

#### Background

An operator sought to expedite drilling an exploration section in a zone with highly dispersive shale. When drilling an offset well with standard water-based mud, 2 days NPT had been spent cleaning out the 8½-in section before logging. Cuttings samples from the offset well showed clearly a lack of inhibition that worsened with depth.

To solve the problem and reduce NPT for the next well, M-I SWACO recommended HydraGlyde Optima\* flexible high-performance water-based drilling fluid system based on accretion laboratory test results. The results showed a reduction in accretion of about 50%, from 33% to 18%.

No major challenges or fluid-related problems were encountered drilling the problematic 8½-in section. The fluid viscosity and other fluid parameters remained very stable throughout the section.

#### Technology

HydraGlyde Optima flexible high-performance water-based drilling fluid system

## Highly Dispersive Shale Inhibited by High-Performance Water-Based Fluid System

Optimized inhibition achieved with flexible fluid system, minimizing drilling time and risk through dispersive formation in an environmentally sensitive area



Cuttings samples from the offset well from left at 4,265 ft [1,300 m] and at right 5,249 ft [1,600 m].



Sample from 5,249 ft [1,600 m] in an actual well drilled with the HydraGlyde Optima system.

*Overall, cuttings integrity was good and the high-performance system provided sufficient inhibition. As the section drilled also explored the sand reservoir below the troublesome dispersive shale, the inhibition characteristics of the fluid ensured a stable open hole during the static period when logging.*