



ENERGY · PRODUCTION & ASSETS

Crude Oil Quality Prediction From Reservoir to Trading

An oil producer used Quantum One to predict blend quality weekly instead of testing periodically — up to 1% value increase.

IMPACT

up to 1%

Value increase under an average market scenario

Weekly

Shipment-level API predicted, instead of periodic assay tests

Quality tracked from reservoir to trading and downstream

CLIENT PROFILE

CLIENT

An oil producer

COMPANY TYPE

Oil and gas operator

INDUSTRY

Energy

SCENARIO

Production & assets

CHALLENGES

- A crude oil blend assay can drift over time due to variations in contributing oil fields, production methods or reservoir depletion.
- Assay tests are costly and time-intensive, so producers often rely on periodic assessments to characterize their blends.
- Investment decisions based on inaccurate predictions of crude quality can result in increased project costs.

APPROACH

A unified data framework consolidates well and field level production, PVT and density tests, condensate spiking and reservoir conditions.

A model trained with hyperparameter optimization predicts shipment-level API weekly, and the projected quality is converted into a downstream value estimate across market sentiment scenarios.

BENEFITS

- Unified data framework across production, lab tests and reservoir conditions
- Weekly shipment-level API prediction instead of periodic assays
- Downstream value projection under different market scenarios
- Quality tracked from reservoir through to trading and the downstream facility

TIME TO PRODUCTION

Stage	Quantum One	Typical process	
Problem definition	1 week	2–3 weeks	
Proof of concept	2–3 weeks	4–6 weeks	
MVP	4–6 weeks	8–12 weeks	
Scale-up	1–2 months	3–4 months	
Maintenance	Ongoing	—	

TAKE THE NEXT STEP

Speak with our experts to discuss tailored AI solutions for your industry

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