Parkland

Hao Zhou

Proactive Alerts Preventing Alkylation Plant Shutdowns

Seeq® conneqt

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Hao Zhou
Process Control Engineer
Parkland

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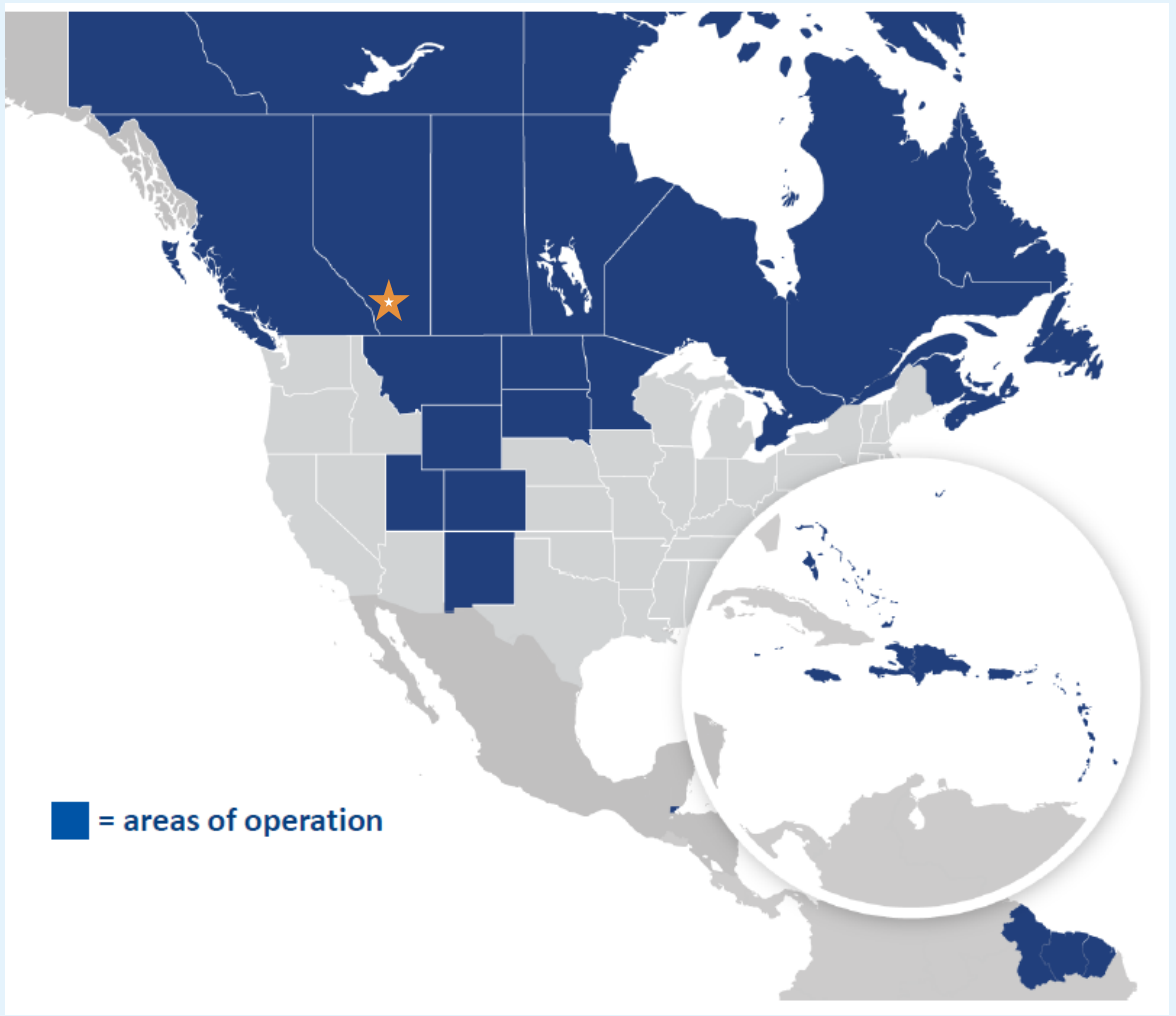
Parkland Corporation

