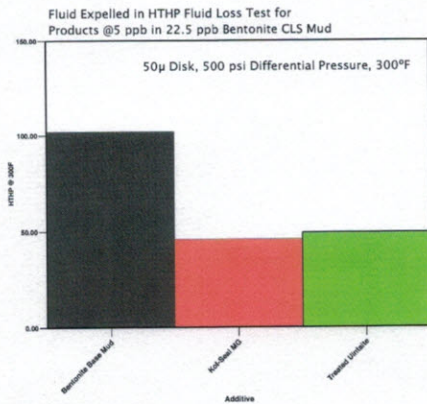




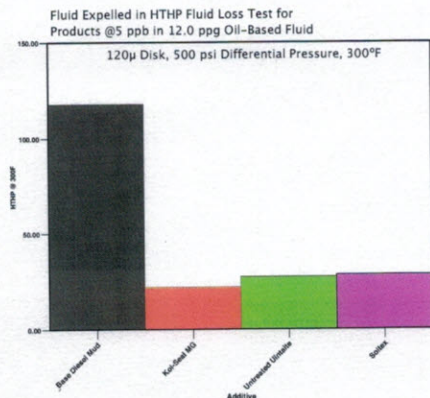
Kol-Seal MG for Seepage Loss and Fluid Loss Control

Kol-Seal MG is a thermally stable seepage loss material for water, oil-based, and synthetic drilling fluids. **Kol-Seal MG** is a light weight granular solid with a specific particle size distribution for maximizing bridging efficiency to reduce seepage loss and fluid loss in fractured or higher porosity formations.

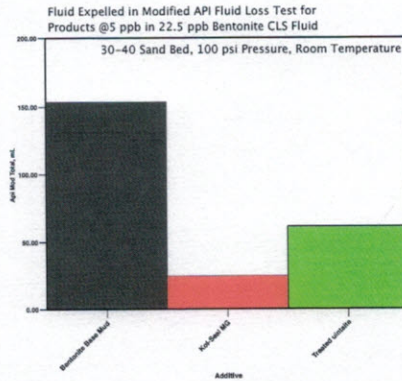
Reduction of HTHP fluid loss values are shown below for a 22.5 ppb bentonite chrome lignosulfonate (CLS) drilling fluid comparing the base mud (black bar) with fluids containing **Kol-Seal MG** (red bar) and treated uintaite (green bar) using a 50 μ disk.



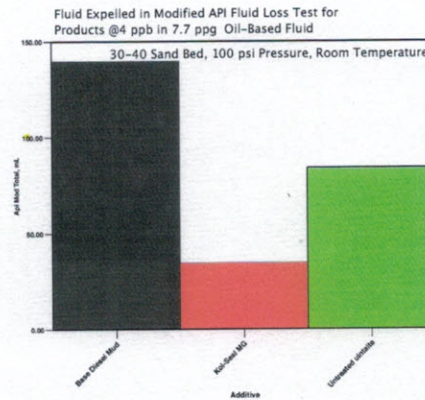
Similar HTHP results are shown below for a 12 ppg diesel oil-based mud using a 120 μ disk. (Purple bar = Soltex®)



A modified version of the API fluid loss test¹ in which the filter paper is replaced with a 1-inch sand bed demonstrates the ability of **Kol-Seal MG** to reduce seepage loss. Shown below are the results for a 22.5 ppb bentonite CLS fluid.



The reduction of seepage loss for an unweighted oil-based mud is shown below.



¹ Santos, Helio et al.: "API Filtrate and Drilling Fluid Invasion: Is There Any Correlation?", SPE 53791, 1999 SPE Latin American and Caribbean Petroleum Engineering Conference, Caracas, Venezuela, 21-23 April 1999.