

September 25, 2026

Tess Richman
Engineering and Science Division
Office of Water (Mail Code 4504-T)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

SUBMITTAL VIA ELECTRONIC PORTAL

Re: Water Environment Federation Comments related to Docket ID No. EPA-HQ-OW-2026-2509; Guidance: Reducing Risk from Perfluorooctanoic Acid and Perfluorooctane Sulfonic Acid in Biosolids

Dear Ms. Richman,

The Water Environment Federation (WEF) thanks the U.S. Environmental Protection Agency (EPA) for the opportunity to provide comments on Docket ID No. EPA-HQ-OW-2026-2509.; Guidance: Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) ¹ in Biosolids (Draft Guidance).

WEF is a not-for-profit technical and educational organization of over 31,000 individual members and 75 affiliated Member Associations representing water quality professionals worldwide. Since 1928, WEF and its members have protected public health and the environment. As a global water sector leader, our mission is to inspire the water community in pursuit of human and environmental well-being toward a life free of water challenges. WEF connects and enriches the expertise of water professionals, increases the awareness of the impact and value of water, and provides a platform for water sector Innovation.

Water Resource Recovery Facilities (WRRF) play a critical role in domestic energy production, water recovery, waste reduction, and nutrient recycling. Municipal biosolids are organic, natural byproduct of the resource recovery process. The U.S. generates 3.76 million dry metric tons of biosolids annually² that is treated in accordance with the EPA “Standards for the Use and Disposal of Sewage Sludge”³. Biosolids are nutrient rich and an affordable and effective alternative to synthetic fertilizers. By utilizing biosolids, utilities can lower costs for ratepayers.

¹ For the purposes of these comments, we will hereafter refer to PFOA and PFOS by the general term referring to per- and polyfluoroalkyl substances, PFAS.

² [Basic Information about Sewage Sludge and Biosolids – Use and Disposal Statistics](#)

³ 40 C.F.R. Part 503

strengthen the supply chain for farmers by reducing their reliance on foreign fertilizers, and protect the environment by preventing erosion, resisting drought, and sequestering carbon.

The EPA's current Draft Guidance provides helpful clarification in the Draft Sewage Sludge Risk Assessment for PFOA and PFOS (Draft Risk Assessment)⁴. We were happy to see that many of the concerns that WEF shared in its comments on the Draft Risk Assessment were addressed in the Draft Guidance, including the importance of maintaining the ability to recover and reuse this valuable resource and to ensure that alternative disposal options remain viable. Any guidance must allow utilities flexibility to consider local conditions, infrastructure limitations, state and local regulations, and costs to ratepayers in order to utilize the best management practice for their community, such as beneficial use, incineration, landfilling, and emerging technologies. Despite being involuntary receivers of per- and polyfluoroalkyl substances (PFAS) contamination, WEF members are dedicated to responsibly managing the risk of PFAS to human health and the environment.

With this in mind, we offer the following feedback⁵.

The Draft Guidance should clearly distinguish between “sewage sludge” and biosolids.

The Draft Guidance briefly outlines the differences between “sewage sludge,” and biosolids, both which are treated in accordance with 40 C.F.R. Part 503 regulations to ensure pathogen destruction via digestion, drying, composting, heat, or other approved means. Despite the clear initial explanation and the title of the Draft Guidance only referencing biosolids, portions of the Draft Guidance appear to use “sewage sludge” and “biosolids” interchangeably.

WEF recommends that EPA should only use the term biosolids throughout the document unless it is specifically referring to untreated sewage sludge waste.

EPA should provide additional details in the Draft Guidance to better inform decisionmakers.

WEF commends the EPA for reiterating its support for the continued practice of using treated biosolids and its acknowledgement that the Draft Risk Assessment has been a source of confusion among the public and regulated community. The Draft Guidance identifies several potential areas of improvement for the Draft Risk Assessment, including the need to conduct national sewage surveys to determine actual PFAS concentrations in biosolids and the need to estimate how often varying levels of exposure occur in the United States.

WEF appreciates that the Draft Guidance outlines considerations for biosolids generators regarding responsible beneficial reuse and disposal practices. The absence of supporting technical justification and overly broad statements, such as recommending specific disposal site

⁴ Docket ID No. EPA-HQ-OW-2024-0504

⁵ Specific responses to EPA's questions are found in Appendix A (starting on pg. 7) and text changes are found in Appendix B (starting on pg. 16).

engineering controls, do not provide substantive clarity on the benefits of specific management practices.

