PFAS Update

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Department of Environmental Conservation

House Committee on Natural Resources, Fish, and Wildlife

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What are PFAS?

- Per and Polyfluorinated Alkyl Substances (PFAS) is broad name given a group of potentially thousands of chemicals. The class is defined by at least one fully fluorinated carbon atom.
- PFASs are commonly used in non-stick cookware, water-repellant clothing, stain resistant fabrics, certain firefighting foams, and products that resist grease, water, and oil.
- Furniture, carpeting, clothing, and other textiles were noted as contributors to PFAS in Vermont.
- The CDC has stated that exposure to PFAS may lead to: increased cholesterol, changes in liver enzymes, decreases in infant birth weight, decreased vaccine response, increase risk of high blood pressure in pregnant women, and increased risk of cancer.

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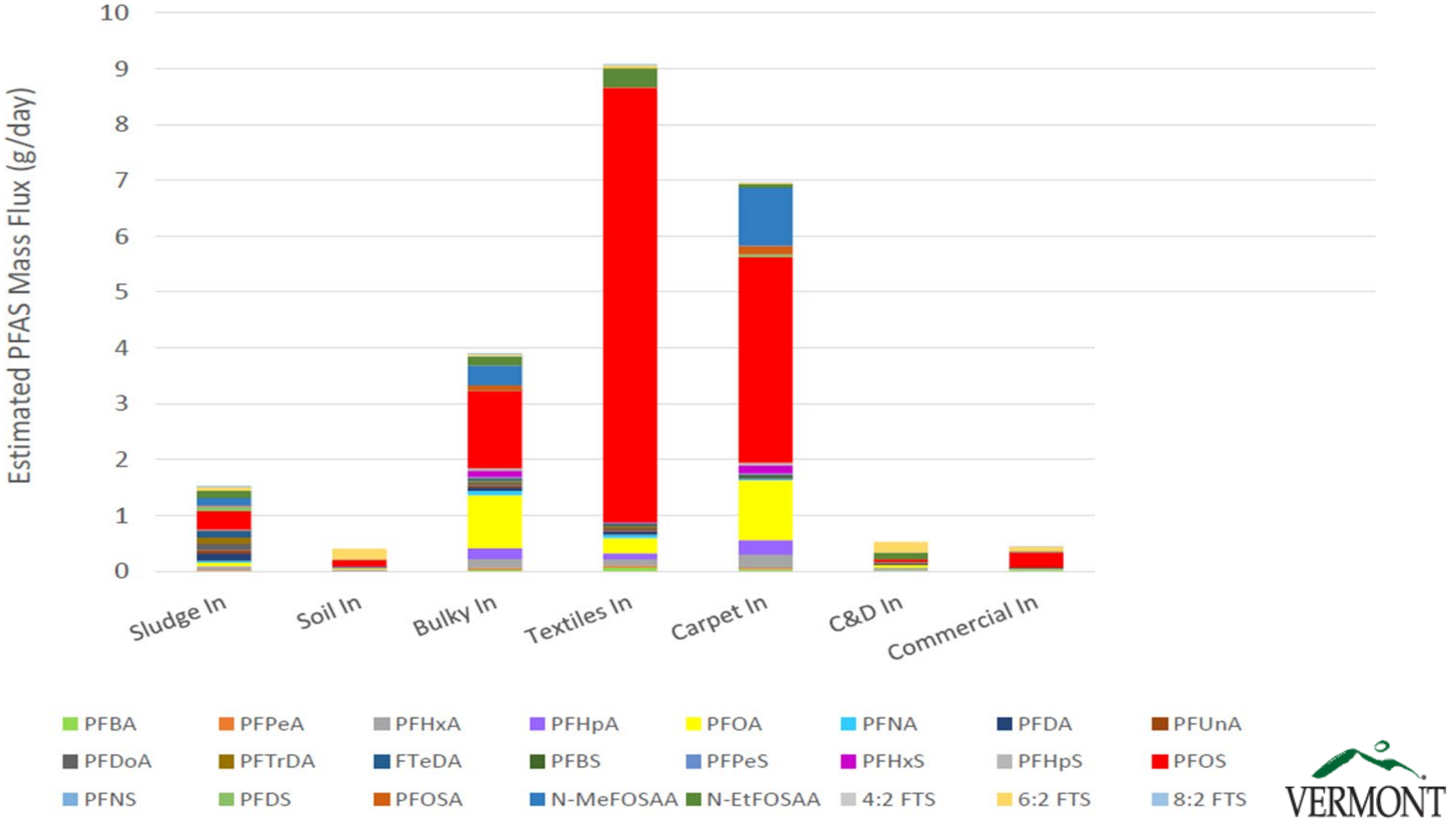
Major PFAS sources: Landfill Waste



