

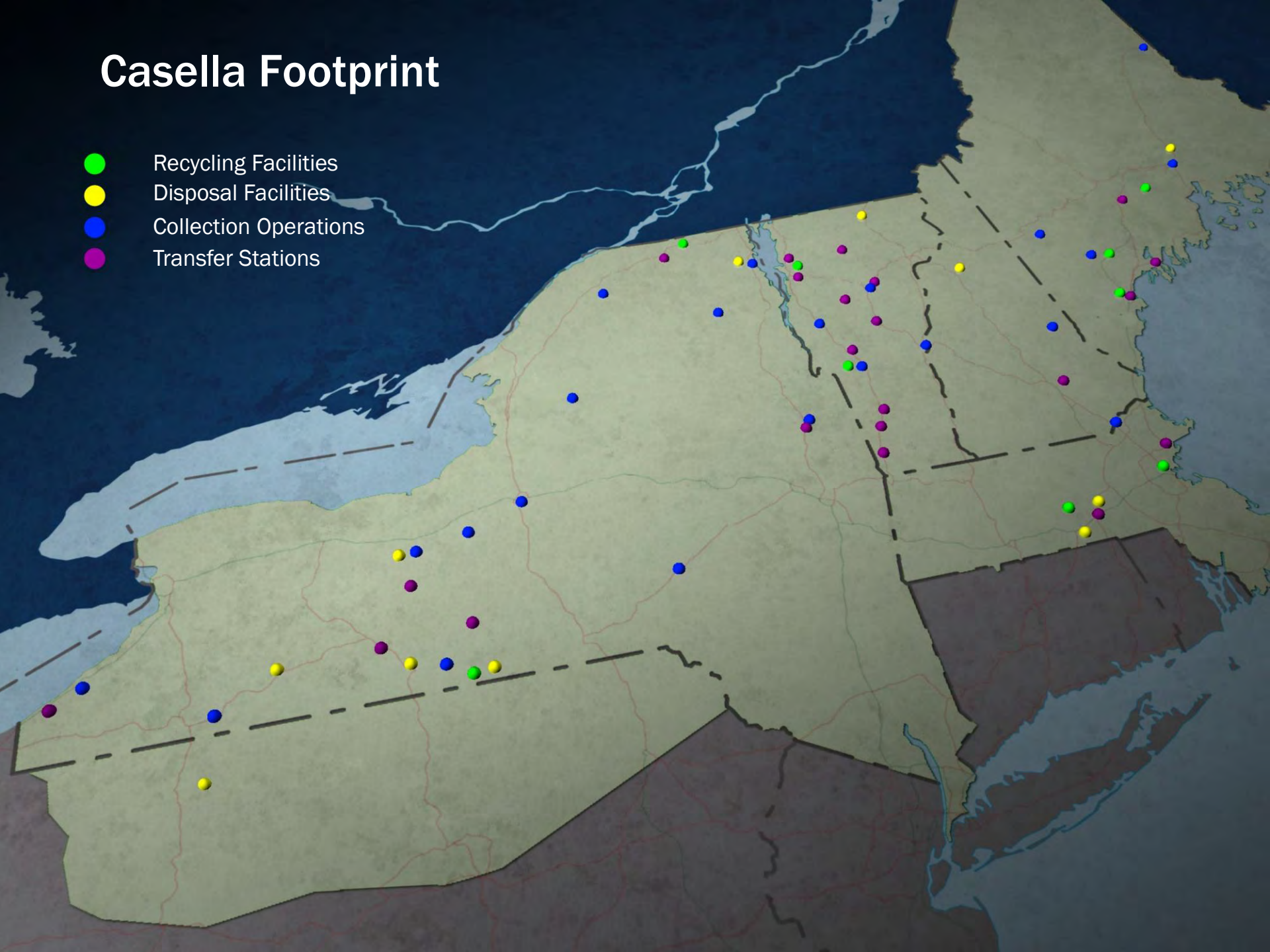
PFAS and Other Emerging Contaminants Industry Perspective

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Casella Footprint

- Recycling Facilities
- Disposal Facilities
- Collection Operations
- Transfer Stations



PFAS-Containing Waste Materials

Last Six Months:

Soil from fire-fighting training pit known to have utilized Aqueous Film Forming Foams

Soil from fire training area at Air Force Base

Manufacturer waste containing excess Teflon pellets

Industrial sludge w/ known PFOA concentration

PFAS-Containing Waste Materials

Impacted soil from PFOA remediation project

Industrial waste containing residual from coated Kevlar

Sludge from paper mill utilizing recycled feedstock

Spent GAC from POET treatment systems

PFAS-Containing Waste Materials

Presence of PFAS in:

MSW Stream

WWTP Sludges



Leachate – Limited Industry Data

Q: Where has the solid waste industry identified PFOS/PFOA in landfill leachate?

A: Wherever we have looked.

Leachate – Limited Industry Data

Canadian Landfill Study (Li, 2009)

- 27 Canadian landfills
- Detections in all 27 samples
- PFOA detected in all samples, mean conc. of 439 ppt

German Landfill Study (Busch, 2009)

- 22 German landfills
- 38 PFAS compounds detected.
- Total PFAS in untreated leachate 30.5 to 13,000 ppt

Management Plans for PFAS at Landfills

Management of Waste Inflow

- Stop accepting certain waste streams
- Targeted acceptance of waste profiles of sludges, remediation wastes, soils, etc... based on mass
- Waste acceptance based on leachate management

Management Plans for PFAS at Landfills

Management of Leachate

- Understanding PFAS lifecycle from leachate to WWTP and effluent/sludge partitioning
- Understanding leachability of PFAS in landfill environment
- Potential for Pretreatment Technologies

Management Plans for PFAS at Landfills

Potential Treatment Scenarios

- Adsorption (carbon or resins)
 - GAC well-understood as drinking water treatment technology on POET scale
 - Requires 'pretreatment' of leachate in order to treat PFAS
 - Residual spent media

Management Plans for PFAS at Landfills

Potential Treatment Scenarios

- Filtration
 - Nano filtration or RO
 - High-cost / high-energy
 - Residual concentrate
- Oxidation

Next Questions

What are the outcomes of the current regulatory and technical uncertainties regarding PFAS?

Will the inflow of PFAS increase as PFAS containing products are cycled out & remediation efforts increase?

Where and how does the industry deal with PFAS in effluent discharges at the WWTPs?