The final guidance should include the following additional information to ensure the public, regulators, and legislators understand the results of the Draft Assessment and its restrictions.

Clarify that biosolid management should be informed by site-specific evaluations of the biosolid material profile, and site-specific exposure pathways associated with the proposed uses rather than broad-brush statements.

PFAS concentrations within biosolids vary widely depending on the levels of industrial inputs and background concentrations from commercial and residential inputs. Land application sites have a wide variety of soil types, depth to groundwater, crop types, biosolids application rates and incorporation methods, along with other site-specific factors. The Draft Guidance recognizes that the farm-family approach utilized for the Draft Risk Assessment is not representative of most biosolids land application settings and does not reflect current farming practices or typical application scenarios. Using site-specific evaluations and exposure pathways is helpful because it recognizes that biosolids managers can be proactive to control risk based on land use decisions.

WEF recommends that the Draft Guidance add specific information about why site-specific considerations should be used and provide examples of evaluations that include great variability of site conditions and sewage sludge across the country.

Include up-to-date information on beneficial reuse and disposal practices.

Several peer reviewed studies on PFAS in land applied biosolids have been published since the Draft Risk Assessment was completed. There is an ever-growing body of research related to PFAS transport and fate in the environment, including soil migration, uptake within various crop types, and transformation between forms. EPA should compile this information and provide references to existing research and inform stakeholders of new research as it becomes available. This critical research, some of which is EPA supported, on PFAS in a variety of land application settings is important to understand and mitigate risk⁶.

Provide a more comprehensive overview of existing state approaches to biosolid management and disposal, the context by which they were adopted, and the success of each approach.

⁶ Such information gaps were identified in National Academies of Sciences, Engineering, and Medicine. 2002. Biosolids Applied to Land: Advancing Standards and Practices. Washington, DC: The National Academies Press.

While the current Draft Guidance includes a section discussing state legislative and regulatory activities to reduce PFAS in biosolids, it should include more information about the relative success of these different state policies, situations where they may be most beneficial, and the cost-effectiveness of each solution.

WEF also recommends the Draft Guidance include a more detailed discussion of state bans on land application and the broader impact of these bans, clarify that the Draft Guidance is not intended to be a blueprint for state-level regulations, legislation, or guidance, and add a section discussing the efforts made within state legislatures to reduce PFAS loading to WRRFs through restrictions on added PFAS in products and other source control efforts⁷.

Best practices for communicating to the public the context, results, and limitations of the Draft Risk Assessment, the importance of good biosolid management, and the complex nature of PFAS

As noted in the Draft Guidance, the Draft Risk Assessment has resulted in a misunderstanding of the risk of PFAS in biosolids. It is important that the inherent limitations of a risk assessment, the necessity of having a responsible sewage sludge management strategy, and the complex nature of PFAS are clear to both the intended audience of this Draft Risk Assessment, and policymakers who may seek to use it. Including this information will help reduce potential misinterpretations.

The Draft Guidance should include a risk evaluation framework that holistically reviews each reuse and disposal option as well as risks from non-biosolids exposures.

Biosolids are a product of the wastewater treatment process, and the EPA's recommendations for risk reduction are useful for utilities that manage this resource. Ultimately, risk reduction can best be achieved by understanding the site-specific factors driving PFAS exposure levels, and identification and implementation of practices that reduce exposure, such as source identification and source control. Therefore, it is important to understand the variety of disposal options available, and the unique risks, constraints, and costs associated with each option.

Creating a standardized evaluation ensures biosolid management options are evaluated consistently and transparently. A risk management evaluation should be based on real-world scenarios; include a cross-media approach that looks at impacts to water and air and the risk profile of the specific land application site; compare risks of all disposal options, not just land application; assess risk separately for different exposure groups; consider all practices for biosolid management; and be scalable.

⁷ <https://www.saferstates.org/resource/state-action-on-pfas/>

Additionally, any risks identified should be contextualized by providing relative risks from exposure to food packaging and other household products that are a primary contributor of PFAS contamination in the environment.

EPA should prioritize actions that eliminate PFAS from the supply chain, and focus on site-specific evaluations, tiered management approach, and source control measures.

