

**From:** [McGuire, Karen](#)  
**To:** [Hayes, Sharon](#); [Chow, James](#)  
**Subject:** FW: Statement sent to Globe  
**Date:** Thursday, December 03, 2020 1:16:48 PM  
**Attachments:** [image001.png](#)

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**From:** Deegan, Dave <Deegan.Dave@epa.gov>  
**Sent:** Tuesday, November 24, 2020 3:06 PM  
**To:** Deziel, Dennis <Deziel.Dennis@epa.gov>; Szaro, Deb <Szaro.Deb@epa.gov>; McGuire, Karen <Mcguire.Karen@epa.gov>; Barmakian, Nancy <Barmakian.Nancy@epa.gov>; Chow, James <chow.james@epa.gov>; Gutro, Doug <Gutro.Doug@epa.gov>; Dixon, Sean <dixon.sean@epa.gov>; Norcross, Jeffrey <Norcross.Jeffrey@epa.gov>; Senn, John <Senn.John@epa.gov>; Rumph, Mikayla <Rumph.Mikayla@epa.gov>; Carr, Stephanie <Carr.Stephanie@epa.gov>; Hewitt, James <hewitt.james@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Hoverman, Taylor <hoverman.taylor@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Messina, Edward <Messina.Edward@epa.gov>; Dinkins, Darlene <Dinkins.Darlene@epa.gov>; Nesci, Kimberly <Nesci.Kimberly@epa.gov>; Dennis, Allison <Dennis.Allison@epa.gov>; Siedschlag, Gregory <Siedschlag.Gregory@epa.gov>; Leifer, Kerry <Leifer.Kerry@epa.gov>; Hull, George <Hull.George@epa.gov>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>; Saenz, Diana <Saenz.Diana@epa.gov>  
**Cc:** Deegan, Dave <Deegan.Dave@epa.gov>  
**Subject:** Statement sent to Globe

Many thanks again for everyone's quick assistance to hone this statement! Best wishes to you all for a happy, relaxing and SAFE Thanksgiving!

Thanks!  
Dave

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Dave Deegan  
U.S. EPA, New England Regional Office  
Office of Public Affairs  
phone: 617.918.1017 | mobile: 617.594.7068



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**From:** Deegan, Dave <[Deegan.Dave@epa.gov](mailto:Deegan.Dave@epa.gov)>  
**Sent:** Tuesday, November 24, 2020 3:01 PM  
**To:** Abel, David <[dabel@globe.com](mailto:dabel@globe.com)>  
**Cc:** Deegan, Dave <[Deegan.Dave@epa.gov](mailto:Deegan.Dave@epa.gov)>  
**Subject:** RE: Globe PFAS story

Hi David, Here's a statement. Please attribute to US EPA. Thanks for your patience!

>>>

EPA is aware of the concerns raised about traces of per- and polyfluoroalkyl substances (PFAS) in a mosquito control product named Anvil 10+10 ULV from Clarke Mosquito used in Massachusetts for public health protections. The agency is providing technical support to the Massachusetts Department of Environmental Protection (MassDEP) as they assess the situation and perform sampling of the pesticide product in question.

EPA has confirmed that the Anvil 10+10 product does not include PFAS in its registered formulation and has confirmed with Clark Mosquito that PFAS is not an ingredient or additive in their product. EPA has also obtained additional product samples for testing and laboratory analysis and is providing laboratory support, including development of an analytical method to detect PFAS in products such as Anvil 10+10. There are significant unanswered questions about the data currently available at this time. EPA will continue to work closely with and support the state on this issue. Aggressively addressing PFAS continues to be an important, active and ongoing priority for EPA under the agency's PFAS Action Plan.

**Background**

On Aug. 10, 2020, an aerial mosquito prevention application was made in Plymouth County and parts of Bristol County in Massachusetts using Anvil 10+10 ULV (EPA Reg. No. 1021-1688-8329), which contains the active ingredients sumithrin and piperonyl butoxide. This pesticide is applied for mosquito control to protect public health by reducing Eastern Equine Encephalitis (EEE), a rare but deadly disease carried by mosquitos. In early 2020, environmental NGOs contacted the Massachusetts Reclamation Board, the Massachusetts Department of Agricultural Resources' Division of Pest Services, and other state agencies claiming that there were unspecified PFAS in the pesticide used for mosquito control.

