

FRC DAF SYSTEMS

Wastewater & Sludge Management at MDF Manufacturer



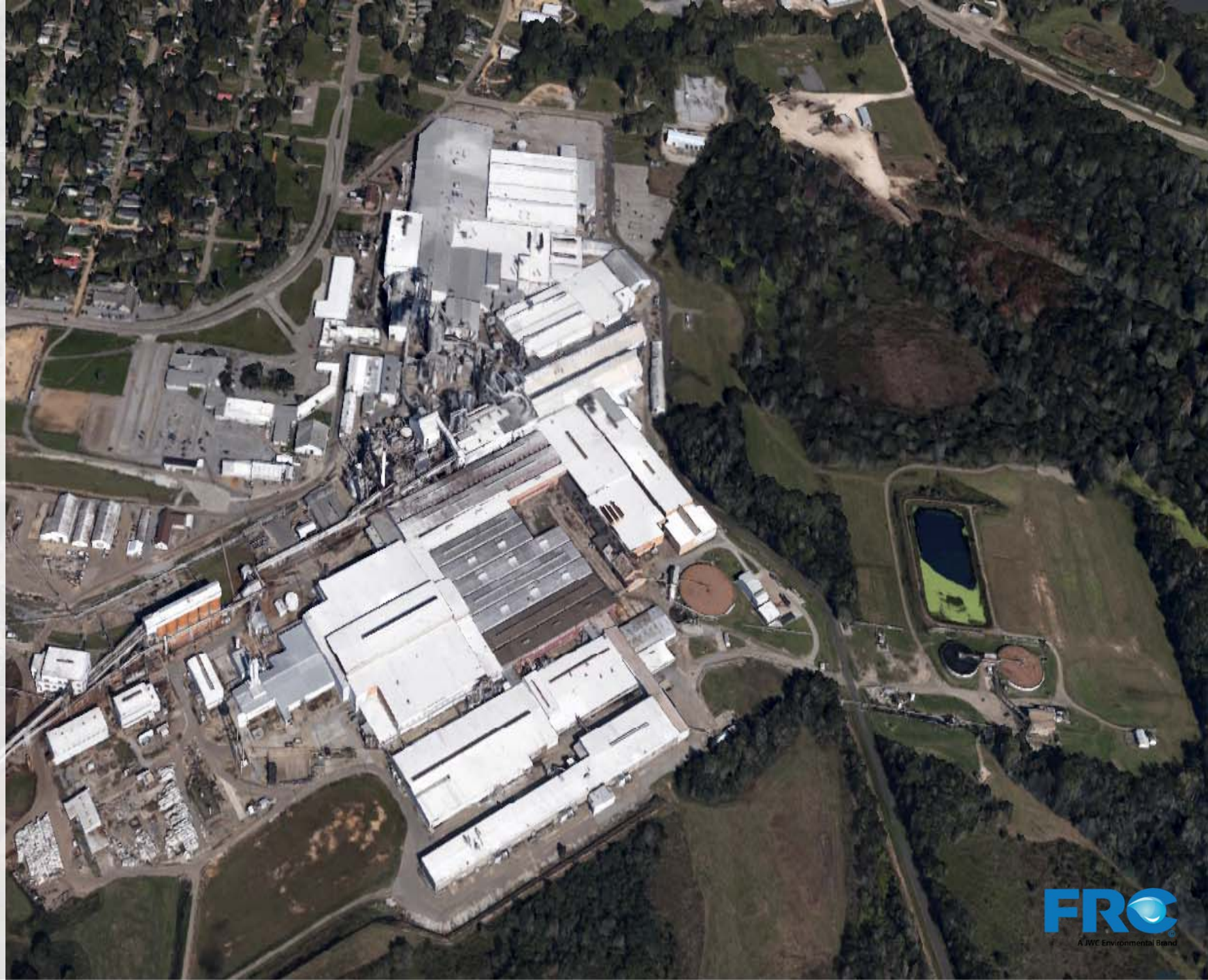
ABOUT FRC

- Founded in 1979 in Gainesville, GA
- Since 2018 a SULZER Company
- Locations around the world
- Over 500 FRC projects in 20+ countries worldwide
- Focus on Industrial Wastewater Treatment
- Ability to provide single products, systems or turn-key wastewater treatment solutions



MDF from Pine

- Produces MDF for Door Manufacture
- Plant consumes up to 27 acres of timber every day in production of door and door facings
- Yearly production of over 35 million door facings



Challenges

MDF From Pine

- Plant data

Design Data:

- Flow: 790,000 GPD
- TSS: 1,300 mg/L
- FOG: ≤ 50 mg/L

Discharge Requirements:

- TSS: $< 7,200$ lb/d
- BOD: $< 7,200$ lb/d
- FOG: < 100 mg/L
- $\text{NH}_3\text{-N}$: < 22 mg/L
- Zinc: < 1.60 mg/L
- Copper: < 0.13 mg/L

- Screening
- Solids separation
- Solids dewatering
- Metals Limits



Pilot Plant

MDF From Pine

- FRC Supplied Complete Pilot Plant for Proof of Concept

Pilot System Includes:

- PFR Flocculator
- Chemical conditioning
- FRC DAF
- FRC Belt Filter Press
- Electrical Controls
- All auxiliary equipment

Pilot System Objectives:

- Establish Performance of FRC Process
 - Determine Full-system Chemicals Consumption
- Two-week Trial was sufficient to establish satisfactory system performance



Permanent Solution

MDF From Pine



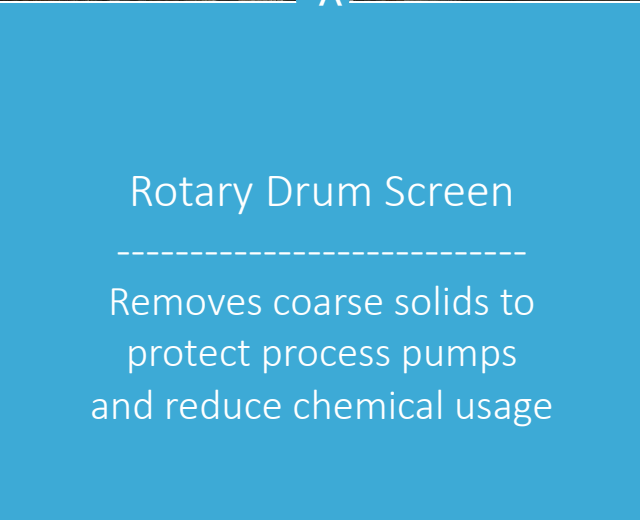
Pipe Flocculator

Disperses and mixes injected coagulants and polymers to agglomerate solids



Belt Filter Press

Dewaters DAF sludge for easier and more cost-efficient disposal



Rotary Drum Screen

Removes coarse solids to protect process pumps and reduce chemical usage



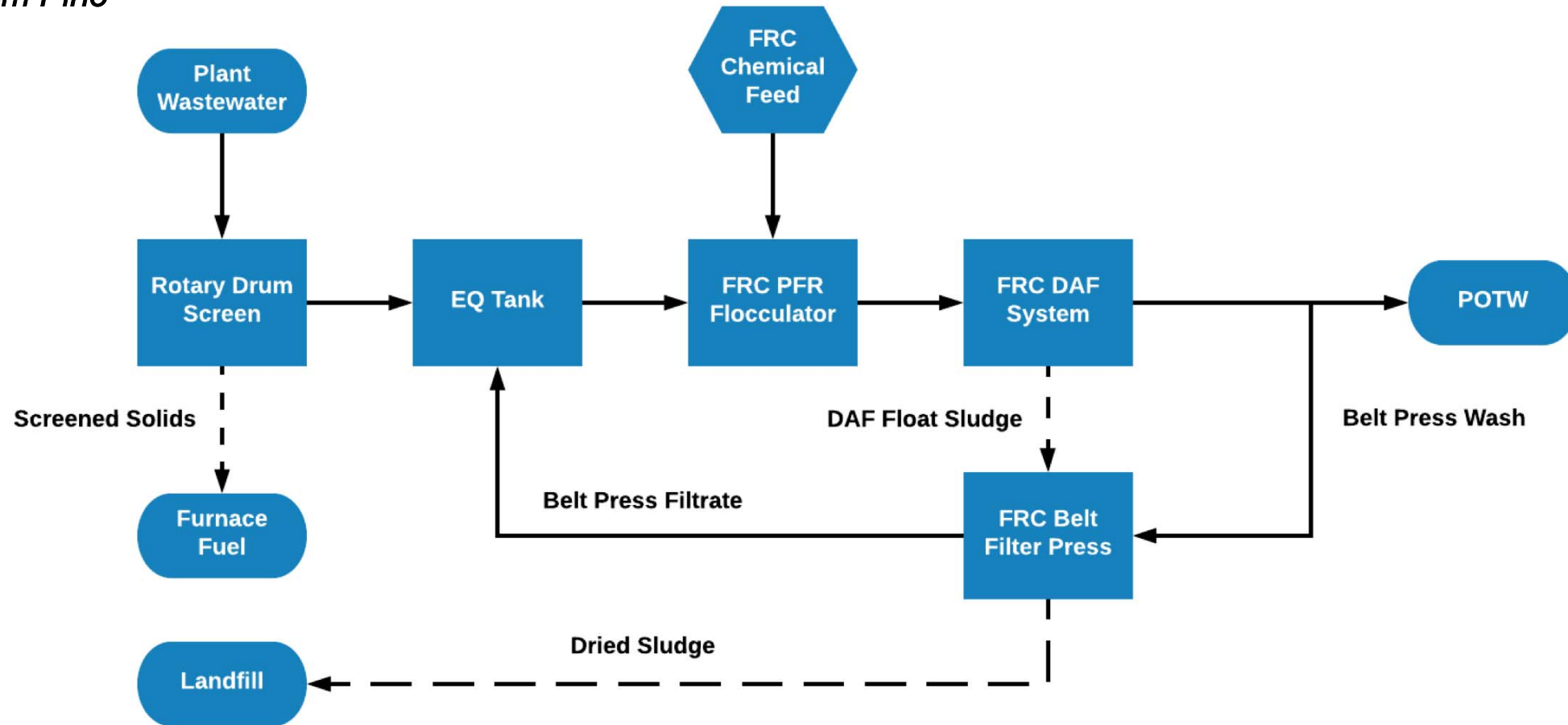
Dissolved Air Flotation Unit

Separates & removes solids, oils, and grease from water