Multiple states have successfully implemented mandatory product restrictions that are designed to reduce PFAS at the source. WEF supports the tiered risk management approach that includes site-specific evaluations, testing, and source control to ensure safe disposal over statewide bans on land application. Michigan has successfully demonstrated that industrial source reduction combined with a biosolids management system that requires increasingly strict biosolids management efforts is an effective method for reducing PFAS contamination. Similar approaches have been adopted or are under consideration in numerous other states.

WEF also supports EPA's ongoing efforts to remove PFAS at the source, such as from household products as soon as possible, as these are major contributors to PFAS found at WRRFs, and subsequently the biosolids produced through the treatment process. We also suggest the Agency prioritizes effluent limitation guidelines that would require PFAS generators to treat their wastewater ahead of sending their waste to municipal facilities and increased investment into industrial pre-treatment programs. Actions like this, especially when combined with additional guidance on applying the National Pretreatment Program, will enable the responsible and beneficial application of biosolids, while preventing large-scale contamination events.

Further, EPA should coordinate with the Food and Drug Administration to remove PFAS from food and food packaging and work with other partner agencies to expand the PFOA stewardship program to include a list of all companies in the U.S. that can handle PFAS materials. As long as PFAS continues to be introduced into our supply chain through everyday products, PFAS will continue to be received by our nation's WRRFs.

Conclusion

Biosolids are a product of the resource recovery process, and EPA's recommendations for risk reduction are useful for utilities that manage this resource. Ultimately, risk reduction can best be achieved by understanding the site-specific factors driving PFAS exposure levels, and identification and implementation of practices that reduce exposure, such as source identification and source control.

Thank you for the opportunity to comment on this important document. Please direct questions regarding these comments to WEF's Senior Manager of Government Affairs, Leah Harnish at lharnish@wef.org, or myself at sdye@wef.org.

Sincerely,

A handwritten signature in dark ink, appearing to read "Steve Dye". The signature is fluid and cursive, with the first name "Steve" and last name "Dye" clearly distinguishable.

Steve Dye

Managing Director, Government Affairs and Strategic Partnerships

Water Environment Federation

Appendix A

The comments below provided specific feedback on the questions EPA posed in the Request for Feedback on the Draft Guidance:

1. Are the recommendations for farmers and bulk land appliers of biosolids sufficient to provide clarity? What other information should the agency consider?

- **Add Emphasis on Site-Specific Risk Evaluation** - The Draft Risk Assessment included hypothetical “worst-case” scenarios for land application. The Draft Guidance could encourage land appliers to consider site-specific evaluations to better understand the exposure pathways, PFAS concentration levels, and overall risk profile at actual land application sites. This information can be used to develop informed decision-making frameworks at the state, local, or individual utility management levels. As an example, dryland farming practices or siting away from drinking water sources can reduce or eliminate the risks from drinking water exposure. Land appliers that conduct studies of the surrounding hydrogeology, runoff patterns, and land use practices will be better poised to make better decisions about land application.
- **Provide More Information Regarding Existing Research** - WEF appreciates EPA’s recognition that biosolids provide benefits to soil quality and nutrient concentrations in soil across a variety of applications. The Draft Guidance would benefit from significantly more specificity in the recommended land application practices. For example, it is recommended that land appliers consider conducting land application on farms with lower risk crops for human exposure. There is an ever-growing body of research on crop PFAS concentrations. It would be helpful for EPA to include references to specific studies⁸ or summaries of key information, such as specific concentration levels found in various crops, and links to relevant state policies.
- **More Detail is Needed for Risk Reduction Recommendations** - The Draft Guidance includes several other instances of vague recommendations, such as avoiding land application near fishable waters, drinking water sources, and areas with higher risks of potential groundwater impacts as well as avoiding land application for agricultural practices that have higher risks for human exposures. While it would not be appropriate for EPA to recommend specific thresholds without adequate supporting scientific research, the broad statements, while helpful considerations, may increase uncertainty.

2. Are the recommendations related to surface disposal and incineration of sewage sludge sufficient to provide clarity to stakeholders? What other information should the agency consider?

