October 5, 2026

Tess Richman
Engineering and Science Division
Office of Water (4504-T)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave, NW
Washington, DC 20460
Submitted via www.regulations.gov

RE: Agricultural Group Comments Regarding Draft Guidance for Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Biosolids; Establishment of a Public Docket; Request for Feedback, Docket ID No. EPA-HQ-OW-2026-2509

Dear Ms. Richman:

The undersigned national agricultural organizations appreciate the opportunity to submit these comments on the Draft Guidance for Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Biosolids ("Draft Guidance").

Our organizations represent the overwhelming majority of the farmers and ranchers in the United States raising row crops, poultry and livestock. The livelihood of farmers and ranchers depends on healthy soil and groundwater. For that reason, we support EPA's underlying goal of addressing widespread contamination of the environment caused by historic use of PFOA and PFOS. As passive receivers of PFAS chemicals, farmers and ranchers want to be fully aware of what is in the biosolids that they are accepting, as they want to ensure that any land application is not going to contribute to contamination of their land. We view the Draft Guidance as an important step towards providing more information to landowners and allow farmers and ranchers to make more informed decisions.

Because of the complex, technical nature of the subject matter herein, the organizations listed below engaged with qualified experts to provide a response to the Draft Guidance. Please see **Attachment 1** hereto entitled "Technical Information to Respond to Docket ID No. EPA-HQ-OW-2026-2509, Draft Guidance Memorandum, 'Draft Guidance for Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Biosolids'" We respectfully request that EPA consider the information in Attachment 1 as EPA proceeds with finalizing the Draft Guidance.

The Draft Guidance provides important context for consideration of PFOA and PFOS in biosolids. EPA identifies several limitations and uncertainties associated with the Draft Sewage Sludge Risk Assessment, including the absence of nationally representative information on PFOA and PFOS occurrence in sewage sludge and uncertainty regarding the frequency with which the higher-exposure scenarios evaluated in the assessment occur in practice. EPA also clarified that the 1 ppb concentration used in the assessment represented a modeling starting point and was not intended to establish a generally applicable "safe level" for PFOA or PFOS in sewage sludge.

These considerations highlight the importance of evaluating potential risks in the context of actual biosolids concentrations, site conditions, agricultural uses, exposure pathways, and management practices. Available information on current agricultural practices, state monitoring and management programs, and the occurrence and environmental behavior of PFOA and PFOS can help inform development of practical approaches that address circumstances with greater potential for exposure while preserving appropriate beneficial use of biosolids.

The information presented in Attachment 1 is particularly relevant to EPA's request for feedback on agricultural land application practices, source identification and reduction, additional risk management measures, the Draft Sewage Sludge Risk Assessment, and current and future land-use issues.

Overall, Attachment 1 highlights important considerations for EPA, including:

- Nationally representative information on PFOA and PFOS concentrations in biosolids remains limited.
- Available information indicates that PFOA and PFOS occurrence, environmental transport and potential exposure vary according to source, site conditions, compound characteristics, crop or land use, and other pathway-specific factors.
- Survey respondents reported that biosolids use is frequently limited in extent and that a range of regulatory controls and management practices are incorporated into land-application decisions.
- Federal, state and local regulatory programs provide an existing management framework, while evolving state PFAS programs demonstrate a range of approaches involving monitoring, source identification and reduction, concentration-based management and site-specific controls.
- These considerations support development of a risk management approach that distinguishes circumstances with greater potential for exposure and allows management measures to be tailored accordingly.
- Recent U.S. food-monitoring data show infrequent PFAS detections and low concentrations, if present at all, in the sampled commercial food supply.

Thank you for considering our feedback. Should you have any questions, please do not hesitate to contact Courtney Briggs at CourtneyB@fb.org.

Sincerely,

American Farm Bureau Federation
National Cattleman's Beef Association
National Pork Producers Council
United Egg Producers
U.S. Poultry & Egg Association

Exponent®

Technical Information to Respond to Docket ID No. EPA-HQ-OW-2026-2509, Draft Guidance Memorandum, "Draft Guidance for Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Biosolids"

Exponent, Inc. (Exponent) conducted these analyses on behalf of the American Farm Bureau Federation, the U.S. Poultry and Egg Association, the National Cattleman's Beef Association, the National Pork Producers, and the United Egg Producers to identify key data necessary to better understand potential risks related to land applied biosolid applications across various crops and food commodities in the United States and to support the U.S. Environmental Protection Agency (EPA) request for information per docket ID no. EPA-HQ-OW-2026-2509, Draft Guidance Memorandum, "Draft Guidance for Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Biosolids."

Exponent is an engineering and scientific consulting firm that brings together more than 90 technical disciplines and over 950 consultants to help clients solve complex technical, regulatory, and business challenges across a broad range of industries. Exponent provides multidisciplinary per- and polyfluoroalkyl substance (PFAS) expertise spanning toxicology, exposure science, environmental fate and transport, risk assessment, regulatory compliance, product stewardship, and remediation support. Exponent's scientists and engineers help clients evaluate PFAS-related risks, address regulatory and technical challenges, and develop science-based solutions across the product and environmental lifecycle. In this report, Exponent relied on information provided by the members of the stakeholder groups listed above and publicly available technical information, as referenced herein. The data summarized in this report are based on information available as of the date of this report.

1 Introduction and Executive Summary

To assist the EPA in "better understanding potential risks from PFOA and PFOS in biosolids and sewage sludge and help inform next steps," the agency requested feedback on specific questions. Responses to these questions, together with additional information concerning biosolids use in U.S. agriculture and available approaches for reducing potential risks associated with PFOA and PFOS in biosolids, are provided in the following sections.

A survey conducted of American Farm Bureau Federation (AFBF) members related to their use of biosolids is referenced throughout these sections. A copy of the survey questions is included in Attachment A. This survey included ~25 questions related to farming operations and use of biosolids. The results characterize the responding operations and should not necessarily be interpreted as nationally representative. The draft currently reports 97 respondents for the use calculation, 46 biosolids users, and approximately 100 total respondents.

The current state-of-the-science concerning PFAS occurrence in biosolids, environmental transport and biological uptake is also summarized. Together, the industry-specific survey results and relevant scientific information can help EPA ensure that the final guidance is grounded in the best available evidence and appropriately addresses potential risks associated with land application of biosolids.

