

**AS-1** is our most effective heavy oil stimulation fluid. We have achieved remarkable results with this product and have been continually improving it since its creation in 1994. If this product does not work in a heavy oil application then it is likely that nothing will!

AS-1 is a specially formulated blend of organic solvents, penetrants, and dispersants for prevention and dissolution of asphaltene and paraffin deposits. AS-1 is used for a variety of applications where these troublesome deposits cause plugging and reduced production. This multifunctional product provides superior deposit and sludge control compared to treatment programs using only solvents. It is most effective in areas where asphaltene precipitation is a problem and provides long-lasting results. The product performs especially well in heavy oil with high asphaltene content.

### Advantages:

1. Resuspends asphaltenes and paraffins by mimicking the natural resins of heavy oil.
2. Coats sand and clay solids and leaves the particles water wet.
3. Breaks water in oil emulsions and water blocks by reducing the interfacial tension that exists between the oil and water phases.
4. Reduces damage induced by polymer drilling fluids.
5. Much higher flash point than alternative fluids.
6. Significantly reduces oil viscosity and prevents sludging.
7. A very effective penetrating and dispersing agent.

It has been noted that AS-1 is a highly effective treatment for increasing production from heavy oil wells that exhibits several of the following characteristics:

Good geological parameters  
High reserves left in place with low production from the immediate area  
Historical sanding problems  
Good reservoir pressure  
High offset production  
Drilled using polysaccharide drilling muds

In addition a good candidate should also demonstrate one or more of the following:

Fluctuating fluid levels throughout production history  
Positive response to loading programs  
Good fluid levels in offset wells that are producing from the same formation  
A sudden decline in production that cannot be attributed to reservoir depletion  
Highly viscous oil with a high asphaltene content  
A well that was previously subjected to a loading program, workovers using solvents or blend or stimulation using acid or solvents

To order AS-1 or any other solvent product please contact either  
Erv Nixdorf (780-871-1082) or Michael Dallmann (780-808-1302)