ADVANCING COMMUNITY-CENTERED ZERO WASTE SOLUTIONS

February 26, 2025

Chair Korman
Environment and Transportation Committee
Maryland House of Delegates
Room 251
House Office Building
Annapolis, Maryland 21401

RE: Testimony in Support of HB 909: Sewage Sludge Utilization Permits – PFAS Concentration Limits.

Dear Chair Korman, Vice Chair Boyce, and Members of the Maryland Environment and Transportation Committee:

Thank you for the opportunity to provide testimony on HB 909. Just Zero supports this bill and urges a favorable report from the committee.

Just Zero is a national environmental non-profit advocacy organization that works to implement just and equitable solutions to climate-damaging and toxic production, consumption, and waste disposal practices. We believe that all people deserve Zero Waste solutions with zero climate-damaging emissions and zero toxic exposures.

HB 909 addresses a significant threat to public health and the environment that has been ignored for decades – contamination of farmland, soil, and water from the land application of sewage sludge.[1] Allowing sludge to be spread on land as a "fertilizer" is a toxic practice that Maryland must move to end once and for all. Failing to enact this law would amount to failing to protect Maryland farmers, residents, and the environment from the known impacts associated with exposure to toxic forever chemicals.

I. Sewage Sludge is a Noxious By-Product of Wastewater Treatment.

It is important to understand that sewage sludge is not a beneficial fertilizer. A lot of different kinds of waste go into the sewer. Industrial wastes, hospital wastes, commercial wastes, landfill leachate, human waste, storm water runoff, and every other kind of hazardous, toxic, and biological waste material that goes down the drain. This material is then sent to a wastewater treatment facility ("WWTF") where it is treated to meet water quality standards and then discharged into rivers, lakes, and oceans. A noxious by-product of the treatment process is sewage sludge, a mud-like material containing hundreds of known toxics. While some of these

[1] Sewage sludge is sometimes interchangeably called "sludge" and "biosolids." For this testimony, we will be using the term "sewage sludge" and "sludge."

pollutants are discharged via the effluent, the majority remains in the sludge.[2] Common toxics found in sewage sludge include heavy metals, microplastics, and synthetic chemicals such as per-and-polyfluoroalkyl substances ("PFAS"). When sludge is spread on land, it allows these toxic materials to enter the environment. Once in the environment, remediation is extremely challenging.

II. Sewage Sludge Contains High Levels of PFAS Which Are Released into the Environment When Land Applied

PFAS, often called forever chemicals, are a group of approximately 15,000 synthetic chemicals.[3] PFAS compounds are known to be toxic in concentrations as small as parts per trillion.[4] These chemicals are associated with cancer and have been linked to growth, learning, and behavioral problems in infants and children; fertility and pregnancy problems, including preeclampsia; interference with natural human hormones; increased cholesterol; immune system problems; and, interference with liver, thyroid, and pancreatic function.[5] PFAS have also been linked to increases in testicular and kidney cancer in human adults.[6]

PFAS enter WWTFs from a variety of commercial and industrial sources such as wastewater from metal finishers and other manufacturing plants, electronic industries, and landfill leachate.[7] WWTFs are not designed or equipped to remove or destroy these compounds. As a result, effluent containing these chemicals is discharged into the receiving waters where it can bioaccumulate and threaten the environment and public health. However, a significant portion of the PFAS is transferred to the sludge.[8]

Numerous studies have shown extremely high levels of PFAS in sludge. For instance, since August 2020, the Massachusetts Department of Environmental Protection has required quarterly monitoring of PFAS in sludge generated at the state's largest WWTF. For two of the most concerning PFAS compounds, PFOS and PFOA, the combined average concentration is 15,000 parts per trillion.[9] Land applying sludge creates a pathway for PFAS contamination in soil and water.[10] A 2022 study showed PFAS from land application of sewage sludge migrating as far as

[2] Lenka, S.P., Kah, M., Padhye, L.P., 2021. A review of the occurrence, transformation, and removal of poly- and perfluoroalkyl substances (PFAS) in wastewater treatment plants. Water Res. 199, 117187.
[3] U.S. Environmental Protection Agency, CompTox Chemicals Dashboard.
[4] U.S. Dep't of Health & Human Serv., Agency for Toxic Substances and Disease Registry, Toxicological Profile For Perfluoroalkyls, Agency For Toxic Substances And Disease Registry, at 5–6,
[5] *Id.*
[6] *Id.*
[7] Heidler, J., & Halden, R. U. (2008). Meta-analysis of mass balances examining chemical fate during wastewater treatment. Environmental Science & Technology, 42(17), 6324–6332.
[8] Supra, note 2.
[9] Barbara Moran, Our Sewage Sludge Often Becomes Fertilizer. Problem Is, It's Tainted with PFAS, WBUR. (Mar. 30, 2023).
[10] Scearce, A. E., Goossen, C. P., Schattman, R. E., Mallory, E. B., & MacRae, J. D. (2023). Linking drivers of plant per- and polyfluoroalkyl substance (PFAS) uptake to agricultural land management decisions. Biointerphases, 18(4).

