

Portland
Water
District

From Sebago Lake to Casco Bay

Pretreatment Success Story

A Long Time Coming



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NERPCA 10/22/25

Outline



Portland
Water
District

From Sebago Lake to Casco Bay



Portland Water District

Our IPT Programs

Industry Profile

Enforcement Timeline

The Pretreatment Project

Post Project

Portland Water District



- Quasi-municipal water and wastewater utility
- Greater Portland area – Maine
- Established 1908
- Wastewater since 1978
- ~180 employees

Drinking Water



- 200,000 people
- 11 communities
- Unfiltered water supply
- 1 treatment facility

Wastewater



- Wastewater collection for 6 communities
- 4 conventional plants
- Plants discharge to Casco Bay and Presumpscot River
- MBR under construction

Industrial Pretreatment

- 2 approved IPT programs
 - Portland
 - Westbrook-Gorham-Windham
- 45 Industries
- 1.75 staff



Industrial Pretreatment

- Environmental Compliance Coordinator
- Environmental Scientists
- Wastewater Systems staff



PWD's IPT Programs



Portland Program
27 Industries



Westbrook-Gorham-Windham Program
18 Industries

Portland Industries



ALLAGASH

Seafood Processors
Dairies
Landfills
Industrial Laundry
Healthcare Facilities
Airplane Deicing Fluid
Recycling
Others



Westbrook-Gorham-Windham Industries



LONE PINE



Power Plant
Industrial Laundries
Breweries
Metal Finishers
Food Processor
Others

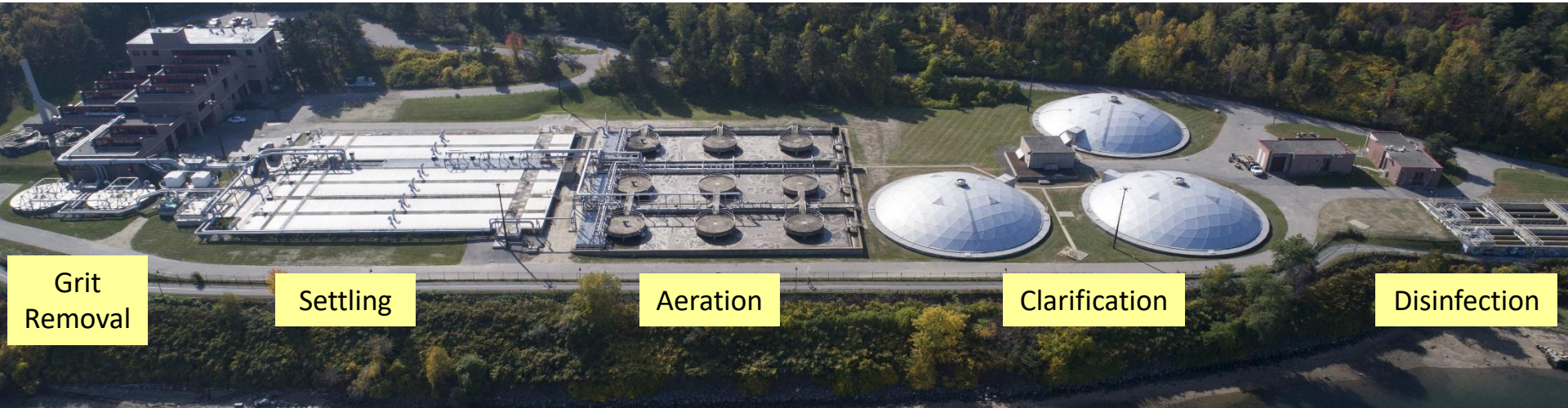


Southern
Maine Specialties



Portland Program

- ▶ **East End Wastewater Treatment Facility**
 - ▶ **Discharges to Casco Bay**
 - ▶ **20 MGD Secondary Treatment Facility**

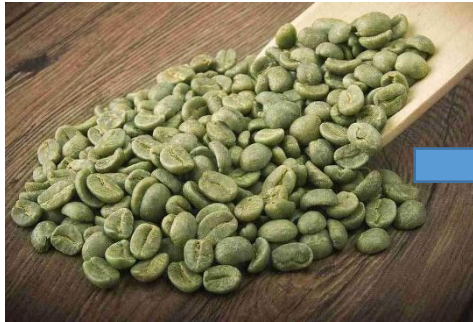


The Trouble Begins...2011



Industrial User Profile

- Significant Industrial User
 - Portland Program
 - Began operation in 2008
 - Permitted SIU since 2010
- Produce coffee extract and cold brew



