



Communication with Farmers about
Biosolids and Forever Chemicals

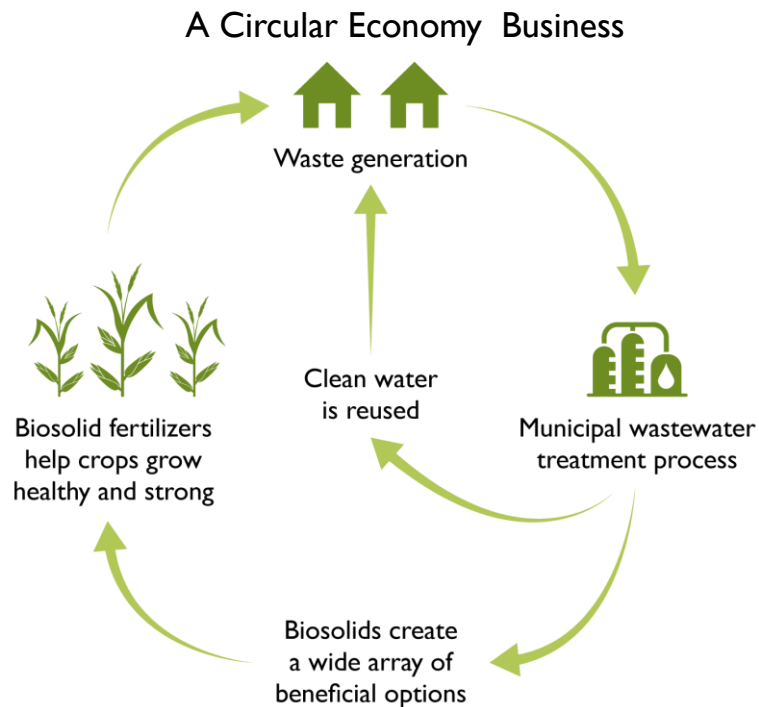
August 12, 2025



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Our Differentiating & sustainable business model

We provide regenerative and beneficial solutions for biosolids



IMPROVES SOIL HEALTH

Applying biosolids to soil can replenish essential nutrients and aid in improving soil structure, water-holding capacity, nutrient mineralization, biological activity, and water and air infiltration rates.



AN EXCELLENT ALTERNATIVE TO CHEMICAL FERTILIZERS

Biosolids can provide plants with nutrients such as nitrogen and phosphorous. These nutrients are less likely to leach into groundwater or be lost to surface waters through erosion than petroleum-based synthetic fertilizers.



MITIGATES CLIMATE CHANGE

Applications of biosolids, and especially biosolid derived products like compost, have been demonstrated to increase the sequestration of carbon in soils.



SUBSTITUTE FOR FOSSIL FUELS

Biosolids retain useful energy value and, in many cases, can replace coal and other fossil fuels in commercial and industrial applications.



Updates Since October 1, 2024

USEPA

PFAS analysis method finalized (almost) Method 1633A published for final comment in Federal Register and for comments under Docket: EPA-HQ-OW-2024-0328. Comments due March 24, 2025

<https://www.regulations.gov/search?filter=EPA-HQ-OW-2024-0328>

Draft Sewage Sludge Risk Assessment for PFOA and PFOS published for comment under Docket EPA-HQ-OW-2024-0504. Comments are due August 14, 2025

<https://www.regulations.gov/docket/EPA-HQ-OW-2024-0504>

Comment period was extended partly because American Farm Bureau and other agricultural interests requested more time to review.



Good News

National Milk Producers Federation has published that its comments will: “explain the shortcomings of the draft risk assessment and why this model should not be used to inform new regulations.”



Farmer Question Examples

- What is PFAS? How does this affect me, my family, neighbors?
- Is there PFAS in these biosolids?
- Where can I get more information on PFAS chemicals? What are scientist saying?
- How do I know if there is PFAS in products? How do I know it is safe? Is commercial fertilizer safe?
- What do I tell my customers and neighbors who ask?
- Why isn't the state regulators saying more about what they are doing?
- If this has been around since the 80's, why don't we know more about it?
- Parts per trillion? What does that mean to me? I don't understand how that could be an issue.
- Why is there so much miss information in the newspapers/News?
- What can I do to limit exposure?