Overall, the survey and information highlight important considerations for EPA, including:

- Biosolids use reported by survey respondents indicates limited use and uses that are targeted to selected acreage and crop categories.
- Respondents reported existing regulatory controls and management practices that already address runoff, access, incorporation, and sensitive locations.
- Recent U.S. food-monitoring data show infrequent PFAS detections and low concentrations, if present at all, in the sampled commercial food supply.
- PFAS occurrence and transport depend on site, source, compound, crop, and species-specific factors, supporting a flexible, monitoring-informed approach.

2 Farming Industry Data and Best Practices

2.1 Potential agricultural-based exposure pathways for PFOA and PFOS are constrained by both the limited extent and limited crop types associated with biosolids application.

Limited extent of biosolids application: According to EPA, biosolids are applied to less than 1% of U.S. farmland annually, although nearly 60% of sewage sludge generated nationwide is managed through land application-related pathways (US EPA, 2026). Based on recent reports submitted to EPA, approximately 31.5% of sewage sludge is applied to agricultural land, 20% is distributed or marketed to the public, 1% is applied to reclamation sites, and 7% is applied to other lands such as forestry (silviculture) (US EPA, 2026).

Fewer than half of survey respondents reported current biosolids use. Many farm respondents reported no current use, with several respondents indicating that they had stopped or suspended application.

Among the 48% (46/97) of respondents reporting biosolids use, the most common application acreage categories reported were less than 10%, 10–25%, and 25–50% of available agricultural acreage (see Table 1). Individual operations also reported applications limited to selected areas, including application to selected areas ranging from approximately 20 to 350 acres, rather than to the entire farm. Application was often intermittent, with respondents reporting frequencies of every two to three years, every three to five years, every five years, less frequently, or once only, although some operations applied biosolids annually.

Table 1 Share of Agricultural Acreage Receiving Biosolids Among Biosolids Users (n = 46)

Share of Agricultural Acreage Receiving Biosolids	**Number of Respondents**	**% of Biosolids Users**
Less than 10%	5	10.9%
10–25%	17	37.0%
25–50%	12	26.1%
50–75%	5	10.9%
More than 75%	6	13.0%
Not reported	1	2.2%

Among the operations represented in the survey, a majority reported that they do not currently use biosolids. Among respondents who reported biosolids use, application was generally limited to selected acreage. When biosolids were used, respondents reported that application often occurred intermittently rather than annually These current practices are consistent with EPA's estimate that biosolids are applied to less than 1% of U.S. farmland annually and indicate that, among responding operations using biosolids, application is limited in acreage and frequency.

Biosolids application is limited to certain crop and land-use categories: Land application of biosolids occurs only for select crop types. The survey responses indicate that biosolid land application, when used, is only used on corn, hay, forage, pasture, soybeans, wheat, and other small grains. Respondents specifically referenced corn, including field corn, corn grain, corn silage, and rotational fields planted to corn, as well as hay fields, grass pasture, forage, and wheat stubble (Table 2). Less frequently reported uses included tobacco, grass-seed acreage, general grain fields, and timber tracts, as shown in Table 2.

Importantly, respondents identified several crop and land-use categories where biosolids are intentionally avoided, including fruit and vegetable acreage, specialty crops, snap beans, fruit crops, certain soybean fields, and acreage associated with direct-to-consumer markets or purchaser restrictions. Overall, the responses suggest that producers who use biosolids tend to avoid specialty crops, fresh produce, and production systems where market acceptance, processor requirements, or concerns regarding contamination may influence application decisions. Biosolids use was reported primarily for field crops, including grain, feed and forage crops, as well as certain fiber or industrial land uses.

Table 2 Crop or Land-Use Types Receiving Biosolids (n=46)

Crop or Land-Use Type	Number of Respondents	% of Biosolids Users
Corn	27	58.7%
Hay	17	37.0%
Pasture	10	21.7%
Soybeans	8	17.4%
Wheat	8	17.4%
Small grains (other than wheat)	3	6.5%
General grain fields	2	4.3%
Forage (other than hay/pasture)	4	8.7%
Tobacco	1	2.2%

Grass-seed acreage	1	2.2%
Timber tracts	1	2.2%

Note: Responses such as "all" or "all listed" were resolved using that respondent's listed crops. Because one respondent could report multiple crop types, the categories overlap and percentages do not sum to 100%.

2.2 The agricultural industry already complies with regulatory requirements and implements best management practices to reduce potential risks associated with biosolids application

2.2.1 State and local regulations influence biosolids application

Based on the survey responses, state and local regulatory requirements were consistently described as an important factor influencing both whether biosolids are used and how they are managed. Respondents indicated that state and local permitting requirements affect field selection and application practices. Permit conditions were also frequently cited as a basis for determining application rates alongside crop nutrient needs and soil test results. Several producers noted that they work closely with biosolids providers or contractors to ensure compliance with state regulations and permitting requirements, while others emphasized following county, state, or local restrictions regarding incorporation timing, public access, runoff prevention, and recordkeeping. A recurring theme was that existing regulatory requirements provide the protocol for biosolids management, but many respondents reported implementing more conservative practices than required by permits, particularly in response to concerns about PFAS, contaminants, public perception, liability, and potential future regulatory changes. Overall, the responses suggest that permitting and regulatory compliance are central considerations in biosolids management decisions, but that uncertainty surrounding emerging contaminants is leading some producers to adopt additional precautions beyond existing regulatory requirements.

2.2.2 Best management practices currently implemented

To further minimize potential risks associated with using biosolids as soil amendments or fertilizers, the agricultural industry can implement a range of best management practices beyond regulatory compliance. These include sourcing biosolids from treatment facilities with technically proficient industrial pretreatment programs, ensuring that application

rates are based on agronomic nutrient needs,[1] incorporating biosolids into soil when feasible to reduce runoff and direct contact, adhering to required setbacks from water bodies and sensitive receptors, documenting application histories, and prioritizing applications to crops and land uses with lower potential for direct human exposure. Additional measures such as grower education programs, transparent communication with stakeholders, and voluntary risk-based screening programs can further support responsible biosolids management while preserving the agronomic benefits of nutrient recycling and soil improvement. As discussed further in this section, survey respondents reported implementing many of these practices when applying biosolids.

Responses to survey questions related to best management practices and permitting indicate that producers who use biosolids already implement a variety of best management practices (Table 3). Common management controls intended to minimize off-site movement and protect water resources and neighboring properties included buffer zones, setback distances, runoff controls, and timing restrictions. Many respondents also reported incorporating biosolids into the soil shortly after application through tillage, disking, or injection, often within the same day or within 24 hours of application. These practices are intended to reduce odor, limit runoff potential, minimize public exposure, and improve nutrient retention.

