

August 30, 2021

How widespread are PFAS chemicals? CT officials are about to inspect more than 2,400 locations



PHOTO | CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

An area set up to contain PFAS-filled foam in Windsor following the crash of a B-17 at Bradley Airport.

By Andrew Brown, CT Mirror

Catherine Iino first learned that her small town of roughly 6,000 people might have a problem earlier this spring,

Iino, the First Selectwoman in Killingworth, was contacted by state environmental officials in March and informed that several water samples would need to be pulled from the wells that supplied town hall, the volunteer fire station and a nearby garage used by the local public works department.

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Similar testing at a neighborhood less than a half mile to the north, she was told, showed signs of several man-made chemicals known as perfluoroalkyl and polyfluoroalkyl substances, or PFAS. The state was concerned the compounds, which have been studied for possible ties to developmental issues, thyroid disorders and several cancers, might have also found their way into other nearby water supplies.

Those worries were not unfounded, as the results would soon prove.

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Several of the water samples taken from the town buildings contained concentrations of the chemicals that were far above a recommended health limit established by the state. And the results continued to get worse from there.

In the weeks that followed, state officials also sampled the wells at another 70 nearby homes to test whether their drinking water was safe and to determine how far the contaminants may have spread underground.

Roughly 34 of those private wells contained lesser amounts of the chemicals, and 15 of the wells exceeded the advised health limit, just like the tap water at the town hall.

Those results marked one of the first times that Connecticut officials uncovered widespread drinking water contamination tied to PFAS. But it is unlikely to be the last.

If additional drinking water contamination is found, it is likely to cause quite an uproar.

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In Killingworth, a rural town in Middlesex County, several public meetings were organized for residents earlier this year, and the state quickly stepped in to install treatment systems to reduce the chemical concentrations in people's tap water to safer levels.

Even so, many of the homeowners with contaminated wells remain extremely frustrated with their circumstances and the ongoing response.

Michele and Mark Krumenacker, who own one of wells that tested positive for significant levels of the chemicals, said they've been meeting with their neighbors to talk over the long-term implications.

The group has a lot of lingering questions: How did chemicals get into the groundwater in the first place? How will they affect their health? Will the compounds harm their children? Who is going to pay for health screenings and their water treatment in the coming decades? And what will the news of the contamination do to their property values?

A wider search for PFAS contamination

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PFAS have been used in the United States for decades to produce things like non-stick pans, waterproof clothing, stain-resistant carpets, grease-resistant food packaging and a firefighting foam that was routinely sprayed during emergencies and training exercises.

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That firefighting product grabbed news headlines in Connecticut in 2019 when a private hangar at Bradley International Airport, north of Hartford, spilled an estimated 21,000 gallons of the chemical-laden foam into the Farmington River.

That episode was likely the first time that most Connecticut residents were introduced to the word PFAS. The spill also showcased how pervasive the chemicals are and how quickly they can spread, which is exactly why the state is casting a wide net in its investigation into potentially-contaminated sites.

In recent months, the state Department of Public Health and Department of Energy and Environmental Protection developed a map of more than 2,400 locations in Connecticut where the agencies suspect the chemicals may have been used or released in the past.

Those sites include airports, landfills, industrial facilities, manufacturing locations, sewage treatment plants, fire stations and firefighter training areas.

The two agencies intend to use the new map, which is not yet available to the public, to pinpoint locations where the chemicals may pose the greatest risk to public water supplies and private drinking water wells.

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It's unlikely that all of the locations highlighted on the map are contaminated with PFAS, but they will provide a starting point in the state's scavenger hunt for the chemicals. The map was one of several recommendations that came out of a 2019 taskforce on PFAS that was set up by Gov. Ned Lamont.

With so much testing expected in the coming years, the state is preparing to hire five new employees who will oversee the state's sampling for the chemicals in drinking water.

Connecticut's health agency is also plans to spend roughly \$500,000 to purchase specialized lab equipment that is needed to detect extremely small amounts of the chemicals in the water.

That equipment will save the state time and money by allowing health officials to run the tests in-house, instead of shipping the water samples to private labs, as they did in the Killingworth case.

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Democratic state Sen. Christine Cohen, whose district includes Killingworth and several neighboring communities, said those investments are well worth the money to safeguard people's health.

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Cohen, who chairs the legislature's Environment Committee, helped pass legislation this year to restrict PFAS in food packaging and limit the use of the firefighting foam, which state officials are currently collecting from local fire departments. That new legislation should limit future spills and public exposure to PFAS, but it will do little to correct any historic contamination that exists in the state.

Research shows the chemicals don't break down in the environment over time. That means they can continue to pose a threat to drinking water long after they are released onto the ground and seep into the groundwater.

That's why lawmakers are eager to provide the agencies with the necessary resources to find the various sources of contamination.

Cohen and other legislators voted in June to spend \$2.3 million over the next two years to pay for testing and treatment of drinking water that is shown to be contaminated.

