



**BEFORE THE UNITED STATES HOUSE OF REPRESENTATIVES  
COMMITTEE ON ENERGY AND COMMERCE  
SUBCOMMITTEE ON ENVIRONMENT**

**TESTIMONY OF ERIK D. OLSON  
SENIOR DIRECTOR FOR HEALTH & FOOD  
HEALTHY PEOPLE & THRIVING COMMUNITIES PROGRAM  
NATURAL RESOURCES DEFENSE COUNCIL**

**Hearing Entitled:  
“Perfluorinated Chemicals in the Environment:  
An Update on the Response to Contamination and Challenges Presented.”**

**September 6, 2018**

## BRIEF SUMMARY OF TESTIMONY OF ERIK D. OLSON

PFAS are the new PCBs – but they may be more widespread and dangerous. They are toxic at extremely low, parts per trillion levels. They don't break down and have become ubiquitous in the environment. Just two of them (PFOA and PFOS) are present in more than 6 million Americans' tap water at unsafe levels, according to a Harvard study. Considering recent data showing that extremely low levels of these compounds and an array of other PFAS are harmful, it is likely that tens of millions of U.S. residents may have unsafe PFAS levels in their tap water. Indeed, PFAS are now found in the bodies of more than 98% of Americans – probably in every one of you, your families, and your constituents.

PFAS have been linked to a wide array of effects ranging from kidney and testicular cancer to impacts on the immune system and thyroid, adverse effects on fetal development, and many other harms. The impacts on everyday lives are very real in communities across the country. Contamination is known or suspected at hundreds of sites, from Hoosick Falls, NY to Chanute Air Force Base in Champaign County, Illinois, to Parkersburg, WV, and the Cape Fear River in NC. There are many people whose agonizing health problems and legitimate worries about their families' health hang like a cloud over their futures.

Unfortunately, EPA has fallen down on the job. It worked with the White House to block release of a critical report by the Centers for Disease Control and Prevention showing adverse effects of PFAS at far lower levels than EPA had admitted, out of fear of a "public relations nightmare." While the report finally was released after a public uproar, EPA has failed to meaningfully regulate PFAS manufacture and use. The agency has failed to issue standards to protect our drinking water and failed to protect our health and the environment from PFAS contamination. It has failed to ensure that PFAS-contaminated sites are cleaned up. The agency must step up to fix these problems and cannot be subjected to political interference from the White House or DOD. States must immediately step into the vacuum by issuing strong, health-protective drinking water and cleanup standards, and by phasing out PFAS firefighting foam and PFAS in key consumer and food packaging products, because regrettably we cannot trust this EPA to do its job.

## **Introduction**

Chairman Shimkus, Ranking Member Tonko, and distinguished members of the Subcommittee, thank you for the opportunity to testify today. I am Erik D. Olson, Senior Director for Health and Food at the Natural Resources Defense Council. My brief biography is attached. I have been working on drinking water and toxics issues for over 30 years first at EPA, and later at non-profit organizations and for the Senate Committee on Environment and Public Works. We appreciate the subcommittee's attention to the important public health and environmental issues posed by per- and polyfluoroalkyl substances (PFAS).

## **PFAS are "Forever Chemicals" Found Virtually Everywhere – Including in All of Us**

You, your family, and probably every one of your constituents has PFAS in your body.

PFAS contamination has become increasingly widespread across the United States.

Centers for Disease Control and Prevention (CDC) data show that more than 98 percent of U.S. residents tested are carrying PFAS in their blood or tissue.<sup>1</sup> Millions of

Americans who drink elevated amounts of PFAS in contaminated tap water or are otherwise more heavily exposed are at greater risk.

