

# Biosolids to Energy: Lessons Learned from the City of St Petersburg

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FWEA Biosolids Seminar  
EpiCenter at St. Petersburg College  
September 14, 2023





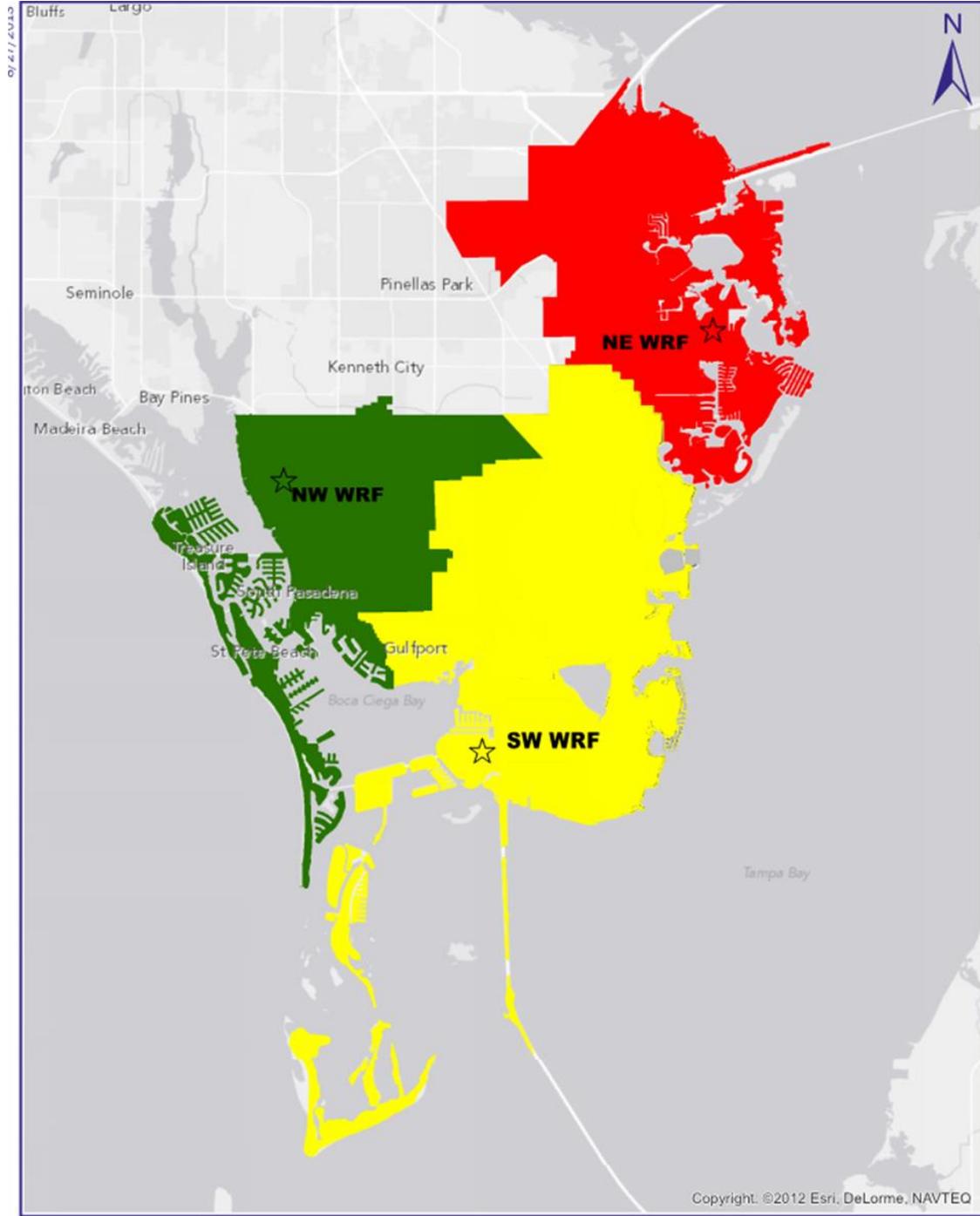
# WE ARE ST. PETE

THE SUNSHINE CITY



## Our Wastewater Ecosystem

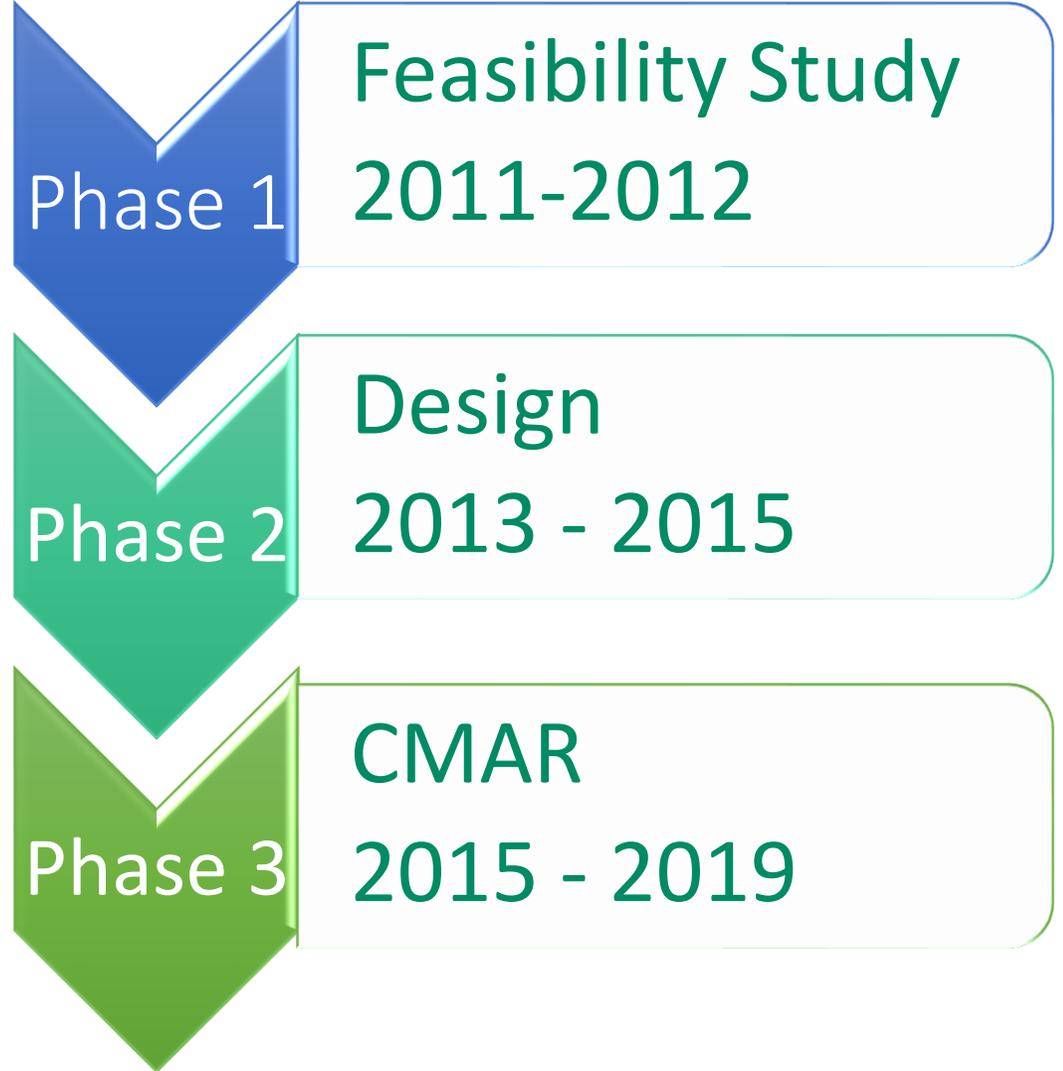
- 316,000 customers served
- Total 56 MGD AADF permitted flow
- 3 Water Reclamation Facilities
- Some interconnectivity among the basins
- 6,200 dry tons of wastewater residuals produced per year





