Improved Sensitivity and Quality Assessment of Oil Shows in Development Drilling - Strategies for Oil-based Mud Systems
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The objective of this paper is to define best practice strategies for detecting oil shows in development wells that are drilled with oil-based mud. Technology extensions include quantification of respective end-member signals and predicting crude oil quality. The workflow design includes: planning and preparation, analysis, and interpretation. Specific elements include:

1. Examination of mud logs, well logs, drilling reports, and physical samples
2. Development of systematic analytical modules for rock cuttings, core material, pristine drilling fluid components and resultant mixtures, and associated fluids (e.g., flow tests if available)
3. Integrate results and define best practice

Specific analytical tools and/or modifications to existing procedures will be outlined for Rock Eval pyrolysis, TEGC, quantitative GC, and quantitative GC-MS SCAN acquisition. Interpretive techniques of chemometric data processing and improved visualization tools aid in the workflow design. The resultant best practice applied to Gulf of Suez and Western Desert petroleum systems demonstrate that the methodology is rapid and low-cost, yet highly sensitive and capable of quantifying oil properties to impact well-site decisions in near real-time.