These "forever chemicals" are extremely long-lived in the environment, and concentrate and last a long time in our bodies and in those of animals. Scientists are finding that certain PFAS likely have adverse effects on our health at vanishingly low levels of exposure – *at parts per trillion* levels.<sup>2</sup> As my colleague Dr. Anna Reade has noted,<sup>3</sup> PFAS

are a class of chemicals estimated to contain between 3,000<sup>4</sup> to 5,000<sup>5</sup> industrial chemicals, and new subclasses of PFASs are still being discovered in products and in the environment.<sup>6</sup>

According to a recent study by Harvard researchers, PFAS are in the drinking water in at least 33 states, and they have been detected at levels exceeding EPA's weak Health Advisories for PFOA and PFOS (two such PFAS) in the drinking water of more than 6 million Americans.<sup>7</sup> Tens of millions more U.S. residents likely are drinking water with PFAS levels higher than those considered safe by CDC and independent scientists.

Indeed, there are hundreds, or more likely thousands, of PFAS contamination sites nationally, including over 400 military installations with known or suspected releases.<sup>8</sup> These blanket the landscape from potentially hundreds of sites in Michigan,<sup>9</sup> to the former Chanute Air Force Base in Champaign County, Illinois,<sup>10</sup> Hoosick Falls, NY,<sup>11</sup> Parkersburg, WV,<sup>12</sup> and the Cape Fear River in NC.<sup>13</sup> PFAS also are found in many consumer products ranging from carpets and clothing to cookware and cosmetics, as well as in food, often due to food packaging.<sup>14</sup> These uses result in multiple routes of exposure in the home including household dust, indoor air, and food.

### **The Health Effects of PFAS are Deeply Concerning**

Numerous studies, including a massive review of nearly 70,000 people exposed to PFAS in their drinking water in West Virginia,<sup>15</sup> and many other epidemiological and animal studies,<sup>16</sup> suggest that the health impacts from these "hot spots" may be formidable.

Scientists have found certain PFAS may increase the risk of: thyroid and liver disease; asthma; lower fertility in women; high blood pressure or pre-eclampsia in pregnant women; increased cholesterol levels; decreased ability to respond to vaccines; and lower infant birth weights.<sup>17</sup> Studies of people exposed in West Virginia also found that PFOA exposure is probably linked to kidney cancer and testicular cancer.<sup>18</sup> Additional evidence has shown links between early life exposures to PFOA and altered mammary gland development.<sup>19</sup> Animal studies have found that PFOA and PFOS can cause damage to the liver and the immune system, birth defects, delayed development, and newborn deaths.<sup>20</sup> A series of in-depth investigative articles by journalist Sharon Lerner<sup>21</sup> discuss extensive evidence that the risks of certain of these chemicals have long been known and hidden by the manufacturers, with reportedly devastating effects on communities.

The 2014 Helsingør<sup>22</sup> and 2015 Madrid<sup>23</sup> Statements, based upon extensive reviews of the scientific literature, provided consensus from more than 200 scientists on the potential for harm associated with the entire class of PFAS. To better protect Americans from this public health threat, EPA, the CDC/ Agency for Toxic Substances and Disease Registry (ATSDR), other federal agencies, and states should use information on PFAS with greater amounts of data to generate health-protective thresholds for PFASs with data limitations.<sup>24</sup>

## We Need Action to Prevent Further Harm from PFAS Now

There is an urgent need for EPA and states to act. Unfortunately, to date EPA has moved exceedingly slowly and has not even made a determination that a drinking water standard is necessary for any PFAS. Moreover, recently EPA teamed up with the White House to block the Centers for Disease Control and Prevention (CDC) from issuing a report finding that certain PFAS have adverse effects at far lower levels than EPA had previously stated.<sup>25</sup> An internal email from the White House said the report would present a “public relations nightmare.”<sup>26</sup> While the report was released after a public outcry, it highlights how EPA is failing to use its power to protect people from this hazard. Many important steps are necessary, for example:

- We need immediate, strong, health-protective drinking water health advisories and drinking water standards for PFOA and PFOS, and for other key PFAS for which there are data in hand (including PFNA and PFHxS, for which ATSDR has developed Minimal Risk Levels, or MRLs, as well as other perfluoroalkyls for which ATSDR has cited data linking its exposure to health hazards, including PFDeA, PFBA, PFHxA, PFBuS, PFDoA, and PFUA). Soon thereafter, we need a total PFAS standard, potentially based on subclasses of PFAS.
- States need to move forward with issuing strong drinking water and cleanup standards now, since EPA has shown it cannot be trusted to do so.
- EPA’s delays and lack of meaningful action are shameful. The Safe Drinking Water Act should be fixed so EPA is forced to set a strong, health-protective

standard under strengthened standard setting authority that will ensure full protection for vulnerable subpopulations as soon as possible; the Office of Management and Budget (OMB) and other agencies should be prohibited from interfering. The National Academy of Sciences and ATSDR should review the health data without political interference.

- EPA and states must ensure that “polluters pay.” Specifically, EPA should list PFOA, PFOS, and other PFAS as hazardous substances under Superfund and hazardous wastes under the Resource Conservation and Recovery Act (RCRA).
- A trust fund, paid for through user fees on manufacturers of PFAS, should be generated to pay for cleanups.
- The Department of Defense (DOD) specifically should be held accountable for identifying and cleaning up its PFAS messes (a bipartisan Senate bill<sup>27</sup> would start this process.)
- Citizens put at risk by PFAS contamination, as well as EPA and states, should be authorized to take legal action to force cleanup and medical monitoring.
- EPA should regulate PFOA, PFOS, and all other hazardous PFAS as toxic water pollutants and hazardous substances under sections 304 and 311 of the Clean Water Act to ensure that we control future pollution.
- EPA should ban new uses of existing PFAS, and new PFAS under the Toxic Substances Control Act, and order a complete data call-in and comprehensive toxicity testing for PFAS.

- Existing PFAS uses should be phased out, with extremely narrow exceptions for true national defense needs, emergencies, or similar urgent needs where there are no alternatives.
- States should take the lead in these phaseouts where EPA is failing to act – such as in the case of firefighting foam, carpets, and other consumer PFAS uses.
- Manufacturers of PFOA, PFOS, and all other hazardous PFAS should be required to take back products that used their PFAS from customers and properly dispose of them.
- Facilities manufacturing and using substantial quantities of PFAS should be required under the Community Right to Know Act to publicly report.
- EPA, the U.S. Geological Survey, and Food and Drug Administration (FDA) should be charged with conducting ongoing, comprehensive testing of tap water, ground/surface water (a bipartisan Senate bill<sup>28</sup> would start this process), and food for PFAS.
- FDA should ban all PFAS from use as a food additive, and in food packaging and food contact substances.
- Use of PFAS in firefighting foam should be phased out and replaced with safer alternatives. Washington State and other researchers are identifying safer alternatives. In the meantime, training exercises should not use PFAS.
- Substantial additional funding through the State Revolving Funds (SRFs) and other authorities should be provided, especially to help disadvantaged

communities clean up their water (Mr. Tonko and colleagues' Assistance, Quality, and Affordability Act<sup>29</sup> would help with this).

### **The Human Toll of PFAS Contamination is Enormous**

The human impacts of PFAS contamination on peoples' everyday lives are very real. For example, in Hoosick Falls, NY, the serious PFOA contamination of the town's drinking water didn't come to light until a local citizen, Michael Hickey, tested his tap water after becoming deeply concerned about his father's death from kidney cancer, a disease he learned had been linked to PFOA exposure in the West Virginia contamination case.<sup>30</sup> His and his citizen allies' efforts to inform local residents and hold government and local polluters accountable ultimately blew the whistle on the problem and forced action. Local citizens have far higher levels of PFOA in their bodies than average Americans, an issue highlighted by the social media campaign showing children with high levels in their bodies.

