

## Premier Geochemistry Services

Premier has assembled the most experienced team of geoscientists in the industry for generating and interpreting chemostratigraphic records from slabbed cores and drill cuttings. Our products provide a spectrum of solutions for 1) constraining a detailed stratigraphic framework, 2) refining reservoir characteristics for optimizing targeting and completions, and 3) modeling fluid-rock interactions that influence the efficiency and longevity of production. Over 15 years Premier geoscientists have developed an unrivaled proprietary elemental calibration that quantifies 28 elements in unconventional and conventional reservoir rocks.

Premier provides exceptional formation evaluation and reservoir characterization by quantifying mineral phases and total organic carbon (TOC) in cores and drill cuttings samples. Accurate measurement of TOC is critical for successful exploration and development of hydrocarbon reservoirs in an unconventional play.

### **Chemostratigraphic / Geochemical**

#### **Applications in all reservoir types:**

- Quantification of major and trace elements for chemostratigraphic constraints, fluid-rock reaction predictability, and geomechanical modeling.
- Quantification of total organic carbon (TOC) for understanding the reservoir distribution of organic richness and related parameters.
- Development of chemofacies assignment and thin bed identification for refinement of reservoir models focused on understanding layering attributes and their impact on frac propagation and height.
- Development of a quantitative understanding of chemofacies heterogeneity and mineral-brittleness linkages that ultimately assist in parameterizing reservoir anisotropy models.
- Characterization of depositional, provenance and diagenetic variations in a well and their relationship to regional-scale variations/correlations.
- Characterization of the mineralogical underpinnings of mechanical facies
- Identification of formation/unit tops and their linkages to downhole log features.
- Optimization of wellbore placement and engineered completions design;
- Optimization of frac-stage placement in lateral wells.
- Identify casing point, coring point, and TD.
- Generation of a Synthetic Gamma Ray log (using K, Th, and U), and generation of a grain density curve.
- Calibration of downhole logs and validation of Petrophysical models leading to more accurate reservoir stimulation response.
- No added downhole risk in HT/HP wells. Geochemical analyses on drill cuttings provide valuable data in these hostile wellbore conditions.