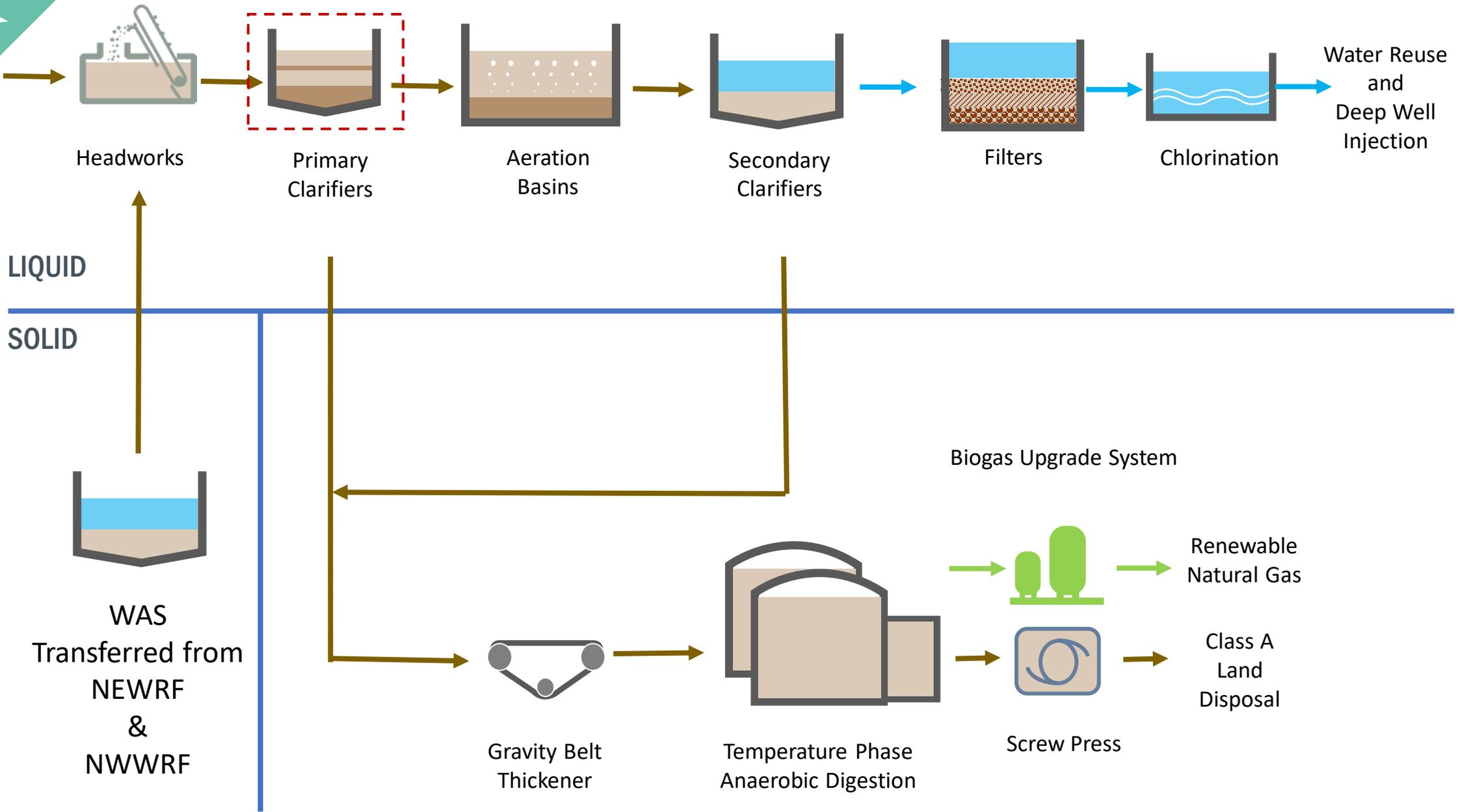
## Project Goals

- Create a Class A Biosolid
- Consolidate Biosolids Treatment
- Create of Renewable Energy
- Reduce Greenhouse Gases





