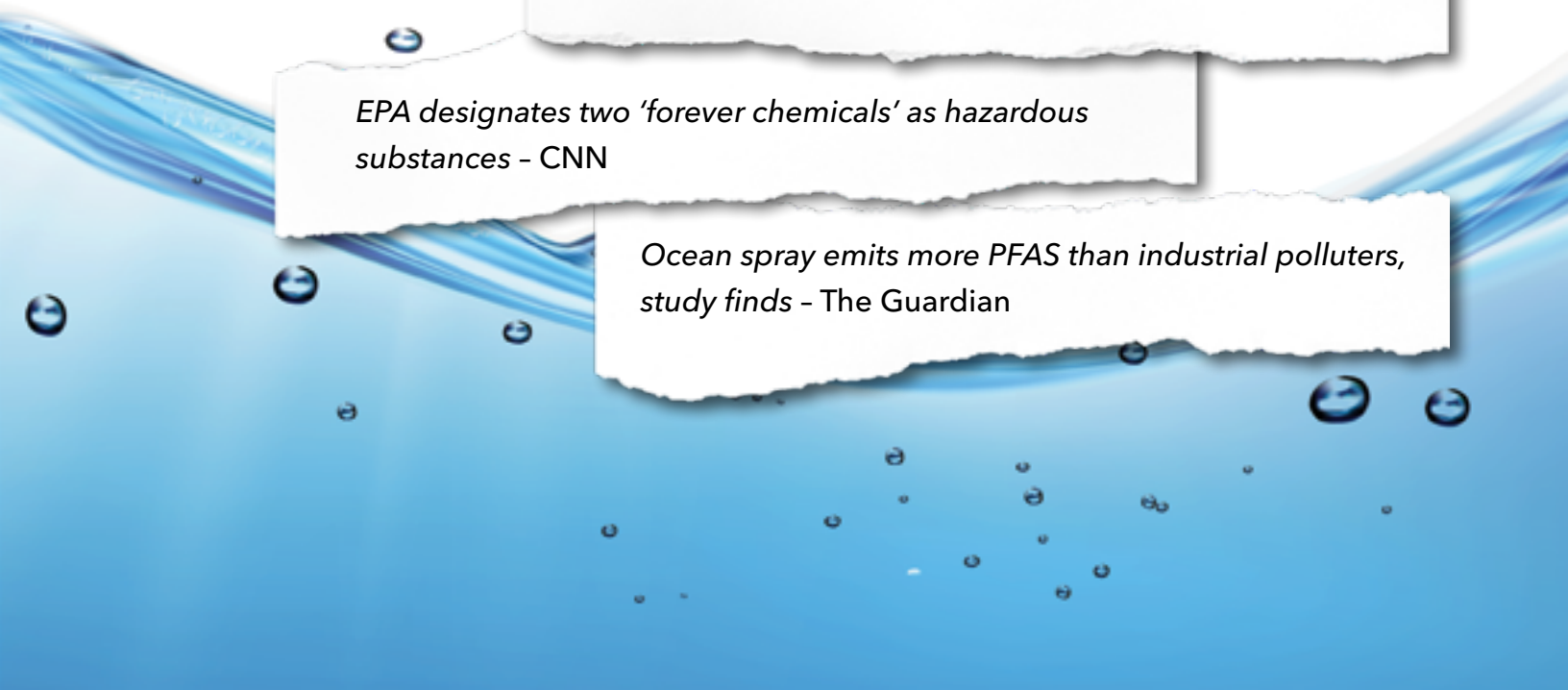
While they've been in the news for years, lately there has been increased coverage of PFAS and the new federal regulations on PFAS levels in drinking water:

EPA imposes first national limits on 'forever chemicals' in drinking water – NBC News

PFAS removal from public water is a costly and long process. Here's how to filter out some of it. – Fast Company

EPA designates two 'forever chemicals' as hazardous substances – CNN

Ocean spray emits more PFAS than industrial polluters, study finds – The Guardian



ABOUT PFAS

PFAS have been in use in various applications since the 1940s. Many are a concern because they:

- Do not break down in the environment
- Are mobile and can move through soils and contaminate drinking water sources
- May have adverse health effects at very low concentrations

With their widespread use and because they are "forever chemicals," most people in the U.S. have been exposed to PFAS and have measurable amounts of the compounds in their blood. PFAS can enter the body in a variety of ways, including:

- Drinking water from PFAS-contaminated water sources
- Eating foods packaged in material containing PFAS
- Eating fish caught in PFAS-contaminated water

Research to understand the health effects of PFAS exposure is ongoing. Evidence indicates associations between exposure to certain PFAS levels and potential health impacts including:

- Cancer effects
- Weight effects
- Immune system effects
- Developmental effects
- Reproductive effects

REDUCING PFAS IN DRINKING WATER

In October 2021, the U.S. Environmental Protection Agency (EPA) released its PFAS Strategic Roadmap, which highlights actions the EPA will take to protect people and the environment.