Industrial User Profile

- Wastewater a combination of:
 - Water from RO part of extraction process
 - CIP waste
 - Water removed from coffee grinds
 - Floor drains

- Solid waste - coffee grinds
 - Spent grinds collected in a tractor trailer and off-sited



Self-monitoring

Discharge Limits	Daily Maximum	Monthly Average Limit
Biochemical Oxygen Demand (BOD), lbs/day	N/A	1750*
Total S		1000*
Dischar		Y
To (by EP		N/A
Non- (by EP		N/A
(by EP Temperature		N/A
pH, Standard Units, S.U.	>12.5 prohibited (see EPA Hazardous Waste Rules 40 CFR 261.22)	N/A

Sampling Frequency

2010 – 2020

Quarterly

2020 – 2023

Monthly

2023 – present

2x/month

Violation History (2017-2024)

Date	Violation Description
August 2, 2017	pH ordinance violation
August 23, 2017	Oil and Grease ordinance violation
October 30, 2017	Oil and Grease ordinance violation
November 7, 2017	Wastewater Pump Failure Untreated Wastewater Discharge
November 28, 2017	Oil and Grease ordinance violation
January 31, 2018	Oil and Grease ordinance violation

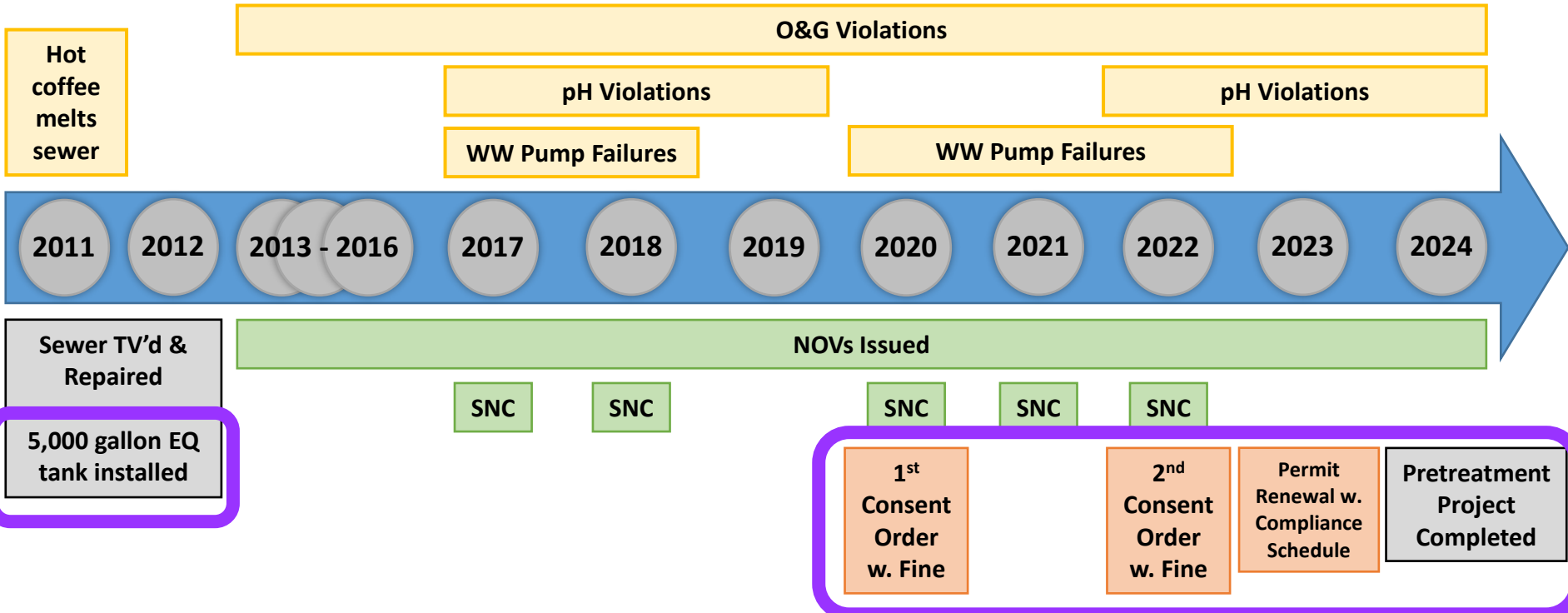
June 7, 2022	Wastewater Pump Failure Untreated Wastewater Discharge
June 17, 2022	Oil and Grease ordinance violation pH ordinance violation
June 29, 2022	pH ordinance violation
August 11, 2022	BOD Permit Limit Violation Oil and Grease ordinance violation

pH Violations
Oil and Grease Violations
Wastewater Pump Failures
Untreated Wastewater Discharges

