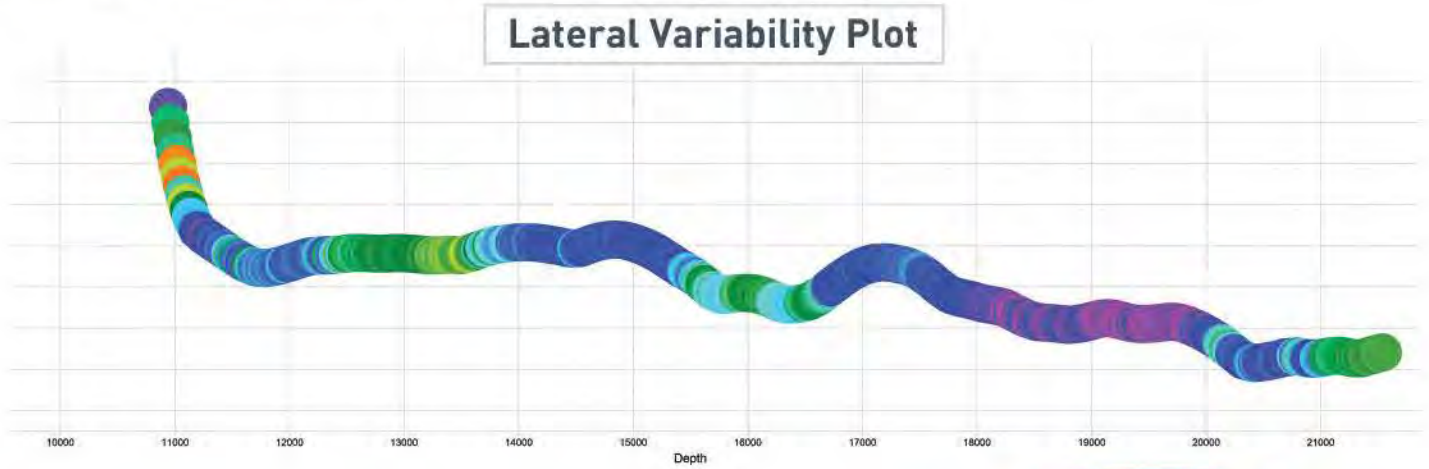
COMPLETION DESIGN OPTIMIZATION

PREMIER OILFIELD GROUP

IMPROVE COMPLETIONS EFFICIENCY USING CUTTINGS-BASED DATA

Figuring out where to place hydraulic fractures along a horizontal well and how to efficiently subdivide them into stages requires relevant data and expertise. Elemental data from drill cuttings provide a cost-effective data source that can be used to optimize completion design, reducing stimulation costs, improving stimulation efficiency and increasing well productivity.



ELEMENTAL FORMATION EVALUATION

Cuttings collected in the build section and along the horizontal well are expedited to a dedicated processing facility at our Geochemistry Center of Excellence in Houston. They are carefully and consistently prepared to ensure reliable measurements, then characterized using rapid x-ray fluorescence (XRF) and x-ray diffraction (XRD) techniques.

Proprietary element-to-mineral transforms are used to define chemofacies and determine formation properties along the wellbore, including critical fracturing parameters such as brittleness. Reservoir quality, organic richness, and susceptibility to formation damage can also be assessed.

Expert geoscientists use the observed chemostratigraphy to divide the interval targeted for stimulation into stages made up of rock with similar mechanical properties. This maximizes the potential for effective fracture initiation at every perforation cluster.

Adjustments to stimulation fluid formulation are also recommended when the interpreted mineralogy – especially clay content – indicates that incompatibility or formation instability could impair stimulation or production performance.

CONTACT PREMIER OILFIELD GROUP TODAY AND TAKE A CUTTINGS-BASED APPROACH TO YOUR NEXT COMPLETION CAMPAIGN

"Completion optimization based on data from drill cuttings is a cost-effective way to optimize horizontal well development costs and production performance."

XRF TYPICALLY MEASURES...	...TO MODEL
SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, V, Ni, Mo, U	Quartz, K-Feldspar, Plagioclase, Total Clays, Calcite, Dolomite, Pyrite, TOC

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SUCCESS STORY FROM THE EAST TEXAS HAYNESVILLE

An operator in East Texas compared wells completed using Premier's cuttings-based completion optimization workflow to conventional geometrically staged completions.

Stage design optimization resulted in an average stage length increase of 24%, eliminating up to 12 stages from a typical 7,500-foot lateral. Expensive horizontal wellbore logging was also eliminated.

Treatment fluid optimization was recommended for stages with clay volumes as high as 50%, which were subsequently treated with much greater success than earlier wells.

Stimulation stages along optimized wells were placed with 99.5% efficiency compared to only 96.8% with geometric designs, further reducing wireline and stimulation costs.

Cost savings of $600,000 per well were realized, while achieving equal or greater productivity per lateral foot. Estimated ultimate recovery of the optimized wells is 50 MMCF greater per thousand lateral feet than geometrically completed wells on the same pad.

"Generating and sharing relevant data from rock and fluid samples is the key to more effective and more efficient hydrocarbon development."

DATA GENERATION

DATA AGGREGATION

DATA ANALYSIS & INTERPRETATION

BE **EFFECTIVE.**

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