



SKB Rosemount PFAS Removal from Leachate

SWAA Winter Training
February 25, 2026



SKB Environmental

A brief history



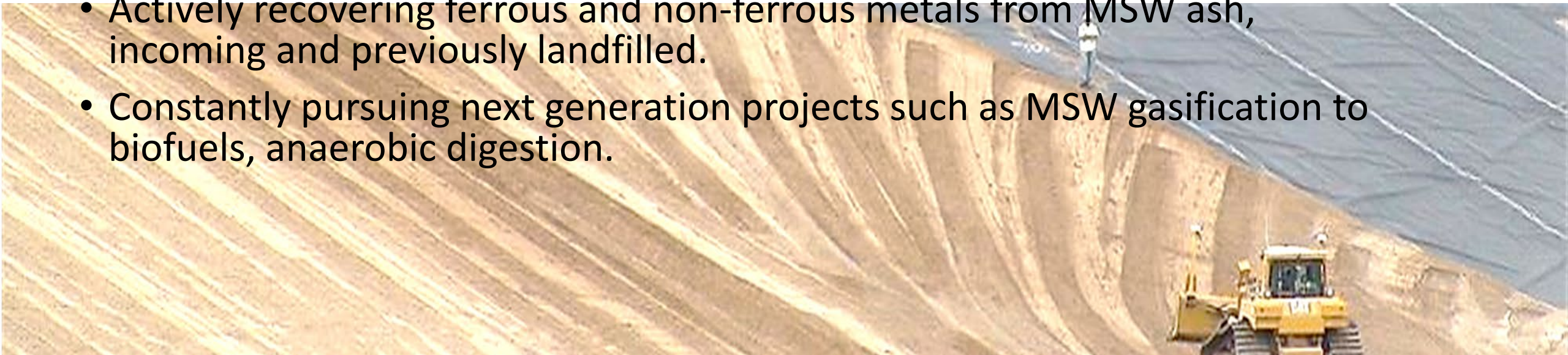
- Founded in 1983 by Dorothy Bolander.
- Acquired the SKB Rosemount Landfill in 2000.
- SKB acquired by Waste Connections in 2012.
- SKB and Waste Connections shared commitment to safety, operational excellence, and innovation.



SKB Environmental's Track Record of Innovation



- SKB is a longtime leader in the waste and recycling industry.
- First company in MN to install liner for C&D landfill.
- Only industrial landfill in MN with triple liner, dual-leachate collection system
- First company in MN to own/operate integrated C&D recycling system.
- First company in MN to own/operate organics composting facility.
- Actively recovering ferrous and non-ferrous metals from MSW ash, incoming and previously landfilled.
- Constantly pursuing next generation projects such as MSW gasification to biofuels, anaerobic digestion.



SKB Rosemount



- Accepts 3 waste streams: Industrial, C&D, and MSW Ash.
- Largest/busiest landfill in MN by annual volume—over 2M tons in 2023.
- Only industrial landfill in MN with triple liner, dual-leachate collection system.
- Site was chosen as the disposal location for 3M East Metro PFC clean up locations. Exclusive cell, all leachate removed and treated/managed by 3M.