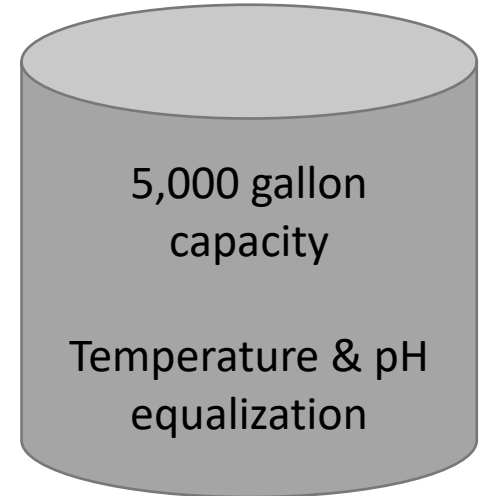
March 17, 2021	Untreated Wastewater Discharge
May 24, 2021	Wastewater Pump Failure Untreated Wastewater Discharge
August 20, 2021	Oil and Grease ordinance violation
December 16, 2021	Oil and Grease ordinance violation
December 20, 2021	Oil and Grease ordinance violation
February 9, 2022	Oil and Grease ordinance violation
April 2022	BOD and TSS Permit Limit Violations
April 15, 2022	Oil and Grease ordinance violation
May 2022	BOD Permit Limit Violations
May 18, 2022	Oil and Grease ordinance violation
June 6, 2022	Wastewater Pump Failure Untreated Wastewater Discharge

January 16, 2024	Oil and Grease ordinance violation
February 6, 2024	Oil and Grease ordinance violation pH ordinance violation
February 20, 2024	pH ordinance violation
March 5, 2024	Oil and Grease ordinance violation
April 8, 2024	Wastewater Pump Failure
April 16, 2024	Oil and Grease ordinance violation
April 2024	TSS Permit Limit Violation
May 7, 2024	Oil and Grease ordinance violation
May 22, 2024	Oil and Grease ordinance violation
June 4, 2024	Oil and Grease ordinance violation
June 2024	BOD and TSS Permit Limit Violations

Timeline

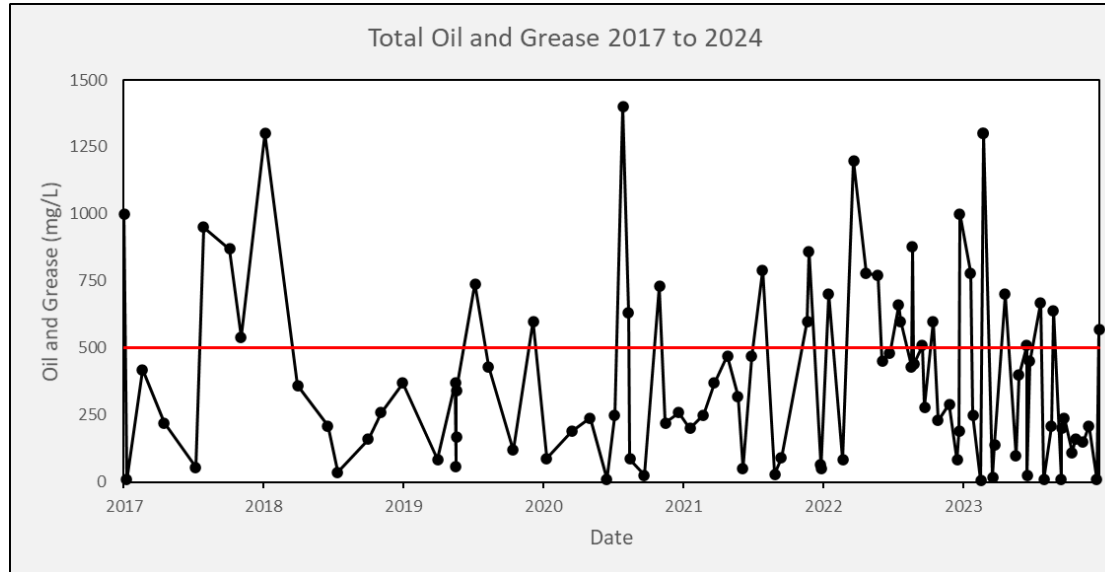


EQ Tank



O&G Violations

City of Portland Ordinance Limit
500 mg/L for Total O&G



Wastewater Pump Failures - 2020

- Multiple failures of pump in lift station
 - Debris in the lift station
 - Resulted in wastewater bypassing EQ tank to sewer
 - No pump redundancy
- PWD required increased inspections of the lift station and Vincent Press

