

Business Item 2023-208:
Empire Polymer Contract
Contract 22P2349A

Elizabeth Schrandt, Principal Engineer

Environment Committee: September 12, 2023



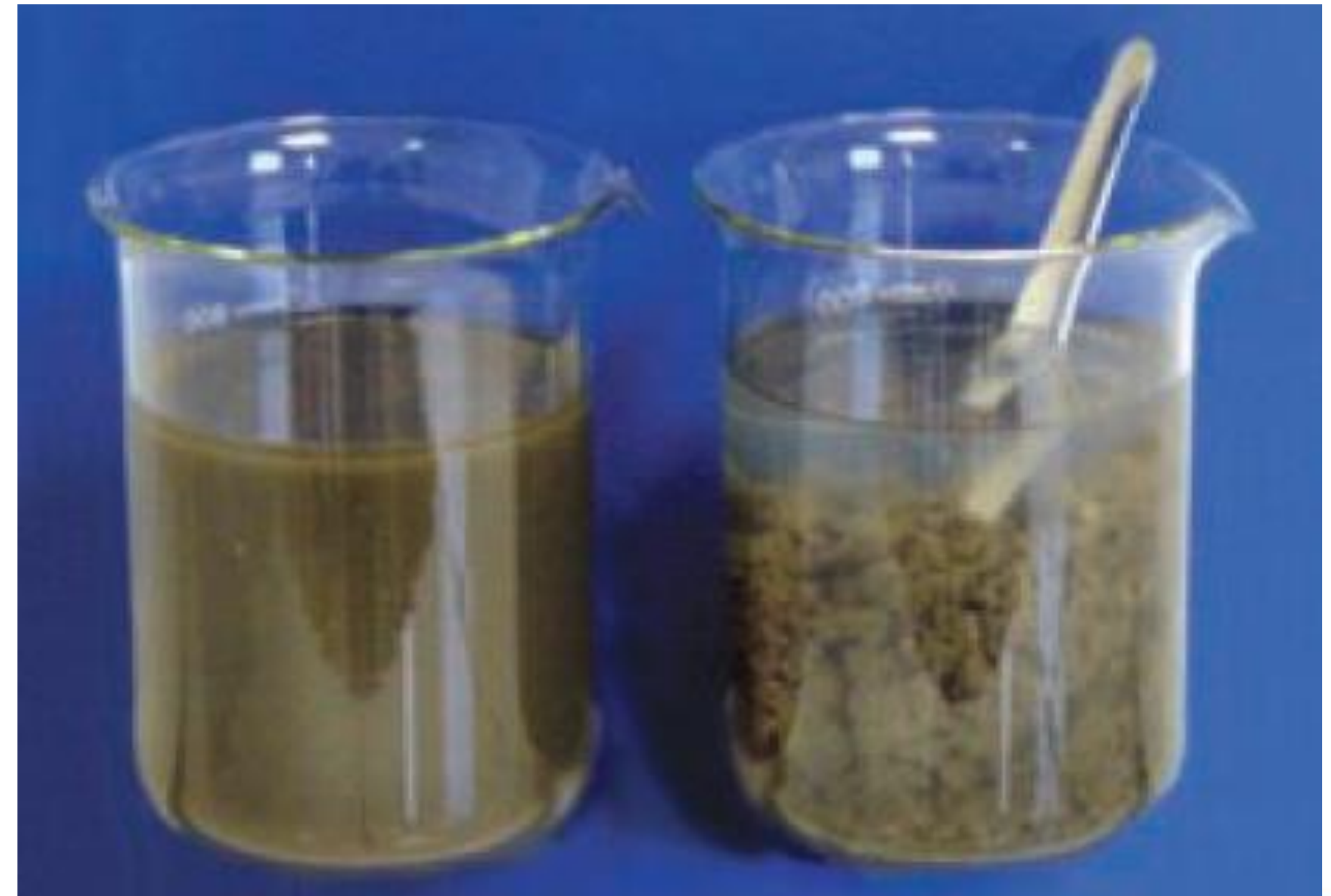
What is sludge?

- Particles that settle naturally (primary sludge in gravity thickeners)
- Excess microorganisms (secondary sludge in aeration tanks)



What is polymer?

- Made of mineral oil (light naphtha), polyacrylamide, and water
 - Raw materials are oil and natural gas
- Causes sludge particles to agglomerate (flocculation)
- Allows dewatering equipment to separate solids from water



How is Polymer Used at Empire?

