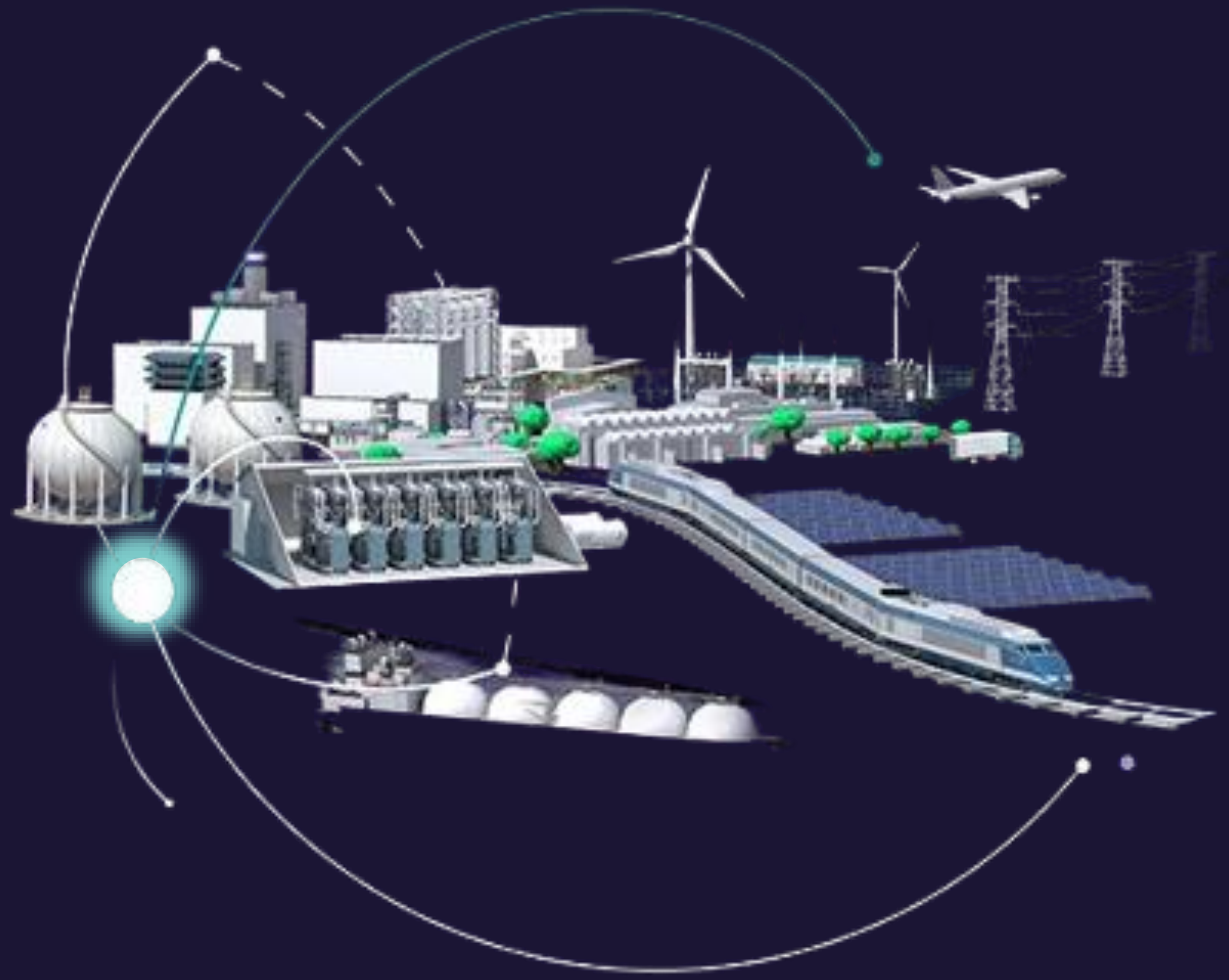
Turning Waste into Wealth: The Potassium Hydroxide Revolution

Saving Our Waterways and Our Budget



THE CHALLENGE: MANAGING KOH WASTE

In our manufacturing process, the Autoclave utilizes potassium hydroxide (KOH) to dissolve the ceramic core within a metal casting to create the cooling passages.