Refineries in Canada and in Caribbean

4000+ retail locations, spanning 26 countries with 6000 employees

More than one million customers served daily



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Burnaby Refinery

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- Built in 1935 by Standard Oil of California (later Chevron)
- Sold to Parkland Corporation in 2017
- Processing capacity of 55,000 BPD
- <10% of Canada's refining capacity, but >90% of renewable production

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Seeq Use Case: Alkylation Plant

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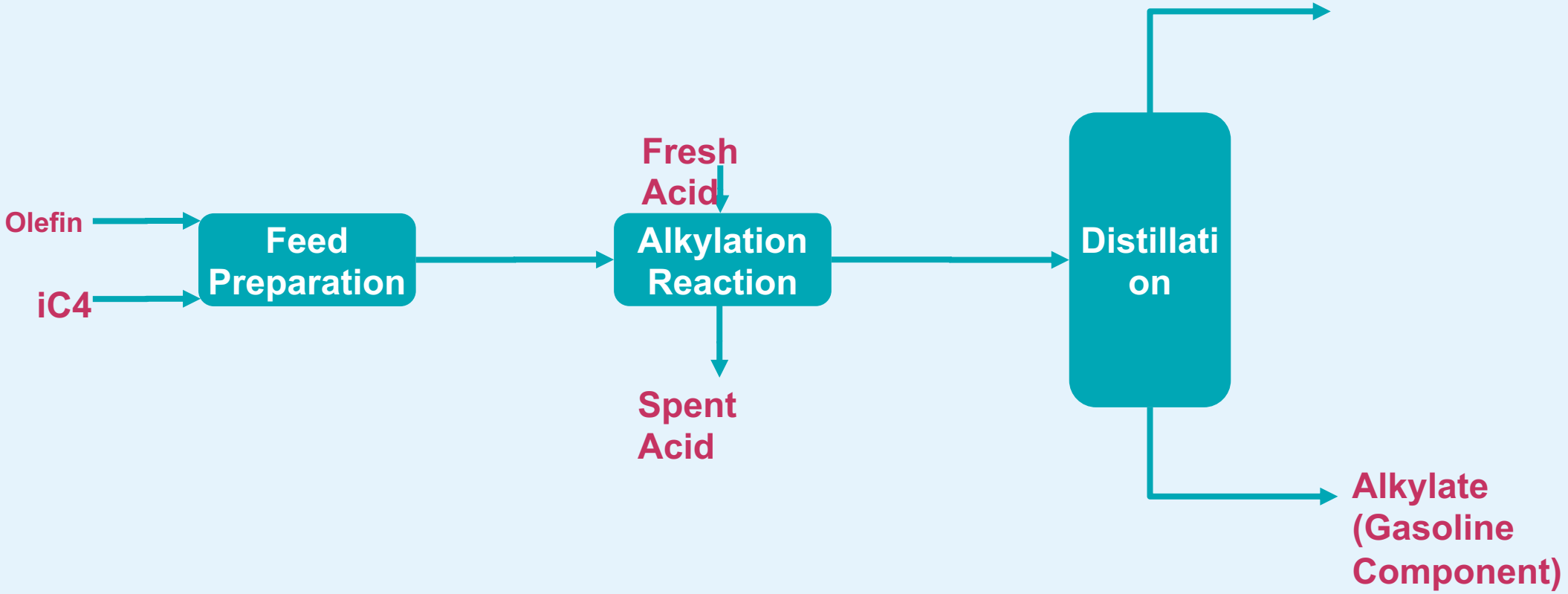
Isobutane (iC4) combines with light olefins in the presence of sulfuric acid to produce alkylate



