

# Northeast Recycling Council



## *Evolving Landscape of Residuals Management and PFAS in Maine*

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MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

*Protecting Maine's Air, Land and Water*

# Residuals in Maine

- Maine uses the term “Residuals”
- Maine’s Residuals Program includes sludge and dewatered septage
- Administered through Residuals Management Unit, which falls under the Materials Management Division in the Bureau of Remediation and Waste Management
- Since the late 1970’s and prior to 2022, land application of sludge and septage was licensed through this program
- **“Spoiler Alert”!** Maine banned land application of sludge and sludge and septage derived products in 2022; ban began in August



# Maine's PFAS & Residuals Timeline

## 2016

- Elevated PFAS Levels Found at Local Water District
- PFAS levels were found to be associated with a nearby dairy farm

## 2017 & 2018

- Maine DEP and Maine DACF coordinate investigation and sampling at the farm
- Soil, drinking water, groundwater, surface water, hay, manure, purchased feed, milk all sampled
- Maine DEP's Beneficial Use Screening levels (Chapter 418, Appx A) updated to include PFOA, PFOS and PFBS



# Maine's PFAS & Residuals Timeline

2019

- Further Maine DACF sampling identifies elevated levels of PFAS in milk, and ties this to other dairy farms (different part of state)
- Maine DEP requires residuals sampling and DEP approval prior to any land application moving forward

2020

- Maine's PFAS Task Force report issued with multiple recommendations including investigating sludge and septage land application sites



# Maine's PFAS & Residuals Timeline

2021

- Interim drinking water standard of 20 ppt for sum of 6 PFAS set by Maine Legislature
- Legislature also requires statewide PFAS soil and groundwater investigation of sludge and septage land application sites: **Public Law 2021, Chapter 478**
- Maine DEP begins investigation late 2021

2022

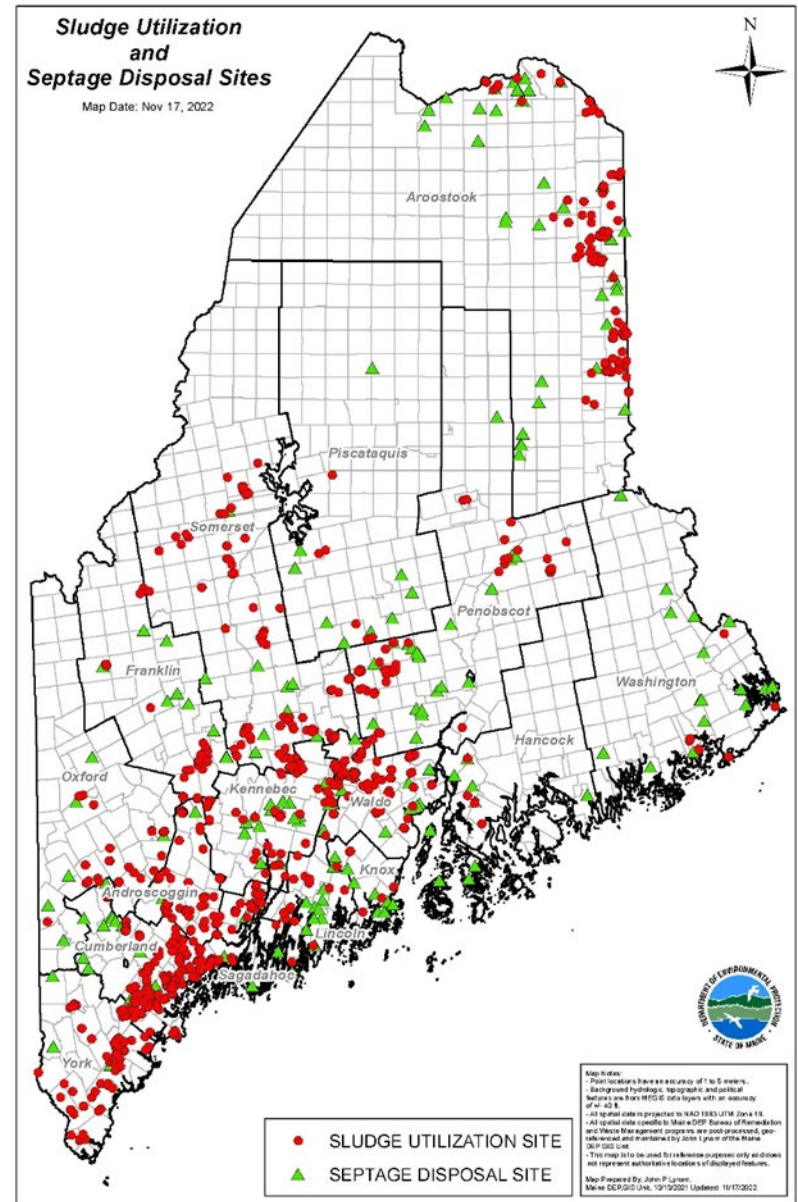
- Ban on the Land Application of Sludge, and Sludge and Septage derived products enacted into law and in effect August 2022: **Public Law 2021, Chapter 641**