⁸ Ex: Moodie, D., T. Coggan, K. Berry et al. 2021. Legacy and emerging per- and polyfluoroalkyl substances (PFASs) in Australian biosolids. *Chemosphere* 270: 129143

- **Inconsistent Treatment of Land Application and Surface Disposal** - Most of the Draft Guidance background addresses land application of sewage sludge. As a result, entities may not consider surface disposal in the portfolio of potential mitigation methods available to address sewage sludge disposal. A one size fits all specific mitigation methods are not the best means of guidance. However, similar to land applications, considerations for surface disposal and incineration must be based on site specific information. This is a reasonable approach given the variability of site conditions and sewage sludge across the country. Furthermore, because the Draft Guidance does not provide detail or context regarding specific mitigation methods, inclusion of a single mitigation method (i.e. a composite liner). Additional federal guidance around landfill disposal practices, such as the EPA's "Biosolids Technology Fact Sheet"⁹ and EPA's *A Plain English Guide to the EPA Part 503 Biosolids Rule*¹⁰, should be included to cover this information.
- **Existing State Solid Waste Programs Already Address Biosolids Disposal** - The Draft Guidance should acknowledge that biosolids surface disposal units are regulated under comprehensive state solid waste programs in addition to 40 CFR Part 503. The Draft Guidance recommendation does not provide additional risk reduction beyond the protections already required by the state solid waste programs. Because states are best positioned to evaluate site hydrogeologic conditions and disposed biosolids characteristics, decisions and recommendations regarding engineering controls (e.g. liners), disposal facility design, and operational controls should remain with the existing state solid waste programs rather than being addressed through a broad national recommendation. Existing state regulatory programs can consider a site-specific approach based on local hydrogeologic conditions and biosolids characteristics and would allow resources to be focused where actual risk is identified. This would be consistent with the risk-based approach in the Draft Guidance.
- **Unintended Costs and Disposal Unit Closures** - The Draft Guidance only considers composite liners as an engineering control for surface disposal, despite a multitude of operational and engineering controls disposal sites employ based on site-specific information. WEF is concerned that this may inadvertently imply that liners are the sole acceptable control measure in surface disposal. This is a costly solution that does not always provide the most risk reduction benefit. In addition, this recommendation could unintentionally lead to closure of existing biosolids disposal units that lack or cannot afford composite liners, even where site-specific hydrogeologic conditions, monitoring data and biosolids characteristics demonstrate minimal risk. Such closures would further reduce biosolids disposal capacity, which lead to landfills restricting biosolid disposal or increasing tipping fees for biosolids – further driving up cost.

⁹ U.S. EPA, *Biosolids Technical Fact Sheet: Use of Landfilling for Biosolids Management* (November 2018).

¹⁰ U.S. EPA, *A Plain English Guide to the EPA Part 503 Biosolids Rule* (September 1994).

3. Are the recommendations related to the protection of public health and pollution prevention sufficient to provide clarity to states, Tribes, and utilities about how to reduce concentrations of PFOA and PFOS in sewage sludge and biosolids? What other information should the agency consider?

- **Source Control Should Include PFAS Reduction in Products** - The Draft Guidance should provide additional discussion of state legislation and other policies that restrict PFAS in consumer products rather than only focusing on restricting land application based on concentration and statewide bans. WRRFs are passive receivers of PFAS and do not add it as part of the treatment process. Therefore, effective source control is an important measure that is needed to reduce PFAS loads to WRRFs, which may be limited in what they can achieve through industrial pretreatment programs. Multiple states have successfully implemented mandatory phased product restrictions that are designed to reduce PFAS from diffuse sources, and these restrictions can be an important step in improving the safety of biosolids. Restrictions on added PFAS in common household products, such as dental floss and nonstick cookware, are common-sense ways to reduce human health risk, and the overall load on the nation's waterways and wastewater influents. The Draft Guidance should reference legislation in Maine, Minnesota, California, Colorado, and other states that have enacted restrictions, often in a phased manner to provide time for manufacturers to develop product alternatives.
- **State-Wide Bans on Land Application are Not Sustainable** – The Draft Guidance includes discussion of “Prohibitions on Land Application,” and references legislative bans on land application that were enacted in Maine and Connecticut. If similar bans were enacted more broadly in more states, it would further increase pressures on landfill capacity and disposal costs, with potentially drastic impacts on public ratepayers. When land application was banned in Maine, biosolids were temporarily transported to Canada for disposal. Legislative bans do not cause utilities to stop generating biosolids, but they do restrict a viable disposal pathway. Site-specific evaluations, testing, and source control to ensure safe disposal are preferable to state-wide bans on land application.
- **PFAS May be Reduced Through Reduction of Infiltration and Inflow** – In some cases, collection system flows from infiltration and inflow of stormwater or groundwater can lead to high PFAS loading to WRRFs. For example, when collection lines flow through a contaminated groundwater source, infiltration can lead to observably higher WRRFs influent concentrations. In these instances, it would be important for the utility to make targeted repairs to the collection system and/or for the groundwater contamination to be remediated. Targeting infiltration of contaminated groundwater could be much more cost effective than treating the entire influent flow to WRRFs.