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Challenge

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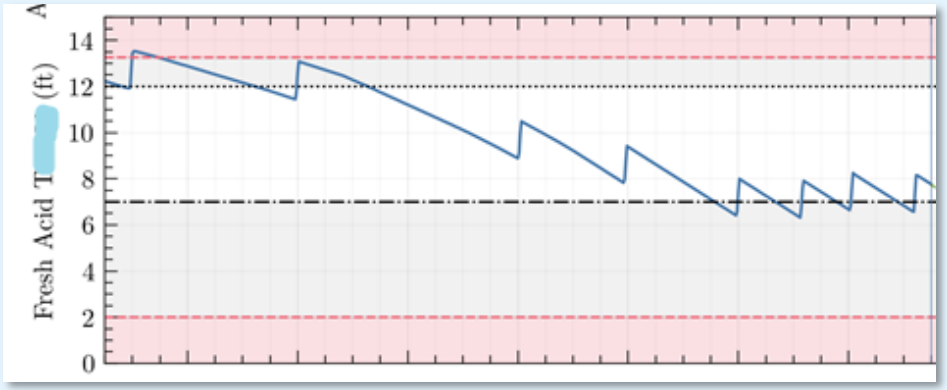
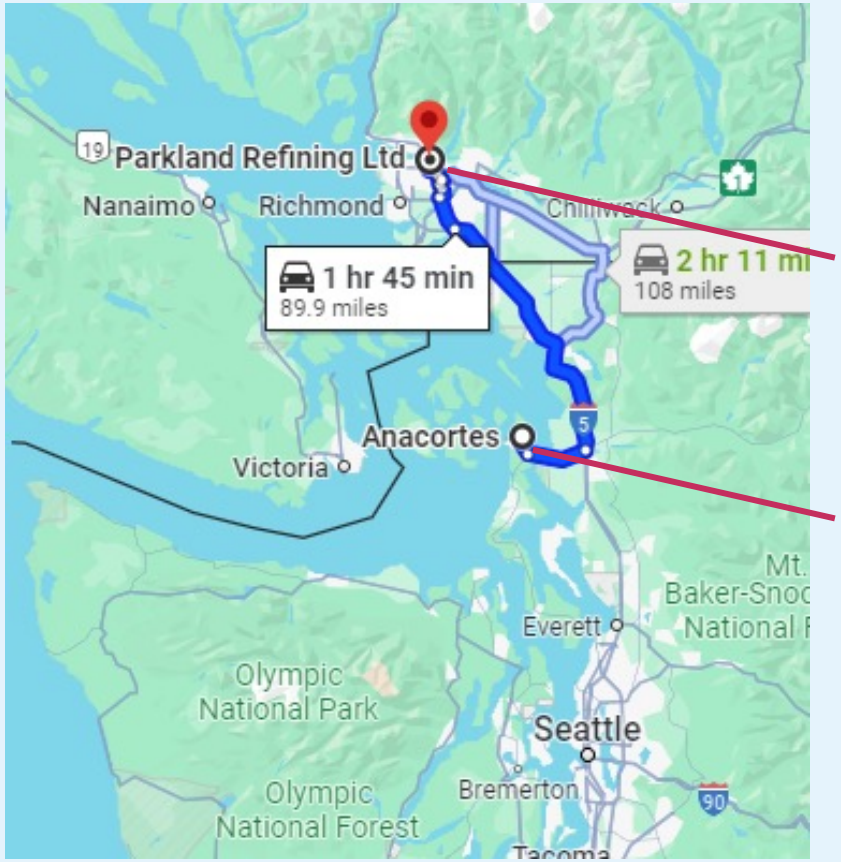
Unreliable supply of sulfuric acid catalyst resulting in potential Alkylation plant shutdown





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Previous Attempts

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- Engineers manually make sulfuric acid inventory forecast using Excel/PI data
- Forecast can change in a short time and requires frequent recalculations

