

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

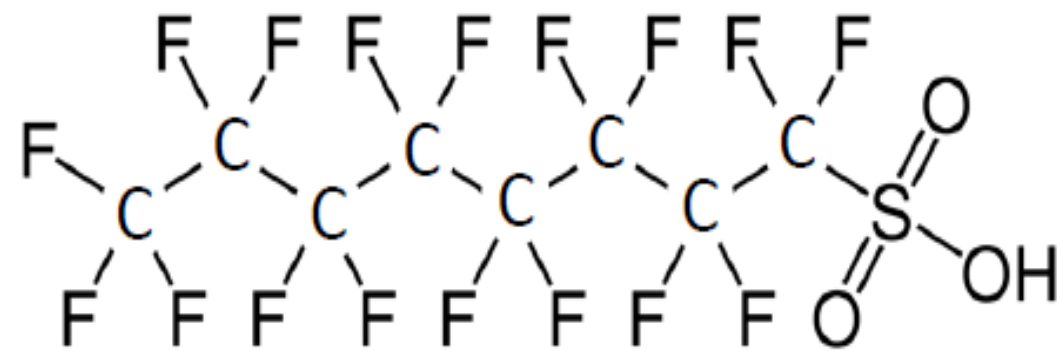
PFAS & Biosolids

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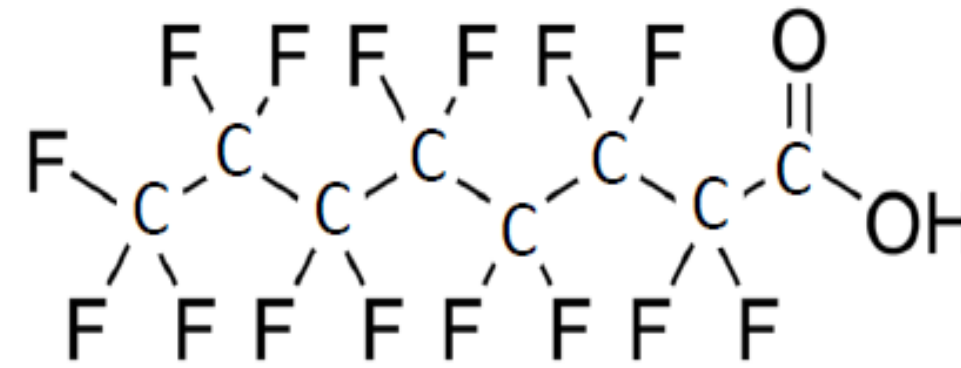


