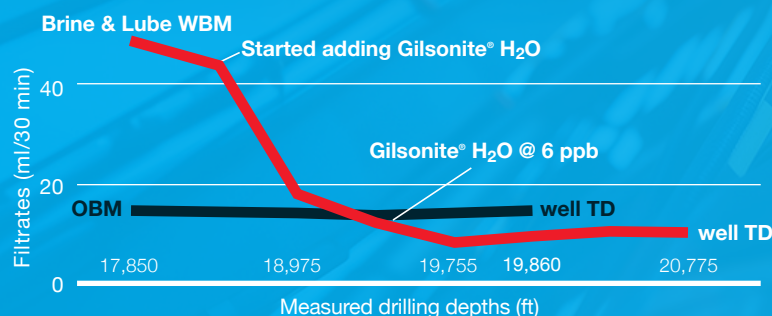


AMERICAN GILSONITE COMPANY

New water-based system enabled major operator to drill 2.5-mile lateral

Gilsonite® H₂O provides shale control, low fluid loss and lubricity

Comparatives of drilling performance



Outcomes at final interval of wells

	WBM w/ Gilsonite® H ₂ O	OBM @250°F
Drill Rate (ft/hr)	60-94	33-54
Well depth (MD) (ft)	20,775	19,869
Fluid loss (ml/30 min)	7-10 (API)	14-15 (HPHT)
Filter cake (32nd inch)	1-1.75	6
Torque (ft lbs)	22k	18k

Gilsonite® H₂O: A game-changer for WBM systems

Gilsonite® H₂O enabled a major operator in the Permian Basin to overcome a challenging downhole environment and successfully reach TD (Total Depth) in an extended reach lateral well while utilizing a water-based mud system. The project was impacted by water influx within the lateral section requiring the replacement of the oil-based system. Alternative water-based mud (WBM) systems struggled with shale control, high filtrate losses, reduced efficiency and increased costs.

Maintaining drilling efficiency and successfully reaching TD through a 2.5-mile lateral section was critical. This challenge led to the implementation of a cut-brine/lubricant system. To optimize drilling performance, minimize fluid loss and control shale, Gilsonite® H₂O was added to the mud formulation. It improved shale stability, controlled fluid loss and increased lubricity, matching prior OBM drilling performance. TD was achieved with an effective water-based system enabled by Gilsonite® H₂O.

Superior performance and cost savings

Gilsonite® H₂O led to significant improvements in drilling while avoiding the serious handling and residual issues associated with OBMs. Field data showed enhanced penetration rates (ROP), reduced torque, better filter cake development and lower filtrate volumes. These results proved that water-based systems enhanced with Gilsonite® H₂O could effectively compete with oil-based systems in the Permian Basin. Additionally, the controlled filtrate and reduced maintenance translated into a more cost-effective drilling process, setting a new standard for WBM fluids.

Overview

Challenge:

- > Reservoir water influx while drilling with OBM system in a Permian Basin well
- > Shortcomings in shale inhibition, filtrate losses and lubricity typical in WBM systems
- > Provision of a drilling system yielding superior drilling parameters and wellbore stability

Solution:

- > Implemented a "new" WBM system including Gilsonite® H₂O that overcame the challenges listed above

Results:

- > Successfully reached TD in a 2.5-mile extended reach lateral section
- > Increased ROP
- > Reduced torque
- > Performance comparable with an OBM system
- > Improved filter cake development, reduced filtrate volumes
- > Mud properties were maintained regardless of water influx
- > Excellent lubricity and wellbore stability
- > Reduced NPT (Non Productive Time)
- > Overall cost savings



There's only one source of Gilsonite®. **Proven under pressure®**

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Gilsonite® is a registered trademark of American Gilsonite Company for the naturally occurring hydrocarbon resin, uinitaite.