EPA routinely provides federal technical assistance on PFAS across the country, including the Commonwealth of Massachusetts on this effort, to bring much needed support to state, tribal, and local governments. These partnerships allow for collaboration and encourage cutting edge research and information sharing — ensuring that our joint efforts are effective and protective of public health.

Additional information on EPA's PFAS efforts: [www.epa.gov/pfas](http://www.epa.gov/pfas).

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Thanks!

Dave

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Dave Deegan

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**From:** Abel, David <[dabel@globe.com](mailto:dabel@globe.com)>



Acid (PFPeS)			ND					ND	ND	ND
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND
Perfluoroheptanoic Acid (PFHpA)	53.4 J	23.6 J	ND ND	ND	ND	47.6 J	ND	ND 19.2 J	ND ND	ND ND
<b>Perfluorohexanesulfonic Acid (PFHxS)</b>	<b>ND</b>	<b>ND</b>	<b>ND ND</b>	<b>52.8 J</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND ND</b>	<b>ND ND</b>	<b>59.2 J 57 J</b>
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ND ND	ND	ND	29.8 J	31.6 J	27.6 J 28.9 J	ND ND	ND ND
<b>Perfluorooctanoic Acid (PFOA)</b>	<b>25.7 J</b>	<b>ND</b>	<b>ND ND</b>	<b>ND</b>	<b>ND</b>	<b>21.8 J</b>	<b>ND</b>	<b>ND ND</b>	<b>ND ND</b>	<b>ND ND</b>
Perfluoroheptanesulfonic Acid (PFHpS)	107	100	ND ND	125	ND	ND	98.9	63.0 J 52.0 J	ND ND	138 108
Perfluorononanoic Acid (PFNA)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND
<b>Perfluorooctanesulfonic Acid (PFOS)</b>	<b>73.1 J</b>	<b>ND</b>	<b>ND ND</b>	<b>76.2 J</b>	<b>2.73</b>	<b>ND</b>	<b>ND</b>	<b>ND ND</b>	<b>3.31 ND</b>	<b>132 141</b>
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND
Perfluorodecanoic Acid (PFDA)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND
Perfluoroundecanoic Acid (PFUnA)	13.8 J	ND	ND ND	21.5 J	ND	184	ND	ND ND	ND ND	ND ND
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF30UdS)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND
Perfluorododecanoic Acid (PFDoA)	ND	ND	ND ND	ND	ND	ND	ND	ND ND	ND ND	ND ND

Table notes: ND = not detected; J = estimated value; Tube rinse cntrl. = sampling device rinsates performed at sampling site prior to sample collection to assess any sampling device contamination. All field and trip blanks were generally non-detect and are not presented. In one, PFOS was detected at 3.3 ppt.

All samples were analyzed by Alpha Analytical, Mansfield, MA. using a modified version of EPA Method 533. Stated reporting limits for product samples were below 100 ng/L with detection limits ranging from approximately 5-50 ng/L depending on the analyte. QA/QC issues were appropriately noted by Alpha Analytical in the lab reports but all QA/QC elements have not been fully reviewed by MassDEP at this time.

The September and October samples were collected by two different contractors using new sampling devices. The October 2.5 gallon jug samples were directly poured into the sample collection tubes.

Initial samples that were collected on 9/2 are not presented. These were invalidated because appropriate field controls were not collected by the contractor and results were consistent with samples being contaminated during collection. In that round, five to thirteen PFAS were detected in duplicate analyses of the single drum 1 sample collected, with a maximum concentration of 25 ug/L (25,000 ppt) for PFBA.