After each cycle, all liquid waste was sent to a waste stream where it was treated with sulfuric acid to neutralize then sent to a municipal facility for disposal which presents environmental concerns and substantial cost

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THE CHALLENGE: MANAGING KOH WASTE

The waste liquid was still potent and required a significant amount of sulfuric acid to neutralize therefore we started asking "why are we throwing this away"?

The process generates 876,000 gallons of KOH waste annually.

To put in perspective…this would be equivalent ***to filling a basketball court 25 feet high***

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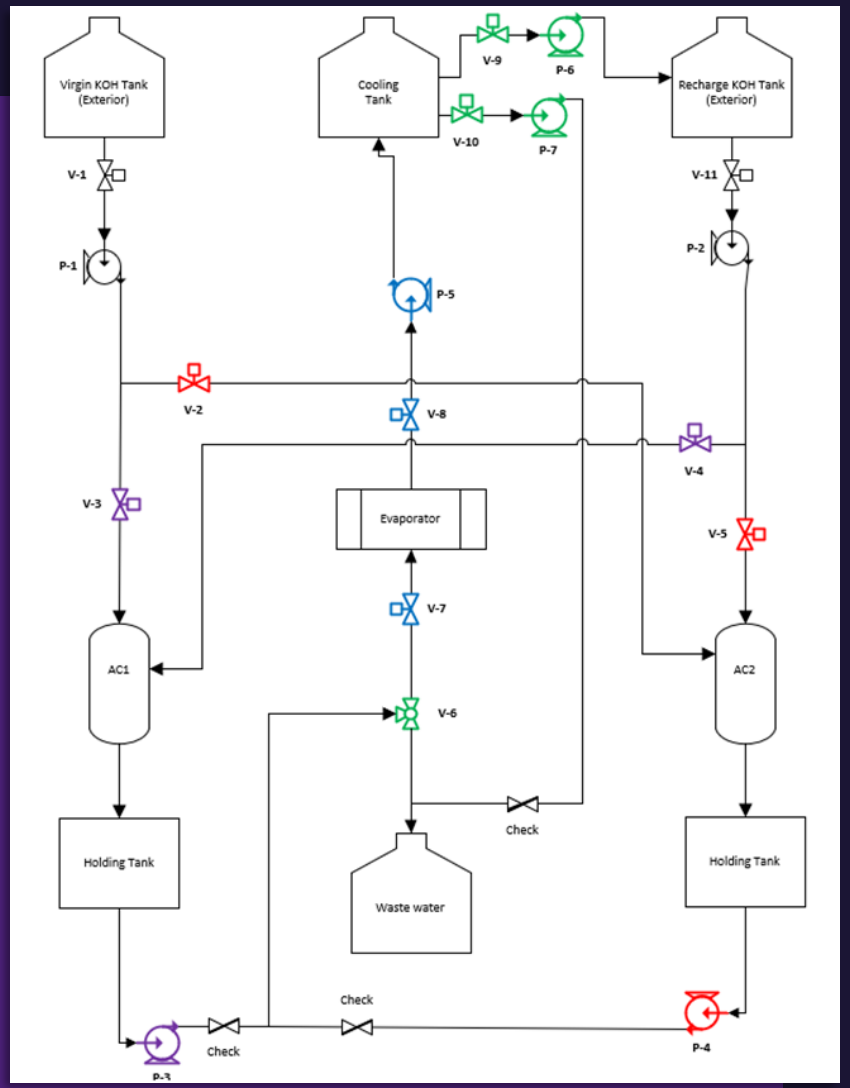
THE SOLUTION: AUTOCLAVE EVAPORATOR

Instead of sending the waste to be processed for disposal:

01 *Waste liquid is boiled in an evaporator to remove excess liquid from the rinsing process to achieve 45% concentration*

02 *Liquid is sent to a cone bottom cooling tank to allow the sediment (ceramic) to settle for disposal*