# Southwest WRF Treatment Train



Headworks

Primary Clarifiers

Aeration Basins

Secondary Clarifiers

Filters

Chlorination

Water Reuse and Deep Well Injection

LIQUID

SOLID

WAS Transferred from NEWRF & NWWRF

Gravity Belt Thickener

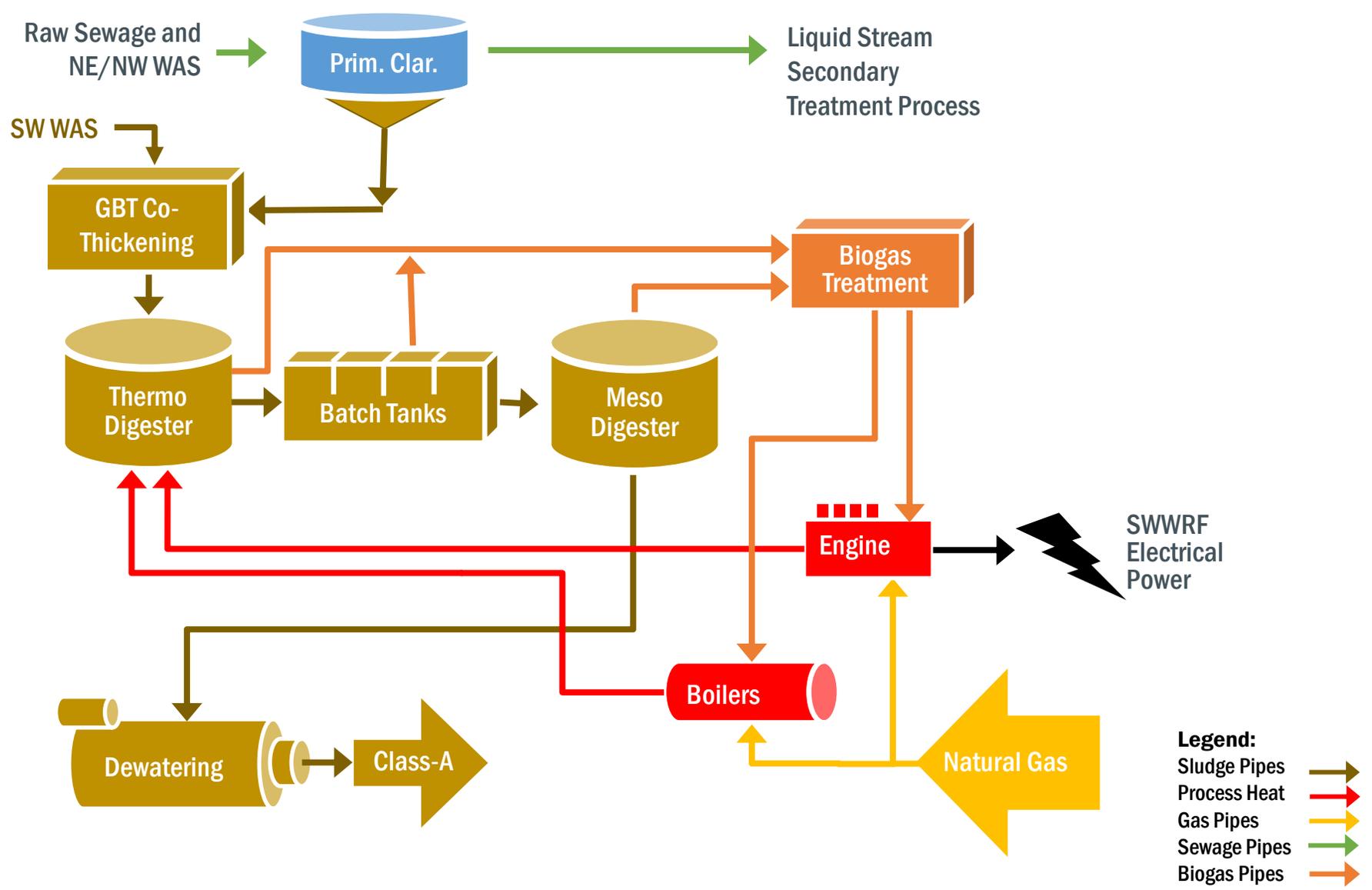
Temperature Phase Anaerobic Digestion

Biogas Upgrade System

Renewable Natural Gas

Class A Land Disposal

Screw Press





# Lessons Learned

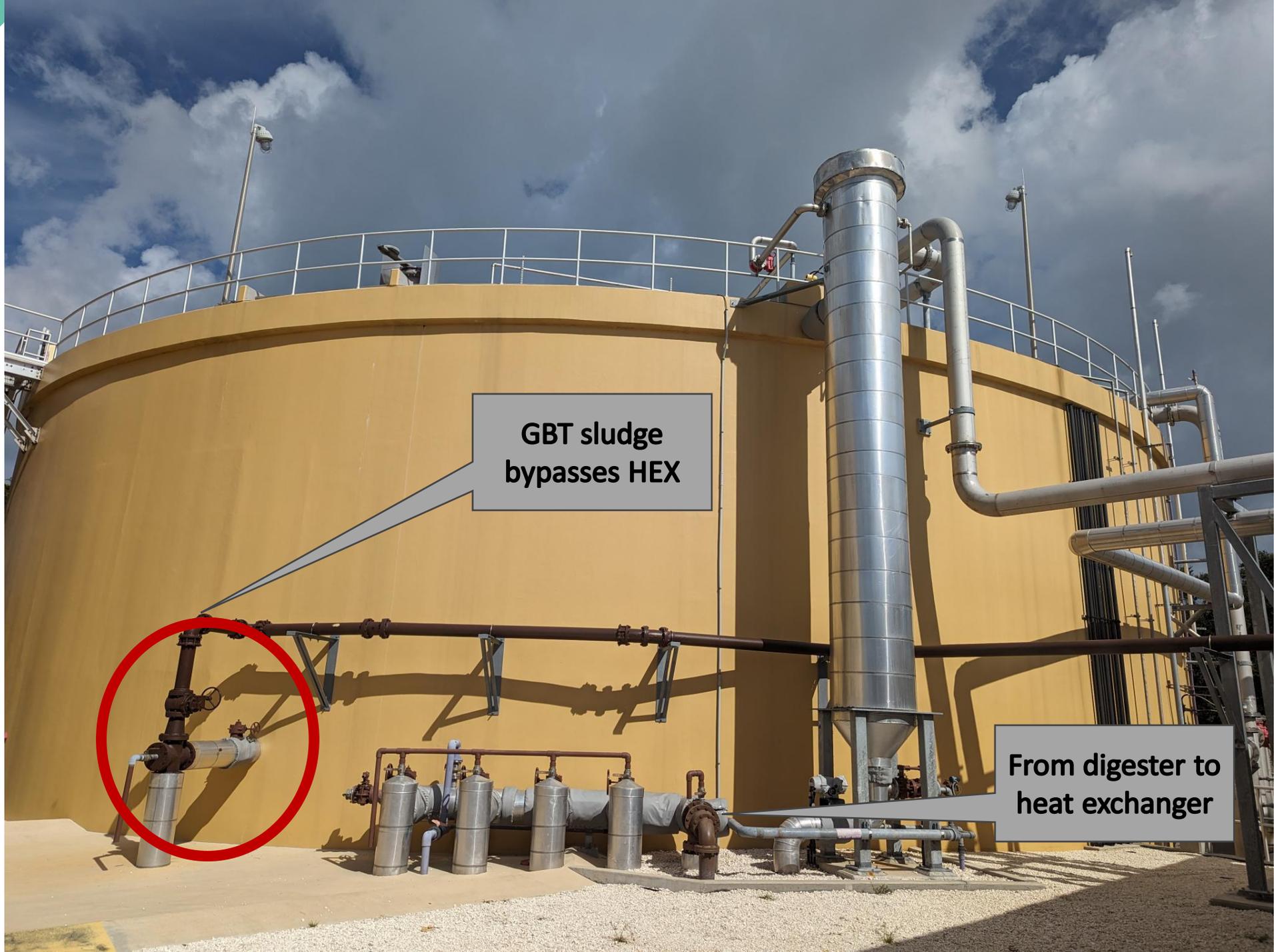


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Lesson #1:  
Piping mods &  
sensor placement