Table 3 Management Controls Reported by Biosolids Users (n=46)

Management control	Count	Percent
Setback distances	36	78%
Buffer zones	33	72%
Runoff controls	20	43%
Timing restrictions	20	43%
Incorporation through tillage, disking, injection, or other soil-mixing methods	31	67%
Tillage or disking specifically	27	59%
Injection or knife-in application	5	11%
Additional management practices beyond regulatory requirements	6	13%
Reported suspending or discontinuing biosolids use	5	11%
Additional precautions in response to emerging concerns (PFAS, odors, public perception, etc.)	21	46%*

[1] Under EPA's Part 503 biosolids regulations and associated nutrient management requirements, biosolids are typically applied based on agronomic nutrient needs determined through soil testing and nutrient management planning. By matching application rates to crop nutrient requirements, these practices help avoid overapplication of biosolids. (40 CFR § 503.11(e); 40 CFR § 503.14(d)(1))

*21 biosolids users answered "Yes" when asked whether they had adopted practices in response to emerging concerns (PFAS, pathogens, odors, public perception, nutrient management).

Some respondents reported additional measures, such as applying biosolids at less than the maximum agronomic rate, extending livestock withdrawal periods from the required minimum to 90–120 days,[2] requiring documentation addressing PFAS before application, incorporating biosolids more rapidly to reduce odor and exposure concerns, restricting public access to treated fields, and discontinuing biosolids use altogether until additional information or regulatory updates become available. Respondents also described avoiding or restricting applications near residences and populated areas, domestic wells and well-recharge areas, streams, ponds, waterways, drainage ditches and tile outlets, as well as steep slopes, sinkholes, and other locations with elevated runoff or water-quality concerns.

2.3 Current biosolids regulations support best practices to reduce human health risk.

Existing biosolids regulatory frameworks already support a range of requirements and best management practices that reduce potential human health risks from biosolids in general and that help address any potential additional concerns related to PFAS. Through source-control programs, monitoring requirements, agronomic land application rates based on crop nutrient needs, and state-specific risk management measures, regulators can identify and manage higher-risk scenarios while tailoring actions to local conditions and exposure pathways. These approaches provide an established foundation for managing PFAS in biosolids.

2.3.1 Biosolids regulations under EPA's Part 503 Rule

Current federal requirements for the land application of sewage sludge (biosolids) are established under EPA's Part 503 Rule (40 CFR Part 503), which is designed to protect human health and the environment through a combination of pollutant limits, pathogen

[2] Livestock withdrawal periods refer to the minimum amount of time that grazing animals must be kept off land following biosolids application. Under EPA's existing part 503 regulations, waiting periods are intended to reduce exposure to pathogens while allowing biosolids to be incorporated into the soil. Although these requirements were not developed specifically for PFAS, some survey respondents reported voluntarily extending withdrawal periods from the regulatory minimum to 90-120 days as an additional precautionary measure. (40 CFR § 503.32(b)(5); EPA. *A Plain English Guide to the EPA Part 503 Biosolids Rule*, EPA 832-R-93-003, Chapter 4.)

reduction and vector attraction reduction requirements, management practices, and site restrictions. Biosolids applied to land must meet specified limits for regulated metals and satisfy treatment standards intended to reduce pathogens and minimize disease transmission risks.

The Part 503 Rule also includes multiple exposure-control measures that limit human and animal contact following land application. Food, feed, and fiber crops are generally subject to a minimum 30-day harvest restriction after biosolids application. Additional waiting periods apply to food crops based on the potential for contact between the edible portion and the sludge-soil mixture. Crops with edible portions above ground that contact the soil may not be harvested for 14 months, while crops with edible portions below ground are subject to restrictions of 20 or 38 months, depending on whether and when the biosolids are incorporated into the soil. Livestock grazing is prohibited for 30 days following application, and turf intended for high public-contact uses may not be harvested for one year.

The regulations further restrict public access to application sites, requiring waiting periods of 30 days for sites with low public exposure potential and one year for sites with high public exposure potential. In addition, biosolids may not be applied in a manner that causes runoff, and site management practices are intended to minimize off-site transport and exposure. Collectively, these requirements establish multiple barriers between biosolids application and potential human, livestock, and environmental exposure pathways, providing multiple existing risk-management controls for the beneficial use of biosolids on agricultural and other lands.

These existing federal requirements demonstrate that the current biosolids regulatory framework already incorporates multiple, layered controls designed to reduce direct and indirect exposure, supporting site-specific risk management and best management practices.

2.3.2 State regulatory efforts to address PFAS in biosolids

State responses to PFAS in biosolids continue to evolve rapidly, with many jurisdictions developing management frameworks that reflect local wastewater sources, agricultural practices, disposal capacity, and environmental priorities (See Appendix B). States have adopted a range of approaches, including targeted monitoring programs, source-control initiatives, concentration-based management thresholds, and, in some cases, outright restrictions on land application.

A notable trend is the emphasis on identifying and reducing PFAS inputs at their source rather than relying solely on end-of-pipe concentration limits. Programs in states such as Michigan, Colorado, Wisconsin, Minnesota, Maryland, and Virginia use monitoring data to drive industrial pretreatment, source investigations, and other locally tailored risk-management measures. These approaches recognize that PFAS occurrence, wastewater influent characteristics, and biosolids management practices can differ substantially among states and facilities.

At the same time, many states are still in the process of collecting occurrence data through biosolids monitoring programs. California, Washington, Rhode Island, Massachusetts, Vermont, and New Hampshire have focused primarily on characterizing PFAS concentrations and understanding local conditions before establishing numeric limits. This growing body of state-specific data is helping regulators develop management strategies that are responsive to regional circumstances. EPA should consider these state actions, the collected data (described further below), and the importance of regional specifics that may influence the potential risks associated with PFAS in biosolids.