17 meters to underlying groundwater.[11] Once spread, the PFAS that does not move to water can remain in soil for years, adding to the PFAS burden from multiple land applications.[12]

III. Land Application of Sewage Sludge is Causing Widespread PFAS Contamination Across the U.S.

In 2019, reports regarding PFAS contamination at Stoneridge Farm in Maine became public. In response, the Maine Department of Environmental Protection ("Maine DEP") halted the spread of sludge until it was tested for three types of PFAS (PFOA, PFOS, and PFBS).[13] When Maine DEP began testing sludge for those three PFAS, over 95% of the sludge tested exceeded the Department's screening levels.[14] The results of the testing coincided with additional findings of extremely high levels of PFAS contamination in areas where sludge application was routine.[15] Importantly, PFAS contamination was not limited to farmland and soil. Over 200 wells and water sources have been identified as contaminated.[16] Additionally a "do not eat" advisory was issued for deer harvested in the Fort Fairfield area where sludge was previously land applied.[17]

The widespread contamination sparked action, and Maine became the first state to ban the spreading of sludge as a fertilizer.[18] Maine has continued to conduct an extensive evaluation of PFAS contamination associated with the land application of sewage sludge. Statewide sampling and testing found extremely high concentrations of PFAS in soil and groundwater. The contamination was so significant, Maine included $60 million in its 2023 budget to help impacted farmers whose farmland whose contaminated land is now unusable and unsellable.[19] Over the last decade, Maine has spent over $100 million to address PFAS contamination, yet more funding is still needed.[20]

Michigan was one of the first states to investigate PFAS in sewage sludge. Officials shut down a farm that land applied sludge for years after finding extremely high concentrations in the soil.[21] In 2024, the state prohibited the property from ever being used for agricultural purposes ever again.[22] The 400-acre property is now unusable.

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[11] Johnson, G. R. (2022). PFAS in soil and groundwater following historical land application of biosolids. Water Research, 211, 118035.
[12] Venkatesan, A. K., & Halden, R. U. (2014). Loss and in situ production of perfluoroalkyl chemicals in outdoor biosolids–soil mesocosms. Environmental research, 132, 321-327.
[13] Maine DEP. Requirement to Analyze for PFAS Compounds. March 22, 2019.
[14] Tom Perkins, I Don't Know How We'll Survive: The Farmers Facing Ruin in America's Forever Chemicals Crisis, The Guardian. (Mar. 22, 2022).
[15] *Id.*
[16] Kevin Miller, Maine DEP Identifies 34 Towns with High-Priority Sites PFAS Chemical Testing, Maine Public. (Oct. 22, 2021).
[17] Meaghan Bellavance, MDIFW Reduces Size of PFAS Do Not Eat Advisory Area in Fairfield, News Center Maine. (Apr. 24, 2023).
[18] 38 M.R.S.A. §1304(20).
[19] Penelope Overton, State Adopts $70 Million Plan to Help Farmers Deal with PFAS Contamination, Portland Press Herald. (Jul. 13, 2023).
[20] Penelope Overton, With Funds Running Out, Maine is at a PFAS Crossroads, Portland Press Herald (January 23, 2025).
[21] Teresa Homsi, This Farmer's Livelihood Was Ruined by PFAS-Contaminated Fertilizer That Few Midwest States Test For, Nebraska Public Media. (Mar. 11, 2024).
[22] *Id.*

In Johnson Country Texas, officials are taking steps to declare a state of emergency and are seeking federal assistance over farmland contaminated with PFAS from sludge land application.[23] Testing of soil, surface water, and well water from properties near where sludge was applied had levels of PFAS that exceed EPA's health advisory levels which recommend a maximum of 0.04 parts per trillion (ppt).[24] Testing of the neighboring properties revealed surface water contamination of more than 84,7000 ppt, and further testing revealed that a newborn calf on one of the neighboring cattle operations had PFAS levels of 3,200 ppt.[25] Testing has also indicated catfish in a pond on a sludge-impacted farm had PFOS levels in their blood as high as 74,000 ppt.[26] In response, Johnson Country officials are seeking to end land application of sludge to halt any further contamination.[27] Additionally, farmers are suing Synagro for manufacturing, marketing, and distributing the sludge a safe fertilizer.[28]

IV. Banning The Land Application of Sewage Sludge Aligns with the Quickly Evolving Scientific and Regulatory Landscape Surrounding PFAS.