"We need to take action and figure out exactly what we are up against here," she said, "and the only way to do that is to be testing water across the state."

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Emerging concerns

Connecticut isn't the first state to undertake a widescale search for PFAS. Other states, like Michigan, New Jersey and New Hampshire, dispatched state health and environmental officials on similar missions in recent years.

And the results of that testing were often the same: Significant levels of the compound were found in lakes, rivers, groundwater, fish populations and drinking water sources.

"If you look for the chemicals, you will find them, and if you don't look, you only pretend like it's not a problem," said Lohmann, who leads a program called STEEP, which stands for Sources, Transport, Exposure and Effects of PFAS. "If you want to protect your citizens, you have to look."

PFAS have been used in the United States since at least the 1940s and 1950s, but for most of that history there was very little information about the chemicals available to the public or regulatory agencies.

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That started to change in the early 2000s when it was first reported that DuPont, a manufacturer of Teflon cookware, had severely contaminated several community drinking water systems near Parkersburg, W. Va., with one of the chemicals included in the PFAS family.

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Lawsuits filed on behalf of those communities led DuPont to pay for a groundbreaking health study in which epidemiologists sampled the blood of nearly 70,000 people near Parkersburg for the chemicals and tracked the health outcomes of those individuals over roughly seven years.

The study eventually found “probable links” between the chemicals and several health issues, including high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer, and pregnancy-induced hypertension.

Since then, further studies and lab testing on animals have raised other medical concerns, including growing evidence the chemicals may affect people’s immune response. The compounds have also been shown to pass from mothers to their children during pregnancy or while breastfeeding.

The known sources of PFAS contamination have also expanded since the early 2000s. One of the most common sources of the chemicals in the United States has been the firefighting foam, which was commonly used by local fire departments, airports and the U.S. military.

The manufacturers of that foam, including 3M, are now being sued by hundreds of plaintiffs in federal court for what some people have described as the biggest environmental liability since asbestos.

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PFAS are known to accumulate in people’s bodies over time, just like they do in the environment. And most Americans have some level of the man-made chemicals in their blood, according to the Centers for Disease Control and Prevention.

The public health response, however, is focused on people who have been exposed to significant levels of the chemicals over extended periods of time. That includes families and communities consuming higher levels of the chemicals in their drinking water.

The U.S. Environmental Protection Agency has not set an enforceable limit for the chemicals in drinking water at this point. But the federal agency and several states have developed so-called health advisory levels for the chemicals in tap water.

In Connecticut, that advised limit is 70 parts per trillion. That is comparable to finding several drops of the chemicals in 20 Olympic-sized swimming pools.

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That miniscule limit is reflective of the serious concerns that health experts have about the chemicals.

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A lot of towns like Killingworth

Lori Mathieu, who oversees the Department of Health's drinking water program, is well aware of the massive amount of work ahead of her team — and the likelihood that they will find other contaminated tap water in the state.

There is some positive news, however.

Many of the largest public drinking water systems in Connecticut have already been sampled for PFAS in past years, Mathieu said. That testing showed homes and businesses in larger cities like Hartford, New Haven and Stamford did not have significant levels of the chemicals in their tap water.

Those results, Mathieu said, could be a sign that Connecticut was not home to a major manufacturer of PFAS or a factory that used large quantities of the chemicals. They could also be attributed to Connecticut's decades-long efforts to protect its reservoirs and other major sources of drinking water from pesticides, industrial waste and other pollutants, she said.

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Still, Mathieu is concerned that the state's smaller water systems and some of the more than 322,000 private drinking water wells in Connecticut won't be so lucky. She told the legislature as much during a hearing earlier this year when lawmakers asked about the upcoming PFAS testing.

"The good news is we're not finding it in the numbers that were found in other states ... But as we start testing more broadly, I think we're going to find it," Mathieu told the lawmakers in February.

The water sampling in Killingworth is already proving that prediction right, Mathieu said.

Connecticut may not find extensive PFAS contamination problems near major factories like Minnesota, Alabama and West Virginia did over the past two decades. But that doesn't mean that smaller contamination problems don't exist next to airports, landfills and fire departments.

Many of Connecticut's 169 towns and cities rely on drinking water systems that are similar to Killingworth, Mathieu said.

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Those communities often have a couple public water wells that supply local schools, a library or a few government buildings. And they are surrounded by homes that are supplied by private wells that are maintained by the individual property owners. X

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More than 20% of Connecticut's residents receive their water from private wells. To read more, please login or register (free)

“The thing that is concerning is how much is out there that we are not aware of at this point,” Mathieu said. “In small communities such as Killingworth, one finding can lead to many.”

The water testing that takes place over the next two years, Mathieu said, should give the state a better understanding of how big of a problem PFAS might be in Connecticut. But she said it could take many more years to find and isolate all of the sources of PFAS contamination.



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