Gravity Belt Thickeners

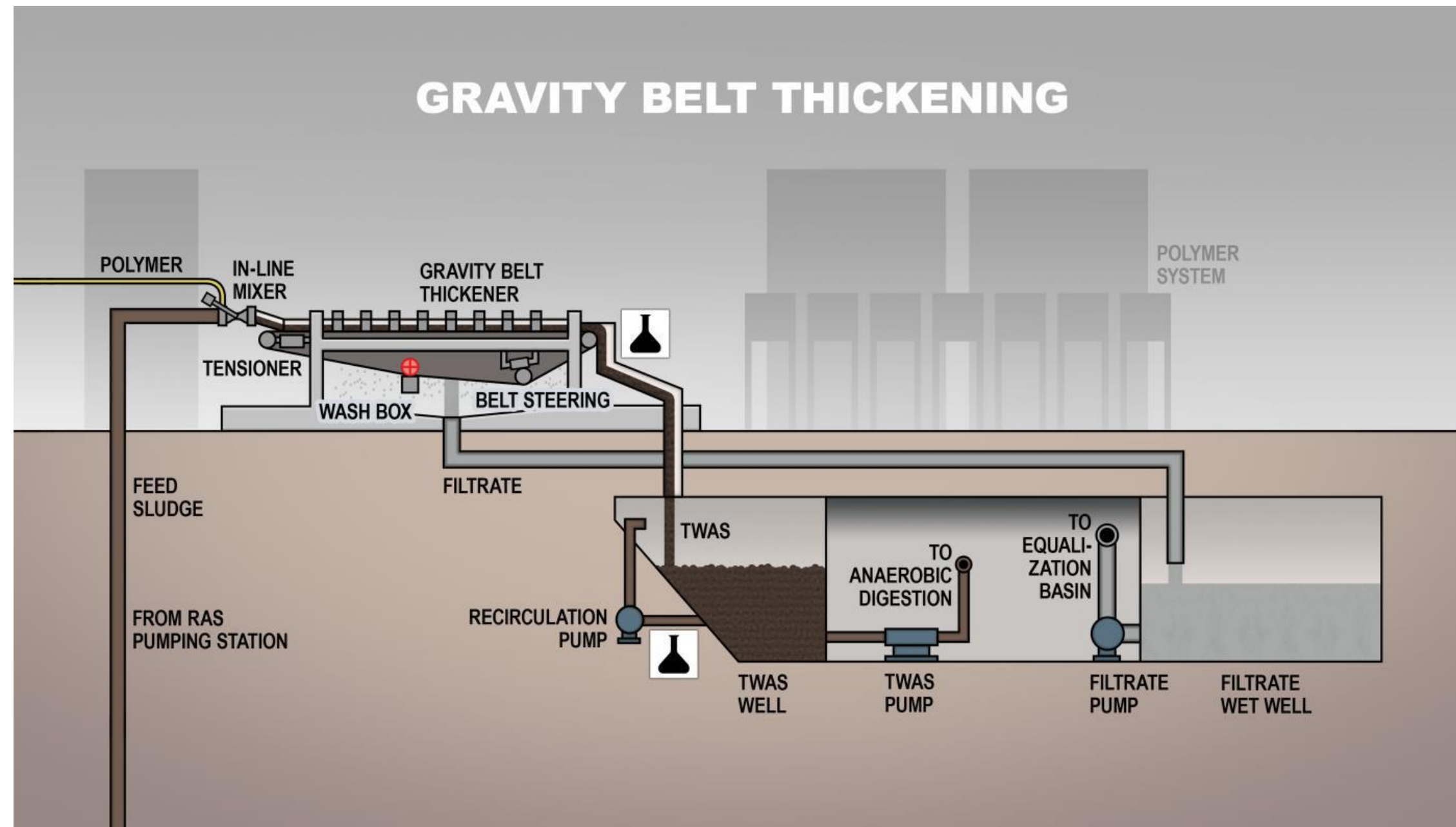


Belt Filter Presses



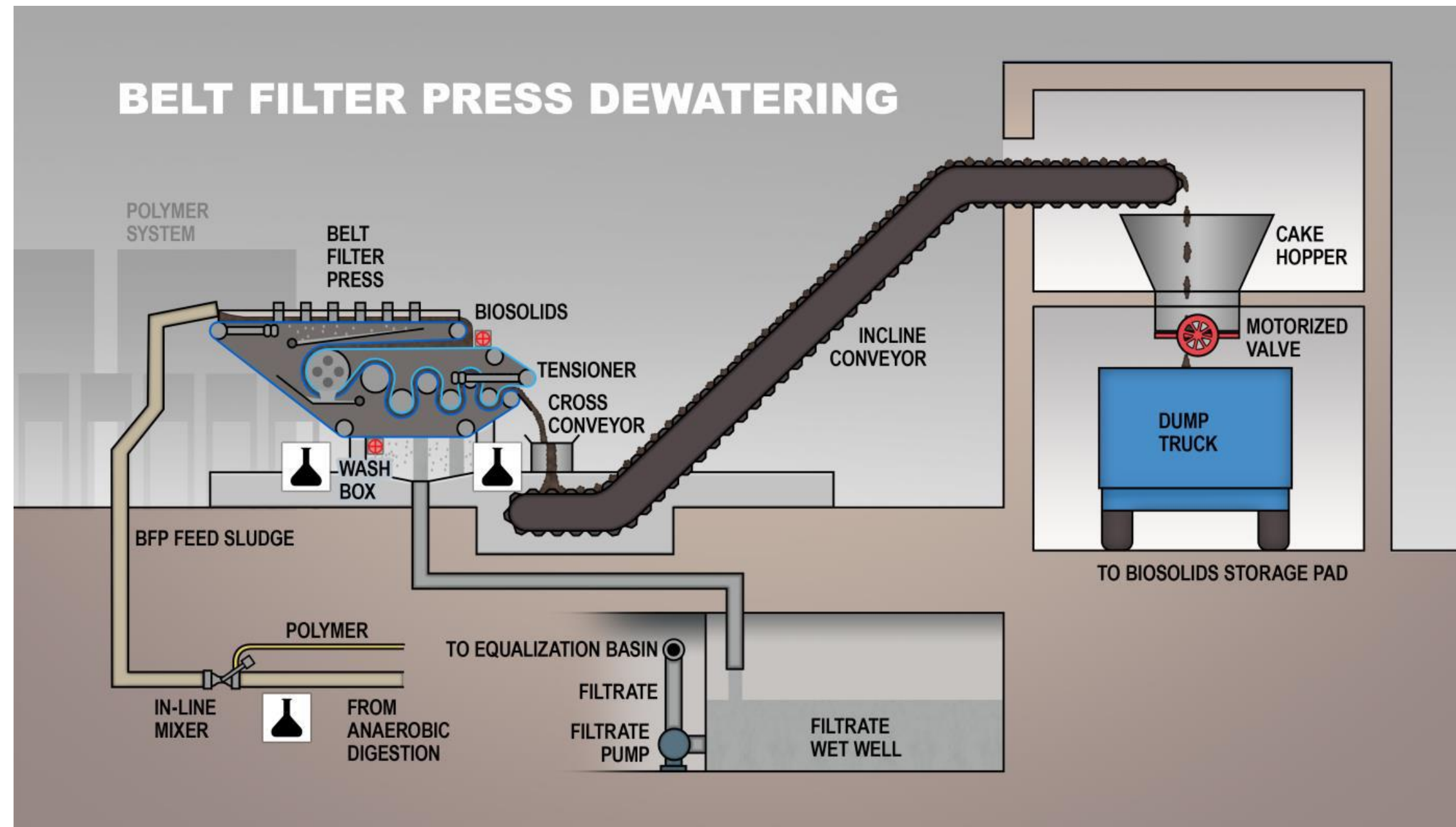
Polymer is mixed with sludge and fed to the equipment

Gravity Belt Thickeners



- Reduce the water content of waste activated sludge to save costs of heating the digesters
- Provide longer retention times in the digesters so better stabilization can occur and provide more digester capacity.
- Increase solids concentration from 1% to 6%

Belt Filter Presses



- Move water from the digested sludge in order to reduce the volume of biosolids to make it economical for storage, hauling and land spreading.
- Increase solids concentration from 2.5% to 12%

Solids Are Ultimately Land Applied

Solids are dried on pavement then loaded for land application in spring and fall



Background

- Two-step Procurement process
 - Invitation for Prequalification – December 19, 2022
 - Identify the most effective polymer through a full-scale evaluation of their performance and prequalify those contractors
 - Only contractors that are prequalified are allowed to participate in the Invitation for Bids which is the second step in the procurement process.
 - Invitation for Bids – July 10, 2023
 - Three bids received and opened – August 10, 2023
- Polydyne, Inc. met evaluation process requirements at lowest cost
- \$380,000 annual expenditure, 5-year contract not to exceed \$2,399,000 accounting for inflation
- Office of Equity and Equal Opportunity did not set a Metropolitan Council Underutilized Business (MCUB) goal

Proposed Action

- That the Metropolitan Council authorize the Regional Administrator to award and execute contract 22P349A with Polydyne, Inc. to provide polymer to the Empire Wastewater Treatment Plant in amount not to exceed \$2,399,000.

Questions

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