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PFAS Sampling in two VT Sewers

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1. More PFAS were measured in wastewater originating from residential communities than from commercial/industrial discharges sampled in these municipalities

2. Industrial facility discharges contained unique PFAS but were not a significant source (< 1% total mass) entering WWTFs

3. Sampling approach may be a suitable model for other municipalities to identify/understand sources of PFAS in wastewater generated by their communities.

Grant Funded

Full Report Available at: https://dec.vermont.gov/pfas

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Residuals

- **Sludge** is the semi-solid, residual material removed at a wastewater treatment facility (WWTF). If subjected to additional treatment for pathogens and meet pollutant standards, sludge may qualify as **biosolids** and may be beneficially reused under a permit from ANR-DEC.
- VT generates 11,564 dry tons of sludge year.
- 68% of Vermont sludge and biosolids are beneficially reused as Class A or B biosolids. 32% is disposed at a landfill.

- **Septage** is the material pumped out of on-site wastewater systems (i.e. septage tanks).
- VT generates 45,673,000 gallons of septage per year
- 98% of Vermont septage is managed at a WWTF (94% at VT WWTFs).

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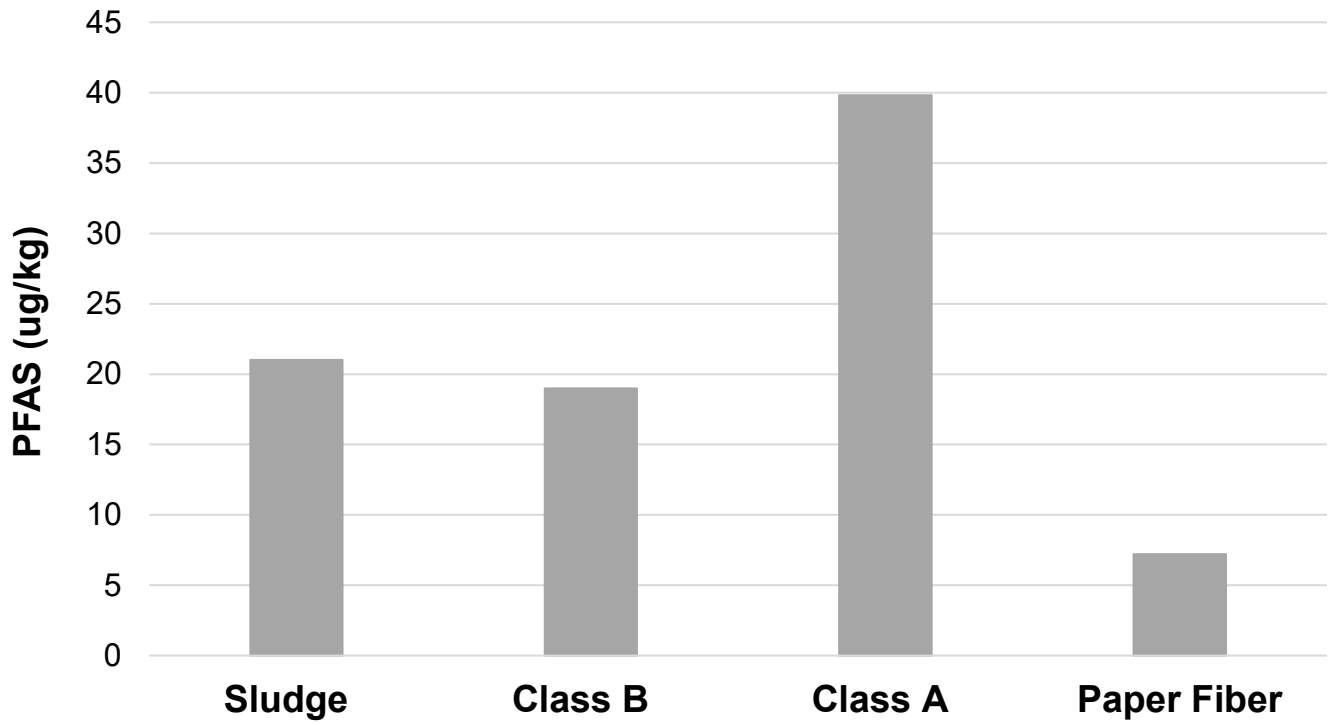
Average VT-5 PFAS (ppb) in Samples of Residual Materials – Data from 2019 W&S Project



