
ENVIRONMENT

TOXINS ON TAP

Lawmakers are working to keep potentially dangerous fluorochemicals out of drinking water supplies.



BY DOUG FARQUHAR

They're pervasive in public water systems and around military bases across the country.

They've been found in public wells in Bucks and Montgomery counties in Pennsylvania and along the Cape Fear River in North Carolina. They've been detected in Oscoda and Kent counties in Michigan, and they've contaminated much of southeastern New Hampshire. Pennsylvania established an action team to deal with them.

What are they?

Per- and polyfluoroalkyl chemicals, a large, diverse group of man-made substances with differing characteristics, formulations and intended uses. Collectively known as PFAS, the group includes perfluorooctanoic acid (PFOA), perfluorotanesulfonic acid (PFOS), GenX and many other chemicals commonly used in food packaging, carpeting, stain- and water-resistant clothing, nonstick products and firefighting foams.

PFAS are useful in manufacturing because they repel oil, grease and water. They keep your takeout pizza from sticking to the box, for example. But they can migrate from packaging into food, and they take a long time to break down in the environment, where they make their way into drinking-water systems.

All told, there are thousands of PFAS chemicals, and scientists are only just beginning to understand their effects on human health. Lawmakers have taken notice, though, as research is showing that some of the chemicals may interfere with hormones, increase cholesterol levels, affect the immune system and increase the risk of cancer. They may affect the growth, learning and behavior of infants and children. And they may decrease a woman's chance of getting pregnant. Although much about the health effects of these chemicals is unknown, they are, nevertheless, still being used in numerous applications.

"People are scared of PFAS because so much is unknown," says Michigan Repre-

sentative Peter MacGregor (R), whose district includes Kent County. The Michigan Legislature studied 17 PFAS-related bills in 2018.

Federal Response

Starting in the early 2000s, industry worked with EPA and other regulators to voluntarily phase out certain products—specifically PFOA and PFOS—which are no longer manufactured in the U.S., Europe or Japan. Since the voluntary phase-out, PFOS and PFOA levels in the U.S. population have declined dramatically, according to the Centers for Disease Control and Prevention.

In May 2016, the EPA established a health advisory—but not a regulatory standard—on the two chemicals. The advisory established the "safe" level of these two chemicals in drinking water to be no more than 70 parts per trillion.

The agency also is considering designating them as hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act,



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also known as Superfund. Doing so would bolster states’ and local water utilities’ efforts to require the companies responsible for contamination to pay for the cleanup. It will be at least a few years until a hazardous substance standard will be finalized.

Peter Grevatt, formerly with the EPA’s Office of Water, testified before Congress that the agency is considering using the Safe Drinking Water Act to develop a maximum containment level for both chemicals. He also said there is no plan to lower the lifetime health advisory for PFOA and PFOS in drinking water.

The federal Agency for Toxic Substances and Disease Registry is charged with protecting communities from hazardous substances. In 2017, it developed an Exposure Assessment Technical Tool for states and territories to use when measuring community exposures to PFAS in drinking water. New York and Pennsylvania are working with the agency to use this tool.

Recent federal legislation directs the agency to study the relationship between PFAS exposure and human health. Assessments at eight sites will measure the exposure levels of nearby residents and the environmental factors contributing to exposure. The study will let communities assess their risks and potentially mitigate some of the health effects.

“States can use these standards to shape their decision-making,” Grevatt says. The federal government could regulate PFAS chemicals at some point in the future, once there is better understanding of how they act in the environment and their toxicity, he says.

This wait-and-see approach hasn’t satisfied state legislatures.

“I wish the EPA would be more force-

ful on what levels are acceptable,” says Michigan Representative Sue Allor (R), whose district includes the decommissioned Wurtsmith Air Force Base and the PFAS-contaminated township of Oscoda. “Michigan had to convene a PFAS Action Team to provide residents information on what levels of these chemicals are and are not safe.”

States Need Answers

Without federal directives, 19 states have taken action on their own. Several have set standards for maximum safe amounts of PFAS chemicals in drinking water.

Lawmakers introduced 76 PFAS-related bills or supplemental appropriations in 11 states in 2018; 15 passed. Minnesota will upgrade its public health labs to handle PFAS testing. North Carolina is funding research and cleanup efforts. And Washington enacted two measures, one prohibiting the use of PFAS chemicals in paper food packaging, the other limiting the amount of the chemicals allowed in fire-fighting foam.