3 Considerations for Assessing PFAS in the US Food Supply

3.1 Available data suggests PFOS and PFOA concentrations in biosolids vary significantly across locations and treatment systems

Available state and facility data indicate that reported PFOA and PFOS concentrations vary and that these compounds are not detected at elevated concentrations in all samples. The EPA has not conducted a national survey to document PFAS occurrence in sewage sludge and no comprehensive, representative data on the occurrence of PFOA and PFOS in biosolids is otherwise available. However, states have implemented heterogeneous monitoring programs. These differ in their regulatory basis, ranging from legislation and agency interim-strategy documents to requirements embedded in regulations or NPDES permits. They also differ in the PFAS analytes targeted and the resolution of testing (some programs address broader analytical lists of PFAS, whereas others focus on PFOA and PFOS), the sample location (point of generation versus point of use), the sampling frequency (annual, quarterly, tonnage-based, or based on multiple facility-specific factors), and reporting requirements (NACWA, 2025a). Maine was among the first states to require biosolids-specific PFAS testing, in 2019, and California, Colorado, Minnesota, New Hampshire, Connecticut, Massachusetts, and Vermont have since initiated their own

monitoring programs (NACWA, 2025a, 2025b). EPA should consider and, where appropriate, incorporate data generated through these state monitoring programs.

Existing studies have detected PFOS and PFOA at varying levels in sewage sludge. Overall, PFOS is typically found more often and at higher concentrations than PFOA. At the national scale, the primary available benchmark remains significantly outdated. Venkatesan and Halden (2013) analyzed archived biosolids from EPA's 2001 National Sewage Sludge Survey (NSSS), which found average concentrations of 34 ppb PFOA and 403 ppb PFOS. As cited in EPA's recent draft risk assessment (2025), multi-state and treatment-process studies report substantially lower values—for example, PFOA of roughly 0.8–8 ppb and PFOS of roughly 0.4–150 ppb across seven WWTPs (Schaefer et al., 2022), and PFOA of about 1–21 ppb and PFOS of about 1–41 ppb before and after treatment at Florida facilities (Thompson et al., 2023) (US EPA, 2025). Notably, NACWA has recently reported that quantifiable PFOS concentrations tend to fall within an order of magnitude across facilities despite differing geographic locations and upstream sources (NACWA, 2025b).

There is a clear need for national sewage surveys that provide a current, comprehensive, and nationally representative sample of concentrations of PFOA, PFOS, and their precursors, spanning the diversity of biosolids production processes and inputs. Toward this effort, EPA is reportedly planning the next NSSS to document PFAS concentrations in the influent, effluent, and sewage sludge of POTWs, as well as their industrial and domestic sources (US EPA, 2025). These data are important to inform any future regulation of PFAS in biosolids.

3.2 Recent U.S. food-monitoring data show infrequent PFAS detections and generally low measured concentrations in the sampled commercial food supply

The weight of evidence from the US Food and Drug Administration (FDA) Total Diet Study (TDS) data, US Department of Agriculture (USDA) sampling, retail market-basket studies, and broader reviews indicates that PFAS occurrence in the general food supply is concentrated in seafood and, to a lesser extent, other animal-derived foods. Retail fruits and vegetables generally contain either non-detectable PFAS concentrations or low concentrations near analytical detection limits.

The most comprehensive data available is from national and regional surveys overseen by the FDA as part of its Total Diet Study (TDS), which in a December 2025 Constituent

Update stated: “It is important to note that to date no PFAS have been detected in 95% (1,290 out of 1,352) of the fresh and processed foods tested from the TDS” (US FDA, 2025a). Examining composite samples of nationally distributed foods across brands, 98.2% (164/167) had no detectable PFAS (US FDA, 2025b).

The FDA TDS sampling shows that PFOA and PFOS were not detected in most samples analyzed from most fresh produce and commercially processed foods sampled in the US. FDA has conducted regional and national sampling efforts between 2019 and 2024 to “help the FDA to identify foods that may be at a higher risk for PFAS contamination” (US FDA, 2025b). Repeated FDA supermarket surveys of fresh produce detected either no or only traces of PFAS in fresh produce. PFAS were more commonly detected in shellfish, seafood, meat, and some ultra-processed foods, however these were all trace level detections below the analytical level of quantification (LOQ); targeted testing of these foods only reported detections above trace levels in seafood samples (FDA, 2025b).

A recent USDA Agricultural Research Service (ARS) publication describes retail foods (meat, poultry, catfish, and eggs collected from U.S. supermarkets in 2024, including 86 food samples tested for 74 PFAS (Sapozhnikova and Stroski, 2025). This sampling found no detectable PFAS in eggs, chicken, or pork products tested. While PFOS was detected in beef samples at 0.057 - 0.145 ng/g, USDA concluded that these detections presented low risk to consumers based on comparisons with established tolerable intakes.

A published study related to the FDA TDS sampling reiterated that PFOA and PFOS in processed foods is not widespread. Genualdi et al. (2022) purchased 172 processed foods items from a grocery store in Kansas. Of the 172 foods analyzed, among the PFAS analyzed, PFOS was detected only in canned tuna, frozen fish sticks, and protein powder at concentrations below 150 ppt with no detects in any other foods tested.

In summary, PFOA and PFOS were detected infrequently in the food datasets reviewed. The potential for PFOA and PFOS concentrations in food varies with environmental conditions, proximity to point sources, species-specific bioaccumulation, and management practices (Death et al. 2021; Dimitrakopoulou et al. 2024; Souza and Domingo 2025; Torres and De la Torre 2023). Globally, a major review of over 150,000 data points from food safety agencies and peer-reviewed publications found no quantifiable PFAS in the majority of food product categories examined (Dimitrakopoulou et al. 2024). Notably, prevalence was 0.2% or lower for plant-based categories, including cereals & grains, vegetables, and fruits, suggesting that even imported food may have low levels of PFAS, depending on origin and food commodity.

Overall, available evidence indicates that although PFOA and PFOS can enter the food chain through multiple environmental pathways, detectable concentrations in most food commodities are uncommon and are generally highest in fish and seafood. Food residue levels reflect the combined influence of numerous exposure sources, environmental conditions, and food-specific factors, making it difficult to attribute concentrations in food to specific sources without site-specific characterization and linked environmental monitoring data.

Importantly, these data indicate that consumer food in the U.S. has very low frequency of PFAS detections, and very low concentrations found in the general food supply, suggesting that most foods from the general commercial food supply are unlikely to be major sources PFOA and PFOS.

3.3 PFOA and PFOS uptake is highly variable; therefore, risk-management strategies should account for site conditions and food-commodity characteristics

The available evidence indicates that PFOA and PFOS can move from contaminated environmental media into food, but food concentrations cannot yet be predicted reliably from biosolids concentrations alone. Key parameters include the incremental contribution of biosolids relative to other sources, PFAS movement from biosolids (if present) into soil, water, and feed, PFAS precursor transformation, and food species-specific uptake, partitioning, and clearance.

