EnerREACH

POLYMERIC INVERT EMULSION

NEXT GENERATION

AES DRILLING FLUIDS

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DESCRIPTION

- Polymeric invert emulsion drilling fluid compatible with diesel, mineral oils, and synthetics
- Superior suspension properties with lower overall solids content
- Fragile gel structure minimizes surge pressure when breaking circulation

BENEFITS

- Minimizes pump pressures and overall equivalent circulating density
- Reduces risk of losses through weak formations
- Tolerates significant water influxes while maintaining invert emulsion

APPLICATIONS

- Extended reach or challenging wells with narrow fracture gradient / density margin
- Areas prone to water influx

EnerREACH†
Polymeric Invert System

Description

EnerREACH is a polymeric invert emulsion system designed to drill the most challenging wells by reducing equivalent circulating density, surge, and swab pressures. EnerREACH utilizes ENERMOD ER, a polymeric viscosifier, to supplement low-end rheology for superior suspension characteristics without increased gelation and plastic viscosity typical of conventional invert emulsion systems.

EnerREACH features a suite of high performance products that provide simple maintenance at low concentrations, easing system maintenance and minimizing chemical treatment requirements. The emulsifier and wetting agent package for the EnerREACH system is optimized to leverage the benefits of a polymeric system while exhibiting significant tolerance to water influx.

Key Components of the EnerREACH System

DURATEC ER†
High performance polymeric fluid loss control additive

ENERMOD ER†
Polymeric viscosifier providing elevated low-end rheology

ENERMUL†
Primary emulsifier for the EnerREACH system

ENERMUL II†
Secondary emulsifier for the EnerREACH system

ENERSPERSE†
Concentrated dispersant/thinner to lower viscosity

ENERWET†
Powerful wetting agent to oil-wet drill solids, lost circulation and weight material, and other additives

ENERVIS RM†
Supplemental liquid rheological modifier used to maintain EnerREACH properties

Successful delivery of EnerREACH requires an optimized drilling fluids program to address risks and effectively leverage the benefits of the system, particularly with challenging extended reach wells or loss prone formations. AES Drilling Fluids provides a full suite of technical support services to plan, prevent, and manage complex wells.

EnerREACH provides excellent suspension for hole cleaning while remaining shear-thinning to minimize equivalent circulating density.

Applications

EnerREACH is ideal for challenging wells where there is a narrow margin between the fracture gradient and required drilling fluid density, such as extended reach wells. In these applications, reduced pressures minimize the risk of losses to the formation and enable high pump rates. Because rheology is maintained without additional clay, it is possible to enhance hole cleaning through turbulent flow at a lower overall pump pressure.

Most applications using EnerREACH require densities ranging from 8.4 to 12.5 lbm/gal, but formulations are available above 16.0 lbm/gal if necessary. EnerREACH is stable beyond 250°F, although lab optimization is recommended for elevated temperatures.

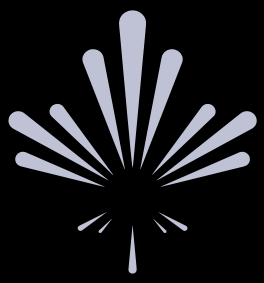
In areas where water influxes are common, EnerREACH offers added benefits through its stability. Where many conventional systems "flip" during a water flow, the emulsifier package designed for EnerREACH is proven to remain an invert emulsion with high water content, allowing time to address the influx and treat the system to desired drilling properties.

EnerREACH is most effective when utilized as part of an optimized drilling program accounting for specific well conditions. Lab testing and hydraulic simulations will aid to determine best properties for drilling, circulating, tripping, and running casing.

Performance

In loss-prone areas, customers note reduced losses to the formation. When breaking circulation, pressures typically do not exceed 50 - 150 psi above normal circulating pressure. During a water influx in West Texas, the oil:water ratio dropped as low as 50:50 without system failure, enabling sufficient time to control the flow and condition the EnerREACH system back to programmed properties. In similar cases, competing systems required complete replacement due to their inability to remain stable.

The oil patch has needed something like this for a long time! It should really change how oil companies drill shale plays. We fight losses less, and if we are in a water-bearing formation, we have run it at a 50:50 oil:water ratio without any problems! It does not tend to flip with an influx of water like conventional clay based-systems.



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Revision 1.00