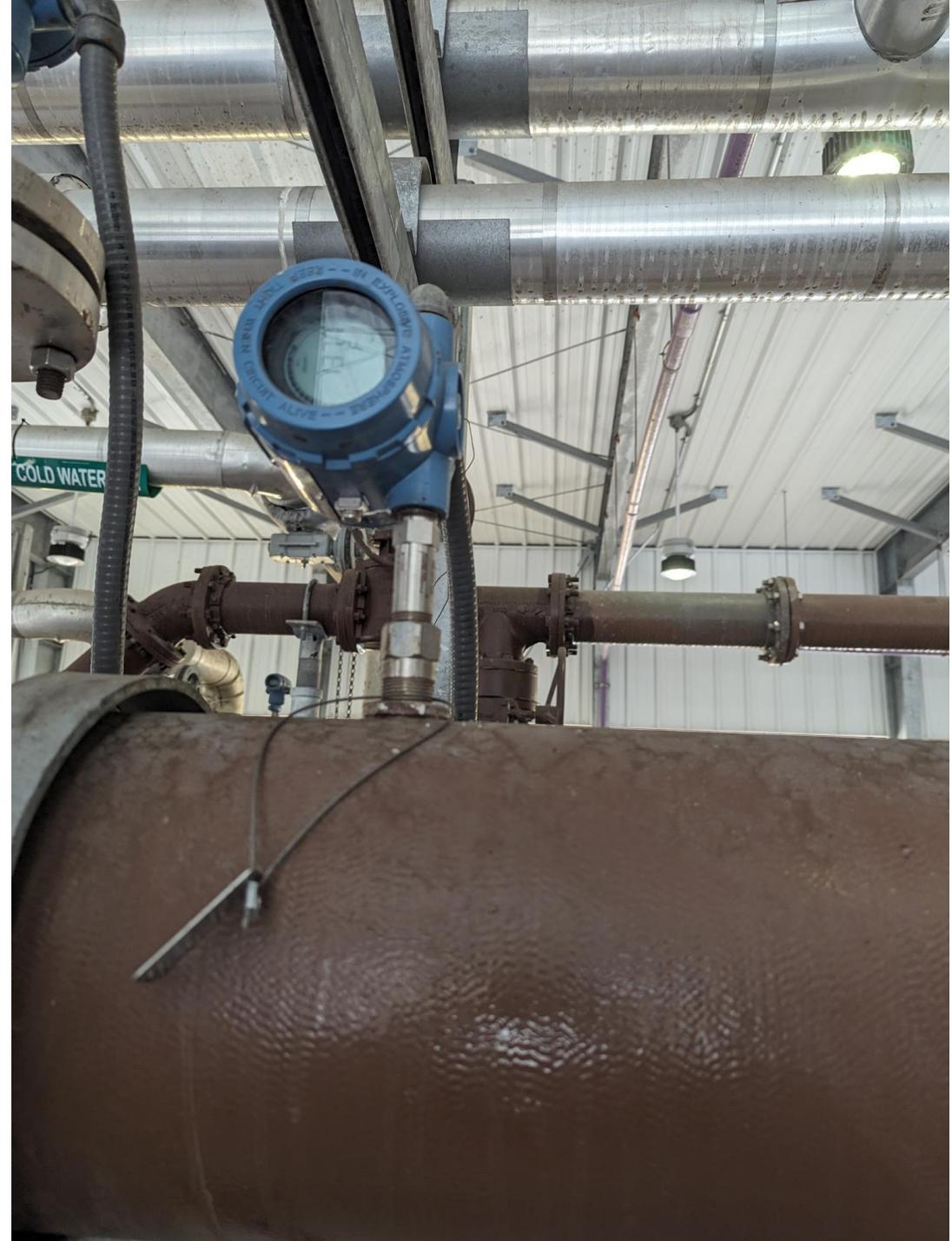
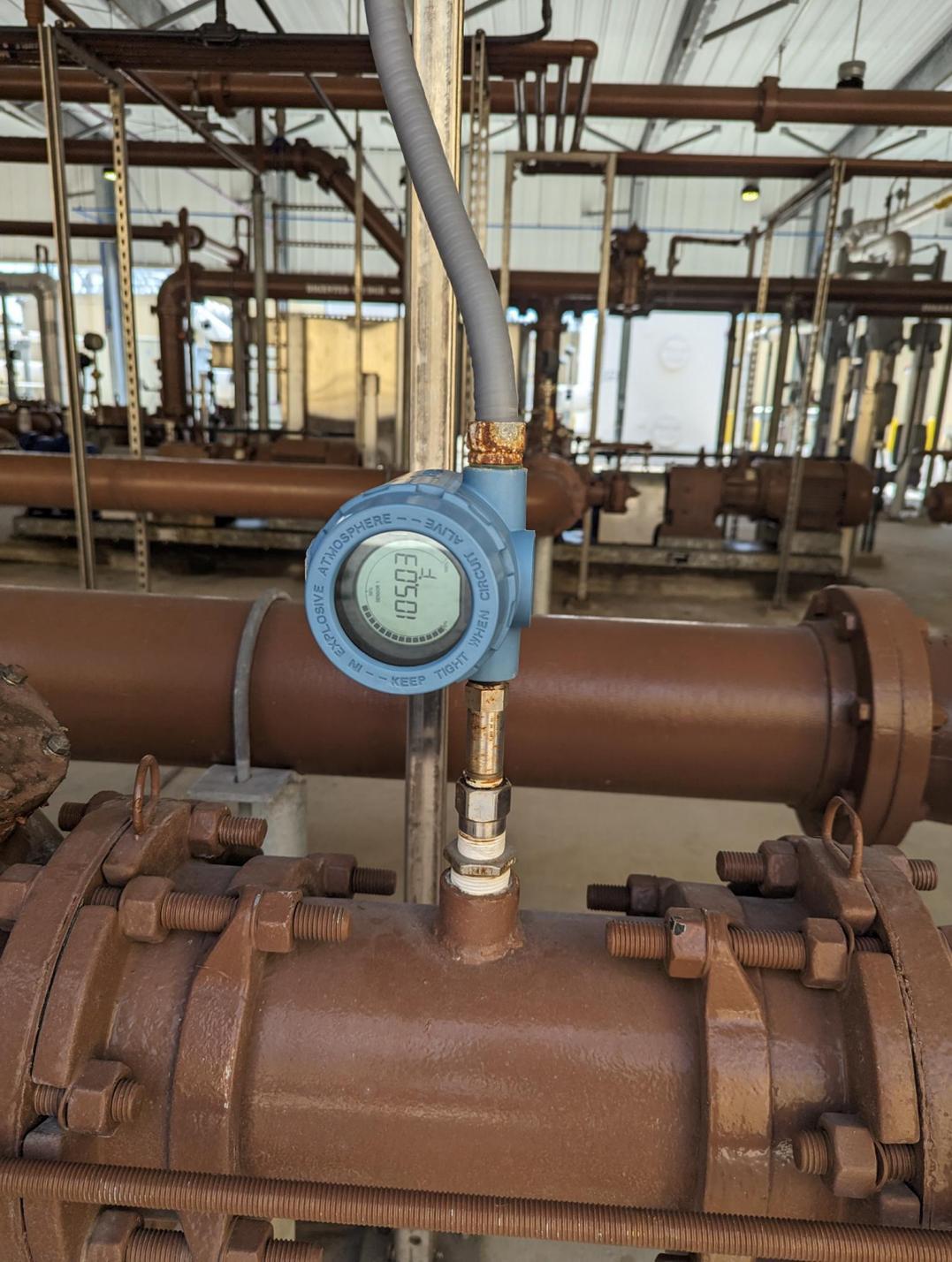