ROSEMOUNT
LANDFILL

55

Spring Lake Park
Archery Range

Spring Lake Park Reserve

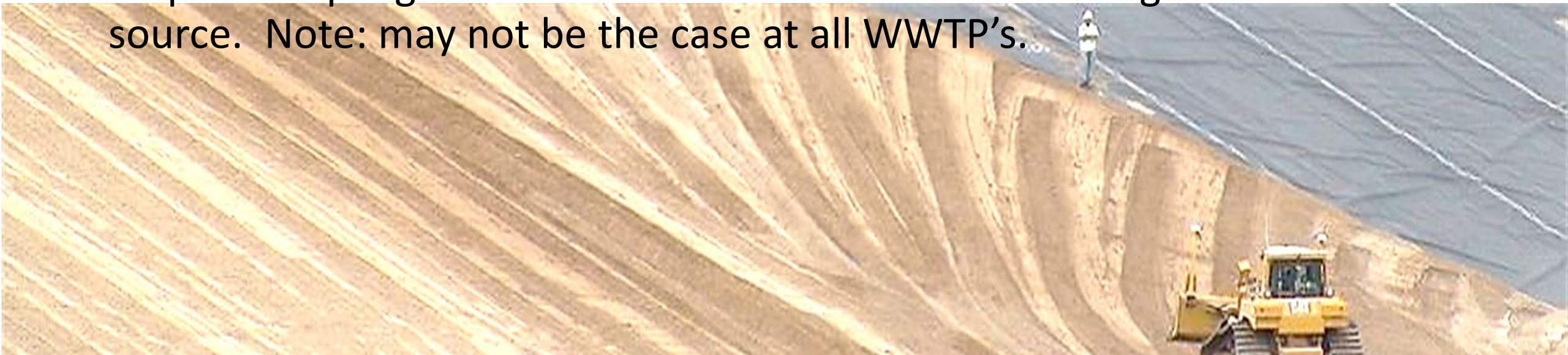
145th St

42

SKB Rosemount



- Combined leachate from all cells discharges to Metropolitan Council Environmental Services Empire WWTP. Approx 20-40M gals/year.
- Empire permit modified with new PFAS plan, generator source sampling.
- Empire sampling results indicated that leachate was a significant source. Note: may not be the case at all WWTP's.



