



Our client is one of North America's largest integrated refining and petrochemical companies, with significant operations along the U.S. Gulf Coast and a strong presence in transportation fuel markets. The company engaged Trindent to identify non-capital opportunities to improve margins while sustainably reducing product quality giveaway. Over a 28-week engagement, Trindent implemented 11 operational and process changes that reduced flash point quality giveaway by 44% and improved annual refining margins by \$45,860,000.

44%

**REDUCTION IN
FLASH POINT GIVEAWAY**

\$45,860,000

**ANNUALIZED
SAVINGS**

47%

**INCREASE IN
OPTIMIZATION UTILIZATION**

How we Made it Happen™

Planning & Scheduling Optimization

- Established a standardized distillates blending optimization program that integrated advanced prediction models, consistent blend execution processes, statistical analytics tools, and enhanced internal model-development capabilities, reducing diesel blend costs and lowering flash point giveaway by 2.9°F.
- Developed a flash point prediction model for naphtha components, providing visibility into naphtha quality rather than static value contributing to increase in naphtha blending to diesel by 1.4% while managing quality risk and reducing flash point giveaway.
- Improved final batch flash point prediction accuracy using non-linear blend models for real-time optimization, improving predictability of mid-blend quality predictions.
- Implemented a Distillate Program Management KPI Scorecard that provides Executives visibility into blend performance, process adherence, and system utilization, contributing to 47% improvement to Trindent's Organizational Behavior Benchmark score.
- Improved initial blend recipe accuracy with measurement and prediction accuracy improvement, contributing to minimum recipe variance during blending.

Execution Excellence

- Established standardized blend execution process and troubleshooting workflows for operators to improve real-time blending optimizer utilization by 62% and uptime/service factor of online analyzer by 27%.

- Developed training modules tailored to each functional group, improving competency on distillate blending optimization with standardized best practices, and sustaining performance improvement.
- Implemented blend execution performance dashboard that improved visibility into final batch optimization performance and abnormal blend behaviors, allowing Blend Team to be able to effectively investigate root causes, and implement corrective actions.
- Established a weekly cross-functional Blend Review Meeting to identify, track, and historize quality giveaway performance.

Measurement Accuracy

- Implemented a management operating system to ensure accountability on sampling and testing cycle/turnaround time, allowing Blenders to optimize for average additional 25% of distillate volume.
- Installed an ASTM D6299 compliant online analyzer SQC program to help initiate preventative actions based on performance leading to improving analyzer uptime by 24%.
- Implemented a retest and resample process to identify outliers based on historized variance between final predictions and lab test results.
- Provided a guidance on chemometric-based diesel property model development and developed ASTM D6122 compliant validation tool, supporting future deployment of online diesel analyzers.

"Trindent worked collaboratively and seamlessly integrated with our team as technical experts to implement industry best practices for quality giveaway reduction. Recognizing the value of this Engagement, this has instilled crucial behaviors and growth mindsets into our operations."

- Vice-President