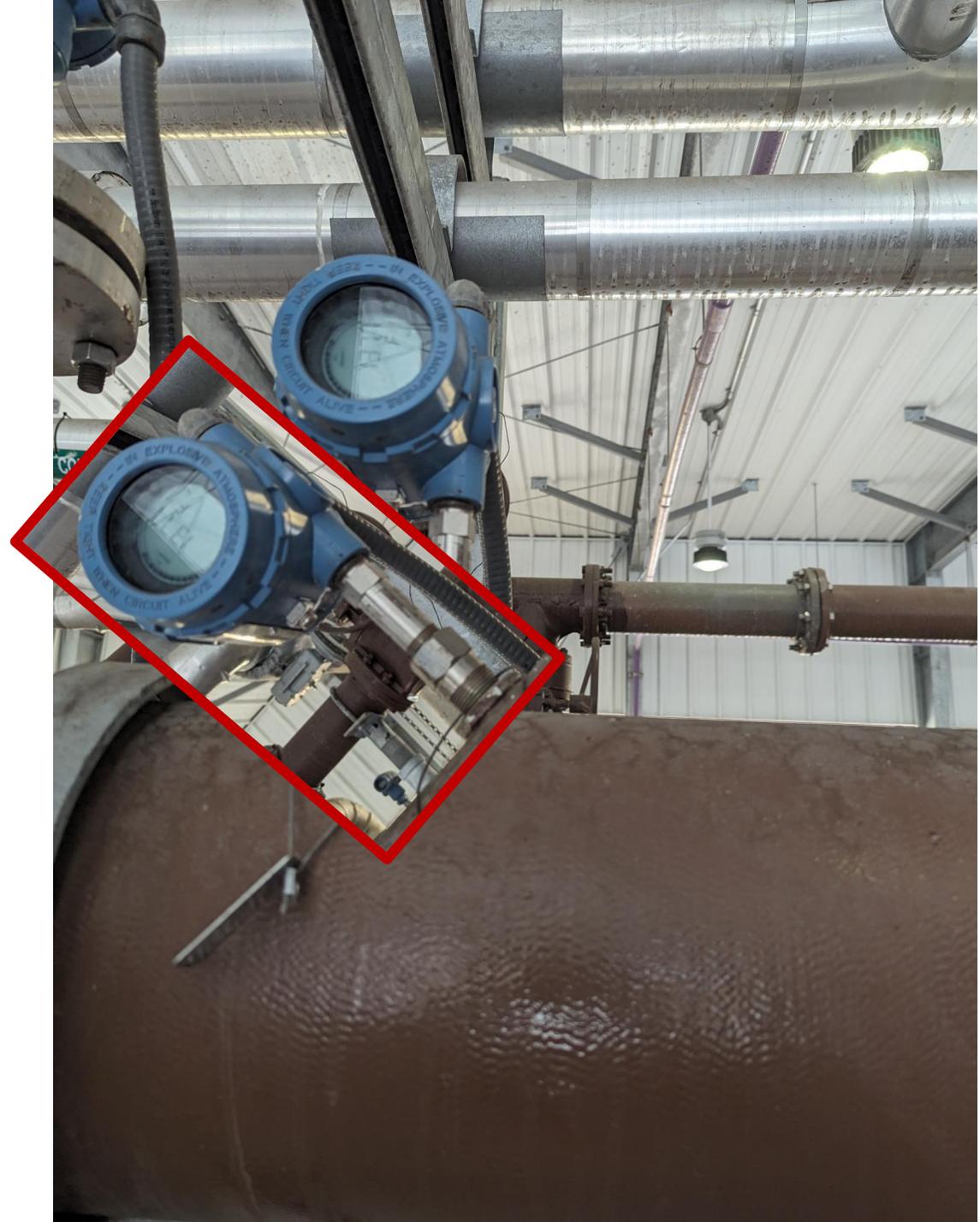
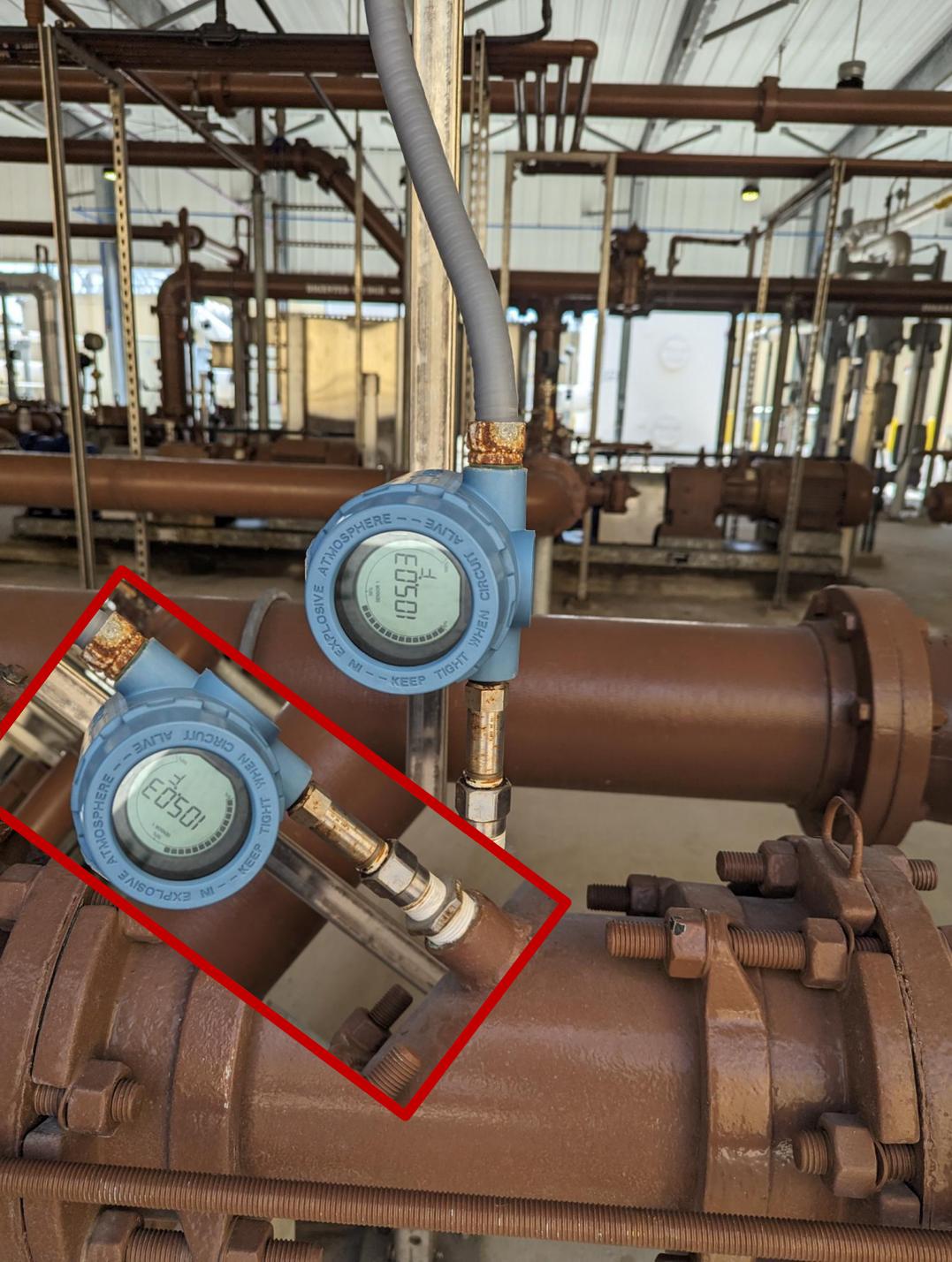
**Influent sludge**