The PFAS Strategic Roadmap included a plan to establish a national primary drinking water regulation for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). These are two of the first PFAS produced, the two most well-understood, and two of the most commonly detected PFAS.

On April 10, 2024, the EPA announced the final National Primary Drinking Water Regulation (NPDWR). This first-ever national legally enforceable drinking water standard established Maximum Contaminant Levels (MCLs) for six PFAS:

- PFOA and PFOS have an MCL of four parts per trillion.
- PFNA and PFHxS (older versions of PFAS) and HFPO-DA (commonly known as "GenX chemicals"—a newer generation of chemicals created as a replacement for PFOA) have an MCL of 10 parts per trillion.
- PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS have a Hazard Index of 1.

The EPA uses the Hazard Index to understand the health risk from chemical mixtures. It is a tool made up of a sum of fractions, with each fraction comparing the

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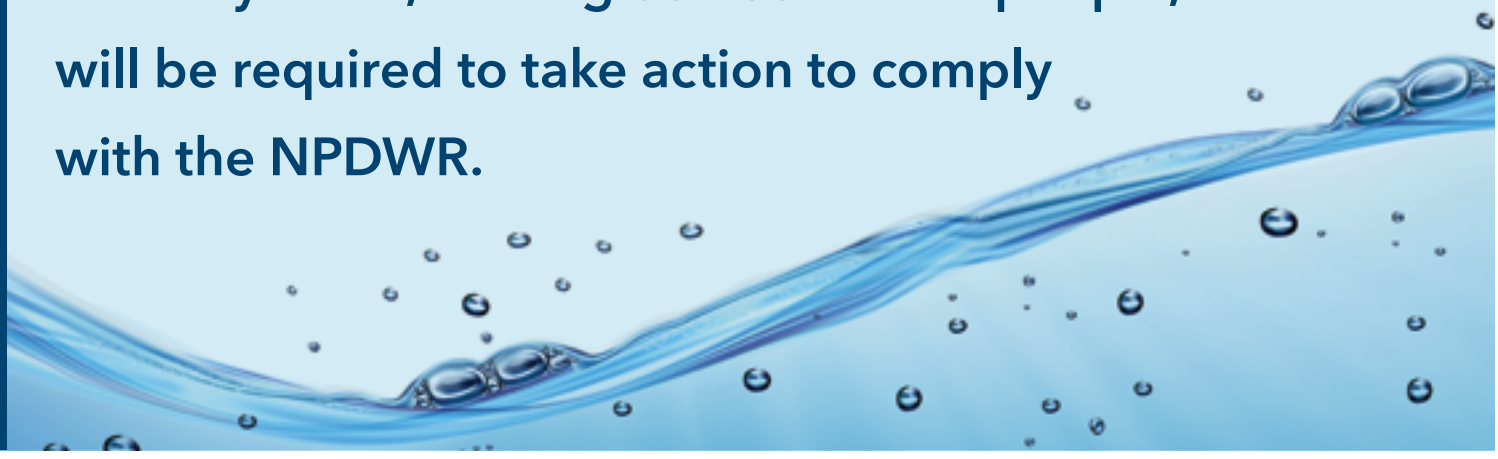

level of each PFAS in the water to the highest level determined not to have risk of health effects. Water systems must use calculations to determine if the combined levels of these PFAS in the drinking water comply with the Hazard Index MCL of 1.

The final rule requires public water systems to monitor the PFAS compounds listed above. Initial monitoring must be complete by 2027, with requirements for ongoing monitoring. If PFAS are detected above the MCLs, public water systems must implement solutions to reduce them. In 2029, public water systems must comply with all regulated MCLs. If any PFAS level violates its MCL, they must take action to reduce the PFAS level(s) and notify the public of the violation(s).

In addition to the federal response, many states are enforcing stricter regulations, including MCLs, on PFAS levels in drinking water. Massachusetts, Maine, Michigan, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin have all implemented standards. Delaware and Virginia are in the process of establishing standards for various PFAS.

Other states have adopted guidance, health advisory, or notification levels for certain PFAS, including Alaska, California, Connecticut, Colorado, Hawaii, Illinois, Maryland, Minnesota, North Carolina, New Mexico, Ohio, and Oregon.

MONITORING AND REMOVING PFAS WILL BE COSTLY

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PFAS dissolve in water. Because of this and their chemical properties, they cannot be removed from drinking water using traditional treatment technologies. The NPDWR does not dictate how the PFAS are to be removed, so public water systems can choose the treatment option(s) that best serves their needs.