David Abel

Reporter

The Boston Globe

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# PRESS RELEASE



For Immediate Release: Tuesday, December 1, 2020

Contact: Kyla Bennett (508) 230-9933; Kirsten Stade [kstade@peer.org](mailto:kstade@peer.org)

## **“Forever Chemicals” Potentially Spread Over Millions of Acres**

*Washington, DC* — State efforts to control mosquito-borne illnesses may be creating a new health problem. The insecticide Massachusetts and numerous other states use for mosquito control, both applied aerially and sprayed from trucks along roads, contains per- and polyfluoroalkyl substances (PFAS), according to lab test results posted today by Public Employees for Environmental Responsibility (PEER).

Tests commissioned by PEER of a jug of Anvil 10+10, the pesticide used in the aerial spraying programs of Massachusetts, parts of Florida, New York, and many other states, reveals that it contains roughly 250 parts per trillion (ppt) of PFOA (perfluorooctanoic acid, a C8 PFAS, manufacture of which has been largely but not completely phased out in the U.S.), and 260 – 500 ppt of HFPO-DA (hexafluoropropylene oxide dimer acid, a “GenX” replacement for PFOA). When PEER alerted Massachusetts Department of Environmental Protection (MADEP) of its findings, MADEP independently tested nine samples of Anvil 10+10 from five different containers, and found eight different PFAS, including PFOA and

PFOS. The U.S. Environmental Protection Agency (EPA) has a 70 ppt Lifetime Health Advisory for PFOA and PFOS in drinking water; some states, including Massachusetts, have much stricter regulatory limits than the EPA Advisory.

PFAS are called “forever chemicals” since they do not break down in the environment and build up in our blood stream. They are associated with a variety of ailments, including suppressed immune function, thyroid disease, testicular and kidney disease, cancers, and liver damage. While PFAS may be added to pesticides as surfactants, dispersants, anti-foaming agents, and/or other uses, it is unclear whether the PFAS found in Anvil 10+10 is an ingredient added by the manufacturer, contained in one of the ingredients supplied to Anvil’s manufacturer by other companies, or whether it is a contaminant from the manufacturing/storage process.

“In Massachusetts, communities are struggling to remove PFAS from their drinking water supplies, while at the same time, we may be showering them with PFAS from the skies and roads,” stated PEER Science Policy Director Kyla Bennett, a scientist and attorney formerly with EPA, who arranged for the testing. “The frightening thing is that we do not know how many insecticides, herbicides, or even disinfectants contain PFAS.” PEER found patents showing chemical companies using PFAS in these products, and recent articles discuss the variety of pesticides that contain PFAS as either an active or an inert ingredient.

In 2019, Massachusetts aeri ally sprayed 2.2 million acres of the state with this pesticide and, in 2020, sprayed more than 200,000 acres. PFAS are not listed as active ingredients in Anvil 10+10. PEER found PFAS listed as approved inert ingredients on EPA’s “Inert Finder” database. EPA is not required to disclose many inert ingredients in pesticides, and manufacturers usually withhold information about inert ingredients as “trade secrets” or “proprietary” information.

“This PFAS fiasco shows that public trust in EPA having a full accounting of these materials and their safety is utterly misplaced,” added Bennett, whose organization has also been highly critical of EPA’s response to the unfolding PFAS contamination scandals. “Until EPA acts, states need to adopt their own safeguards and chemical disclosure requirements because they certainly cannot depend upon the diligence of EPA.”

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See the summary of lab test results, with links to lab reports

See Summary of MADEP’s test results

Read PEER Letter to EPA on PFAS in Anvil 10+10

View PEER Letter to MA DEP on PFAS in Anvil 10+10

Check out PEER PFAS Fact Sheet

See PFAS on EPA's "Inert Finder" database

See patent showing PFAS as an ingredient in pesticides

See peer-reviewed articles discussing PFAS in pesticides

<https://www.sciencedirect.com/science/article/pii/S2589004220306593>

and

<https://pubs.rsc.org/en/content/articlelanding/2020/em/doem00291g>

View Massachusetts' spraying program use of Anvil 10+10

Find more information about the health effects of PFAS

Review EPA's handling of inert pesticide ingredients

Look at the Material Data Safety Sheet for Anvil 10+10

Read PEER's critique of EPA performance on PFAS

See use of Anvil 10+10 by state





From: [Deegan, Dana](#)  
To: [Dorel, Dennis](#); [Stern, Dan](#); [McGuire, Karan](#); [Bermekian, Nancy](#); [Hayes, Sharon](#); [Gulfo, Doug](#); [Chow, James](#); [Diach, Sean](#); [Norcross, Jeffrey](#); [Sonn, John](#); [Bumgar, Mikayla](#)  
Subject: Globe Story : Toxic forever chemicals' found in pesticide used on millions of Mass. acres when spraying for mosquitos  
Date: Tuesday, December 01, 2020 9:03:45 AM  
Attachments: [image002.png](#); [image003.png](#)