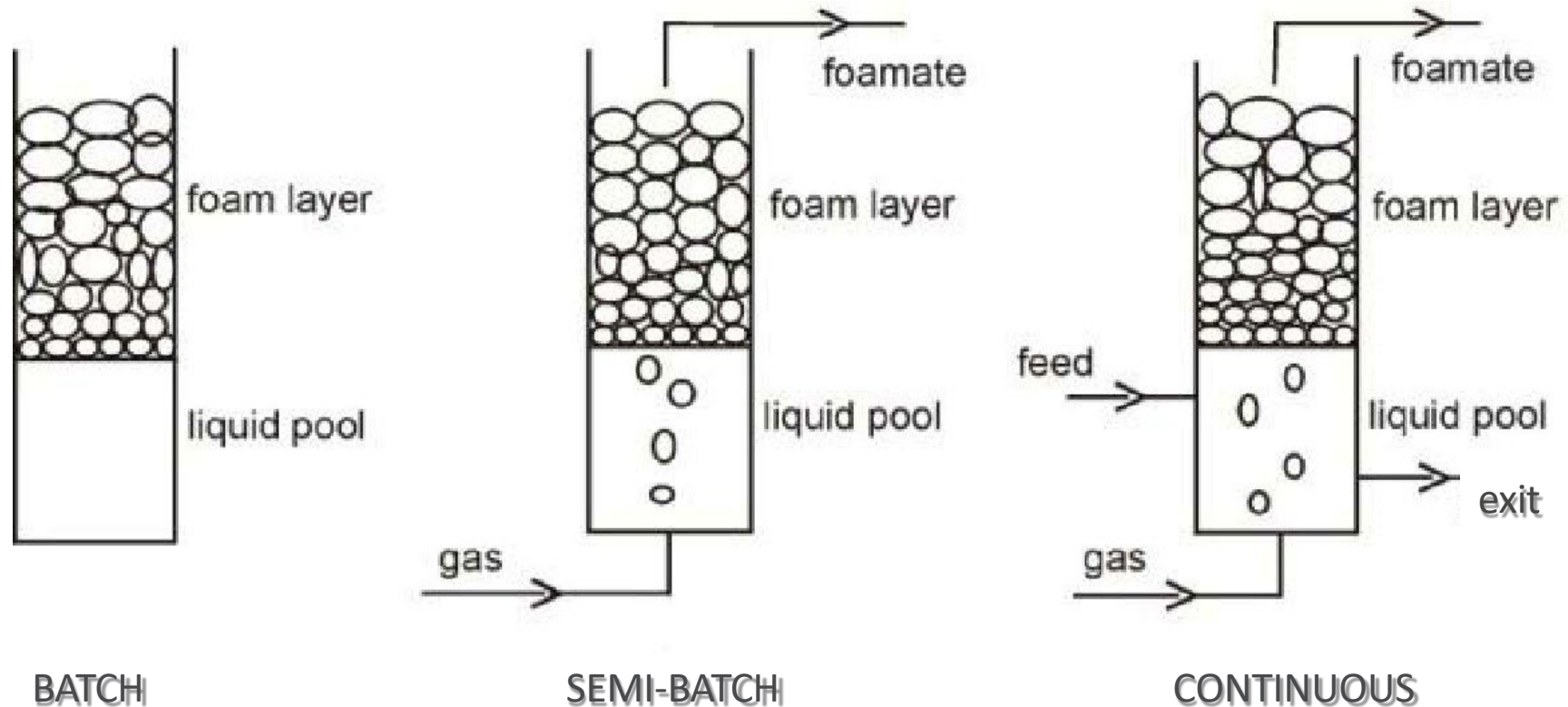
SKB Rosemount



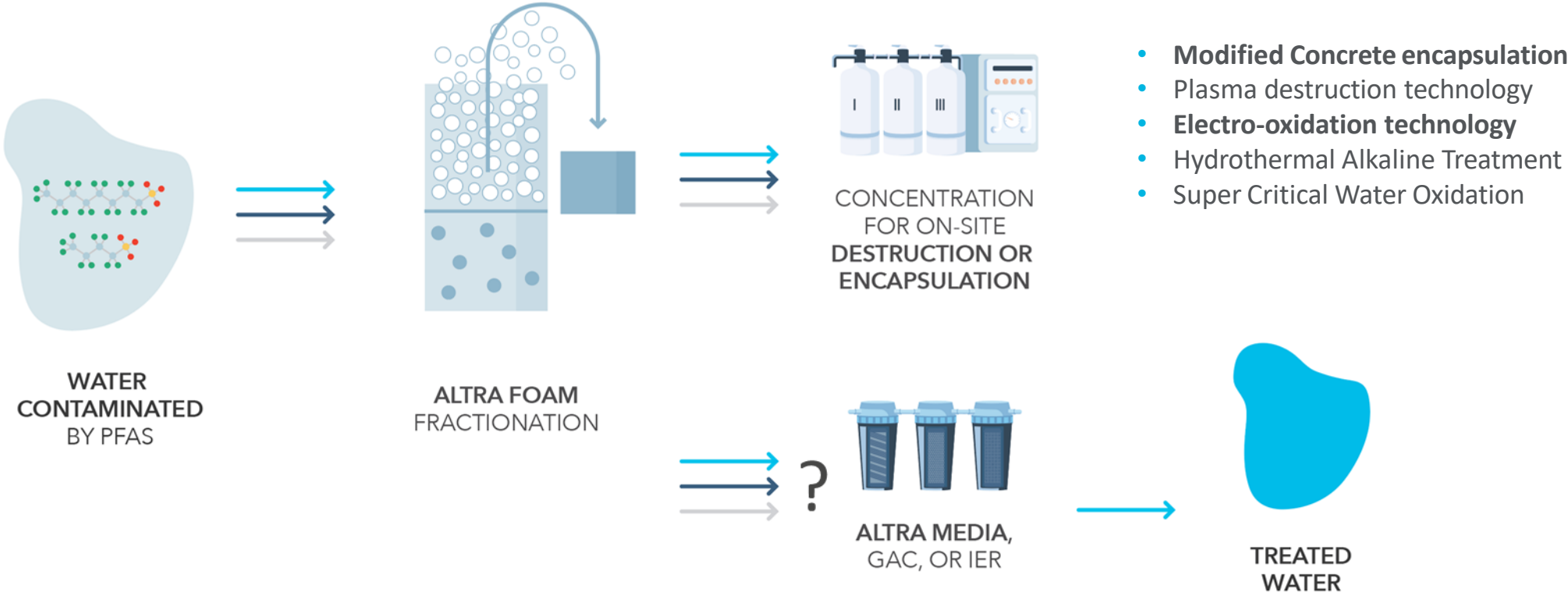
- SKB with Stantec began exploring various known and developing technologies to remove or destroy PFAS from leachate.
- After bench testing several technologies, narrowed search down to Foam Fractionation.