3.3.1 Limited PFAS accumulation in plant-based foods

Plants primarily acquire PFAS through contaminated soil, irrigation water, biosolids, or atmospheric deposition. Once absorbed by roots, PFAS can be transported through the transpiration stream to aboveground tissues; however, accumulation patterns vary considerably depending on PFAS chain length, plant species, and the characteristics of the growing environment (Ghisi et al. 2019; Brunn et al. 2023).

The extent of PFAS translocation within plants is strongly influenced by carbon-chain length and functional group chemistry. Short-chain PFAS generally exhibit greater mobility and are more readily transferred from roots to shoots and leaves, whereas long-chain compounds such as PFOA and PFOS are more strongly retained in root tissues; It is hypothesized that this is because of their greater affinity for some soil organic matter and plant root surfaces (Ghisi et al. 2019; Yang et al. 2023). As a result, root and vegetative tissues often contain higher concentrations of long-chain PFAS than reproductive tissues (fruit/seeds). Transfer to fruits, seeds, and grains is generally limited, leading to relatively

low concentrations in many commercially important food crops such as corn, wheat, soybeans, and fruiting vegetables (Yang et al. 2023; Brunn et al. 2023).

3.3.2 Variable accumulation potential of PFAS in animal-derived foods

PFAS occurrence in seafood and meat products is influenced by species-specific physiology, trophic level, and environmental exposure. Concentrations of PFOA and PFOS are generally highest in fish and seafood and lower in meat, eggs, and other animal products (Genualdi et al. 2022). Freshwater organisms often exhibit higher total PFAS concentrations than marine species, likely reflecting differences in contaminant sources and environmental fate (Torres and De la Torre 2023). Similarly, carnivorous fish tend to accumulate higher PFAS concentrations than omnivorous species because PFAS biomagnify through aquatic food webs and are retained in protein-rich tissues (Souza and Domingo 2025). Livestock products generally contain lower PFAS concentrations than wild fish and game, although available data remain limited for many hunted species (Death et al. 2021; Souza and Domingo 2025; Torres and De la Torre 2023).

The distribution of PFAS in animal-derived foods is largely controlled by compound-specific physicochemical properties and tissue affinity. Unlike many persistent organic pollutants that preferentially accumulate in fat, PFAS readily bind to proteins and are therefore concentrated in blood, liver, kidney, and other highly perfused tissues rather than adipose tissue or muscle (Death et al. 2021; Souza and Domingo 2025; Torres and De la Torre 2023). Long-chain PFAS, particularly PFOA and PFOS, are of greatest concern because of their environmental persistence and bioaccumulative potential. PFOS is generally the predominant PFAS detected in vertebrate animal tissues, including fish, livestock, poultry, and wildlife, whereas PFOA may occur at higher concentrations in some shellfish species, particularly clams (Death et al. 2021; Souza and Domingo 2025; Torres and De la Torre 2023; Guo et al. 2019). These characteristics help explain the predominance of PFOS and PFOA among PFAS detected in animal-derived foods worldwide.

Species-specific physiological processes influence PFAS retention, elimination, and transfer into food products. Following uptake, PFAS may be retained in tissues, excreted, transferred into milk or eggs, or formed through biotransformation of precursor compounds. PFOA is generally eliminated more readily than PFOS and therefore accumulates to a lesser extent in many species (Death et al. 2021; Dimitrakopoulou et al. 2024). Poultry may also eliminate certain PFAS more efficiently than mammals, potentially contributing to lower tissue concentrations, although transfer into eggs has been documented under some exposure conditions. Differences in metabolism, clearance rates, tissue partitioning, and product transfer result in substantial variability among

species, meaning that PFAS concentrations in food reflect the combined effects of exposure history, compound-specific behavior, and biological characteristics.

Livestock and poultry may be exposed to PFAS through contaminated water, forage, feed, soil ingestion, dust, bedding materials, and other environmental media. Relevant sources include industrial and wastewater discharges, runoff from historical use of aqueous film-forming foam (AFFF), contaminated irrigation water, fish-derived feed ingredients, and recycled-paper bedding (Death et al. 2021; Dimitrakopoulou et al. 2024). Proximity to fluorochemical manufacturing facilities, airports, military installations, landfills, and other point sources can influence multiple exposure pathways simultaneously.

Elevated PFAS concentrations reported in wild fish and game further demonstrate that food-chain exposure can occur independently of agricultural activities and biosolids application (Death et al. 2021; Souza and Domingo 2025). Biosolids therefore represent only one of several potential upstream contributors to PFAS exposure in food, and their relative importance must be evaluated within the broader context of regional environmental contamination and overlapping exposure sources.

4 Specific Comments on EPA's Draft Guidance

This section addresses specific content within EPA's Draft Guidance and several of the questions identified in the agency's July 2026 Federal Register notice, including potential land application controls, monitoring approaches, and considerations related to current and future land use. The issues discussed below highlight the need for clear and implementable guidance for agricultural producers, biosolids managers, and state and local regulators.

For example, the recommendation to avoid land application of biosolids near fishable waters, lakes, reservoirs used as drinking water sources, or areas with elevated groundwater vulnerability raises important practical questions regarding how these locations would be identified and what constitutes being "near" such resources. The potential for PFOS and PFOA migration from land-applied biosolids is highly site-specific and depends on numerous factors, including but not limited to soil permeability, depth to groundwater, bedrock geology, precipitation and runoff patterns, slope and topography, soil organic carbon content, biosolids PFAS concentrations, historical loading, groundwater use practices, and the presence of PFAS precursors.

Because these factors vary substantially across locations, a fixed setback distance may not accurately reflect actual risk. Conversely, developing site-specific hydrogeologic transport models for every application site could be prohibitively complex and costly. Recent studies have demonstrated that multiple PFAS sources and watershed-specific characteristics influence PFAS occurrence in surface water and groundwater, making it difficult to attribute impacts solely to biosolids application. Where available, environmental monitoring data generated through existing state and local programs can provide useful information on site-specific conditions and potential impacts and can help inform appropriate management responses.

Additionally, the recommendation to avoid land application in areas where children under five years of age currently have access, or may have access in the future, would also benefit from further clarification. It is unclear how future access would be determined, what exposure scenarios are being considered, and why five years of age was selected as the cutoff. Agricultural fields receiving biosolids are generally subject to existing access restrictions following application, and many state biosolids programs already include management practices intended to minimize public contact. Additional explanation of the exposure pathways, risk rationale, and implementation criteria would improve consistency and transparency.

