MINNESOTA RESOURCE RECOVERY ASSOCIATION

Municipal Waste Combustors A Promising Environmental Method to Mitigate PFAS

2026 SWAA Winter Training

Blueprint Initiatives

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- Develop plans for monitoring PFAS at permitted landfills
- Monitoring PFAS at NPDES-permitted facilities
- **Add PFAS to facility's Minnesota Air Emissions Inventory**
- What is needed
    - Collect statewide data from regulated facilities

Data Request from Facilities

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- 163 facilities with air permits, identified by MPCAs
  - (these facilities regularly conduct stack testing)
- **Voluntarily** report air emissions of the 50 PFAS target analytes
- What type of data can be used?
    - CEMS data (continuous emissions monitoring)
    - **Stack testing** (OTM-45, measures 49 PFAS)
    - Process samples, mass balance calculations
    - Emission factors developed for similar sources
- Best available “preferred” method is stack testing

Facility Testing

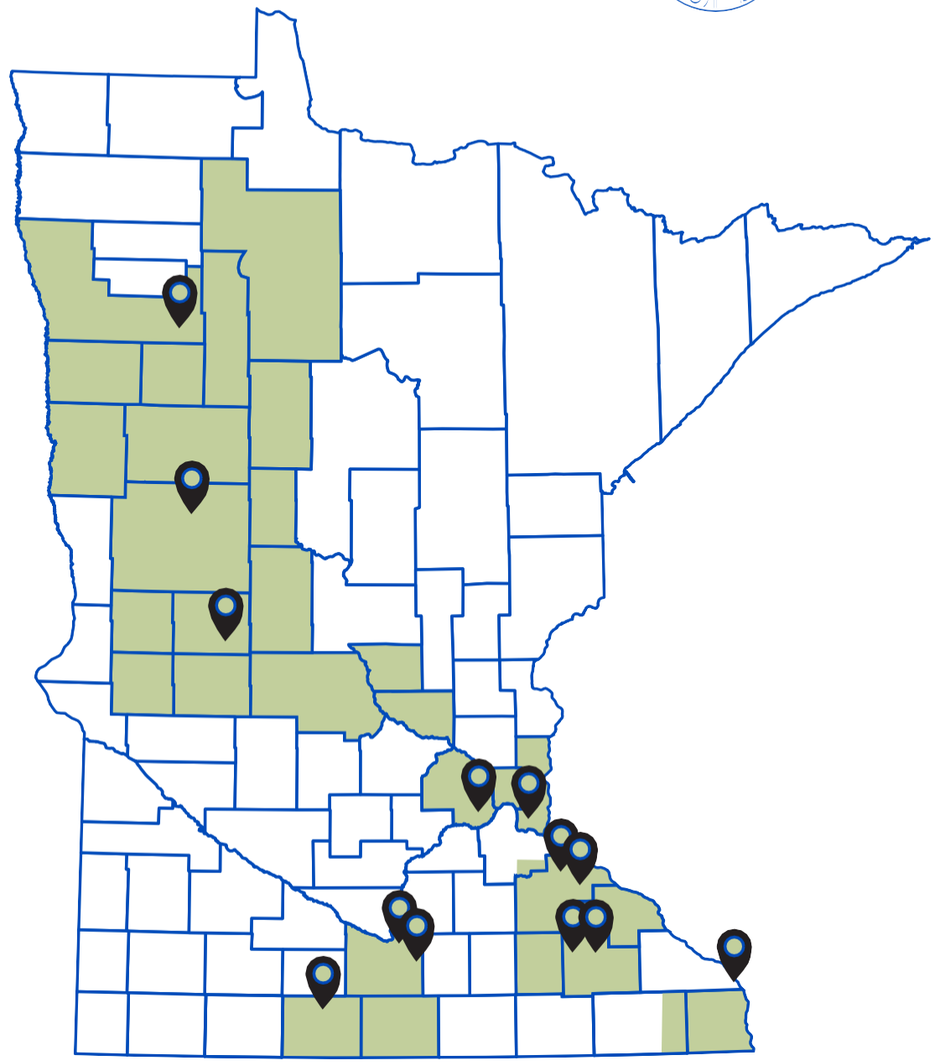
Three Public Facilities Tested

- Representative Combustion Technology
- Representative Pollution Control Technology
- Geographical Representation