EPA RESOURCES ON PFAS AND DRINKING WATER

PFAS STRATEGIC ROADMAP

epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024

PFAS NATIONAL PRIMARY DRINKING WATER REGULATION FACT SHEET

epa.gov/system/files/documents/2024-04/pfas-npdwr_fact-sheet_general_4.9.24v1.pdf

EMERGING CONTAMINANTS IN SMALL OR DISADVANTAGED COMMUNITIES GRANT PROGRAM

epa.gov/dwcapacity/emerging-contaminants-ec-small-or-disadvantaged-communities-grant-sdc

REDUCING PFAS IN DRINKING WATER WITH TREATMENT TECHNOLOGIES

epa.gov/sciencematters/reducing-pfas-drinking-water-treatment-technologies

WATER TECHNICAL ASSISTANCE PROGRAMS

epa.gov/water-infrastructure/water-technical-assistance-programs

Three types of technology have been found to remove PFAS, especially PFOA and PFOS, from drinking water:

- Granular activated carbon—activated carbon media absorbs contaminants
- Membrane filtration (reverse osmosis and/or nanofiltration membranes)—removes contaminants via passage through a porous membrane at high pressure
- Ion exchange—removes contaminants by exchanging them for another charged substance on the surface of a resin

The costs to public water systems and primacy agencies to comply with the NPDWR include:

- Water system monitoring
- Communicating with customers
- Disposing of drinking water treatment residuals
- Obtaining new or additional sources of water, if necessary
- Installing and maintaining treatment technologies, if necessary

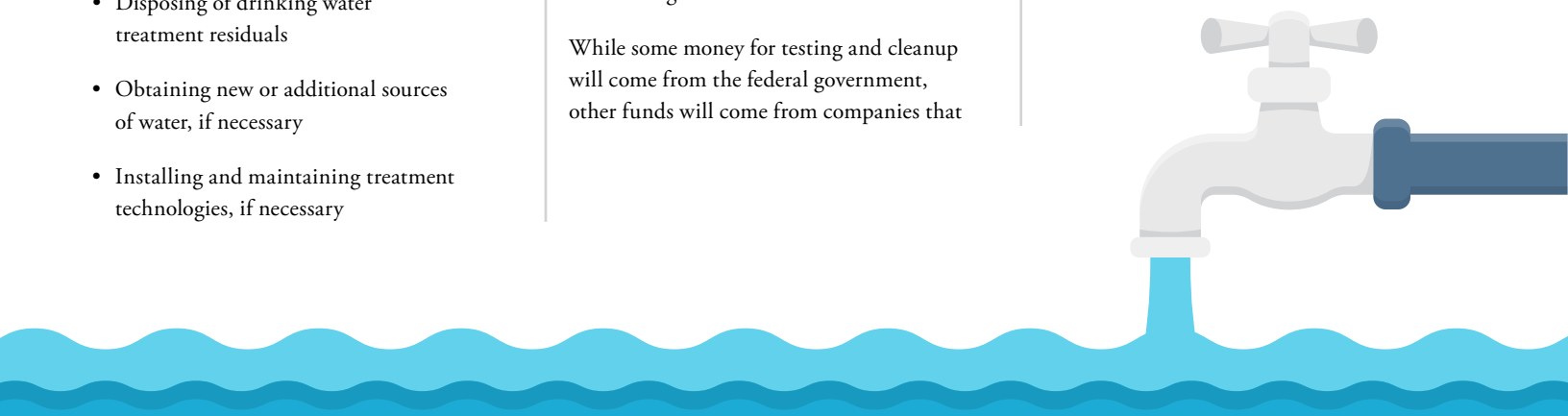
According to EPA estimates, it will cost public water systems approximately $1.5 billion per year to implement the regulation. However, a study conducted by Black & Veatch on behalf of the American Water Works Association estimated that the national cost for water systems to install treatments to remove PFOA and PFOS to levels that meet the federal requirements will exceed $3.8 billion annually.

In announcing the NPDWR, the EPA also announced nearly $1 billion in newly available funding through the Emerging Contaminants in Small or Disadvantaged Communities Grant. Part of a $9 billion investment through the Bipartisan Infrastructure Law to address PFAS and other emerging contaminants in drinking water, this program helps states and territories carry out PFAS testing and treatment at public water systems in small or disadvantaged communities.

While some money for testing and cleanup will come from the federal government, other funds will come from companies that produce PFAS. In 2023, 3M agreed to support PFAS remediation for public water suppliers through a present value commitment of up to $10.3 billion over 13 years. The same year, Chemours, DuPont, and Corteva reached a comprehensive PFAS settlement with U.S. water systems to resolve PFAS-related water claims. The companies will collectively establish and contribute a total of $1.19 billion to a settlement fund.

Even so, the additional expenses associated with removing certain PFAS from drinking water could exceed available federal funding and settlement funds, resulting in communities and ratepayers facing additional costs to meet the new federal mandate.

Lisa Hammond is risk control and business development manager at Tokio Marine HCC's Public Risk Group.



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