1st Consent Order - 2020

- Terms
 - Investigate causes of violation and bypass events
 - Evaluate options for improving wastewater quality
 - Propose additional treatment if deemed necessary
 - Bi-weekly progress reports required
 - Procure replacement pumps and provide redundancy
 - Create and implement pump failure SOP

- \$5,000 fine

Following 2020 CA

- Evaluation of facility and pretreatment by consultant
- Roof drains identified as contributing water to pump station
 - Partially completed – 2021
- Recommended pump station upgrade with pump redundancy and bypass prevention
 - Numerous delays in 2021 into 2022, not completed

2nd Consent Order - 2022

- Superseded 2020 Consent Order

- Terms
 - Complete redundant pump project by March 2023
 - Pump project required for permit renewal in 2023
 - Wastewater bypass prevention plan by March 2023
 - Evaluation of pretreatment system and potential upgrades needed to meet discharge limits

- \$10,000 fine

Permit Renewal 2023

- Redundant pipe project, roof drain removal, and bypass prevention plan completed by March deadline
- Permit renewed with Implementation Schedule
 - Upgrade the pretreatment system
 - Implement bypass prevention plan
- Quarterly updates required
- Project completion target: April 2024

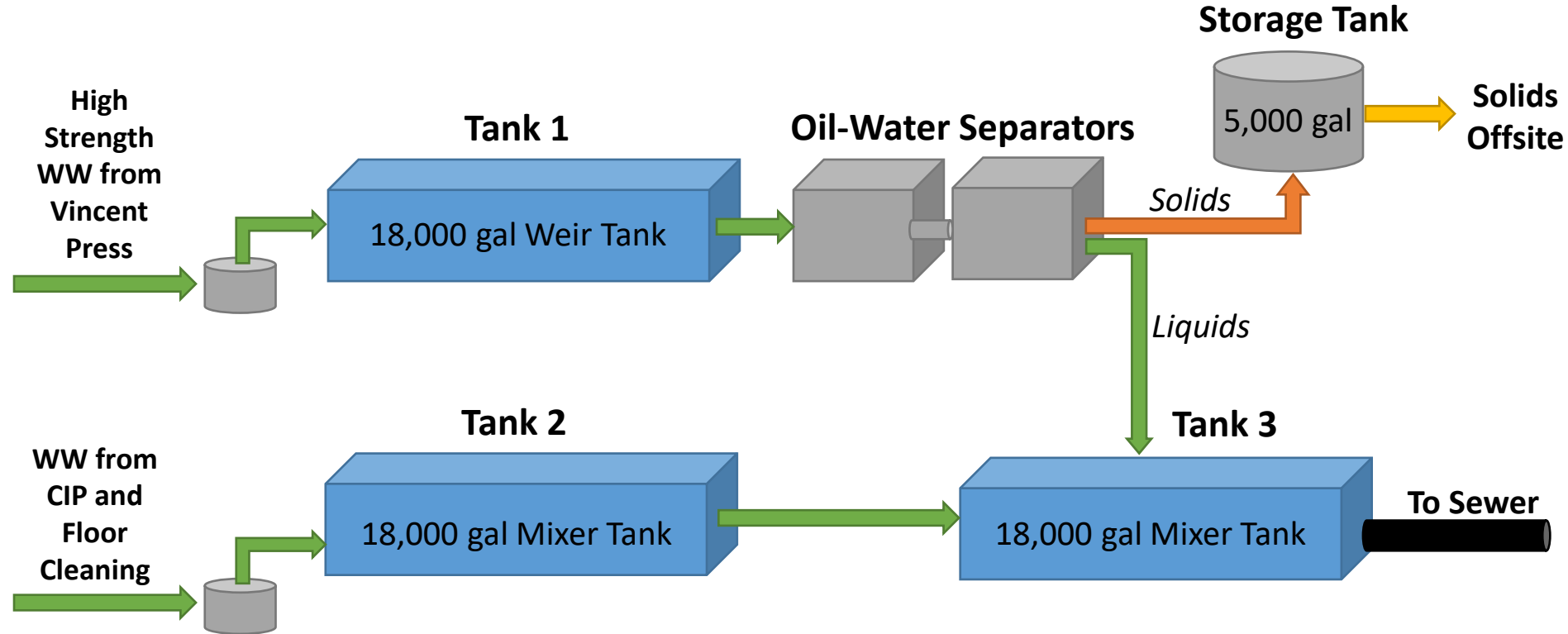
Permit Implementation Schedule

- Project on schedule to start
 - Quarterly update due January 2024
 - Equipment procurement not completed
- Industry proposed new pretreatment system
- PWD amended permit with new schedule in March 2024
 - Monthly updates required
- Project completion target: September 2024