WHAT IS FOAM FRACTIONATION? THREE TYPES

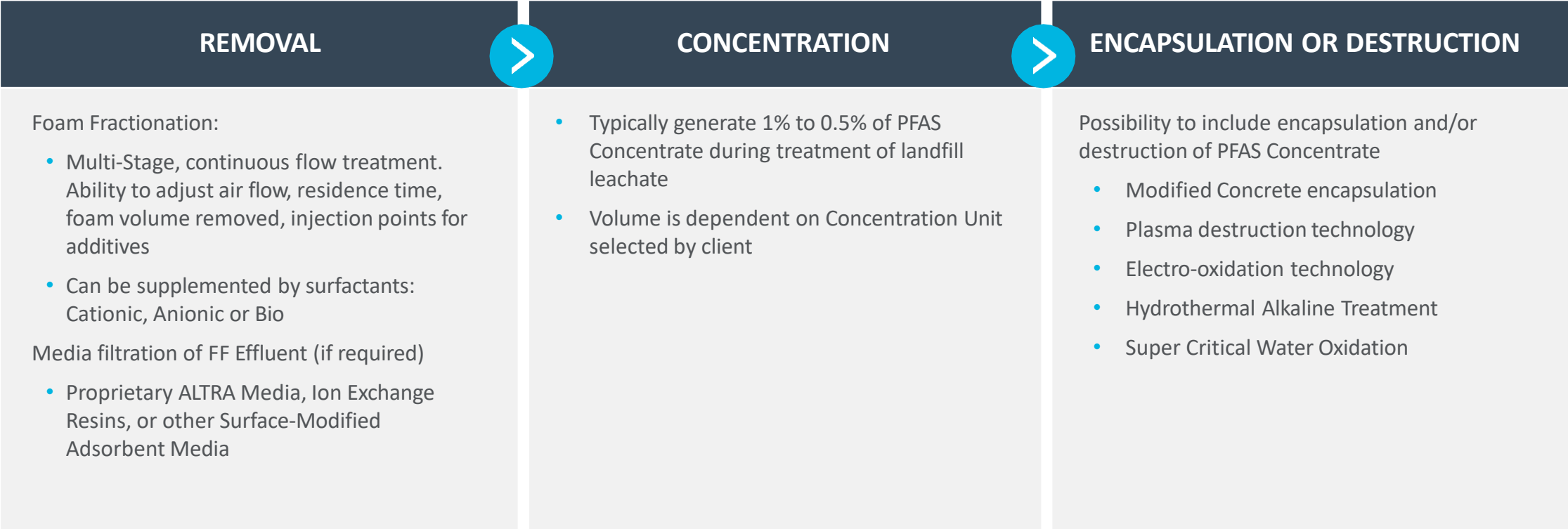


ALTRA FOAM FRACTIONATION THE ONLY CONTINUOUS FLOW, CLOSE-LOOP SOLUTION



- **WATER** - includes groundwater, wastewater, stormwater, industrial discharge & leachate (raw & RO reject)
- **PFOS, PFNA, PFHpS, PFOA, PFHxS, PFHpA, 6:2FTS, 8:2FTS, PFUnDA, PFDoDA**
- **PFBA, PFPeA, PFBS, PFHxA, PFPeS**

TECHNOLOGY DESCRIPTION



Pilot



- In 2022, conducted a pilot test of an Altra/Sanexen Foam Fractionation unit at Rosemount. Sampling results indicated dramatic PFAS capture rates.

- Developed an agreement with Waste Connections to construct facility at SKB Rosemount.



Installation



- System installed in December 2023.
- Installed equalization tank in September 2024 and began treating 100% of leachate in December 2024.





ALTRA PFAS-IMPACTED LEACHATE TREATMENT PLANT AT
SKB ENVIRONMENTAL'S ROSEMONT, MN (A WASTE CONNECTIONS COMPANY)

ALTRA

TREATMENT UNIT RESULTS (Sept. 2025)

| EPA's 6 Drinking Water PFAS Targeted | Removal |
|--------------------------------------|---------|
| PFOS | 88%* |
| PFOA | 99% |
| HFPO-DA | 53%** |
| PFNA | 96% |
| PFHxS | 98% |
| PFBS | 62% |

| PROCESS PARAMETER | DATA |
|----------------------------------|----------------------|
| Design Flow Rate | 55 gpm |
| Average Daily Volume | 36,000 gpd |
| Foamate Generation (Concentrate) | <2% |
| Volume Treated as of Feb 1, 2026 | > 25,000,000 gallons |

*typically above 90%

**very low concentrations, close to non-detect.

Waste Connections Foam Fractionation Systems



- Champ Landfill, St. Louis MO. MSW landfill - installed ECT2 system.
- Bethlehem Landfill, Bethlehem NY. MSW landfill - installed Leef system (Water & Carbon Group).



PFAS Destruction of Foamate



- Received grant from MPCA to test Super Critical Water Oxidation (SCWO).
- Will be testing using the General Atomics SCWO unit, anticipated start in Q3 2026.



Moving forward



- SKB intends to continue to be industry leaders and innovators.
- SKB Rosemount serves as an ideal disposal location for PFAS remediation waste.
- Landfills and WWTPs are part of the solution to safely and responsibly manage PFAS.
- These new technologies will help us better improve how we do that.

