



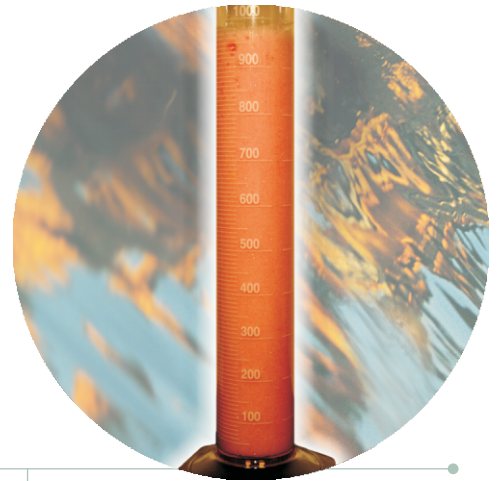
# Weatherford®

## Effectively Drill Water-Sensitive Formations

### Inhibitive, Oil-Based OleoFoam™ Underbalanced Drilling Fluid System

This recyclable foamed UBD fluid system can be adapted to most non-aqueous base fluids, including diesel, mineral oil and native crude. Stable, ultra-low densities are achieved (<2.0 lbm/gal), using a unique foaming surfactant.

High cuttings carrying capacity without reliance on high fluid velocities makes this system especially beneficial for drilling in water-sensitive formations, particularly in horizontal wells. The *OleoFoam* system consists of a foaming agent, a viscosifier and initiator, and a defoamer.



#### **OleoFoam hydrocarbon foaming agent: recyclable performance**

*OleoFoam* foaming agent is an oil-soluble foamer that effectively reduces the surface tension of hydrocarbon-based fluids, generates foam at ultra-low concentrations [ $<0.2\%$  (v/v)] and can be recycled (foamed/defoamed) with minimal maintenance. After drilling, the hydrocarbon drilling fluid can be sent to a production facility or stored for the next well.

This robust foaming agent can handle large influxes of formation water without hindering foaming properties. It is the ideal solution for UBD in hydrocarbon-bearing or water-sensitive shale formations.

#### **Hydrovis™ hydrocarbon solids-free viscosifier and Hydrolink™ initiator: increase cuttings carrying capacity, not ECD**

*Hydrovis* solids-free viscosifier and *Hydrolink* initiator are specifically designed for UBD. Conventional viscosifiers, like organophilic clays, increase the solids content of drilling fluids—an unfavorable outcome for UBD because it also increases the equivalent circulating density (ECD) of the fluid. And that can lead to drillstring or wellbore erosion.

But the *Hydrovis* product increases base fluid viscosity to extend foam life and enhance cuttings suspension without increasing ECD. Viscosity can be generated on the fly with the use of chemical-injection pumps or a standard rig mixing tank. By varying the *Hydrolink* viscosity initiator, the base fluid viscosity can be designed for a conventional or stiff foamed system. Standard concentrations of these products are 0.5%/0.5% (v/v).

#### **Hydrobreak™ defoamer: efficient surface separation**

*Hydrobreak* defoamer is a compatible product that quickly reduces the foaming of the *OleoFoam* system for separation of cuttings and water. It works by thinning the bubble membrane, which allows the gas to escape from the fluid. This method of increasing the surface tension defoams the system only temporarily. Once gas is injected into the fluid stream, the system will regenerate foam as it is pumped down the drillstring. Thus the *OleoFoam* system is highly recyclable, conserving fluid volume.

To learn more about the *OleoFoam* system, contact an authorized Weatherford representative, or visit [weatherford.com](http://weatherford.com).