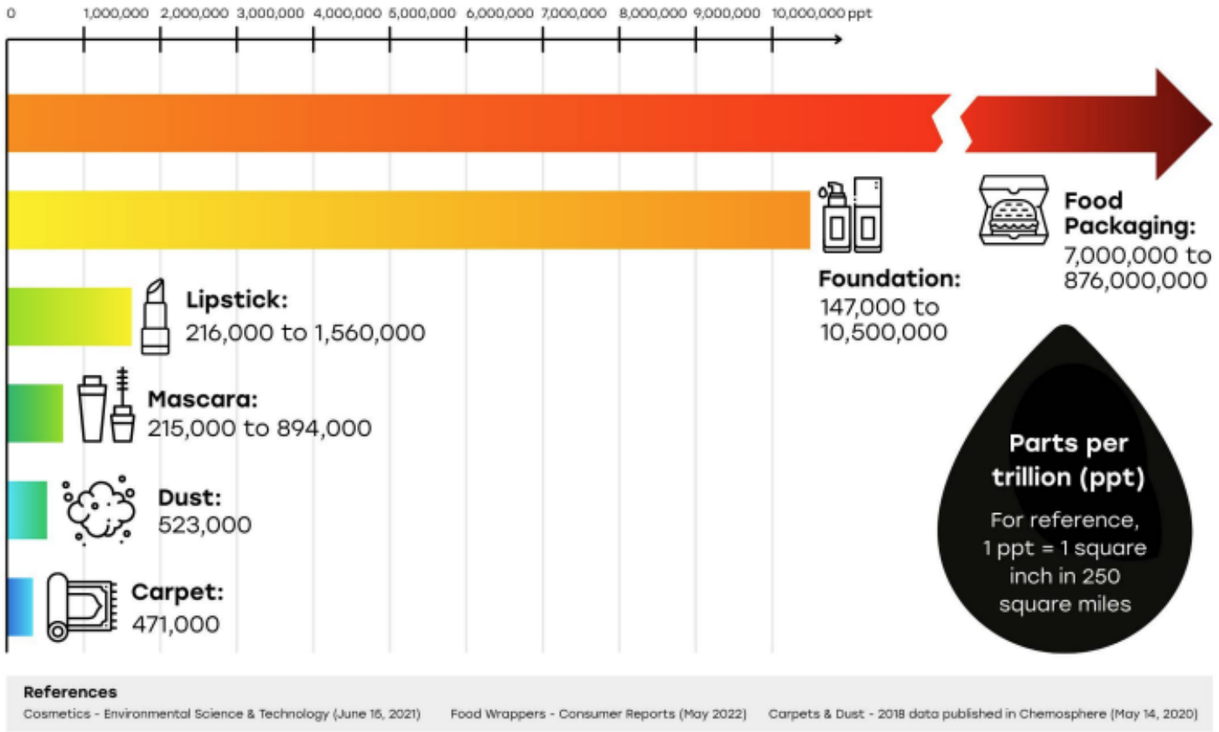
Testing During 4th Quarter 2024

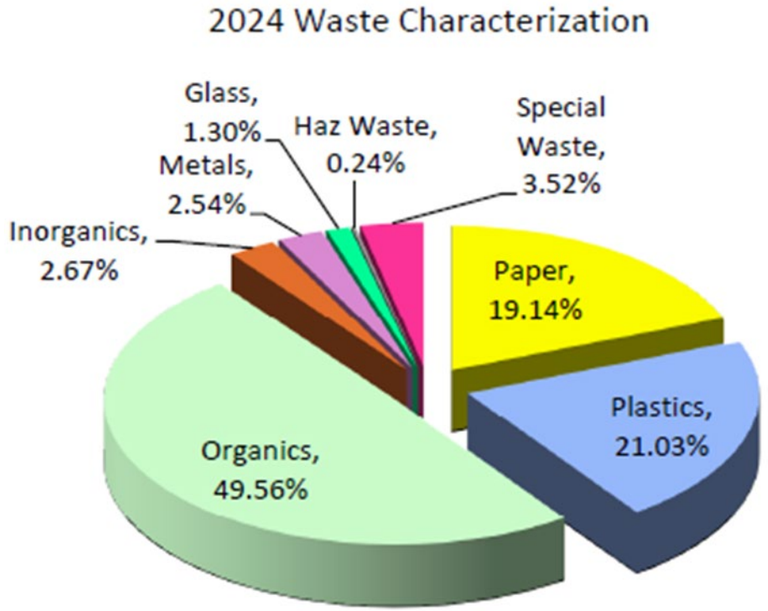
Air Emission Stack Testing

Residual Combustion Ash Testing



PFAS in MSW





*Olmsted County Waste Composition Study, 2024

100,000 grams to 372,000 grams per year Through Minnesota Resource Recovery Facilities (1 Million Tons of Waste):