State and federal regulations regarding the land application of sewage sludge are rightfully in flux because of the public's warranted concerns over PFAS-contaminated biosolids. Last year, Connecticut became the second state to ban sludge land application.[29] This legislative session, several states, including Massachusetts, Mississippi, New York, Oklahoma, and Texas, are considering adopting similar bans.[30]

Additionally, the EPA is proposing significant changes to the ways in which PFAS are regulated at the federal level. For instance, the EPA has proposed regulating PFOA and PFOS – two common and highly toxic PFAS compounds– as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act.[31] High concentrations of both PFOA and PFOS are frequently found in sewage sludge.[32] EPA has also proposed amending the Resource Conservation and Recovery Act rules to add nine PFAS to its list of hazardous constituents.[33] These nine PFAS (PFOA PFOS, PFBS, GenX, PFNA, PFHxS, PFDA, PFHxA, PFBA) are also frequently found in sewage sludge at high concentrations.[34]

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[23] Hiroko Tabuchi, Texas County Declares an Emergency Over Toxic Fertilizer, New York Times (Feb. 14, 2025).
[24] Brigit Rollins, Farmers File Suit Over PFAS Contamination, National Agricultural Law Center (April 2, 2025).
[25] *Id.*
[26] Tom Perkins, Texas Farmers Claim Company Sold Them PFAS-Contaminated Sludge that Killed Livestock, The Guardian. (Mar. 1, 2024)
[27] Hiroko Tabuchi, Texas County Declares an Emergency Over Toxic Fertilizer, New York Times (Feb. 14, 2025).
[28] Tom Perkins, Texas Farmers Claim Company Sold Them PFAS-Contaminated Sludge that Killed Livestock, The Guardian. (Mar. 1, 2024)
[29] Connecticut, Public Act No. 24-59 (2024).
[30] See, Mississippi Senate Bill No. 2004 (2025), Massachusetts Senate Bill No. 2403 (2025), New York Assembly Bill No. 8317 (2025), Oklahoma Senate Bill No. 3 (2025), and Texas House Bill No. 1674 (2025).
[31] EPA, Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances, Proposed Rule, 87 Fed. Reg. 54415 (Sept. 6, 2022).
[32] Venkatesan, A. K., & Halden, R. U. (2013). National Inventory of perfluoroalkyl substances in archived U.S. biosolids from the 2001 EPA National Sewage Sludge Survey. *Journal of Hazardous Materials*, *252–253*, 413–418.
[33] EPA, Listing of Specific PFAS as Hazardous Constituents, Proposed Rule, 89 Fed. Reg. 8606 (Feb. 8, 2024).
[34] Thompson, K. A., Mortazavian, S., Gonzalez, D. J., Bott, C., Hooper, J., Schaefer, C. E., & Dickenson, E. R. (2022). Poly- and perfluoroalkyl substances in municipal wastewater treatment plants in the United States: Seasonal patterns and meta-analysis of long-term trends and average concentrations. *ACS ES&T Water*, *2*(5), 690–700.

In April 2024, the EPA adopted final National Drinking Water Regulations for six PFAS compounds. The new regulations set a maximum contamination level goal of zero for both PFOA and PFOS. The regulations also set legally enforceable maximum contamination levels for all six PFAS.[35] Finally, in January, the EPA released a draft risk assessment that first the first time warned that sewage sludge can contaminate soil, groundwater, crops, and livestock with PFAS, posing human health risks.[36] The extensive study concluded that the risks created from using sewage sludge as a fertilizer exceed federal safety thresholds, sometimes by several orders of magnitude.[37]

V. Conclusion

Banning the land application of Sewage Sludge is a critical and necessary step in protecting public health, safeguarding the environment, and preventing further PFAS contamination. The risks associated with PFAS are well documented and cannot be ignored. Just Zero urges a favorable report of HB 909.

Thank you for your time and consideration of this testimony.

Respectfully submitted,

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[35] 40 C.F.R.§ 141. The U.S. EPA has set the following maximum contamination levels in drinking water – PFOA, 4 ppt., PFOS, 4 ppt., PFHxS, 10 ppt., PFNA, 10 ppt., and HFPO-DA, 10 ppt.
[36] U.S. Environmental Protection Agency, Draft Sewage Sludge Risk Assessment for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS), EPA-HQ-OW-2024-0504 (Jan. 15, 2025).
[37] *Id.*