Brief PFAS Overview

- Brief Intro to PFAS
 - Over 4,000 PFAS Compounds
 - Chemistry of PFOS and PFOA



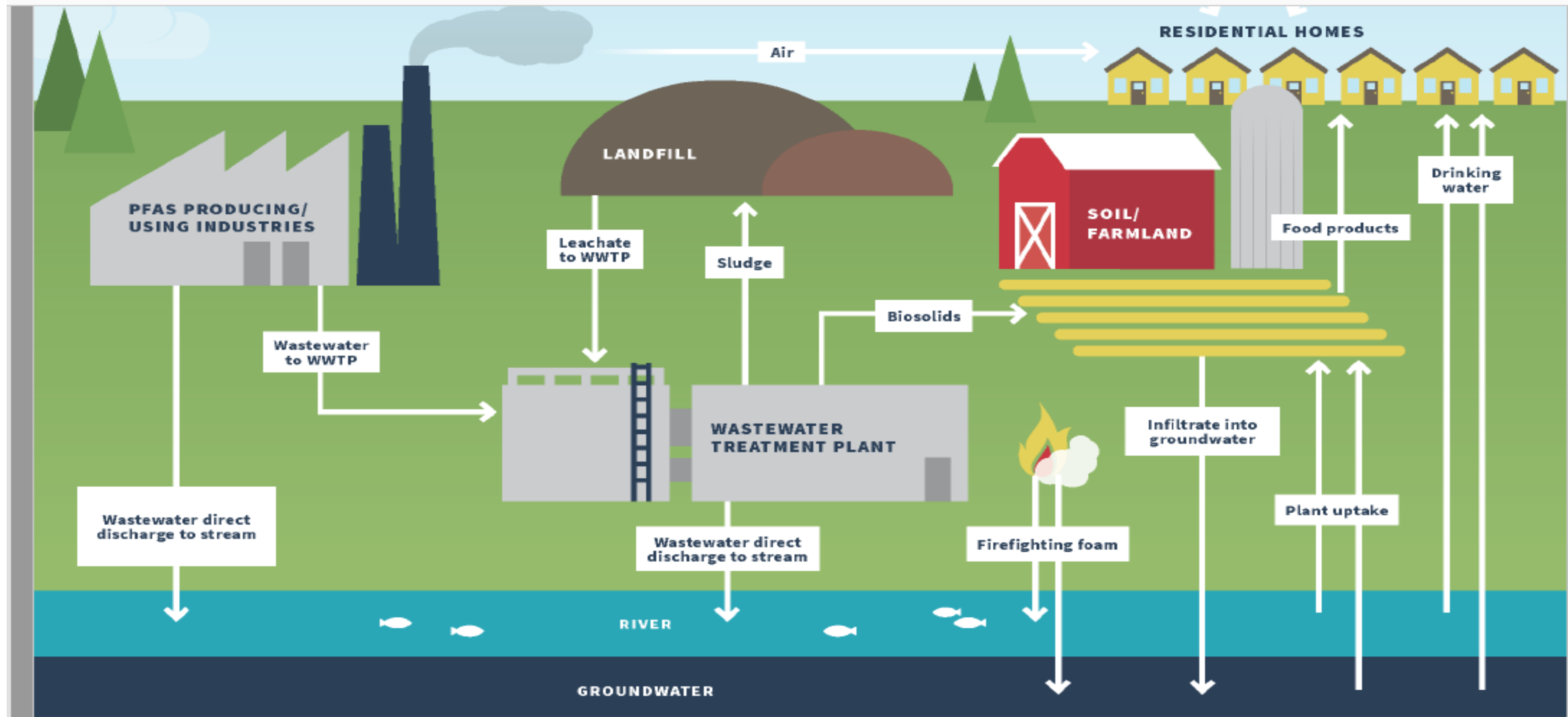
PFOS – perfluorooctanesulfonic acid



PFOA – perfluorooctanoic acid

- Termed “Forever Chemicals” due to extremely strong bonds and resistance to degradation in the environment.

PFAS Fate & Transport



PFAS in Muni WW & Biosolid

- PFAS first identified in WW & Biosolids in early 2000s
- Sources
- PFOS & PFOA (long-chain) are commonly found
- Data suggests that short-chain PFAS are more likely to be discharged through the effluent while longer chain PFAS compounds are more likely accumulate in the sludge

Regulation of Biosolids in WI

- Federally Delegated Program from EPA
- Subject to 40 CFR Part 503 Requirements
- Chapters 283, Wis. Stats. and NR 204, Wis. Adm. Code.

WI Efforts on PFAS & Biosolids

- 2019 – Gather research, monitor EPA and state activity
- 2020 – Work closely with Great Lakes states like MI
 - Evaluate various models
- 2021 – Continue coordination with EPA & Other States
 - Develop Interim Strategy Approach

Draft Interim Strategy Approach

Goal of Interim Strategy

- Provide municipal operators an approach for handling and disposing PFAS-impacted biosolids in the interim
- SOURCE REDUCTION, SOURCE REDUCTION, SOURCE REDUCTION!!!
- Interim step or approach while we gather more data and waiting on EPA to conclude risk assessment

Draft Interim Strategy Approach

- PFAS Biosolids Sampling – included at permit reissuance
- PFAS Source Reduction – will be developing more content and sharing in the near term
- Farmer and Landowner Communication – will be developing messaging and sharing in the near term
- Additional internal review pending and looking to engage with stakeholders on a final approach prior to implementation.

PFAS Biosolids Sampling

- Sample and analyze biosolids for PFAS prior to land application.
- All Municipal WWTFs with a design flow over a million gallons and WWTFs that generate EQ/Class A product will monitor PFAS in the year they plan to land apply
- Lagoon, reed bed and other facilities will monitor prior to any land application and at least once during their 5-year WPDES permit cycle

Use of Analytical Results

- Tiered System
 - Below 50 micrograms per kilograms ($\mu\text{g}/\text{kg}$) of sum of PFOA/PFOS concentrations
 - 16 $\mu\text{g}/\text{kg}$ concentration
 - 50 $\mu\text{g}/\text{kg}$ – 150 $\mu\text{g}/\text{kg}$ of sum of PFOA/PFOS concentrations
 - Above 150 $\mu\text{g}/\text{kg}$ of sum of PFOA/PFOS concentrations

Below 50 $\mu\text{g}/\text{kg}$

- If over 16 $\mu\text{g}/\text{kg}$, implement PFAS source investigation and reduction. If below, no further action necessary prior to land application.
- Provide PFAS analytical results to the landowner prior to application
- Track application rates

50 $\mu\text{g}/\text{kg}$ - 150 $\mu\text{g}/\text{kg}$

- Immediately notify DNR Staff
- Investigate potential sources to develop a source reduction program
- Reduce any future land application rates to no more than 1.5 dry tons per acre
- Provide PFAS analytical results to the landowner prior to application.
- Track application rates
- WWTF operators may decide to arrange for alternative disposal options.

Above 150 $\mu\text{g}/\text{kg}$

- Biosolids are considered industrially impacted by PFAS. Biosolids should not be land applied. Future WPDES permits likely to include language prohibiting land application above this level.
- Immediately notify DNR Staff
- Investigate potential sources to develop a source reduction program
- Arrange alternative disposal of biosolids (e.g., incineration or appropriate landfill)

Identify PFAS Sources

- Numerous potential industrial sources as discussed earlier
- Commercial sources can occasionally be a source of PFAS
- Reach out to your DNR contact to discuss a source identification and reduction plan. We are happy to assist your team.

Next Steps

- Discuss Interim Strategy internally and externally prior to implementation. This is key!
- Continue to partner with all WWTFs on PFAS efforts with an emphasis on PFAS source identification and reduction.
- Work with other states and EPA on PFAS efforts
- Review new information as it becomes available and revise strategy as appropriate.
- Keep an open dialogue!

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