- **Clarification of Source-Identification** - The Draft Guidance paragraph addressing “Source-identification, pollution prevention and monitoring” in the “Recommendations” section should be modified to avoid confusion on PFAS testing methodologies. The language currently refers to testing “sewage sludge” to determine the largest contributors of PFAS to the wastewater system. However, because “sewage sludge” is a product of overall wastewater treatment, the Draft Guidance could be interpreted as a recommendation to limit testing to the final portion of the process. EPA should modify this recommendation to be inclusive of the broader wastewater collection and treatment system, while also recognizing that each WRRF must be able to customize the monitoring process to meet their system and budgetary requirements. Additionally, the current test methods are expensive and often produce inconsistent results. There are known issues where waste streams with high solids concentrations, as typically found in wastewater influents, require either filtration or in-lab dilutions. If filtration is performed, the portion of PFAS in the solid fraction of the sample is not considered. In the case of dilutions, reporting levels become elevated and it is difficult or impossible to gain clarity about actual detectable levels of PFAS in the sample. One best practice for source identification should be a surveillance and monitoring effort of wastewater influent and potentially portions of a collection system rather than sampling biosolids or sewage sludge for PFAS. The Draft Guidance could also benefit from providing a standardized method for testing PFAS compounds and lab practices¹¹.
- **Finalize Appropriate Effluent Limitation Guidelines** – The Draft Guidance highlights some measures that states like Michigan are taking to reduce PFAS loading from industrial dischargers. In 2021, EPA published an Advance Notice of Proposed Rulemaking to solicit data and information regarding manufacturers of PFAS and the presence and treatment of PFAS in discharges from Organic Chemicals, Plastics and Synthetic Fibers industrial category. In addition, the EPA announced a rulemaking to address PFAS discharges from a subset of facilities in the Metal Finishing and Electroplating point source categories, and the development of ELGs and pretreatment standards for landfills that discharge their leachate is warranted and that it intends to revise the existing Landfills Point Source Category ELGs to address PFAS discharges in 2023. Removing PFAS at the source before it enters a WRRF is the most efficient and cost-effective method of control. **Therefore, WEF recommends that these previously announced actions be completed in a timely manner to provide greater certainty and reduce PFAS loading from industrial dischargers.**

¹¹ McBride, Samantha, et. al. “Per- and Polyfluoroalkyl Substances (PFAS): A Blueprint for Utility Managers–Strategies for the Next Five Years” (January 2022).

4. Several states have taken an approach to reducing PFAS concentrations in sewage sludge that is not risk-based but instead focuses on achieving practical reductions of PFOA and PFOS by addressing discharges from industrial facilities through the implementation of source identification and targeted source reduction. The EPA is seeking feedback and data demonstrating whether and how these approaches can reduce concentrations of PFOA and PFOS in biosolids and sewage sludge, and feedback and data on the effectiveness of these reductions in mitigating risks to public health.