## Hoosick Falls – Social Media Effort PFOA Project



Lauren Jackett photo of  
Finlay & Alvena Arlrich

Courtesy of the Albany Times Union, <https://www.timesunion.com/tuplus-local/article/Top-Stories-2016-PFOA-water-pollution-in-Hoosick-10825849.php#photo-12046319>

Another example comes to us from West Virginia, as reported by the *News Journal*:<sup>31</sup>

Earl Botkin lives in Evans, West Virginia, a small town about 45 miles downriver from [a PFOA manufacturing plant] .... He says he was a healthy man of 55 in 1997 when he began to experience thyroid problems, and soon contracted ulcerative colitis – a form of explosive diarrhea – and high cholesterol. Now he must adhere to a strict regimen of diet and medication to deal with ulcerative colitis which he says was caused by C8 [PFOA] exposure in his drinking water....

[Scientists who] tested 69,000 residents in the area, linked all three illnesses to exposure to the chemical. Botkin believes his health problems stemmed from consuming tap water tainted with C8, which allegedly found its way into [his] municipal water system....

DuPont has said it will not challenge the supposition that drinking water tainted with high levels of C8 can cause ulcerative colitis, thyroid problems and a host of other illnesses. But DuPont will challenge specific cases brought by plaintiffs like Botkin....

Botkin says his life is hell. His days begin at 4 a.m. with coffee and a piece of toast. He needs to eat early so he can digest his food, go to the bathroom and be at work by 8:00 a.m. Botkin eats only a small snack during the day to limit his trips to the bathroom. His big daily meal is dinnertime, and he takes it at home where he has immediate access to a bathroom.

He takes eight steroids a day to stop the bleeding, which makes his face and stomach puffy but does little to help him manage the disease.

The Botkins rarely leave home for fear of having an embarrassing episode outside the home. If he does go out, he must take precautions and scout ahead for a clean bathroom.

Botkin has kept his job as a home inspector because he needs the insurance to cover the cost of his medicine. He says the multiple diseases has made it impossible for him to visit his three children who have relocated to other parts of the country.

"They really ruined us," Botkin said. "We had nice jobs and were about to retire. We had plans."...

Shortly after receiving [a] letter about PFOA in their water, [another WV resident Joe] Kiger began hearing about neighbors contracting strange illnesses. A friend told him about her seven-year old granddaughter's teeth turning black. Three young boys came down with testicular cancer. Friends said their dogs developed tumors.

Kiger...started questioning the West Virginia Department of Natural Resources. Officials there treated him as if he had the plague, he recalled. He received a similar reaction from DuPont...His wife, Darlene, asked how that went. "I told her, I was just fed the biggest line of BS in my life," he said. "He told me there was nothing to worry about, which immediately told me I better start worrying."

Similar stories are playing out in homes and communities across the country.

## Conclusion

The evidence has become clear that PFAS are our new PCBs – but are possibly more widespread and dangerous. They are toxic at extremely low levels, don't break down, and have become ubiquitous in the environment. They are present in millions of Americans' tap water at unsafe levels, and are now found in nearly all of our bodies. They have been linked to a wide array of adverse health effects ranging from kidney and testicular cancer to impacts on the immune system, thyroid, fetal development, and many other harms. I regret to say that EPA has fallen down on the job. It has failed to meaningfully regulate PFAS manufacture and use, failed to issue standards to protect our drinking water, and failed to protect our health and the environment from spreading contamination by these hazardous compounds. EPA has failed to ensure that PFAS-contaminated sites are cleaned up. The agency must step up to fix the problem, and cannot be subjected to political interference from OMB, DOD, or others. States must immediately step into the breach and issue strong, health-protective drinking water standards and cleanup requirements, and address use of PFAS in firefighting foam and consumer goods like carpeting and food packaging, because regrettably we cannot trust this EPA and federal government to do their job.

## Erik D. Olson: Biography

Erik D. Olson is Senior Director for Health and Food at the Natural Resources Defense Council (NRDC), in the Healthy People and Thriving Communities program. He has more than 30 years of experience in consumer, public health, and environmental policy. He oversees NRDC's work on an array of issues including drinking water, toxic chemicals in food and consumer products, pesticides, and other food, agriculture and environmental health concerns. He has worked on drinking water and toxics issues since he began his legal career at EPA in 1984, when he focused on the Safe Drinking Water Act (SDWA), clean water, and hazardous waste issues. He has served on the National Drinking Water Advisory Council and was actively involved in the 1986 and 1996 amendments to the SDWA. His food work at NRDC concentrates on antibiotics overuse in animal production, food waste, agricultural contributions to pollution and climate change, and better and less meat.