Finally, the recommendation to prioritize biosolid land application on farms producing lower-risk crops (i.e., not meant for human consumption) such as grain, fiber crops, or corn for ethanol is generally consistent with existing biosolids management practices and state regulatory requirements. Many state programs already restrict or limit biosolids application in sensitive settings, including areas near drinking water resources, and agricultural producers routinely consider crop type when making land application decisions. Consequently, this recommendation largely reflects established risk-management practices rather than a new control measure.

Overall, the effectiveness of any biosolid guidance is likely to depend on local environmental conditions and existing management practices. A flexible, data-driven framework that incorporates environmental monitoring and site-specific considerations may be more effective than broadly applied exclusion criteria that do not account for differences in hydrogeology, watershed characteristics, or PFAS transport potential.

5 Conclusion

Available information supports a risk-management approach for PFOA and PFOS in biosolids that builds on existing regulatory requirements and agricultural management practices while accounting for substantial variability among facilities, application sites, environmental settings, and agricultural uses. Federal requirements under 40 CFR Part 503, state and local permitting programs, nutrient-management planning, source-control programs, and established practices such as setbacks, runoff controls, application-rate limits, soil incorporation, access restrictions, and crop-selection considerations already provide an operational framework for managing biosolids. Respondents participating in the cited AFBF survey also reported adopting additional precautions in response to concerns regarding PFAS and other emerging issues.

At the same time, the available evidence does not support assuming that PFOA and PFOS concentrations, environmental transport, or food-chain transfer will be uniform across biosolids sources or land-application sites. Nationally representative occurrence data for PFOA, PFOS, and relevant precursors in biosolids remain limited. In addition, movement from biosolids into soil, water, plants, livestock, and food products depends on multiple source-, site-, compound-, and species-specific factors. Concentrations measured in food or environmental media also may reflect multiple contributing sources and generally cannot be attributed to biosolids application without linked, site-specific information. These limitations should be addressed before the Draft Risk Assessment is used as a basis for broadly applicable risk management recommendations.

Accordingly, EPA's final guidance should provide clear, implementable criteria while preserving sufficient flexibility to account for local conditions and existing state programs. Broad exclusion criteria should be supported by clearly described exposure pathways and risk rationales and should define key implementation terms, including proximity to sensitive waters, groundwater vulnerability, and potential future access by young children. Where appropriate, source investigation, biosolids characterization, environmental monitoring, and tiered management responses may provide a more informative basis for decision-making than uniform assumptions or fixed restrictions that do not account for differences in hydrogeology, PFAS sources, crop type, land use, and existing management controls.

Overall, the objective of reducing potential risks associated with PFOA and PFOS in biosolids is most likely to be achieved through a flexible, data-driven framework that integrates source control, representative monitoring, site-specific evaluation, existing regulatory protections, and practical agricultural best management practices. Continued collection of nationally representative biosolids-occurrence data and evaluation of environmental transport and food-chain uptake will be important for refining future guidance and identifying circumstances that warrant additional management measures.

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Appendix A. Survey Sent to American Farm Bureau Federation Members

Exponent®

TO:	Members of the U.S. Poultry & Egg Association, American Farm Bureau Federation, National Cattleman's Beef Association, National Pork Producers, United Egg Producers
FROM:	Exponent, Inc.
DATE:	August 10, 2026
SUBJECT:	Survey Questions for American Farm Bureau Federation Members Related to EPA's **Docket ID No. EPA-HQ-OW-2026-2509** Draft Guidance Memorandum, "Draft Guidance for Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Biosolids"

REQUEST: We request responses to the questions below to support the farm and agriculture industry's response to the U.S. Environmental Protection Agency (EPA) request for information to inform the "Draft Guidance for Reducing Risk from Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) in Biosolids".[3][4]

WHY: EPA states that the goal of their questions is to "assist the EPA in better understanding potential risks from PFOA and PFOS in biosolids and sewage sludge" and to "help inform any final guidance on this topic and potential future administrative actions." The farm and

[3] https://www.federalregister.gov/documents/2026/07/06/2026-13615/draft-guidance-for-reducing-risk-from-perfluorooctanoic-acid-pfoa-and-perfluorooctane-sulfonic-acid

[4] For the purposes of this survey, in alignment with EPA's draft guidance, the term "biosolids" is used to mean "sewage sludge that is intended to be land applied as a soil amendment or fertilizer and that has been treated by a WWTP to meet the requirements in the EPA's Clean Water Act (CWA) regulation entitled, "Standards for the Use or Disposal of Sewage Sludge," found at 40 CFR part 503 (Part 503)." https://www.ecfr.gov/current/title-40/chapter-I/subchapter-O/part-503

agriculture industry wants to provide relevant and accurate information to the EPA related to biosolid use.

WHAT: The enclosed survey questions include both multiple choice and open responses. Questions where additional information/description is helpful are noted in *italics*. These survey questions should take no longer than 5-10 minutes to complete.

WHEN and HOW: Please send your responses back to your representative by **August 21, 2026.**

Survey Questions

Operations

1. What types of agricultural operations do you operate? (*please circle as many as apply*)
    a. Row crop production
    b. Specialty crops
    c. Livestock production
    d. Poultry production
    e. Dairy
    f. Other (*please describe*)

2. What are your primary crops, commodities, or agricultural products? (*please list all major crops/products grown or produced*)

3. What is the primary end use of these crops/products? (*please circle as many as apply*)
    a. Human food consumption
    b. Animal feed
    c. Industrial use (e.g., ethanol production, biofuel feedstock)
    d. Mixed uses (*please describe*)

e. Other (*please describe*)

4. In which state(s) are your operations located?

Biosolids Application Practices

5. Do you apply biosolids to agricultural land?
    a. Yes
    b. No
    c. If yes, what is the source of biosolids? (*please describe*)

6. Which fields or crop types described in Question 2 receive biosolids applications?

7. How much of your agricultural acreage receives biosolids application?
    a. Estimated acreage of applied biosolids:

    b. Estimated percentage (%) of total land under management that receives biosolids:
        i. <10%
        ii. 10-25%
        iii. 25-50%
        iv. 50-75%
        v. >75%