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Since Fall 2019, VTDEC has tested 59 individual fields across ~30 unique land application sites in Vermont, below is a summary of groundwater and soil testing results:

# GW wells tested	# wells > GWES of (20 ppt)	Average VT-5 PFAS in wells tested (ppt)	Range of VT-5 PFAS in wells tested (ppt)
94	18	56.6	No Detect - 154
# of field soils tested	**# soils > Standard (1.2 ppm)**	**Average VT-5 PFAS in soils tested (ppb)**	**Range of VT-5 PFAS in soils tested (ppb)**
58	0	13.2 (11.6 as PFOS)	No Detect – 59.2

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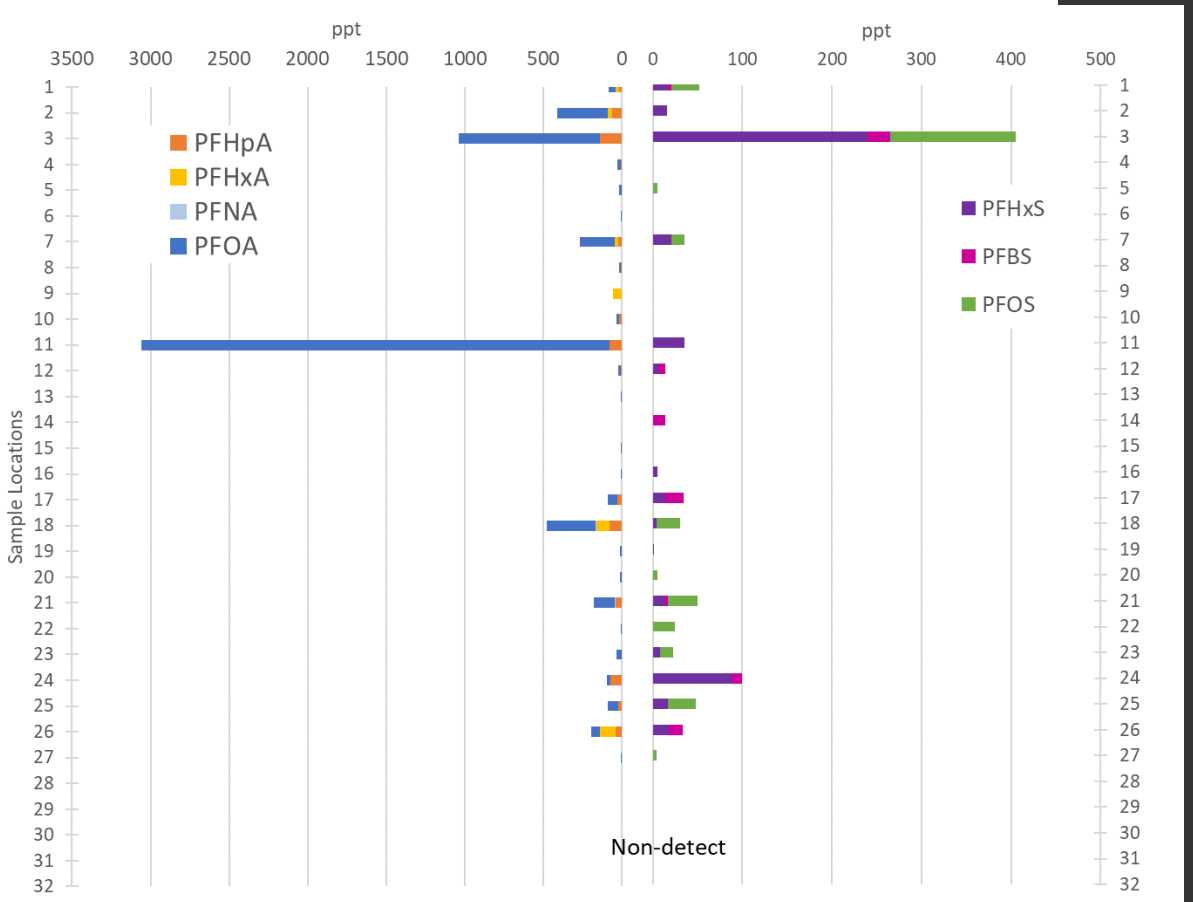
Solid Waste – Unlined Landfills

- Vermont has 37 regulated and unlined closed landfills
- 21 of those landfills have had exceedances within an onsite groundwater monitoring well, an additional 12 landfills have detection below groundwater standards
- 2 locations have impacted off site drinking water sources which are being treated and managed.