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Testing Results

Minimal Detections

Representative Samples

Air Testing:

Average 144 micrograms PFAS per ton MSW

Ash Testing:

Average 140 micrograms PFAS per ton MSW

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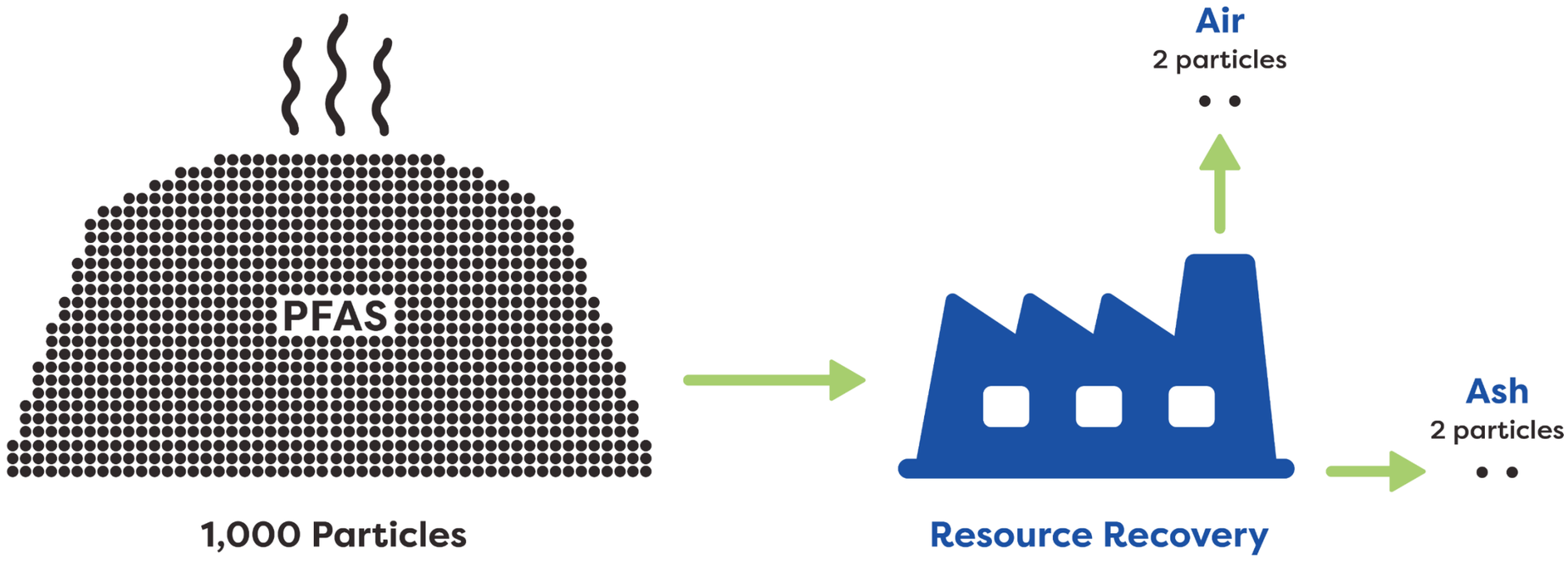
Resource recovery processes effectively destroy 99.6% to 99.97% of PFAS particles



Additional Assessment

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Xcel Energy: 145 micrograms of PFAS/ton of MSW

Health Standards Comparison (MN Dept. of Health)

10 – 1000 times lower than MDH Risk Assessment Advice level

Elevated Temperatures = Thermal Destruction

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PFAS

Human-made, industrial, long-lasting chemicals

PFAS emitted into our air, soil, water and communities

Resource Recovery

99.6% - 99.97% of PFAS effectively eliminated

Questions

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