# Scope of Investigation

- 1,066 licensed sites (original estimate was 700)
- ~3,000 residential drinking water wells sampled
- ~ 20% of samples exceeded Maine's interim drinking water standard
- > 500 point-of-entry filter systems installed

*Most sites are on current or previous farm or agricultural lands*



# Land Application Ban

- Why?
  - Public concerns at a boiling point
    - Farmers impacted by statewide soil and groundwater investigation concerned about their livelihood and stigma of their products
    - Health exposure concerns in specific communities
  - Time necessary to calculate screening values was not provided to the Department: Change needed to happen faster than the scientific analysis could be completed

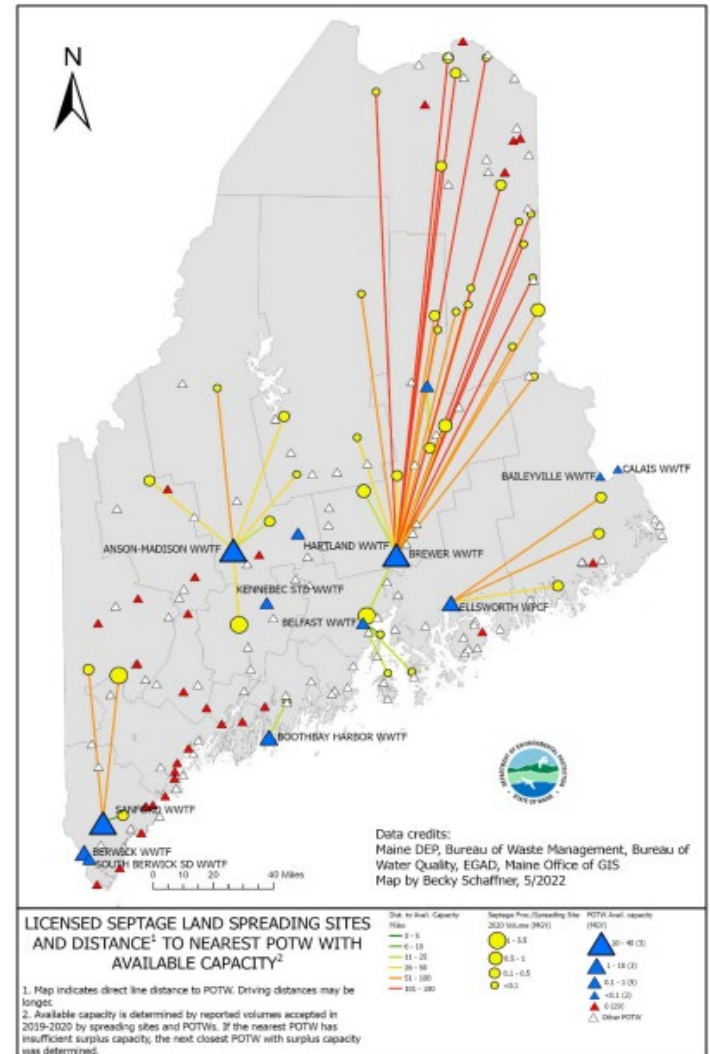
# Unintended Consequences

- Where to put the sludge? Lack of landfill capacity or other disposal options
- Bulking materials needed to stabilize sludge in landfills take up a lot of landfill space ~1:4 ratio
- Treatment technologies still young and costly to implement
- Wastewater operators struggle with uncertainty on how to dispose of their sludge and rising costs



# Land Application of Septage

- ~ 10.5M gallons / 16% of all septage waste in Maine is estimated to be land applied
- Why is septage treated differently than sludge?
  - Land application only available method in certain remote parts of Maine
  - Different level of impact to soil & groundwater based on initial data



# Fast Forward to 2026!

- Maine's first sludge dryer comes online 2nd quarter 2026
- Designed to accept up to 73,000 TPY of municipally generated biosolids (83%) of Maine's generated biosolids
- Will be able to process up to 200 tons per day
- WM has also installed a foam fractionation system as part of its overall landfill operation – already began operations



# More Options Coming to Maine?

- Application in for a gasification facility in Sanford Maine: Aries Technology
- Portland (largest wastewater facility in Maine) is looking to create its own treatment facility (reduce uncertainty)
- Landfill expansions?
  - This is a big discussion in the Maine legislature, and also tied up in court
  - Without an expansion of Maine's state-owned landfill, Maine's capacity to landfill its waste at JRL is anticipated to run out in 2028
  - As Maine searches for new landfill sites, the process to site, design and permit new facilities is rife with controversy and requires many years prior to operation



# PFAS Source Reduction in Maine

- 2023: Ban on carpets, rugs, fabrics
- 2026: Ban on cleaning products, cookware, dental floss, juvenile products, menstrual products, textiles, ski wax, upholstered furniture, items sold in fluorinated containers or containers with intentionally added PFAS
- 2029: Artificial Turf; outdoor gear without PFAS label
- 2032: All products unless the product meets requirement of unavoidable use
- 2040: Cooling, heating, ventilation, air conditioning, and refrigeration equipment, refrigerants, foams or aerosol propellants





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