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Seeq Data Lab Solution

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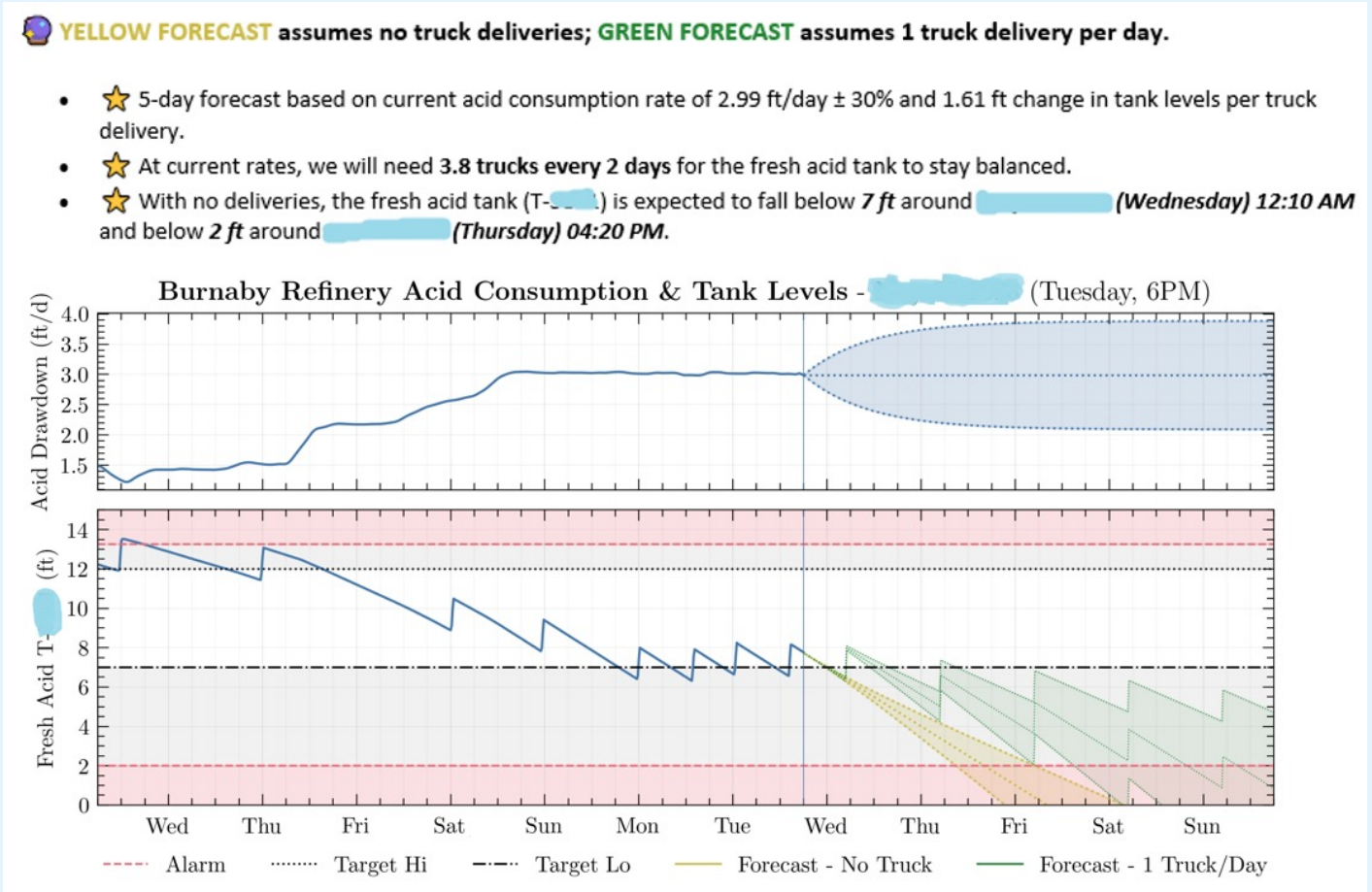
Pull data
`spy.pull()`

Forecast
Custom Python calculation

Plot trend
`matplotlib`

Send email
`spy.notifications.send_email()`



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Right Data, Right Time, Right People = Success