Prior to assuming his current position, Olson was Senior Director of Food Programs, and Deputy Director of the Pew Health Group at The Pew Charitable Trusts, where he oversaw work on toxic chemical policy reform, reduction of antibiotics use in animal agriculture, food safety, school nutrition, and the Food and Drug Administration's (FDA) food additives programs. At Pew he helped lead the successful legislative effort to enact in 2011 the first overhaul of the FDA's food safety program in over 70 years.

Previously, he was Deputy Staff Director and General Counsel of the U.S. Senate Committee on Environment and Public Works. During his Senate tenure, he played a key role in major legislation and hearings on global warming, children's environmental health, toxic chemicals, clean air, drinking water, clean water, green buildings, and environmental justice, among other issues.

In his prior 15-year stint at NRDC, he helped enact the Food Quality Protection Act and the 1996 Safe Drinking Water Act Amendments. Previously, he was an attorney at the National Wildlife Federation where he was a litigator and advocate on pesticides, toxics, water, waste and oil spills. Prior to his NWF position, he served as a staff lawyer at the U.S. Environmental Protection Agency's Office of General Counsel, where he litigated and counseled agency clients on water and waste issues.

He has litigated major federal environmental cases ranging from the Exxon Valdez case to drinking water, Superfund, and other groundbreaking federal litigation.

Olson is a member of the [National Academy of Medicine's](#) Food Forum and of the James Beard Foundation's impact programs advisory committee, and is on the Boards for [Food Policy Action](#) and the [Supporters of Agriculture Research](#) (SoAR) Foundation. He received his J.D. from the University of Virginia School of Law, where he was a member of the Order of the Coif legal honor society and served as an editor of the environmental law journal. He earned his A.B. from Columbia University in environmental biology and policy.

## NOTES

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<sup>1</sup> Calafat, Antonia M. et al. "Polyfluoroalkyl Chemicals in the U.S. Population: Data from the National Health and Nutrition Examination Survey (NHANES) 2003–2004 and Comparisons with NHANES 1999–2000." *Environmental Health Perspectives* 115.11 (2007): 1596–1602. PMC. Web. 4 Sept. 2018; see also CDC, National Biomonitoring Program: Biomonitoring Summary, Perfluorchemicals, available at [https://www.cdc.gov/biomonitoring/PFAS\\_BiomonitoringSummary.html](https://www.cdc.gov/biomonitoring/PFAS_BiomonitoringSummary.html) (accessed September 3, 2018).

<sup>2</sup> ATSDR, Toxicological Profile for Perfluoroalkyls, Draft for Public Comment, June 2018, available online at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf> (accessed September 3, 2018). (hereinafter "ATSDR, Toxicological Profile")

<sup>3</sup> Anna Reade, NRDC, Comments on ATSDR Toxicological Profile on Perfluoroalkyls (2018 Draft), available online at [https://www.nrdc.org/sites/default/files/comments-on-atsdr-toxicological-profile-on-perfluoroalkyls-2018-draft\\_2018-08-21.pdf](https://www.nrdc.org/sites/default/files/comments-on-atsdr-toxicological-profile-on-perfluoroalkyls-2018-draft_2018-08-21.pdf) (accessed September 4, 2018).

<sup>4</sup> Swedish Chemicals Agency (KEMI). (2015) Occurrence and use of highly fluorinated substances and alternatives. Report from a government assignment. Report 7/15. Stockholm, Sweden <https://www.kemi.se/en/global/rapporter/2015/report-7-15-occurrence-and-use-of-highly-fluorinated-substances-and-alternatives.pdf> (accessed September 4, 2018).