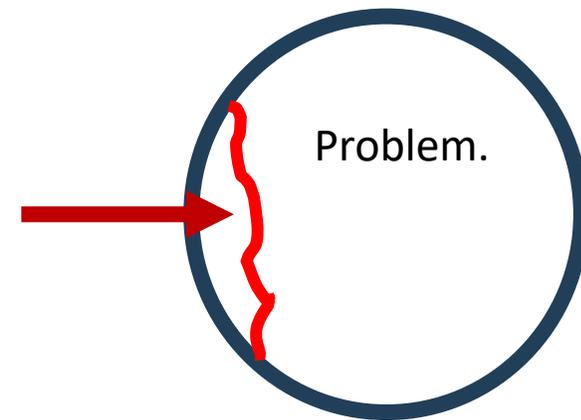


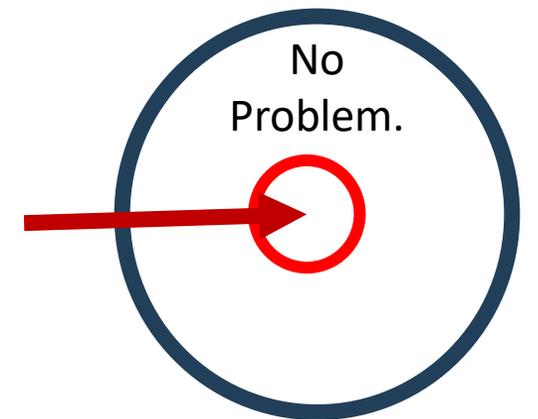
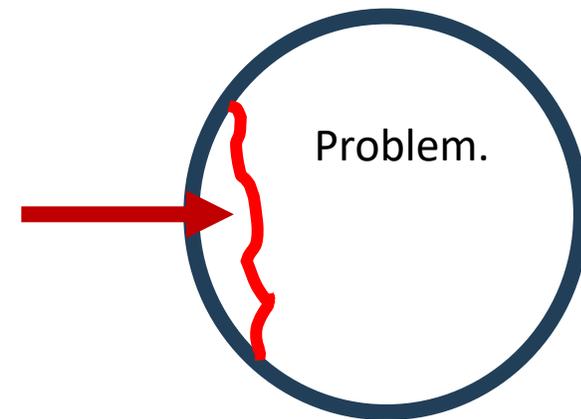
**GBT sludge  
bypasses HEX**