Former New Hampshire Representative, now U.S. Representative Mindi Messmer (D), joined her Republican colleagues in co-sponsoring legislation to establish maximum contaminant limits for several PFAS chemicals, including PFOA and PFOS.

“This law calls for the state to come up with standards for PFAS in drinking water, more in line with the Vermont standard of 20 ppt,” Messmer says, using the abbreviation for parts per trillion.

New Jersey’s Department of Environmental Protection is implementing PFAS standards of less than 15 ppt for drinking water through its Safe Drinking Water Act.

States with Numerical Per- and Polyfluoroalkyl Chemical (PFAS) Limits

PFAS includes perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), GenX and other common chemicals. Limits based on parts per trillion (PPT).

California

- 14 PPT (PFOA)
- 13 PPT (PFOS)
- Drinking water notification guidance

Colorado

- PFOA/PFAS listed as hazardous waste
- 70 PPT (combined PFOA/PFOS)
- Ground water quality standard for El Paso county only

Massachusetts

- 70 PPT (PFAS)
- State guidance for concentrations of six PFAS in drinking water

Michigan

- 70 PPT (combined PFOA/PFOS)
- State standard for concentrations in drinking water

Minnesota

- 35 PPT (PFOA)
- 27 PPT (PFOS)
- Health-based guidance values

New Jersey

- Set Perfluorononanoic acid standard at 13 PPT
- Proposed standards for:
 - 14 PPT (PFOA)
 - 13 PPT (PFOS)

Vermont

- 20 PPT (PFAS)
- Drinking water health advisory for six PFAS

Washington

- Banned in firefighting foam and food packaging
- Proposed drinking water standard

Source: Bloomberg Environment

Fear on the Cape Fear

North Carolina has seen the biggest challenge with PFAS chemicals.

A facility near Fayetteville has been discharging wastewater containing the fluorochemical GenX, which is similar to PFOA, into the Cape Fear River since 1980. About a quarter million people downstream from the plant depend on the river for their drinking water. When the state tested several hundred of the residents' wells, the chemical was found in 70 percent of them, with 160 wells being above the state's health goal of 140 ppt.

The legislature convened a select committee to study the river's water quality. Lawmakers ultimately allocated \$2.3 million for the Department of Environmental Quality to test for PFAS substances, with another \$530,000 going to establish a new Water Health and Safety Unit in the Department of Health and Human Services. An additional \$8 million was appropriated to set up statewide monitoring and testing for GenX and PFAS substances.

Increasing funding for both agencies has been a source of disagreement between the House and Senate but a top priority for Governor Roy Cooper (D), who recently proposed adding \$14.5 million for GenX response and testing in next year's budget. Senate sponsor Michael Lee (R) says the legislation accomplishes the immediate goal of addressing water quality in southeastern North Carolina and puts in place the tools needed to help protect future North Carolinians from GenX and other emerging compounds.

"The government agency tasked to protect our clean water missed this one for over 37 years," he says. "GenX is just one of over 5,000 compounds in the PFAS family."

As residents learn of the existence of these chemicals and, increasingly, ask about the safety of their drinking water, lawmakers are responding.

"It's important for the health of the people," says Allor of Michigan. "Nobody wants this in their drinking water."

Doug Farquhar directs NCSL's Environmental Health Program.

In California, the Legislature delegated its authority over chemical safety to the Office of Environmental Health Hazard Assessment, which recommended the state notify residents when the level of PFOA in drinking water exceeds 13 ppt and 14 ppt for PFOS. Although public drinking water systems generally are not required to test for these chemicals, those that do are now required to report excessive amounts of PFAS chemicals to their governing boards and the state water board.

Pennsylvania elected not to set a standard in the absence of a federal one. Governor Tom Wolf (D) in September set up a team of state officials to advise his administration on how to curb the chemicals, which are being cleaned up at 11 locations around the state.

Pennsylvania's concerns about drinking water began in the Philadelphia suburbs of Bucks and Montgomery, then spread statewide. A group of concerned citizens petitioned the Environmental Quality Board to set standards for PFAS in their drinking water. But state officials on

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the board were uncomfortable setting a standard before the EPA does, saying the agency has better data and more research dedicated to the topic.

The Senate and House Environmental Resources and Energy committees, however, continue to hear testimony on the subject. Eleven bills were filed in 2018 regarding the state setting standards and requesting that the federal government clean the chemicals from drinking water supplies.