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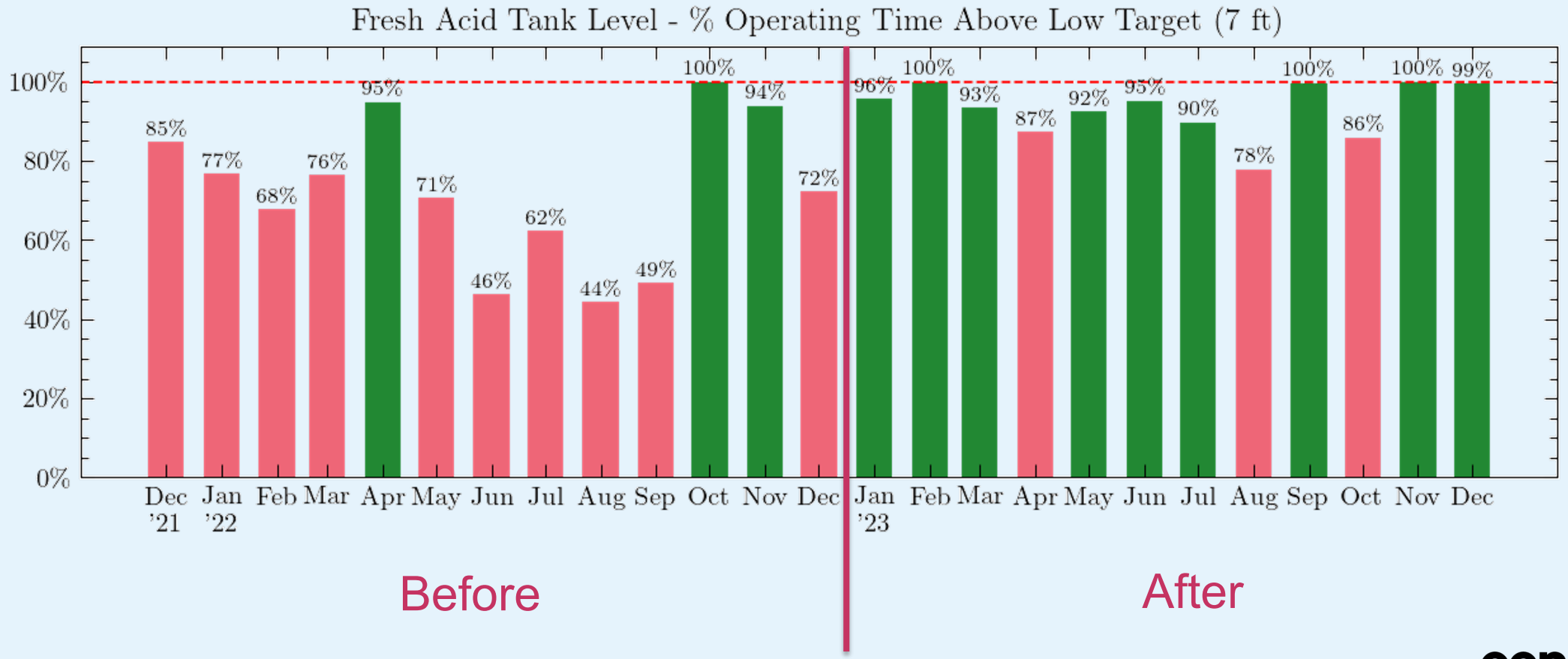
Email automatically sent out every shift to notify suppliers/drivers



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Results

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- Improved acid tank reliability metrics by 30%
- Averted costly Alkylation unit shutdown with a Loss Profit Opportunity (LPO) of over $1 million
- Empowered vendors with better access to acid tank forecasts

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Stakeholder Feedback

Parkland

- Increased productivity and time savings for Parkland engineers
- Emails are the preferred data delivery method for acid supplier and trucking company
- SDL enabled us to rapidly replicate fit for purpose solutions for other use cases that require cross-company attention
  - Renewable feedstocks, catalyst inventory, etc.

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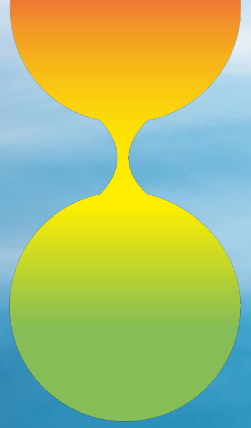

Q & A

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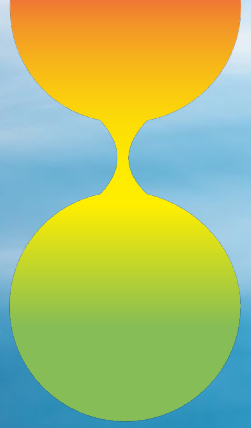

Thank You

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