VALIDERE

CUSTOMER STORY

Boosting energy commodities margins through advanced analytics.

CUSTOMER

A Calgary-based private energy company. The company has a significant land position and growing production stream in liquids-rich British Columbia, a top-tier North American resource play.

Consistently deliver on-spec condensate, virtually eliminating quality giveaways and boosting margins.

CHALLENGE

The search for higher product margins

The company had strong existing commercial agreements with several midstream companies that purchased its condensate. The vice president of business development believed there was an opportunity to receive higher netbacks but needed a means to do so without adding additional resources.

It was also paying quality giveaways in the range of $50K to $70K per month to its midstream customers due to its condensate falling out of range of the contracted quality specifications. The operations team sought a means to implement a better testing and measurements program that would yield condensate with consistent quality. In addition, the company did not have a means to verify condensate quality with its downstream counterparties.

APPROACH

Better product quality management through analytics

Validere partnered to consolidate its production data so advanced analytics could be applied to its operational issues using Validere Operations Hub SaaS offering.

Aggregating the sources of product data quality can be challenging as the oil and gas industry has unique data format and types that can include Excel spreadsheets, SQL databases, PDF documents, and vendor-specific data formats. Using its data engineering and industry expertise, Validere was able to collect all the disparate data types into a single location in the AWS cloud.

Once the data was aggregated, it needed to be validated and augmented. The sensitive scientific measurement instruments are often prone to data errors. Gaps in the data may also exist as not every possible sensor needed for every type of measurement may have been deployed economically. Validere used its physical and data science expertise to cleanse and validate the data to get to the truth. It also used ML models that have been trained using industry-wide data sets to fill in data gaps.

Validere also deployed a digital "twin" of a physical vapor pressure analyzer that was used to monitor the quality of condensate at the output of the gas processing plant.

The virtual analyzer leveraged the consolidated data and advanced analytics to replicate the measurement capability of a physical instrument. By having an in-line, real-time virtual sensor, the operations team could make rapid adjustments to the gas processing to ensure that the condensate stayed within specification.

To improve netbacks for its crude oil, the company employed the Validere Commercial Hub, a managed online market that uses advanced analytics to deliver real-time pricing, transparent product qualities, and transportation data from all segments of the oil supply chain. It highlights the highest value commercial opportunities for producers, midstream companies, marketers, and traders so all market participants can make the most positive net sum decisions. The Commercial Hub provided the client with recommendations for buyer sites that would most benefit from the purchase of its condensate. The Commercial Hub then enabled it to list barrels at a premium for potential buyers to purchase. Only buyers who are willing to pay a premium to the client's current pricing were auto matched.

Key to enabling the product data cloud and advanced analytics were AWS S3 and Lambda services. By building out a cloud native data pipeline, Validere is able to extract, transform and load data in real time. AWS S3 provides low-cost storage of raw data, and event triggered serverless Lambda functions allow for immediate data transfer without having to run a dedicated server.

The Validere platform is built using AWS cloud native services including AWS RDS and multi-node EC2 containers. This architecture allows for immediate scalability of the platform to handle any sudden increase in traffic and load.

OUTCOME
Better margins for commodities

With the capability to now consistently deliver condensate that was with the quality specifications, quality giveaways were virtually eliminated, boosting margins. With the gas plant product quality management now running smoothly, its operations teams had greater efficiency and were less reactive. It was able to avoid the capital expenditure of a physical vapor pressure sensor.

The company also had better market demand intelligence for its condensate that enabled it to increase netbacks by CDN $2 per cubic meter. It also gained strategic benefits of a better view of the potential of its production in any given season. It had visibility to a larger number of potential buyers that provided it with a deeper understanding of its pricing position that could be used to negotiate better pricing from its existing buyers.

Talk to a Validere expert

Learn how Validere can transform your business.
Email **contactus@validere.com**

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