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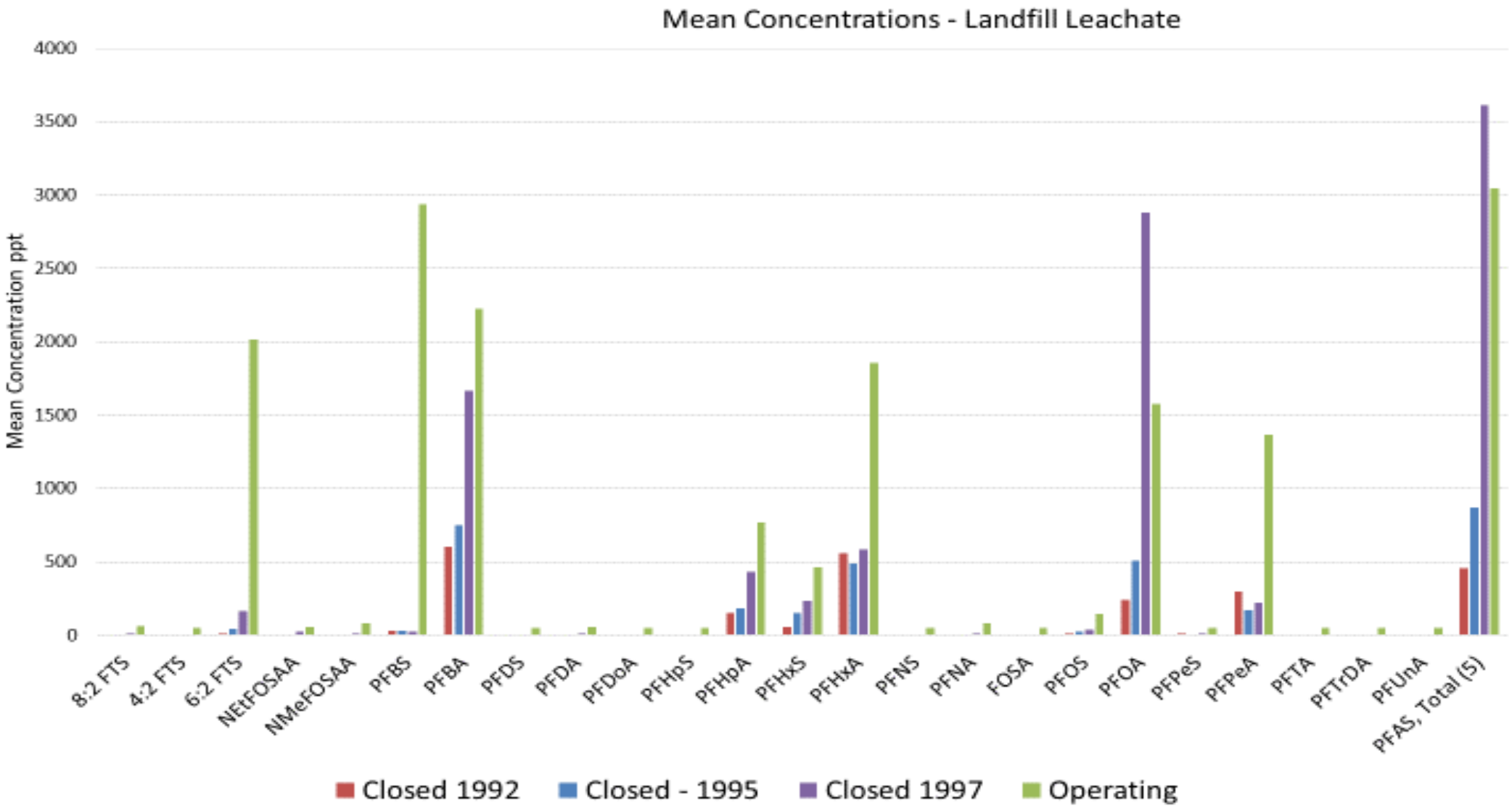
Solid Waste – Lined Landfills



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