

# Concerns grow over tainted sewage sludge spread on croplands

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In this Thursday Aug. 15, 2019 photo, dairy farmer Fred Stone pauses while working in the milking room at his farm in Arundel, Maine. Fred Stone and his wife Laura, whose dairy farm is contaminated by toxic chemicals known collectively as PFAS, so-called "forever chemicals," have high PFAS levels in their blood. (AP Photo/Robert F. Bukaty)

For more than 20 years, the eastern Michigan town of Lapeer sent leftover sludge from its sewage treatment plant to area farms, supplying them with high-quality, free fertilizer while avoiding the expense of disposal elsewhere.

But state inspectors ordered a halt to the practice in 2017 after learning the material was laced with one of the potentially [harmful chemicals](#) known collectively as PFAS, which are turning up in drinking water and some foods across the U.S.

Now, the city of 8,800 expects to pay about \$3 million to have the waste treated at another facility and the leftover solids shipped to a landfill. Testing has found elevated PFAS levels in just one field where the sludge was spread, but farmers have lost an economical fertilizer source and hope more contamination doesn't turn up.

"I feel bad for them," said Michael Wurts, superintendent of the waste treatment plant, who ruefully recalls promoting sludge as an agricultural soil additive to growers in the community. "The city didn't do anything malicious. We had no clue this was going on."

Lapeer isn't alone. For decades, sewage sludge from thousands of [wastewater treatment plants](#) has been used nationwide as cropland fertilizer. It's also applied to sports fields, golf courses and backyard gardens.



In this Thursday Aug. 15, 2019 photo, dairy farmer Fred and Laura Stone work on their dairy farm in Arundel, Maine. The couple's dairy farm has been forced to shut down after sludge spread on the land was linked to high levels of PFAS in the milk. Their blood has tested high for PFAS. (AP Photo/Robert F. Bukaty)

About half of the 7 million tons generated annually in the U.S. is applied to farm fields and other lands, the Environmental Protection Agency says. While the sludge offers farmers a cheap source of fertilizer, there long have been concerns about contaminants in the material—and attention of late has turned to perfluoroalkyl and polyfluoroalkyl substances, or PFAS.

The city of Marinette, Wisconsin, has stopped distributing sewage waste, also called "biosolids," to farms after getting high PFAS readings. In

Maine, a [dairy farm](#) was forced to shut down after sludge spread on the land was linked to high levels of PFAS in the milk.

"It's been devastating. We kind of get treated like we are criminals," said Stoneridge Farm's Fred Stone, whose blood has also tested high for PFAS from what he believes was drinking contaminated water and milk over the years.

The concern is that certain PFAS chemicals, which studies have associated with increased risk of cancer and damage to organs such as the liver and thyroid, could be absorbed by crops grown in soils treated with polluted sludge and wind up in foods. The Food and Drug Administration this year reported finding substantial levels of the chemicals in random samples of grocery store meats, dairy products, seafood and even off-the-shelf chocolate cake, although the study did not mention any connection to sewage waste.



In this Thursday Aug. 15, 2019 photo, dairy farmer Fred Stone walks to his baling machine at his dairy farm in Arundel, Maine. (AP Photo/Robert F. Bukaty)

"The FDA continues to work with other federal agencies to identify sources and reduce or eliminate pathways for dietary PFAS exposure including through use of biosolids," spokeswoman Lindsay Haake said.

The extent of any threat to the food supply is unknown because so little testing has been done, scientists say.

"We don't have a lot of data but the data we have suggests it's a problem," Linda Birnbaum, director of the National Institute of Environmental Health Sciences, said at a recent conference in Boston.

"We are finding that there are elevated levels of different PFAS in biosolids. We clearly need more research in this area."

Studies have documented PFAS absorption by some crops—lettuce, tomatoes and radishes among them—from soils fertilized with sewage byproducts. And the EPA's inspector general reported last year that the agency was falling short in tracking hundreds of pollutants in sludge, including PFAS.



In this Thursday Aug. 15, 2019 photo, dairy cows stand in the milking chamber at Stoneridge Farm in Arundel, Maine. The farm has been forced to shut down after sludge spread on the land was linked to high levels of PFAS in the milk. (AP Photo/Robert F. Bukaty)

Yet despite growing evidence that at least some sludge is contaminated, the federal government hasn't limited PFAS in fertilizer or developed a standard for determining safe levels. That leaves fertilizer companies and farmers wondering what to do and fearful of consumer backlash.

"If you want to destroy agriculture in Michigan, start talking about, 'Hey, it could be contaminated with PFAS,'" said Laura Campbell, agricultural ecology manager for the Michigan Farm Bureau. "People will see that and say, 'Oh, we can't trust them, we'll buy from elsewhere,' even though the problem is no worse in Michigan than it is anywhere else."

Studies going back almost two decades found PFAS in sludge, primarily from industrial wastewater that flows to municipal treatment facilities. Residential sewage is another source—from carpets, clothes and other household items containing PFAS. The grease- and water-resistant compounds, known as "forever chemicals" because they don't degrade naturally and are believed capable of lingering indefinitely in the environment, also are found in firefighting foam used at military bases and airports.

Evidence of a link between PFAS-laced sludge and food emerged in 2008, when the EPA found elevated levels of several compounds in sludge that a Decatur, Alabama utility had spread on 5,000 acres of farmland. They were detected in nearby waters and vegetation from the fields. The chemicals were traced to several companies that manufactured and used PFAS.