**From digester to  
heat exchanger**







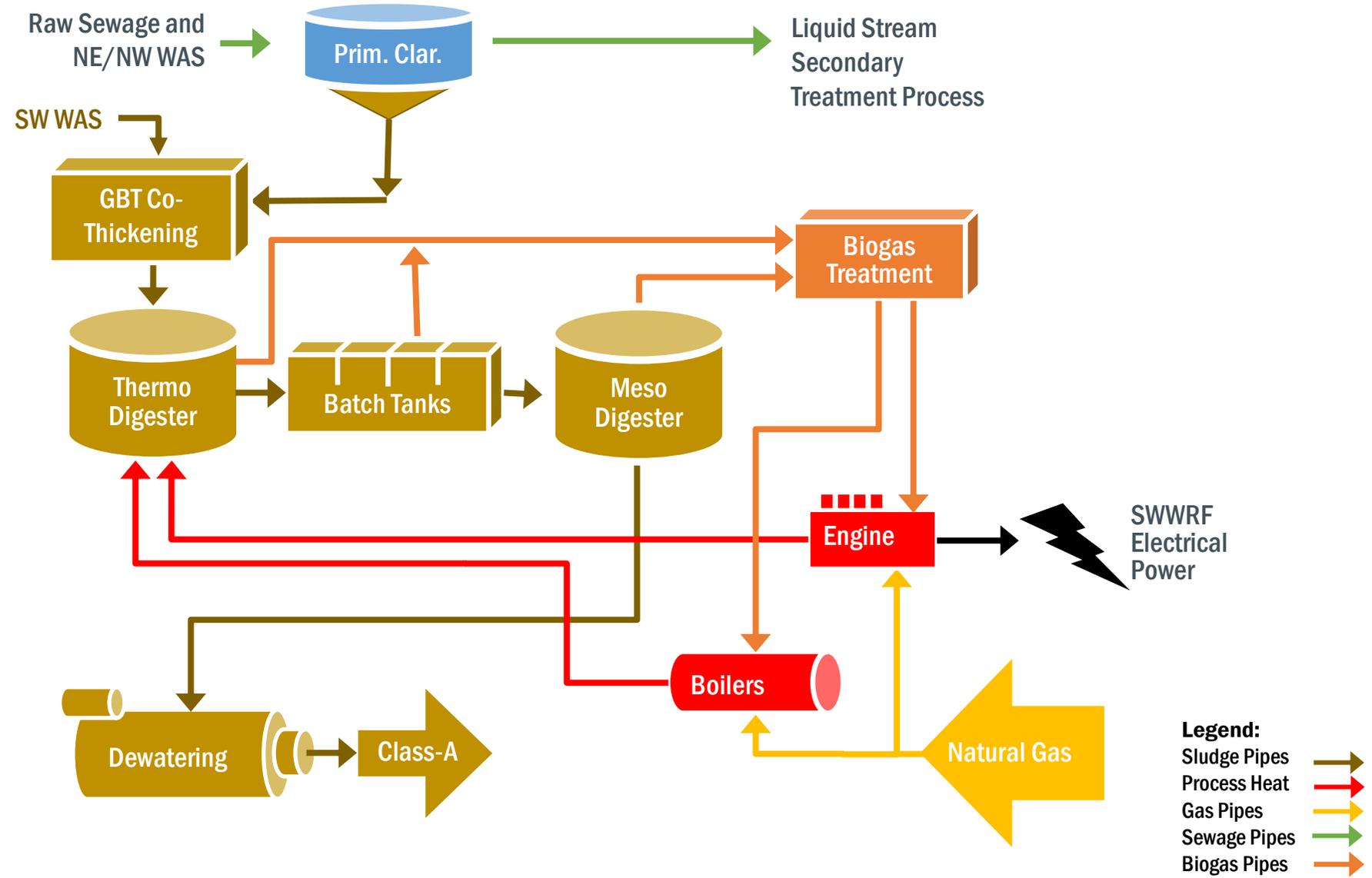


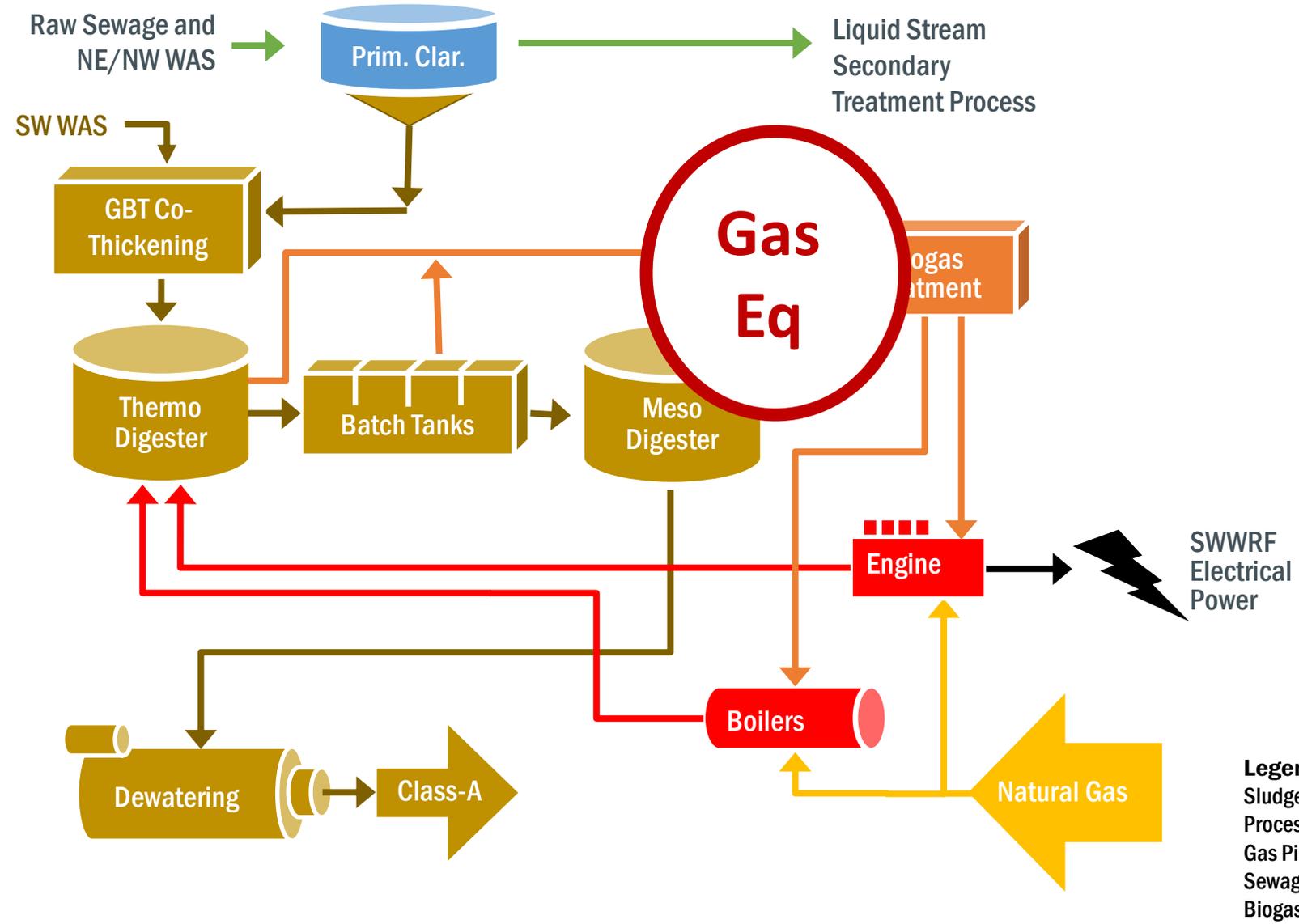
Lesson #2:  
Biogas smells.