- **Support for Tiered Management Approaches** - EPA should provide additional guidance for states to implement a tiered management approach. The Draft Guidance provides a general discussion of this approach but does not provide specific details for states or utilities wishing to use this framework. Examples of states that have taken this approach that can be used as a framework for other states are Michigan and Colorado. Michigan coupled its industrial source reduction efforts with a biosolids management system that requires increasingly strict biosolids management efforts as PFAS concentrations increase. Colorado requires PFAS sampling for 40 PFAS parameters in biosolids with the frequency being dependent on the dry weight per year, and response actions dependent on PFOS concentrations.
- **The Michigan Approach Should be Coupled with Residential and Commercial Source Control Where Necessary** - The approach used in Michigan to manage PFAS in biosolids has been proven to be very successful for utilities that had excessive influent PFAS loads from industrial users. This approach is likely to be successful in other states and communities as well when a significant portion of the PFAS load is attributable to industrial dischargers that are, or could be, permitted through pretreatment programs. However, several utilities in Colorado, Utah, as well as Michigan, have also conducted source assessments required by discharge permit conditions and found that influent PFAS loading is not primarily from industrial sources, but mostly from diffuse residential and commercial sources. In these situations, the approach used in Michigan may still be helpful as an initial step to identify relative loadings, but coupling industrial load reductions with additional source control measures via PFAS product restrictions, as mentioned above, or other means is likely to lead to more substantial reductions in wastewater influent and ultimately in biosolids.
- **Additional Funding is Needed to Research Biosolids in a Variety of Settings** - While the Michigan Department of Environment, Great Lakes, and Energy provides an excellent model for regulating PFAS in biosolids, EPA can and should fund more broad-based analysis of biosolids from other states to better characterize the range of PFAS concentrations in biosolids across the United States.

5. The EPA is seeking feedback on practices not included in the Draft Guidance that can reduce risk when land applying biosolids. Please provide any conditions, controls, monitoring, best management practices, or permitting practices and any examples of implementation from State, Tribal, or local programs.

- **Acknowledge the limitations of the Draft Risk Assessment** - The EPA notes in the Draft guidance that the Draft Risk Assessment is not representative of risks to the public and may lead to misconceptions among regulators, the public, and industry. Specifically, the 1 part per billion threshold is not intended as a regulatory limit. It is important that Draft Guidance direct legislators or regulatory bodies to fully consider the feasibility, costs, and capacity constraints of all potential management options prior to focusing on site-specific risks and management options that are tiered based on PFAS concentrations in biosolids would serve to reduce false assumptions about perceived risks and provide a framework to ground risk-based land application management decisions.

6. The EPA is seeking feedback on practices not included in the Draft Guidance that can reduce risk when surface disposing or incinerating sewage sludge contaminated with PFOA and PFOS. Please provide any conditions, controls, monitoring, best management practices, or permitting practices and any examples of implementation from State, Tribal, or local programs that the EPA should consider.

- **Leachate Management for Landfills** – Landfill leachate typically contains elevated PFAS concentrations. Landfills will can sequester up to 90 percent of PFAS in the landfill mass, depending on temperature, precipitation, long versus short chain versus precursor PFAS¹². Only some of the remainder is concentrated in landfill leachate, which is often discharged back to publicly owned treatment works. In order to manage risk from this, it is important to understand the volume of leachate, the mass of PFAS in the leachate, the ultimate destination of the leachate, and whether any technology will be employed to treat the PFAS in the leachate waste stream before going to a WRRF. Leachate flow rates are typically low relative to wastewater flow rates, and may be more conducive to separation technologies, such as foam fractionation, reverse osmosis, granular activated carbon, and ion exchange, as well as the ultimate concentrated residuals management. The Draft Guidance should include information about how to reduce PFAS from entering WRRFs from leachate, funding mechanisms to support landfill leachate treatment systems and WRRF PFAS removal technologies to prevent PFAS from entering the sewage sludge stream that would be used for land application and disposal.

¹² Tolaymat T, Robey N, Krause M, Larson J, Weitz K, Parvathikar S, Phelps L, Linak W, Burden S, Speth T, Krug J. A critical review of perfluoroalkyl and polyfluoroalkyl substances (PFAS) landfill disposal in the United States. *Journal of Science of the Total Environment* (December 20, 2023).

7. What next steps should the EPA take regarding the Draft Risk Assessment, and how would this help provide clarity about potential risks from use and disposal of biosolids and sewage sludge? Should the agency also reevaluate the underlying framework for the Draft Risk Assessment, and if so, how? What specific data or other information is available that may help inform the agency's potential next steps on the Draft Risk Assessment and other potential future actions related to PFAS in biosolids and sewage sludge?