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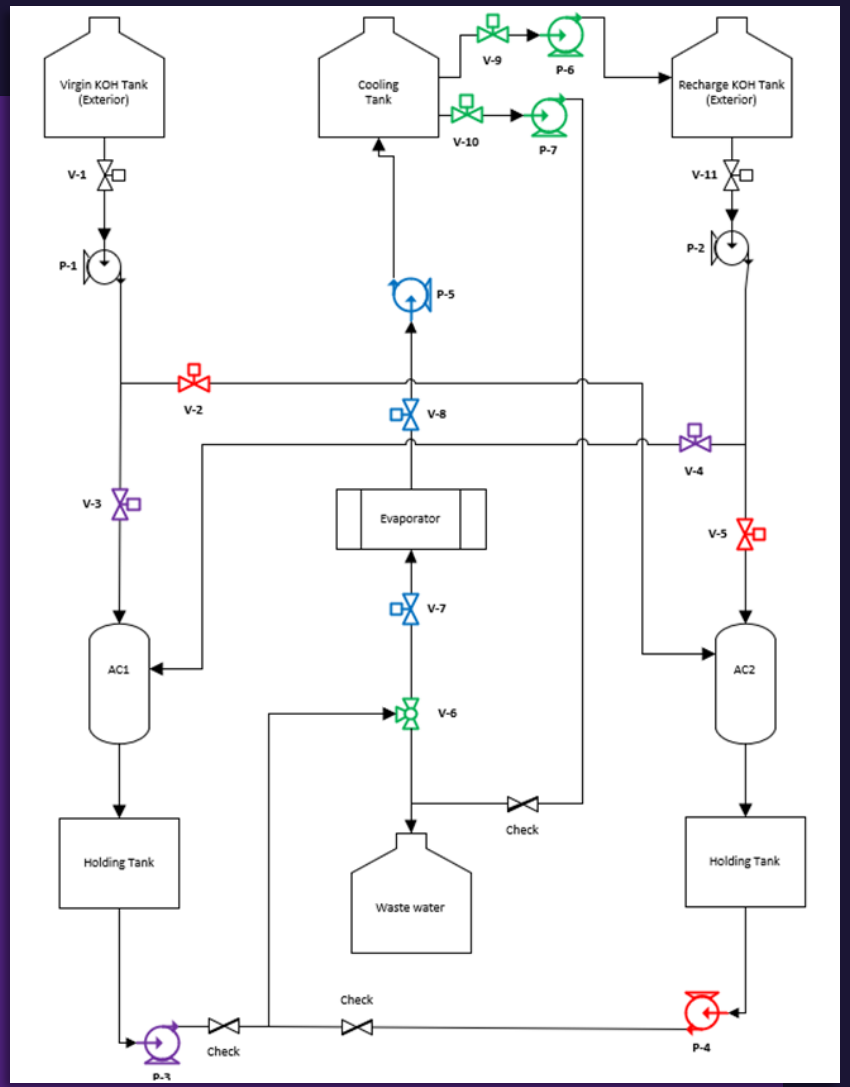
THE SOLUTION: AUTOCLAVE EVAPORATOR

03 *Settled liquid is then sent to holding tank to be reintroduced to the system*

05 *Potency is maintained by small introductions of fresh KOH during the core removal cycle*



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THE IMPACT: COST SAVINGS AND ENVIRONMENTAL BENEFITS

Cost Savings:

- ***$1.5** million annually by recycling KOH*
- ***$0.5** million annually by reducing sulfuric acid usage.*

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THE IMPACT: COST SAVINGS AND ENVIRONMENTAL BENEFITS

Environmental Impact:

- ***80%*** *reduction in KOH usage.*
- ***50%*** *reduction in sulfuric acid usage.*
- ***80%*** *reduction in KOH wastewater processing.*

