LATIDRILL
high-performance water-based fluid system

Drill lateral wells faster, easier, and more efficiently
Drilling land-based unconventional, deviated, and lateral wells often presents significant operational and logistical difficulties, predominantly wellbore instability and low rates of penetration (ROP) due to increased friction, torque, and drag. The time and costs associated with fluid maintenance, product transportation, and storage are additional concerns.

Traditionally, the use of oil-based mud (OBM) was preferred for these challenging wells. Although OBM provides inhibitive and lubricious characteristics, they pose environmental risks and logistical downsides. With the LATIDRILL™ high-performance water-based fluid system, Baker Hughes, a GE company (BHGE), offers a competitive, water-based fluid alternative to address operational and performance needs in challenging wells, while offering exceptional environmental, logistical, and economic benefits.

The LATIDRILL system consists of a trio of core products that work together: LATIBASE™ multifunctional additive, LATIMAGIC™ wellbore stabilizer and lubricant, and LATIRATE™ ROP enhancer.

25-minute mixing time
Quick mix—easy fix

The LATIDRILL system’s formulation uses fewer products, enabling field personnel to quickly mix a robust fluid system with an improved rheological profile and easily maintainable, faster stabilizing properties. Tests show the LATIDRILL system can be mixed in half the time it takes to mix OBM or conventional water-based mud (WBM), speeding up the time it takes for drilling operations to get underway.
# Improved rig economics

By using fewer products at lower concentrations, the LATIDRILL system minimizes solids crowding and excessive dilution rates. Frictional pressure losses are reduced, equivalent circulating density is lowered, and penetration rates are improved.

## Improved rig economics

Fewer products simplify wellsite and transportation logistics, including freeing up storage space at the rig site. Using the LATIDRILL system means rig personnel spend more time on the drill floor and less time mixing mud.

And because the LATIDRILL system is water-based, rig and equipment clean-up may be reduced by as much as two days per well when compared to oil-based systems. The system has a longer storage life and requires fewer preservatives than traditional WBM, delivering more storage and reuse flexibility.

## Improved performance, reduced friction

OBM historically delivered better lubricity and wellbore stability over WBM offerings. The LATIDRILL system was designed specifically to deliver lubricity and stability like an OBM, while improving drilling performance and mitigating environmental impact.

The LATIDRILL system addresses the performance issues typically associated with WBM, and effectively competes with OBM to reduce friction factors.

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- Reduced torque and drag
- Optimized shale inhibition
- Improved hole cleaning
- Increased ROP
- Improved wellbore stability
- Decreased NPT
- Drill more efficiently

BHGE developed the LATIDRILL system with lubricity attributes tailored to emulate OBM, with its three components working together to reduce friction and surface fatigue on the drill string, casing, and wellbore. The specialized polymeric content forms a physical barrier that absorbs or transmits limited energy reducing friction, vibration, and heat, and the custom-engineered components further reduce friction through layered structures that slide relative to one another.

LATIDRILL system applications

- Unconventional gas/shale plays up to 275°F (135°C)
- Deviated, lateral, and extended reach wells
- Drilling operations with challenging well paths
- Wells where a suitable alternate to OBM is desired

The LATIDRILL system minimizes solids, providing better hydraulics and improved hole cleaning for increased ROP.
Components of the LATIDRILL system

The LATIDRILL fluid system is an integrated suite of products

LATIBASE
A multifunctional, water-based drilling fluid additive for versatile application. The foundation of the LATIDRILL system, it is designed to provide express performance in all intermediate and lower hole sections.

LATIMAGIC
A custom-engineered wellbore stabilizer and lubricant that increases drilling efficiency and wellbore integrity in directional and extended-reach wells. The LATIMAGIC component helps avoid sticking and reduces torque and drag by creating a thin and tough filter cake without adversely affecting mud properties.

LATIRATE
An easy-to-use ROP enhancer and lubricant that reduces downhole friction, improving sliding efficiency and penetration rates in directional and extended-reach wells. The LATIRATE component works effectively in low concentrations.

Maintain wellbore stability
Clay swelling from water infiltration into the formation can jeopardize the integrity of the wellbore and lead to costly time delays, or worse, complete loss of the well. With the LATIDRILL system, wellbore integrity is maintained by minimizing clay swelling. The system’s chemical structure encapsulates the reactive clays, which inhibits the entry of water into the clay matrix, enabling the clay to maintain its integrity even after extended exposure to the water-based system. Associated nonproductive time (NPT) from tight spots and stuck pipe due to clay swelling is significantly reduced.

Additional information describing recommended treatment, environmental information, safe handling recommendations, packaging description, and typical physical properties is available for each product.

CASE STUDY

More value from a complete shale solution
When used on a well in the Eagle Ford basin in South Texas, the combination of the LATIDRILL system and the BHGE StarTrak™ high-definition resistivity imaging service saved 15 days of drilling compared to an offset well, and provided superior imaging quality. The LATIDRILL system can be applied with the full range of BHGE shale solutions to identify fractures while drilling, characterize the hole for optimal zone placement, and maximize production.

The StarTrak service provides the industry’s highest-quality electrical images. The example above, from the Permian basin of West Texas, shows horizontal bedding and conductive fractures cross-cutting the borehole.

Highly reactive clay plugs, 60 bentonite/40 water
After five days in fresh water
After five days in unweighted LATIDRILL fluid

Simplify your drilling complexity
The simplicity of its components, combined with superior performance, make the LATIDRILL system unique in the industry. It can provide a significant reduction in drilling time, deliver significant cost savings, and maximize return on investment by completing the well sooner and getting production online.

For more information about drilling your next well faster, easier, and more efficiently, contact a BHGE representative or visit bhge.com.

The LATIDRILL system maintains wellbore integrity by blocking the hydration of formation clays. Lab tests demonstrate the reaction of clays exposed to the LATIDRILL system and to water. After five days of exposure, the clays in the LATIDRILL system maintained their integrity.