<sup>5</sup> Organization for Economic Co-operation and Development. (2018) Toward a New Comprehensive Global Database of Per- and Polyfluoroalkyl Substances (PFASs): Summary Report on Updating the OECD 2007 List of Per- and Polyfluoroalkyl Substances (PFASs). Series on Risk Management, No. 39. ENV/JM/MONO(2018). Available online at [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV-JM-MONO\(2018\)7&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV-JM-MONO(2018)7&doclanguage=en) (accessed September 4, 2018).

<sup>6</sup> Barzen-Hanson K. A., et al. (2017) Discovery of 40 classes of per- and polyfluoroalkyl substances in historical aqueous film-forming foams (AFFFs) and AFFF-impacted groundwater. *Environ Sci Technol* 51:2047-2057, available online at <https://pubs.acs.org/doi/abs/10.1021/acs.est.6b05843> (accessed September 4, 2018).

<sup>7</sup> Hu, Xindi C. et al. "Detection of Poly- and Perfluoroalkyl Substances (PFASs) in U.S. Drinking Water Linked to Industrial Sites, Military Fire Training Areas, and Wastewater Treatment Plants." *Environmental Science & Technology Letters* 3.10 (2016): 344–350. PMC. Web., available online at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5062567/> (accessed 4 Sept. 2018); "Unsafe levels of toxic chemicals found in drinking water of 33 states," *The Harvard Gazette*, August 9, 2016, <https://news.harvard.edu/gazette/story/2016/08/unsafe-levels-of-toxic-chemicals-found-in-drinking-water-of-33-states/>

<sup>8</sup> Maureen Sullivan, Deputy Assistant Secretary of Defense (Environment, Safety & Occupational Health), "Addressing Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)." Health, March 2018, available online at [https://partner-mco-archive.s3.amazonaws.com/client\\_files/1524589484.pdf?\\_ga=2.91028698.1354282183.1536020554-1545800389.1530215118](https://partner-mco-archive.s3.amazonaws.com/client_files/1524589484.pdf?_ga=2.91028698.1354282183.1536020554-1545800389.1530215118) (accessed September 3, 2018).

<sup>9</sup> Keith Matheny, "Is your water safe? Harmful chemical found in many Michigan systems," *Detroit Free Press*, August 22, 2018, available online at <https://www.freep.com/story/news/local/michigan/2018/08/22/harmful-chemical-pfas-pfos-pfoa-hundreds-public-water-systems/1067165002/> (accessed September 3, 2018).

<sup>10</sup> See Northeastern University, Social Science Environmental Health Research Institute (SSEHRI), "SSEHRI PFAS Contamination Site Tracker (last updated July 26, 2018), available online at <https://docs.google.com/spreadsheets/d/1HxLAzOmFdMh7V-mey4ExTPsnNKarEcGG6klBWZ8auA/edit#gid=676990244> (accessed September 3, 2018).

<sup>11</sup> Brendan J. Lyons. "Survey: Higher rates of cancer, illnesses followed PFOA exposure Health survey raises questions about earlier health department estimates." *Albany Times-Union*, August 21, 2018,

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<https://pfasproject.com/2018/08/28/survey-higher-rates-of-cancer-illnesses-followed-pfoa-exposure-in-hoosick-falls/>

<sup>12</sup> Arathy Nair, “DuPont Settles Lawsuits Over Leak of Chemical Used to Make Teflon,” Feb. 13, 2017, available online at <https://www.reuters.com/article/us-du-pont-lawsuit-west-virginia/dupont-settles-lawsuits-over-leak-of-chemical-used-to-make-teflon-idUSKBN15S18U> (accessed September 4, 2018).

<sup>13</sup> Cheryl Hogue, “What’s GenX still doing in the water downstream of a Chemours plant?” Chemical & Engineering News, Feb. 12, 2018, available online at <https://cen.acs.org/articles/96/i7/whats-genx-still-doing-in-the-water-downstream-of-a-chemours-plant.html> (accessed September 4, 2018).