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## Toxic 'forever chemicals' found in pesticide used on millions of Mass. acres when spraying for mosquitos

By [David Abel](#) Globe Staff, Updated December 1, 2020, 32 minutes ago

Mosquito spraying in Southeastern Massachusetts in 2018.



Mosquito spraying in Southeastern Massachusetts in 2018. THE BOSTON GLOBE/BOSTON GLOBE

For two decades, state environmental officials have used a controversial pesticide to kill mosquitos in Massachusetts, spraying millions of acres from the air and ground to reduce the spread of Eastern equine encephalitis.

Now, after years of criticism from environmental advocates who have long raised health concerns about the expensive treatment known as Anvil 10+10, the pesticide has been found to also contain an array of toxic compounds known as PFAS. The so-called "forever chemicals," which are found in a range of commercial products and never fully degrade, have been linked to cancer, low infant birth weights, and a range of diseases.

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The amount of some of the chemicals found in the pesticide — which has been used in at least 25 [other states](#) — exceeds [recent safety limits](#) imposed by the state for drinking water. Given the amount of pesticide used, and how widely it has been dispersed over the years, specialists say it's likely that the chemicals have leached into groundwater and other water sources.

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The recent findings came from a series of tests conducted this fall by the state Department of Environmental Protection, which began examining Anvil after [testing by](#) an advocacy group found similarly elevated levels of the chemicals in the pesticide.

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Environmental officials said they're trying to determine whether it's safe to continue using the pesticide, which federal regulators have found includes other [potential carcinogens](#). Most of the [spraying](#) has been done in the southeastern part of the state, where EEE, a rare but deadly mosquito-borne disease, has been most prevalent.

"We're taking this very seriously," said Dan Sieger, the state's undersecretary for environmental affairs. "When we figure out the source of the contamination . . . we'll make a decision."

Officials at Clarke, the Illinois company that produces Anvil, said that no PFAS chemicals are used in the pesticide, but acknowledged the possibility they could have been introduced through manufacturing or packaging.

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Mark Smith, director of the DEP's office of research and standards, said he has been studying how the chemicals may have been dispersed and whether they present a health danger.

"The reason we're taking this so seriously, and why we're concerned, is that these compounds are so persistent in the environment," he said.

Concerns about PFAS, manmade chemicals invented in the 1940s as water repellants and flame retardants, have risen as a growing body of research links long-term exposure to an array of health problems. In response, an increasing number of states have enacted stricter limits on the amount allowed in drinking water.

So far, Smith's assessments suggest the PFAS in the pesticide haven't "presented significant risk to water supplies, because of the dilution factor," he said. When the chemicals are dispersed, they decline in concentration.

"I've done some worst-case calculations to determine what levels might land in a drinking water reservoir, and the results wouldn't be measurable," he said.

But he acknowledged there are unknowns, given that the pesticide has been used in large amounts for the past 20 years and the PFAS do not break down, accumulating over time.

Since September, the department has tested nine samples from five separate containers of Anvil and detected eight different compounds of PFAS. Of those, three compounds substantially exceeded the state's new limits, in some cases by more than sevenfold. Other unregulated PFAS chemicals were detected in even greater amounts.

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Officials at the US Environmental Protection Agency, which has been criticized for delaying new standards to reduce PFAS exposure, said they were looking into the findings and plan to conduct their own tests of Anvil.