- **Risk Management Framework** – The Draft Guidance should include a risk management framework that allows utilities and stakeholders to compare risk of all disposal options, not just land application. It should be based on real-world scenarios in order to account for site-specific risk and the EPA's acknowledgement that the "farm family" scenario was not representative. It should also include a cross-media approach that looks at impacts on water and air; assess risk separately for different exposure groups; consider all practices for biosolid management; and be scalable. Given the different stakeholders who may wish to use this framework, the Draft Guidance should also include comparative risks of fertilizer alternatives (e.g. commercial fertilizer or other alternatives) and a risk management plan.
- **EPA should provide context to the public about relative risks from common sources of PFAS** – The Draft Guidance should include information about the relative risks of other common sources (e.g. consumer products) to provide opportunities to reduce comprehensive exposure risk and inform public about the relative risk from biosolids. Given the ubiquitous nature of PFAS, ensuring that all sources are identified and managed will be an important tool in overall PFAS risk reduction.
- **EPA should utilize recent research and reinstate research that informs risk management** - Several peer reviewed studies on the fate of PFAS in land applied biosolids have been published since the draft risk assessment was performed, some of these funded by EPA. These should be included in the Draft Guidance to communicate up-to-date analysis of PFAS risk and risk management tools. Additionally, several studies were planned or underway that would have provided additional clarity for risk evaluation. EPA's support for critical research on PFAS fate and transport in a variety of land application settings is important to understand and mitigate risk.

8. Given that risks can depend on land use decisions (e.g., risks are different for growing textile crops than produce), should EPA evaluate policy options that would consider current and future land use practices (e.g., different land use or planted crops after a change in ownership)? What strategies should the EPA consider for protecting public health, future land uses, landowners, and property values?

- **Land Use Recommendations Should be Site-Specific and Grounded in Science** - Land application sites have a wide variety of soil types, depth to groundwater, crop types, biosolids application rates and incorporation methods, and other site-specific factors. Consideration of land management alternatives in the Draft Guidance is helpful because it recognizes that biosolids managers can be proactive to control risk based on land use

decisions, however, given the site-specific nature of land application, overly broad or overly general policy recommendations may not be useful. The Draft Guidance would benefit from additional information, such as compiled research of PFAS concentrations in soil and crops and impacts of different land management scenarios.

- **Research Accessibility** - EPA should continue to update stakeholders as additional research becomes available through a hosted clearinghouse hosted on EPA's website or a trade organization's website.

Appendix B: Specific Recommended Revisions

WEF provides the following specific proposed redlines (additions shown in double underline, deletions shown in ~~strikethrough~~).

- The Draft Guidance describes the differences in “sewage sludge” vs “biosolids” but then uses “sewage sludge” almost exclusively. Please revise “sewage sludge” to “biosolids” throughout the document where application as soil amendment or fertilizer is referenced (not disposal).
- Pg. 2, *Biosolids that meet specific quality criteria can also be bagged...*
- Pg. 2, *While the EPA estimates that biosolids are applied to less than 1% of America’s farmland, which limits the exposure and associated risk from biosolids to the vast majority of the population...*
- Pg. 2, *Land application is therefore a crucial and cost-effective management option for our nation’s utilities, especially in locations where landfill and incinerator capacity is limited. This option does not expose the general population to biosolids or associated risks.*
- Pg. 3, *PFOA and PFOS are two synthetic, man-made chemicals in the larger class of PFAS.*
- Pg. 3, *On January 14, 2025, the Biden EPA released a draft risk assessment (Draft Risk Assessment) aimed at understanding potential risks (i.e., the chance of harmful effects to humans) posed by PFOA and PFOS in sewage sludge- for a very specific, narrow subset of the population, the farm family, but not the broader public.*
- Pg. 4, *Reuse of sewage sludge (rather than disposal in a landfill or incineration) is a viable option for treatment works and the agricultural community. It is often preferred by treatment works ~~because it tends to be less costly and provides a benefit as a soil amendment~~ that seek sustainable solutions that minimize burden on their ratepayers while protecting public health and the environment. The current text implies that treatment works choose land app/reuse just to reduce their own costs. However, this management practice reduces the cost burden on the actual ratepayers who pay for wastewater treatment and biosolids management.*
- Pg. 5, *Some approaches states have taken include source reduction and pretreatment programs, prohibitions on the land application of sewage sludge in certain areas, or industrially impacted biosolids with PFAS values that exceed specific thresholds, and permit monitoring requirements to better understand the extent of PFAS in sewage sludge.*

Pg. 7, Maine’s ban on land application has led to significant issues and cost increases for utilities in Maine where landfill capacity is limited and there are no in-state sewage sludge incinerators.

These impacts led the Maine DEP Commissioner to provide a warning for other states considering similar land app bans to have actual viable options other than land app before the management practice is banned.