Farmer Questions

- Why is USEPA Draft Risk Assessment showing risk at 1 ppb PFOA or PFOS?
- Dr Sally Brown Biocycle articles
 - **Connections: PFAS In Context** <https://www.biocycle.net/connections-pfas-in-context/>
 - **Connections: Barking Up The Wrong Tree | BioCycle**
 - *“In the real world, PFAS is staring you in the face whichever direction you face. That is true whether or not biosolids are even a blip on your horizon.” Dr. Sally Brown*
- **Michigan EGLE Comments on the Draft Risk Assessment**
- **<https://www.regulations.gov/comment/EPA-HQ-OW-2024-0504-0092>**
- *“The risk assessment should consider the estimated risks associated with the evaluated exposure routes relative to the risk from other household exposures. It should also consider the mass loading to the soil relative to other agricultural sources such as pesticides and rainwater.”*
- *California Association of Sanitary Agencies (CASA)*
- **<https://www.regulations.gov/comment/EPA-HQ-OW-2024-0504-0031>**



Farmer Questions

Where can I get more information on PFAS chemicals? What are scientist saying?

- There is a lot of information on the internet, try these reputable sources:

[PFAS \(wef.org\)](https://www.wef.org/)

[Per- and Polyfluoroalkyl Substances \(PFAS\) | US EPA](#)

[Ohio EPA's PFAS Action Plan | Ohio Environmental Protection Agency](#)

[The Benefits of Biosolids - Synagro](#)



Factors to consider when interpreting data

- EPA method 1633 has a small sample size (.5 g) yet a large (+/-50 %) variability
- There is a high level of variability between batches of pellets, compost and cake
- Current regulatory models / tier systems don't account for variability (Michigan tier system as an example)
- Some regulations are “or” some are “plus” PFOA and PFOS



EPA Method 1633

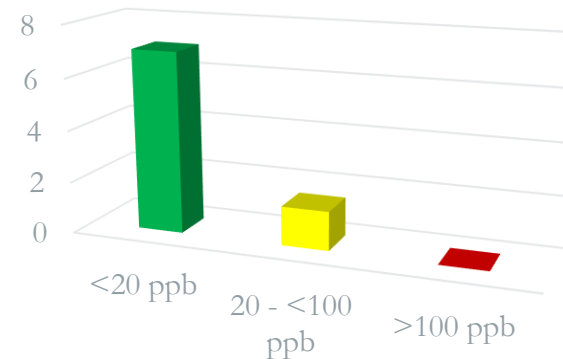
- Dec 5, 2024
- Very technical
- 40 Analytes
- Uses 0.5g for analysis
- +/- 50% variability

Tier 1: <20 ppb *No restrictions*

Tier 2: 20 ppb to < 100 ppb
1.5 dry ton/acre

Tier 3: ≥ 100 ppb
No land application

Application Restriction (dry ton/acre)



Michigan Response

- What's your PFAS number?
- It would be difficult to have a discussion with landowner or farmers on PFAS in biosolids if you do not respect the issue enough to have a number. "They don't require it." does not work.



Michigan Response

- In Michigan we have been notifying growers and landowners of first PFOS levels and now PFOS and PFOA for several years regardless of concentration in the biosolids.
- Michigan's initial notification guidance document was a collaboration between MWEA, MDARD, EGLE, Michigan State University and Michigan Farm Bureau.
- Obviously, the threshold has been reduced and max application rate of 1.5 dt/a at PFOS or PFOA above 20 ppb dry.
- Some regulatory agencies may require notification only if it is above 20 ppb.



Strategies for Communication

- Do not minimize the issue.
- Share your personal frustration that we have all been exposed to this class of compounds in the various ways you know of.
- Empathize with their concerns
- Use the notification document as your good faith effort to gaining their trust



Outcomes

- In general, you will have positive outcomes with growers that **own their land** and have received several applications previously.
- Landowners that lease ground to the grower are generally skeptical.
 - Landowners could be:
 - Retired Farmer
 - Surviving Spouse
 - Investment Company
 - Trust
- In general, it's been my experience that will lose 50% of the ground of landowners that have questions.



THANK YOU!

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