8. What factors determine where biosolids are applied? (*please circle as many as apply*)
    a. Crop type
    b. End use of crop
    c. Biosolids availability
    d. Cost considerations
    e. Regulatory restrictions

f. Soil nutrient requirements
g. Geographic location
h. Other (*please describe*)

9. Are there crops, fields, or uses for which biosolids are intentionally avoided?
    a. Yes
        i. If yes, *please describe*:
    b. No

10. Following application, are biosolids incorporated into the soil (via any tilling or mixing methodology)?
    a. Always
    b. Usually
    c. Sometimes
    d. Never

11. If incorporated, how soon after application does incorporation occur? (*please describe*)

12. What methods are used to incorporate biosolids into the soil?
    a. Tillage
    b. Disking
    c. Injection
    d. Other (*please describe*)

Application Rates and Frequency

13. What type(s) of biosolids do you use?
    a. Class A
    b. Class B
    c. Both
    d. Other (*please describe*):

14. What is the typical/average application rate? (*please provide units where possible, e.g., dry tons/acre, wet tons/acre*)

15. How is the application rate determined? (*please circle as many as apply*)
    a. Nitrogen needs
    b. Phosphorus needs
    c. Permit requirements
    d. Biosolids availability
    e. Other agronomic considerations (*please describe*)

16. How frequently are biosolids applied to a given field?
    a. Annual
    b. Every 2-3 years
    c. Less frequently
    d. Other (*please describe*)

Regulatory Oversight and Permitting

17. Which regulatory agency or agencies oversee biosolids application in your operation?
    a. State environmental agency
    b. State agricultural agency
    c. Local authority
    d. Federal EPA
    e. Other (*please specify*)

18. Are permits required for biosolids application?
    a. Yes
        i. If yes, *please describe:*
    b. No

19. What permit conditions or restrictions apply to biosolids use on your operation?
    a. Crop restrictions
    b. Harvest intervals
    c. Site access restrictions
    d. Buffer requirements
    e. Slope limitations
    f. Other (*please describe*)

Best Management Practices

20. What practices are used to minimize human exposure during biosolids handling and application?
    a. Mechanized application
    b. Limited worker contact
    c. Personal protective equipment (PPE)
    d. Contractor application only
    e. Other (*please describe*)

21. Are there procedures to minimize off-site migration of biosolids?
    a. Buffer zones
    b. Setback distances
    c. Runoff controls
    d. Timing restrictions
    e. Other (*please describe*)

22. Do you implement any additional biosolids management practices beyond regulatory requirements?
    a. Yes
        i. If yes, *please describe*:
    b. No

23. Have you adopted any practices specifically in response to emerging concerns (e.g., PFAS, pathogens, odors, public perception, nutrient management)?

a. Yes
    i. If yes, *please describe*:
b. No

Appendix B. State PFOA / PFOS Regulations

State-by-state - PFOA / PFOS in biosolids (all values dry weight; µg/kg = ppb)

State	Category	Analyte basis	Prohibition threshold	Lower tier triggers	Application rate limit	WWTP / biosolids monitoring	Authority	Effective
Maine	Effective ban	All PFAS (any fully fluorinated carbon atom)	Land application, sale and distribution of sludge-derived soil amendments prohibited outright	N/A (prior 2019 DEP screening levels were 2.5 ppb PFOA / 5.2 ppb PFOS)	-	PFAS effluent testing required at water resource recovery facilities. Note: The statute excludes food processing, brewery, distillery, and seafood residuals from the land application prohibition.	LD 1911 (PL 2021 ch. 641)	Jul 2022
Connecticut	Effective ban	All PFAS (any fully fluorinated carbon atom)	Use, sale or offer for sale as a soil amendment prohibited	-	-	-	PA 24-59 (SB 292); PA 25-152	1 Oct 2024
Michigan	Numeric tiers	PFOA or PFOS	≥100 µg/kg = 'industrially impacted', land application prohibited	≥20 and <100 µg/kg = 'elevated'; triggers source investigation and reduction plan, source effluent sampling within 30 days	1.5 dry tons/acre, or an EGLE-approved alternative risk mitigation strategy submitted ≥14 days before application	Representative finished-biosolids sampling is required before land application; all facilities that land apply Class A or Class B biosolids must collect at least one representative sample per calendar year. Additional sampling/source-control requirements apply at elevated concentrations.	Part 24 Biosolids Rules; Interim Strategy (2021, rev. 2022, rev. 2024)	1 Jan 2024
Minnesota	Numeric tiers	PFOA or PFOS	≥125 µg/kg of either analyte prohibited	Tier 1: ≤19 µg/kg no additional action; Tier 2: 20-50 µg/kg requires notification and a PFAS pollutant management plan; Tier 3: 51-124 µg/kg requires reduced-rate application; Tier 4: ≥125 µg/kg of either analyte prohibits land application.	1.5 dry tons/acre at Tier 3	Annual per-facility sampling by Method 1633A. Exceptional Quality biosolids sold for domestic use must be ≤20 µg/kg combined PFOA+PFOS with quarterly sampling.	MPCA Biosolids PFAS Strategy	1 Sep 2025
Wisconsin	Numeric tiers	PFOA + PFOS combined (reduced-rate trigger keyed to PFOA)	>100 µg/kg combined PFOA + PFOS = land application prohibited	Tier 1: ≤20 µg/kg combined, no additional land-application requirements. Tier 2: >20 to ≤50 µg/kg combined, source-reduction and tracking requirements; reduce to 1.5 dry tons/acre only if PFOA >20 µg/kg. Tier 3: >50 to ≤100 µg/kg combined, 1.5 dry tons/acre or approved alternative risk-mitigation strategy. Tier 4: >100 µg/kg combined, no land application.	1.5 dry tons/acre in Tier 3; also in Tier 2 when PFOA alone is >20 µg/kg, unless DNR approves an alternative risk-mitigation strategy.	All facilities producing biosolids or industrial sludge must monitor under their individual WPDES permit or the supplemental general permit. Method 1633A is required; results include all 40 analytes plus calculated combined PFOA + PFOS.	Interim Strategy (updated 2026); 2025 Act 201	Interim strategy effective 1 Jul 2026; 2025 Act 201 enacted 6 Apr 2026
Colorado	Numeric tiers	PFOS only	No prohibition threshold. PFOS at or above the trigger level requires preparer action; the strategy is a monitoring and source-reduction framework, not a land-application ban.	≥50 µg/kg PFOS triggers a Preliminary Source Investigation and Source Reduction Plan. CDPHE states the trigger is not risk-based.	-	Preparers generating ≥30 dry tons/yr (or distributing out of state) must sample and report to CDPHE at frequencies from annual to monthly depending on volume. “Preparer” means either the person who generates biosolids during the treatment of domestic sewage in a domestic wastewater treatment works or the person who derives a final product material from biosolids.	Regulation 64; Colorado Biosolids-PFAS Interim Strategy (extended through 2026)	1 Jan 2023; 2026 strategy in effect through 2026 or until revised
New York	Numeric tiers	PFOA or PFOS	≥50 ppb prohibits recycling until concentrations fall below 20 ppb	20 to <50 ppb: additional sampling and possible land application restrictions. ≤20 ppb: no additional restriction.	Possible restrictions in the middle tier	All permitted Part 361-2 and 361-3 facilities that accept biosolids must sample each biosolids source and report results to DEC. Final DMM-7A (June 2026) also requires sampling and analysis of biosolids-derived products, including compost and heat-dried products produced in-state or imported for use in New York.	DEC Program Policy DMM-7 (7 Sep 2023); draft DMM-7A (Dec 2025)	20 Oct 2023
Maryland	Numeric tiers	PFOA, PFOS, or the combination	≥50 ppb prohibited from 1 Oct 2028	25 to <50 ppb triggers farmer notification and source tracking. Blending to achieve compliant concentrations is permitted.	-	Monitoring required; strengthened authority to control industrial discharges at source.	SB 719 / HB 925	Law effective 1 Oct 2026; land-application concentration restrictions begin 1 Oct 2028
Virginia	Numeric tiers	PFOS or PFOA individually to 1 Jul 2029, then combined	≥50 ppb annual average on a rolling 12-month basis prohibited from Jul 2027	25 to <50 ppb based on a rolling 12-month average triggers reduced-rate application and landowner notification. <25 ppb: existing permit conditions, with notification. A result ≥75 ppb triggers prompt retesting; a second consecutive result ≥75 ppb stops land application.	3 dry tons/acre in the 25 to <50 µg/kg tier.	Owners of sewage treatment works that land apply, market, or distribute sewage sludge must begin representative sampling on 1 Jan 2027. Testing is monthly during 2027, with potential reduction to quarterly thereafter with DEQ approval.	SB 386 / HB 1443	Enacted 13 Apr 2026; effective 1 Jan 2027; concentration tiers begin 1 Jul 2027

