

Application: DNA Profile®

Quantify lateral DNA heterogeneity to improve lateral placement and ultimately monitor relative production over time

Location: Eagle Ford

CHALLENGE

Operator engaged Biota to determine wellbore variability along the lateral.

SOLUTION

- Cuttings were collected every 50' along the lateral wellbore during drilling.
- Subsurface DNA was successfully extracted from well cuttings and used to characterize lateral variation along the well.
- In order to visualize lateral variation, DNA markers are grouped at a broad family scale with each colored bar containing tens to hundreds of individual DNA markers; the top 20 groupings are shown in the figure.

RESULTS

- A summary of the most abundant subsurface DNA markers recovered along the lateral indicates the first two-thirds of the wellbore have a different composition compared to the toe of the well.
- The operator compared this DNA variability with the geosteering report and subsurface data and observed a fault on seismic, passing approximately through the dashed section.
- Observing lateral heterogeneity informs operator's decision for lateral length and well placement.
- Ongoing work will compare produced fluids from the well to the lateral DNA variability baseline to determine relative production contribution along the lateral.

