QMAX SOLUTIONS INC

"Reduced non-productive time due to less reaming and cleaning"

Introduction

Wellbore instability has been estimated to cost the Oil & Gas Industry worldwide over $500 million dollars annually. Oil-based drilling fluids are traditionally used to drill the most difficult shales. The environmental liabilities of oil-based fluid forced the drilling fluids industry to produce water-based drilling fluids with oil-based-mud shale stabilizing properties.

The QM - 12 System (water-based potassium silicate) functions by forming an in-situ impermeable barrier within the shale matrix. This barrier, which forms in all types of shale, prevents pressure transmission from the mud to the shale. The result is a more stable shale, less likely to detach from the borehole wall.

The three mechanisms believed to be responsible for this chemical-mechanical inhibition are: lower pH of pore-space water, Ca^{2+} and Mg^{2+} ions present in pore-space water and soluble silicates natural tendency to coat surfaces.

Applications:

- Drilling wellbores prone to borehole instability due to dispersive, swelling, pressurized or fractured shales
- Drilling in environmental sensitive areas as oil-based mud replacement
- Drilling deep, high ROP, Potassium Silicate Flocculated Water sections

Benefits:

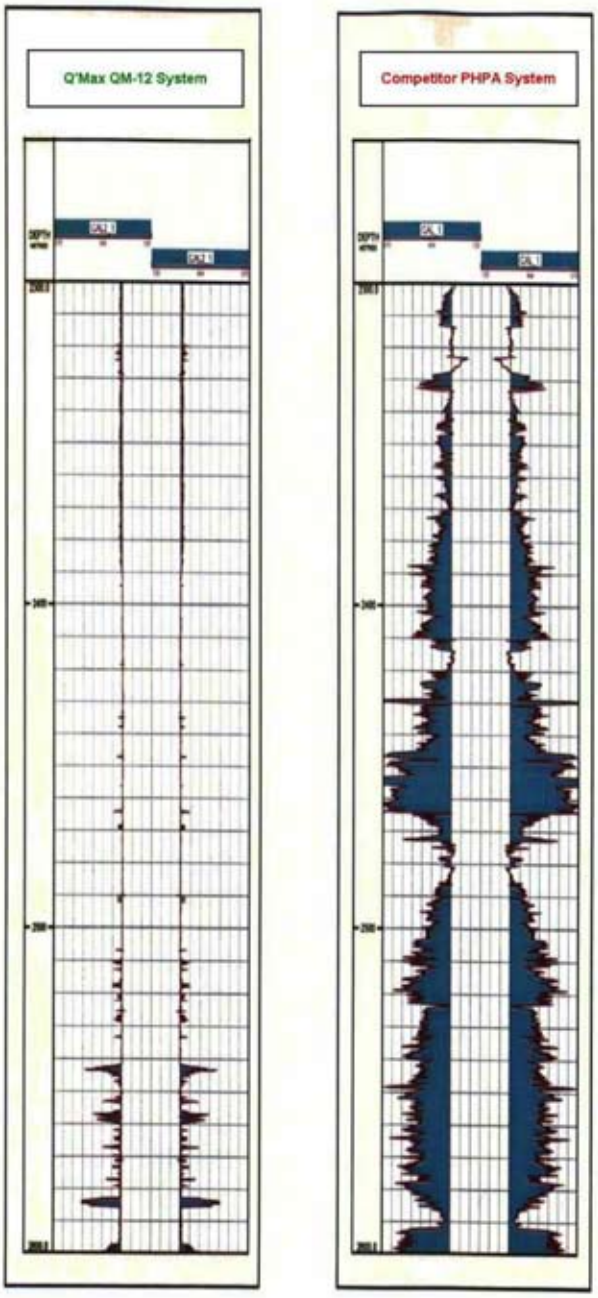
- Reduced non-productive time due to less reaming and cleaning
- Better gauge hole
- Reduced corrosion
- Bacteria resistant
- Easy to de-water; recyclable liquid; solids disposed by mix-bury-and-cover method

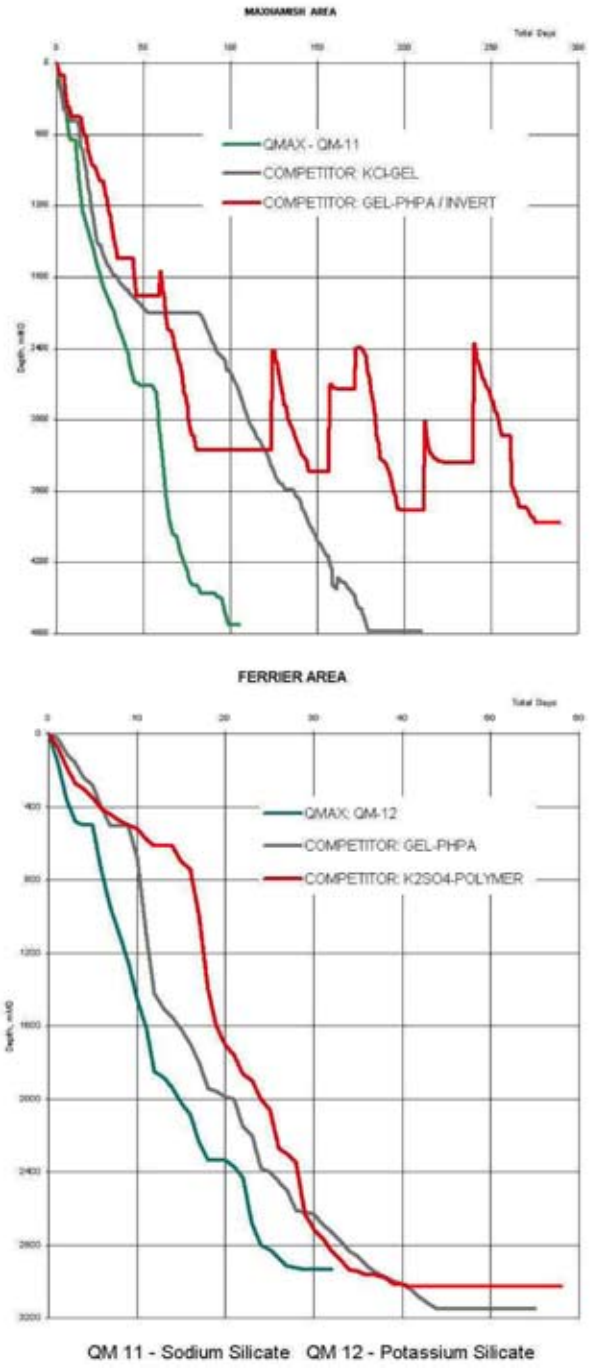
QM-12System™

(Potassium Silicate)

www.qmaxsolutions.com

Case Histories





QM 11 - Sodium Silicate QM 12 - Potassium Silicate

1996 - Introduced Silicate Drilling Fluids Technology to Western Canadian Operators

2000 - Introduced Silicate Drilling Fluids Technology to Pemex - Mexico

To date - Drilled **46** well sections totalling **55,138** m silicate fluids

Paper #59751 presented at SPE - first for Western Canada

Dr. Brent Warren, et al - Q'Max Solutions Inc.

Use of Silicate Mud to Control Borehole Stability and Overpressured Gas Formations in North-Eastern British Columbia

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