

# BaraHib™ Trackable Inhibitive System

## INHIBITIVE CHEMISTRY QUANTITATIVELY MEASURED TO IMPROVE DRILLING FLUID PERFORMANCE AND RELIABILITY

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### OVERVIEW

In environmentally sensitive areas, high-performance water base fluids (HPWBF) are suitable alternatives to non-aqueous drilling fluids (NAF). HPWBF rely on shale inhibitors – amine inhibitors and polymeric encapsulators – to achieve drilling fluids performance similar to NAF. Traditionally amine inhibitors have been tracked through mass balance calculations. These inhibitors can deplete faster than indicated by calculations during drilling operations. This can lead to issues such as wellbore instability, stuck pipe incidents, non-productive time (NPT), loss of reservoir access and increased well costs for operators.

The BaraHib™ trackable highly-inhibitive system (TIS) is a high-performance water-based fluid which uses advanced inhibitive chemistry that can be quantitatively measured continuously at the rigsite. This unique capability helps operators improve operational reliability and reduce environmental impact, maximizing asset value. In addition, BaraHib TIS provides excellent wellbore stability in various types of clay mineralogy, improved lubricity, and maximum hole cleaning in highly-deviated and long lateral wellbore sections. The inhibition framework can be customized to avoid shale swelling, prevent cuttings dispersion through shale encapsulation, and reduce bit-balling tendencies with anti-accretion coating.

### TRACK SHALE INHIBITORS

Formations that contain hydratable shale or mixed layers of reactive clay can lead to wellbore instability issues. The BaraHib TIS tracks shale inhibitor concentration through quantitative measurements instead of the volumetric tracking approach commonly used in the industry. This innovative tracking method accurately measures amine-based inhibitors. As a result, operators can achieve effective shale inhibition improving wellbore stability, maximizing drilling efficiency, and enhancing control over the wellbore.

### IMPROVE OPERATIONAL RELIABILITY

The BaraHib TIS is engineered to suppress reactive clay hydration, allowing operators to drill longer hole sections and eliminate the need to back ream due to clay swelling. Shear thinning behavior enhances hydraulic horsepower and improves hole cleaning and suspension, maximizing ROP.

### FEATURES

- » Quantitative trackable amine inhibitor
- » Thermally stable to 300°F (149°C) with standard component range
- » Fluid weight up to 17.5 lb/gal
- » Low toxicity
- » Environmental Gold Rated for North Sea

### BENEFITS

#### Lower Well Costs

- » Effective inhibitor depletion tracking
- » Improve stability for logging and cementing

#### Maximize Drilling Efficiency

- » Inhibition of reactive shale formations
- » Minimize colloidal solids
- » Optimized rheology for hole cleaning

#### Customizable Fluid System

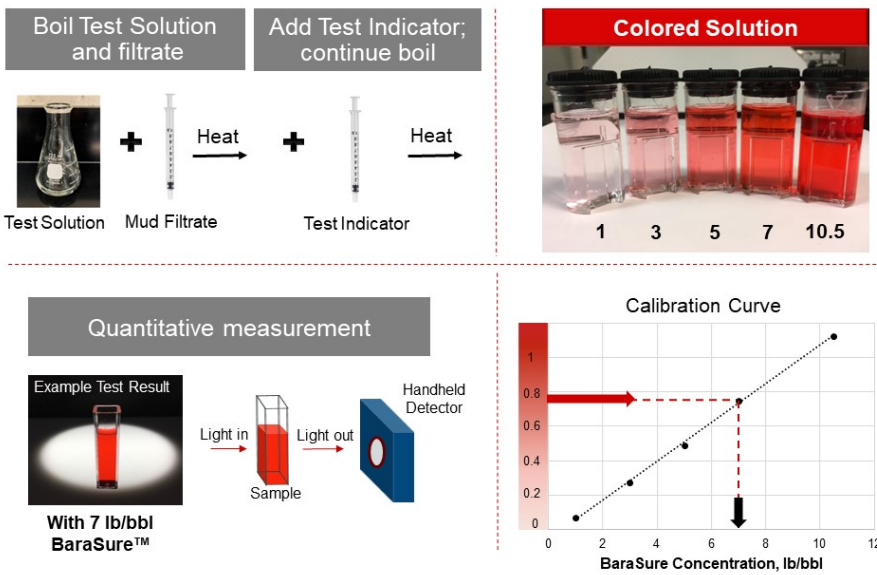
- » Engineered for speed, stability, and simplicity
- » Inhibitors matched to various formation types
- » Nano particle sized bridging polymers seal micro-fractures, strengthen the wellbore and improve stability

## REDUCE ENVIRONMENTAL IMPACT AND CO<sub>2</sub> FOOTPRINT

The BaraHib TIS is environmentally friendly, helping to reduce CO<sub>2</sub> footprint by only adding the products required instead of large dilution volumes. It contains enhanced polymeric additives, which provide drill cuttings encapsulation, improving cuttings integrity and efficient cuttings removal. This aids operators to reduce dilution rates and minimize waste management costs. The system can be customized with degradable, non-chloride salts to allow land farming of drill cuttings while protecting the environment.

## Tracking Neutral Amine

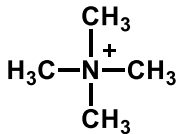
### BaraSure™ Shale Inhibitor Tracking Test



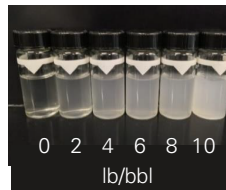
## Tracking Quaternary Amine

### TARGET IDENTIFIED

Quaternary Amine Inhibitor



### CONCENTRATION TRACKING



For more information, contact your local Halliburton representative or visit us on the web at [www.halliburton.com](http://www.halliburton.com)

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