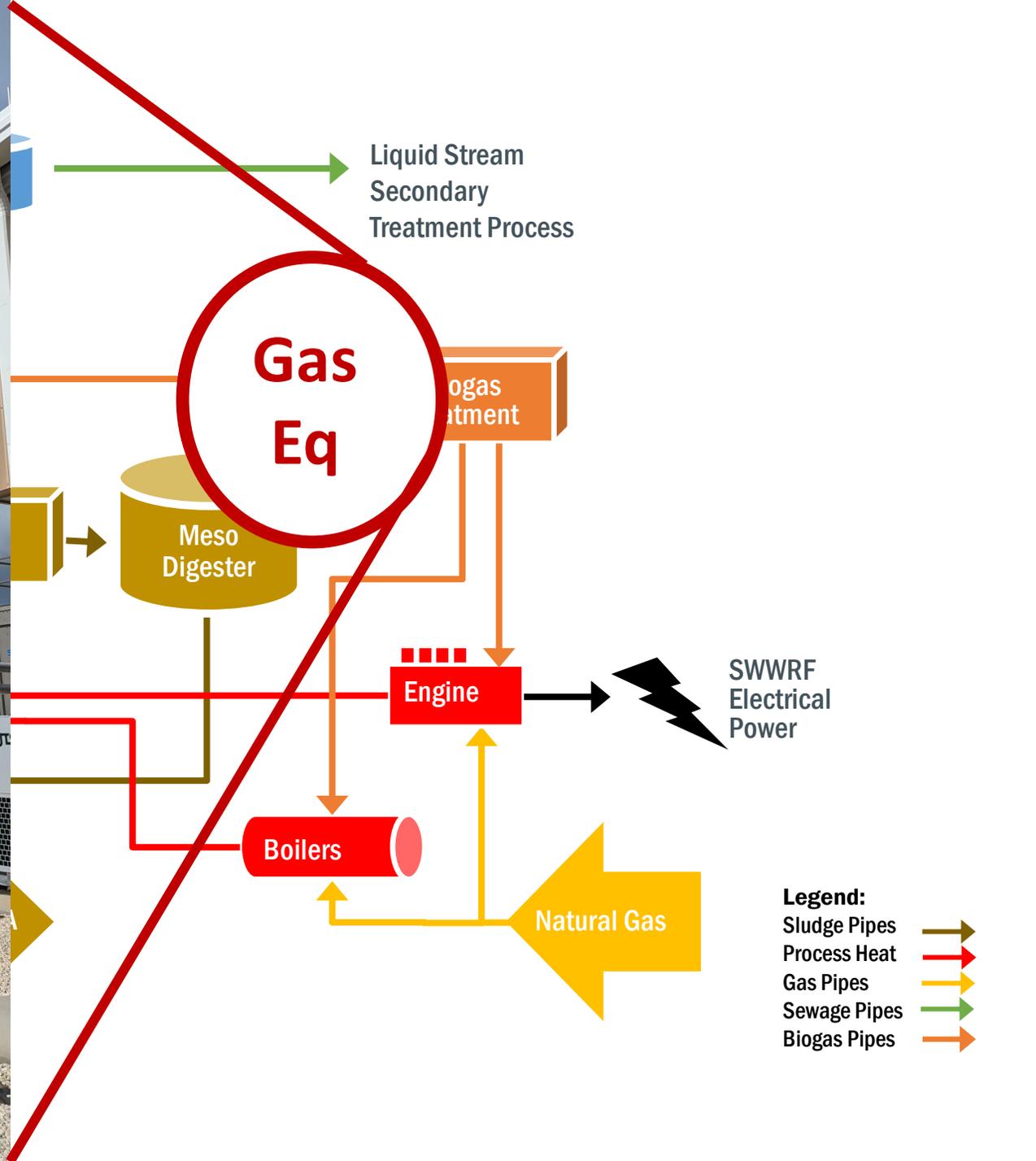


# ECKERD COLLEGE



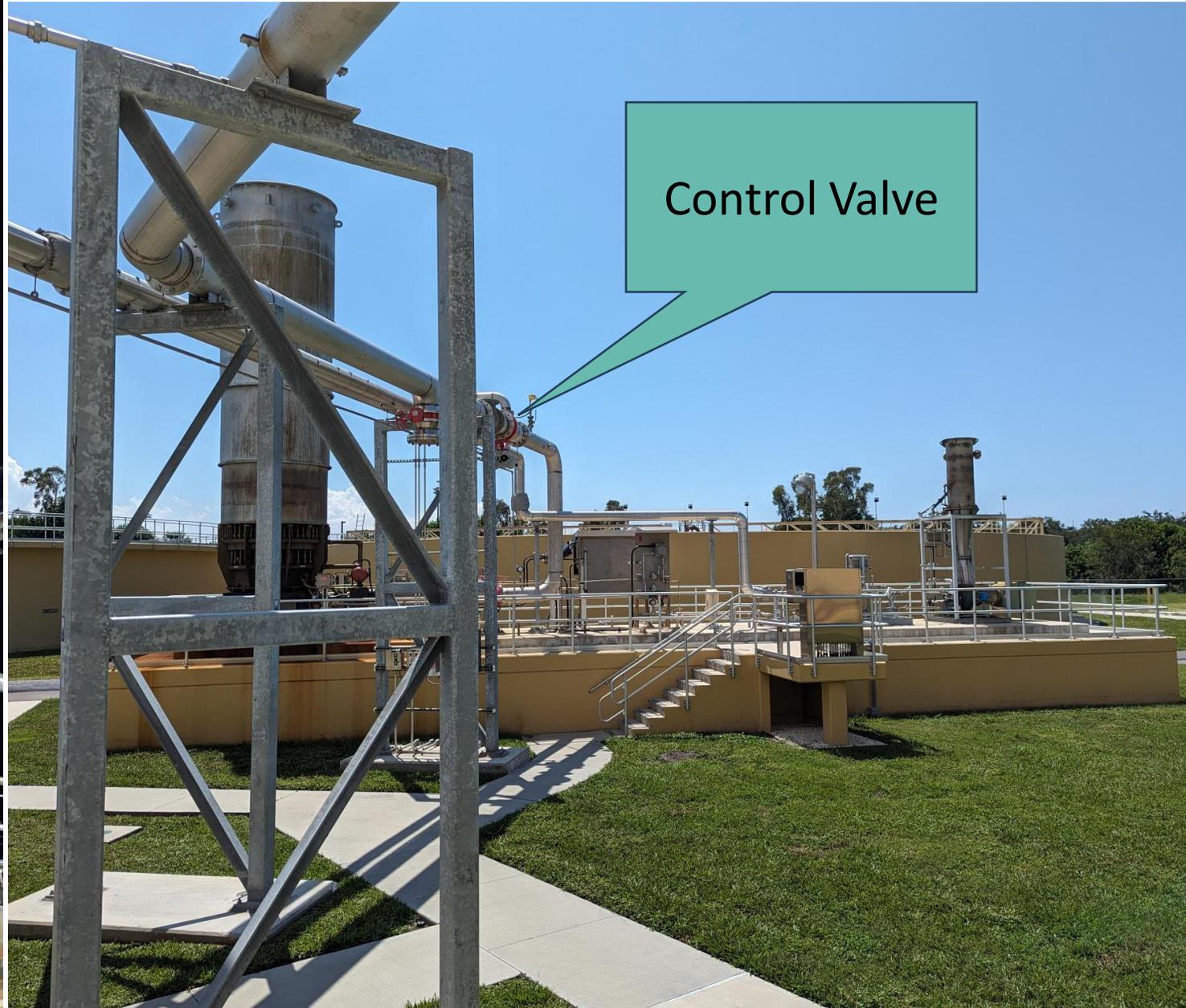












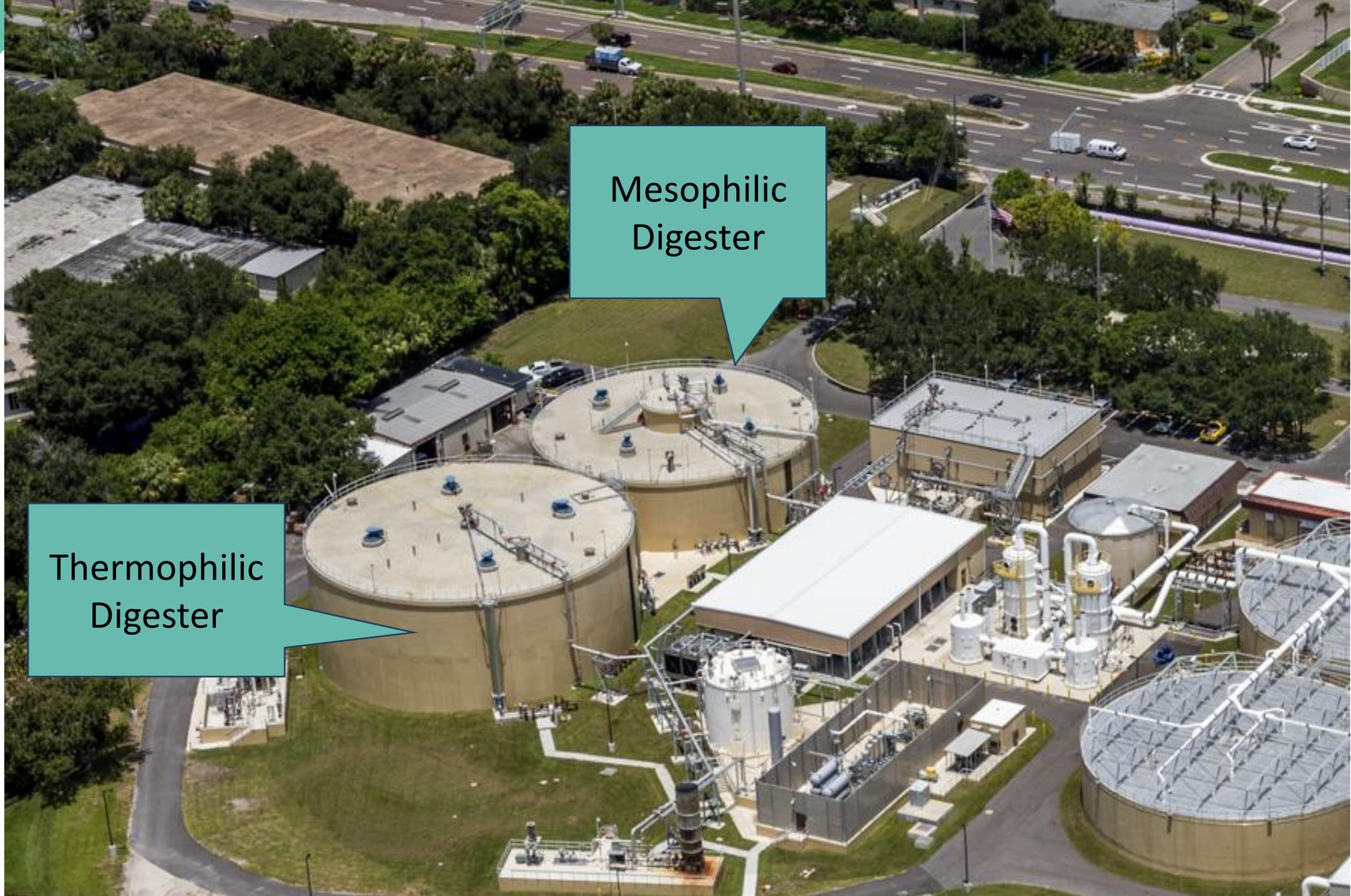




Lesson #3:  
Redundancy.  
Redundancy.







Thermophilic  
Digester

Mesophilic  
Digester

Lesson #4:  
Energy production  
is hard.





Pressure off  
the digesters





Pressure off  
the digesters





**Pressure off  
the digesters**

**Flow Rate**





Pressure off  
the digesters

Flow Rate

PSAs

Next Steps



# Biogas Optimization Study

- Evaluating the existing facilities
- Biogas utilization evaluation
- Explore P3s for future operation





**“You can’t learn this kind  
of stuff from a book”**



# In memory of John Hughes



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