FRC Engineered Process Flow

MDF From Pine



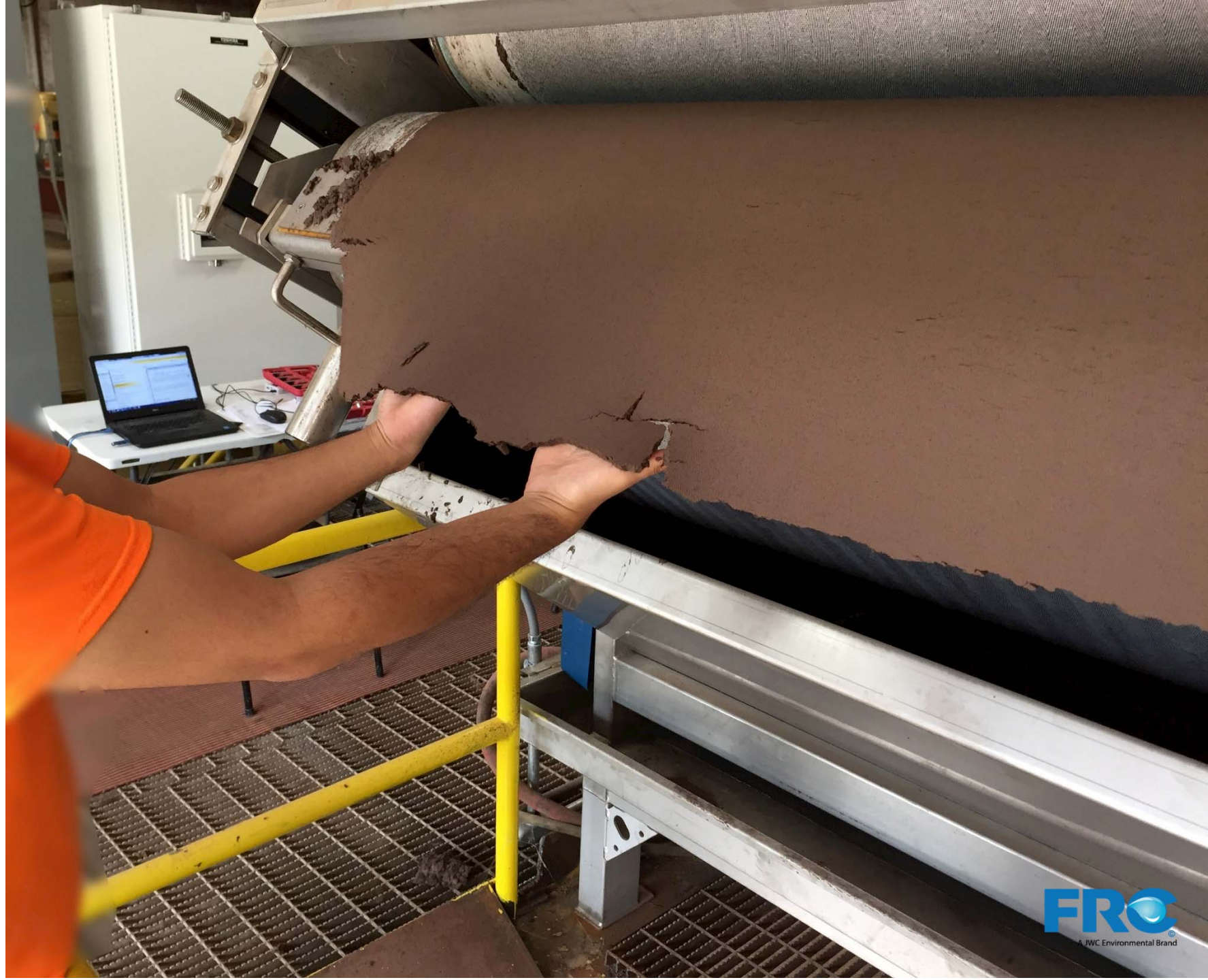
Application-specific DAF Solution

- Flocculator and DAF are carefully selected to meet the needs of the application
- FRC PCL-60 DAF permits treatment of up to 700 gpm in compact footprint.
- Included corrugated lamella plates provide massive separation surface area
- Low hydraulic surface loading rate is key to separating metals and small particles



Dewatering Done Well

- Belt Filter Press is a much better fit for this application
- Influent sludge quality changes constantly – but dewatering performance is consistently excellent
- Belt Filter Press system minimizes operator input.
- The results speak for themselves!



What Sludge Should Look Like