<sup>14</sup> ATSDR, Toxicological Profile, *supra*; Zota, Ami R., Cassandra A. Phillips, and Susanna D. Mitro. “Recent Fast Food Consumption and Bisphenol A and Phthalates Exposures among the U.S. Population in NHANES, 2003–2010.” *Environmental Health Perspectives* 124.10 (2016): 1521–1528. PMC. Web, available online at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5047792/> (accessed September 4, 2018).

<sup>15</sup> C8 Science Panel, “C8 Probable Link Reports,” available online at [http://www.c8sciencepanel.org/prob\\_link.html](http://www.c8sciencepanel.org/prob_link.html) (accessed September 3, 2018)(hereinafter “C8 Science Panel”).

<sup>16</sup> See ATSDR, Toxicological Profile, *supra*.

<sup>17</sup> ATSDR, Toxicological Profile, *supra*.

<sup>18</sup> See C8 Science Panel, cited *supra*.

<sup>19</sup> Rudel, Ruthann A. et al. “Environmental Exposures and Mammary Gland Development: State of the Science, Public Health Implications, and Research Recommendations.” *Environmental Health Perspectives* 119.8 (2011): 1053–1061. PMC. Web, available online at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3237346/> (accessed September 4, 2018).

<sup>20</sup> ATSDR, Toxicological Profile, *supra*.

<sup>21</sup> Sharon Lerner, *The Teflon Toxin, The Intercept*, series available online at <https://theintercept.com/series/the-teflon-toxin/> (accessed September 4, 2018).

<sup>22</sup> Martin Scheringera, Xenia Trier, Ian T. Cousins, Pim de Voogt, Tony Fletcher, Zhanyun Wang, Thomas Webster, “Helsingør Statement on poly- and perfluorinated alkyl substances (PFASs),” *Chemosphere*, Volume 114, November 2014, Pages 337-339, available online at <https://www.sciencedirect.com/science/article/pii/S004565351400678X> (accessed September 4, 2018).

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<sup>23</sup> Blum, Arlene et al. “The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs).” *Environmental Health Perspectives* 123.5 (2015): A107–A111. PMC. Web, available online at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4421777/> (accessed September 4, 2018).

<sup>24</sup> See Anna Reade, NRDC, Comments on ATSDR Toxicological Profile on Perfluoroalkyls (2018 Draft), available online at [https://www.nrdc.org/sites/default/files/comments-on-atsdr-toxicological-profile-on-perfluoroalkyls-2018-draft\\_2018-08-21.pdf](https://www.nrdc.org/sites/default/files/comments-on-atsdr-toxicological-profile-on-perfluoroalkyls-2018-draft_2018-08-21.pdf) (accessed September 4, 2018).

<sup>25</sup> Annie Snider, White House, EPA headed off chemical pollution study, Politico, May 14, 2018, available online at <https://www.politico.com/story/2018/05/14/emails-white-house-interfered-with-science-study-536950> (accessed September 4, 2018).

<sup>26</sup> *Ibid.*

<sup>27</sup> PFAS Accountability Act, S. 3381, 115<sup>th</sup> Congress, 2d Sess.

<sup>28</sup> PFAS Detection Act of 2018, S. 3382, 115<sup>th</sup> Congress, 2d Sess.

<sup>29</sup> Assistance, Quality, and Affordability Act of 2017, H.R. 1071, 115<sup>th</sup> Congress, 1<sup>st</sup> Sess.

<sup>30</sup> Brendan Lyons, *Top Stories 2016: PFOA water pollution in Hoosick Falls*, Albany Times-Union, December 30, 2016, available online at <https://www.timesunion.com/tuplus-local/article/Top-Stories-2016-PFOA-water-pollution-in-Hoosick-10825849.php#photo-12046319> (accessed September 4, 2018).

<sup>31</sup> Jeff Mordock, “Taking on DuPont: Illnesses, deaths blamed on pollution from W. Va. Plant.” *The [Delaware] News Journal*, April 1, 2016, available online at <https://www.delawareonline.com/story/news/2016/04/01/dupont-illnesses-deaths-c8/81151346/> (accessed September 4, 2018).