In this Thursday Aug. 15, 2019 photo, dairy cows rest outside the home of Fred and Laura Stone at Stoneridge Farm in Arundel, Maine. The farm has been forced to shut down after sludge spread on the land was linked to high levels of PFAS in the milk. (AP Photo/Robert F. Bukaty)

"I'm very concerned about replicating that in other states," EPA's Andrew Lindstrom, whose lab ran tests there, said at the Boston conference. Milk from one dairy contained 270 parts per trillion of PFAS— almost four times the agency's nonbinding health risk level of 70 ppt for PFOA and PFOS, the two best-known chemicals in the class.

An EPA "action plan" in February acknowledged "information gaps" about tainted sludge. It said the agency was developing better detection methods and assessing risks posed by PFOA and PFOS, which no longer



are manufactured in the U.S. but remain widespread in the environment.

"We are studying the potential pathways by which PFAS are getting into biosolids and we are researching alternative methods for removing or destroying PFAS in biosolids if analysis indicates that detected levels are of risk and need reduction," the agency told The Associated Press in a statement.

Advocacy groups say EPA also should look at chemicals developed as replacements for PFOA and PFOS, which studies found accumulate in edible parts of plants.



In this Thursday Aug. 15, 2019 photo, hay dries after a recent cut at Stoneridge Farm in Arundel, Maine. The farm has been forced to shut down after sludge spread on the farm land was linked to high levels of PFAS in the milk. (AP

Photo/Robert F. Bukaty)

"At least EPA should require that sludge be tested for PFAS before being applied to farm fields," said Colin O'Neil, legislative director with the Environmental Working Group.

Its [inspector general](#) reported last year that the EPA had identified 352 pollutants, including PFAS, in biosolids. But the report concluded the agency had too little data and other tools to assess their safety. Regulations require testing for only nine pollutants in sludge, all heavy metals.

Several states are examining sewage sludge for PFAS contamination and assessing potential dangers. Maine has enacted a nonbinding advisory level for PFAS in sludge and New Hampshire is working with the U.S. Geological Survey on a soil study whose results will help them set a standard.

Maine also found most biosolids from more than 30 wastewater treatment plants were above the state's advisory level while neighboring New Hampshire detected PFAS in tests of sludge from two dozen permit holders. Neither state found traceable levels of PFAS in the milk tested.



In this Thursday Aug. 15, 2019 photo, dairy farmer Fred Stone stands for a portrait at his farm in Arundel, Maine. Fred Stone and his wife, Laura, whose farm is contaminated by toxic chemicals known collectively as PFAS, so-called "forever chemicals," have tested high for PFAS in their blood. (AP Photo/Robert F. Bukaty)

Based on sludge tests at 41 plants, Michigan ordered several to stop distributing it to farms.

After the state's environmental department ordered some plants to trace PFAS sent to them, several installed treatment systems that sharply reduced their pollution output, spokesman Scott Dean said.

Among them was Lapeer Plating & Plastics, the automotive chrome

manufacturer that caused the Lapeer contamination.

But City Manager Dale Kerbyson said the company has reneged on a promise to help cover Lapeer's costs of dealing with the pollution and a lawsuit may be coming. "I don't think the citizens of our city should have to pay for this," Kerbyson said.

Lapeer Plating & Plastics did not respond to email and phone messages seeking comment.

Although they complain about a lack of government standards, some cities and towns fear strict rules that could force costly infrastructure upgrades or sending [sludge](#) to out-of-state landfills. And companies worry they will be put out of business.



In this July 31, 2019 photo, Michael Wurts, superintendent of the Lapeer Wastewater Treatment Plant, stands beside tanks of sewage sludge at the plant in Lapeer, Mich. State officials ordered Lapeer to stop distributing its sludge for use as farm fertilizer after it was found to contain toxic PFAS chemicals. Experts are raising concerns that sludge spread on agricultural fields around the U.S. could contaminate crops. About half of the 7 million tons of sludge generated each year is applied to farm fields and other lands. (AP Photo/John Flesher)



This July 31, 2019 photo shows sewage sludge from the Lapeer Wastewater Treatment Plant in drying beds, where it is being stored until an arrangement is made for permanent disposal, in Lapeer, Mich. State officials ordered Lapeer to stop distributing its sludge for use as farm fertilizer after it was found to contain toxic PFAS chemicals. Experts are raising concerns that sludge spread on agricultural fields around the U.S. could contaminate crops. About half of the 7 million tons of sludge generated each year is applied to farm fields and other lands. (AP Photo/John Flesher)



In this July 31, 2019 photo, Michael Wurts, superintendent of the Lapeer Wastewater Treatment Plant, stands in an adjacent cornfield where sludge from the plant was used as fertilizer, in Lapeer, Mich. State officials ordered a halt to the practice after toxic PFAS chemicals were detected in the sludge. Experts are raising concerns that sludge spread on agricultural fields around the U.S. could contaminate crops. About half of the 7 million tons of sludge generated each year is applied to farm fields and other lands. (AP Photo/John Flesher)

**"This is the biggest issue that has hit the biosolids recycling profession in North America ever, because of regulatory overreaction," said Ned Beecher, executive director of the North East Biosolids and Residuals Association.**

Companies that manufacture compost—some from [sewage sludge](#)—contend tough standards are premature until scientists determine acceptable PFAS levels.

"We don't want people jumping to conclusions," said Frank Franciosi, executive director of the U.S. Composting Council. If EPA cracks down on anyone, he said, it should be those who manufacture and use PFAS chemicals that enter the waste stream.

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