State-by-state - PFOA / PFOS in biosolids (all values dry weight; µg/kg = ppb)								
State	**Category**	**Analyte basis**	**Prohibition threshold**	**Lower tier triggers**	**Application rate limit**	**WWTP / biosolids monitoring**	**Authority**	**Effective**
New Hampshire	Monitoring only	PFAS	None	-	-	Annual sampling via Sludge Quality Certificates	RSA 485-A:XVI-c	2019
Massachusetts	Monitoring only	PFAS	None	-	-	Quarterly PFAS sampling implemented through MassDEP residuals approvals and permit renewals. MassDEP maintains a PFAS-in-residuals monitoring program and public data portal.	MassDEP Residuals Program; 310 CMR 32.00	Ongoing (PFAS residuals program since 2020)
Vermont	Monitoring only	PFAS	None	None. Interim strategy uses PFAS screening and risk-management measures for residuals, including biosolids, septage, and paper sludge.	Site-specific; application rates subject to permit review and approval.	PFAS testing required for biosolids, soils, groundwater, and in some cases crops. Vermont has conducted statewide PFAS investigations of wastewater facilities, biosolids land-application sites, and residuals management practices	Interim Strategy for Mitigating PFAS Risks Associated with Residuals Management; Solid Waste Rules	1-Apr-24
California	Monitoring only	31 PFAS analytes (plus 11 optional)	None	None. Investigative-order framework designed to characterize mass loading, not to set action levels.	None PFAS-specific; land application under General Order 2004-0012-DWQ	Order WQ 2020-0015-DWQ (Jul 2020) required PFAS monitoring of influent, effluent, biosolids, and certain associated media at POTWs >1 MGD. Investigative orders were issued to 249 POTWs, with results reported to GeoTracker. This was Phase III of California's PFAS investigation program. Drinking-water NLs/RLs were revised in Oct 2025 (PFOA: 4.0/10 ng/L; PFOS: 4.0/40 ng/L).	Water Code ss.13267, 13383; Order WQ 2020-0015-DWQ	Jul 2020
Illinois	Monitoring only	PFAS	None	-		2026 legislation expanded PFAS monitoring, sampling, and reporting requirements for wastewater, biosolids, and sewage sludge. No biosolids concentration thresholds or land-application restrictions identified.		
Rhode Island	Monitoring only	PFAS	None	None numeric, but DEM may use results in permitting decisions.	-	Quarterly PFAS testing and reporting to DEM required for biosolids distribution or land-application approvals beginning in Q4 2025. Separately, a 2026 law established a moratorium on new sludge-processing facilities and created a commission to evaluate biosolids management options, reporting to the General Assembly by 1 April 2027.	HB 5844 / SB 650; June 2026 moratorium act	Signed Jun 2025; sampling from Q4 2025
Washington	Monitoring only	PFAS via Method 1633A	None	None. Statute is data-gathering with a legislative report and recommendations at the end.	-	Most facilities covered by the Statewide General Permit for Biosolids Management must sample under Ecology guidance using Method 1633A. Sampling and analysis plans are due at least 60 days before sampling; results must be submitted through Ecology's reporting process.	SSB 5033; RCW 70A.226; Ch. 173-308 WAC	Law effective 27 Jul 2025; temporary sampling 1 Jan 2027 through 30 Jun 2028
Oregon	Research study	PFAS - study scope only	None	HB 2947 (2025) establishes a voluntary Oregon State University study to characterize PFAS in biosolids, biosolids-amended soils, and non-food crops, including evaluation of PFAS retention and leaching. Participation by wastewater utilities, farmers, and landowners is voluntary. Study authorization expires 2 January 2029.	None PFAS-specific. Class B applied to the same area 2 of 3 years at the agronomic N rate triggers DEQ soil testing for nutrient overloading.	No regulatory sampling mandate or concentration threshold. HB 2947 directs a voluntary OSU study, with a progress report due 15 Dec 2026 and final report due 1 Sep 2028.	HB 2947 (2025); OAR 340 Div. 50; OAR 340-122-0115(30)	Effective on passage in 2025; study provisions repeal 2 Jan 2029