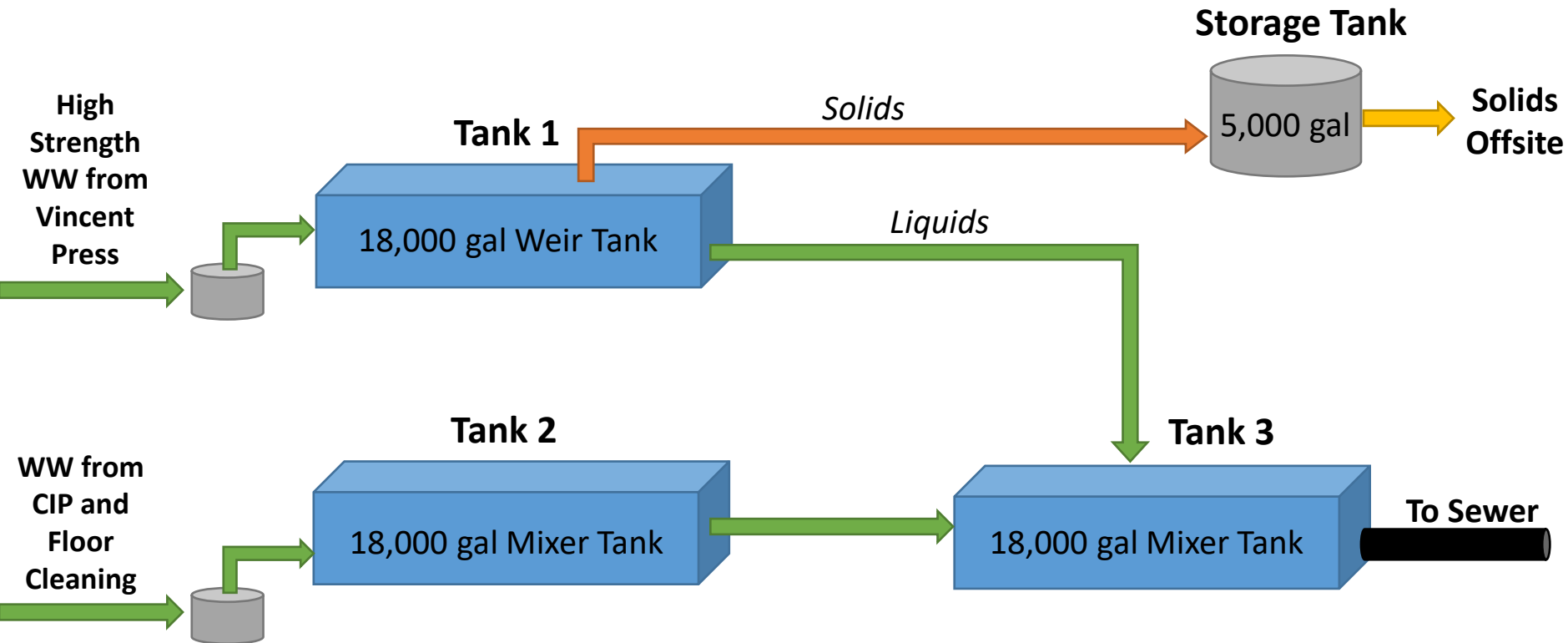
Construction

- Monthly Updates Received
- Equipment Procured in May and June 2024
- Construction began in July 2024
- Project Delay in August 2024
 - Broken underground pipe discovered
 - Industry provided timely communication
- Project Completed in October 2024!!!!

Pretreatment Project - 2024



Pretreatment Project - 2024



Pretreatment Project Photos



Did it work?

Violations since
project completion

0

Take Homes

- Followed ERP even when violations were expected and project underway
- Sometimes fines and escalated enforcement (CAs) are needed
- Corporate and local management don't always agree
- Require appropriately timed updates for the situation

Questions?