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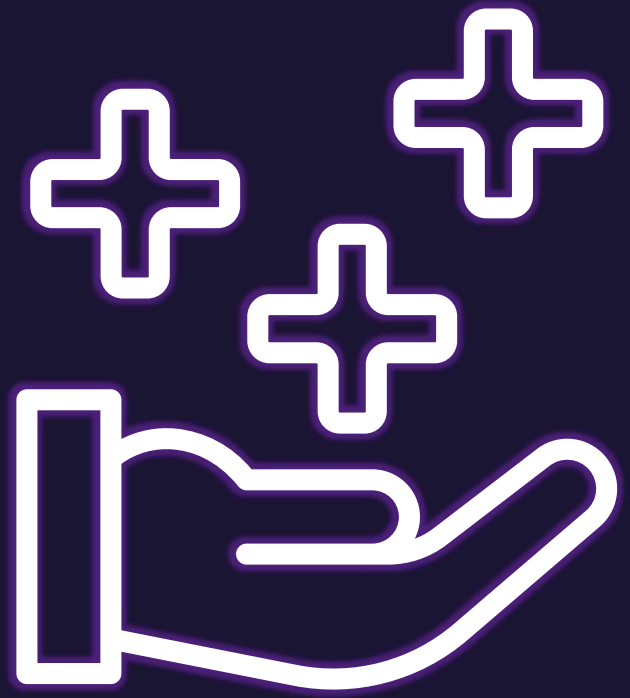
THE IMPACT: COST SAVINGS AND ENVIRONMENTAL BENEFITS

Additional Benefits:

- *Mitigates raw material price increases.*
- *Minimizes chemical waste and environmental risks.*
- *Strengthens partnerships with regulatory agencies.*



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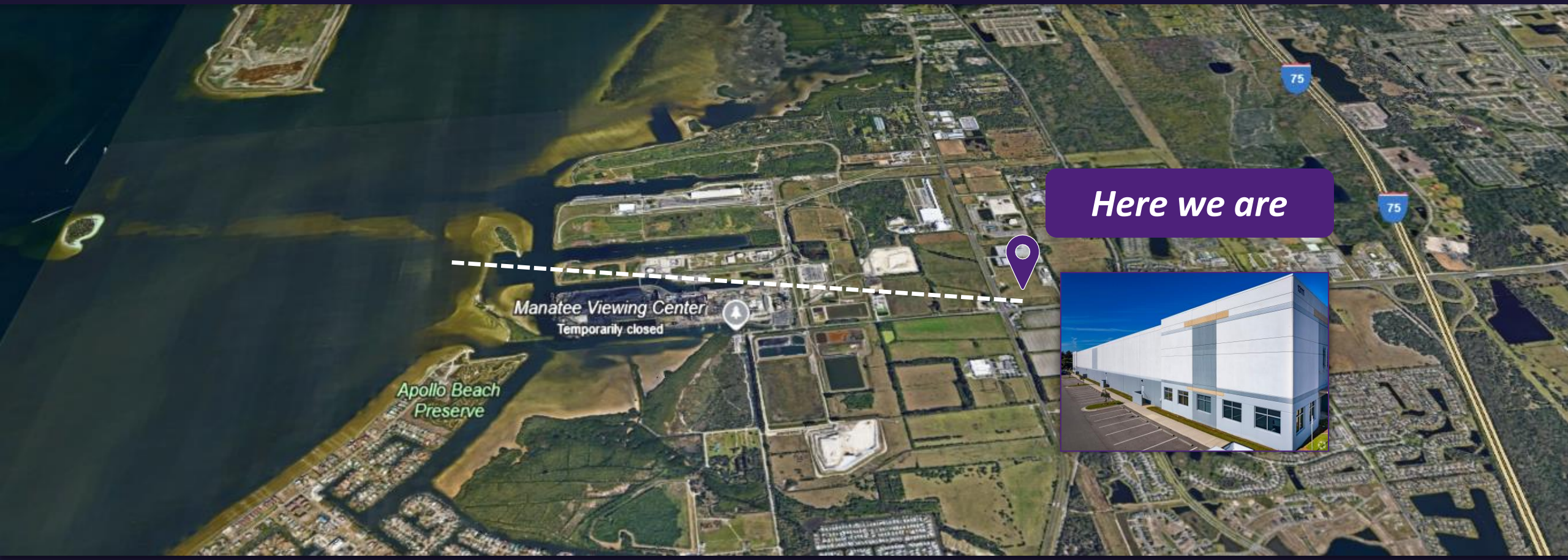
WHERE WE ARE



That's Why its Very Important Because we don't want this waste to go in our Water

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ANY QUESTIONS?

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THANK YOU?