[A Flourish chart](#)

"There are significant unanswered questions about the data currently available," said Dave Deegan, a spokesman for the EPA's offices in New England, adding that the agency is working on "an analytical method" to detect PFAS in pesticides. "EPA will continue to work closely with and support the state on this issue. Aggressively addressing PFAS continues to be an important, active, and ongoing priority for EPA."

Last year, Massachusetts spent more than \$5 million to spray Anvil from helicopters and airplanes, dousing more than 2 million acres over 26 days in 100 municipalities. It was the state's most deadly outbreak of EEE since the 1950s, with six deaths among the 12 people who contracted the disease.

This year, with drought conditions reducing the mosquito population, the state sprayed 200,000 acres in 23 municipalities. There have been no deaths this year.

State officials did not provide information about how much of the pesticide was sprayed on the ground.

Officials at Clarke defended their product and said they were awaiting guidance from regulators about how best to conduct their own tests.

"Anvil has played an important role in preserving public health for three decades," said Karen Larson, the company's vice president of government affairs. "Confidence in these products is critical to achieve public health goals, and we will continue to work closely with the EPA to conduct our own testing."

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Larson said it was unclear why the company's pesticide contained PFAS.

"When this was first brought to our attention, we conducted an internal inquiry of our manufacturing and supply chain to ensure that PFAS was not an ingredient in the production, manufacturing, or distribution of either the active or inactive ingredients of Anvil," she said.

"No PFAS ingredients are used in the formulation of Anvil, nor in the production of any source material in Anvil. PFAS components are not added at any point in the production of Anvil," she added.

Some environmental advocates were skeptical of the company's claims, noting that PFAS have been used in other pesticides and can extend their shelf life and help make them easier to disperse.

In a letter to DEP officials, Public Employees for Environmental Responsibility, a Washington advocacy group, noted its own tests of Anvil found the pesticide contained 250 parts per trillion of one of the chemicals regulated by the state — more than 22 times the new limit for drinking water. They found other unregulated PFAS compounds in even greater amounts.

While Clarke doesn't list the chemicals as active ingredients of Anvil, they could be inert ingredients, they said.

[A Flourish chart](#)

"Pesticide manufacturers usually withhold information from the public about inert ingredients as 'trade secrets' or 'proprietary' information," wrote Tim Whitehouse, executive director of PEER. "Therefore, it is conceivable that PFAS are added deliberately to pesticide formulations."

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Larson dismissed the possibility that PFAS were inert ingredients.

"We have reached out to the manufacturers of the active and inert ingredients, and they also confirm that PFAS is not an ingredient in the production, manufacturing, or distribution of the product's ingredients," she said.

Whitehouse noted an increasing number of municipalities in Massachusetts have detected elevated levels of PFAS in their drinking water, and that many of them are now struggling to pay for the expensive equipment designed to filter out the toxic chemicals.

As of this month, 32 of 164 public water systems tested over the past year had more PFAS in their drinking water than allowed, state officials said.

"While it is likely some of the contamination is coming from wastewater treatment plants and consumer goods, it is also possible that some of the widespread contamination is coming from Massachusetts' aerial and ground-based spraying of Anvil," wrote Whitehouse, who urged the state to stop using the pesticide or any others that contains PFAS.

Some scientists and lawmakers echoed his concerns. Laurel Schaidler, a research scientist at the Silent Spring Institute in Newton, which has received large grants from the federal government to study PFAS, said she was "very concerned" about the state's findings.

She noted that some of the chemicals the state detected in Anvil are newer "short-chain" PFAS compounds, which she described as "even more mobile in the environment and more difficult to remove from drinking water."

"We already have a public health crisis in this country with PFAS contaminating drinking water, and we don't want to make the situation worse," Schaidler said.

State Senator Jo Comerford, a Northampton Democrat who chairs the Legislature's Joint Committee on Public Health and is an observer on the state's newly created Mosquito Task Force, called the state's findings "significantly concerning."

With the state expecting a bad EEE season next summer — the disease usually spikes in three-year cycles — she said environmental officials should issue a moratorium on Anvil and take steps to protect the public without using such toxic chemicals.

"These findings should be a wake-up call for all of us," Comerford said.

Thanks!

Dave

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Dave Deegan

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