

# FLO ULTIMA heavy crude drag reducing agents

## Efficiently increase crude throughput and reduce pipeline drag

Heavy asphaltenic crudes are difficult to transport via pipeline. Operators often use large amounts of diluent or heat to reduce viscosity and enable transportation. But, it also adds frictional pressure which decreases overall transmission efficiency. Because of the high volume of diluents required, this method often reduces the total volume of crude being transported.

Baker Hughes **FLO™ ULTIMA heavy crude drag reducing agents (DRA)** reduce frictional pressure loss and increase throughput of asphaltenic crudes that are restricted by viscosity or operating pressure. FLO ULTIMA DRAs increase the flow rate in pipelines by more than 25%, transporting heavy crude to market faster than conventional DRAs, while also improving your bottom line.

The specific polymer design allows high drag reduction delivery in heavy crudes with less heat and diluents, reducing HSE risks and concerns. The active latex polymer agent dissolves in asphaltenic crudes with <23° API gravity to maintain a high performance level in

pipelines. FLO ULTIMA heavy crude DRAs do not coat the walls of the pipeline or adversely affect the crude oil. These specialized drag reducing agents help to reduce pressure in the pipelines, which enables operators to bypass pump stations and effectively optimize power usage to lower overall OPEX and increase the pipeline's efficiency and throughput.

Baker Hughes hydraulics professionals will calculate the precise amount of FLO ULTIMA heavy crude DRA required to increase your pipeline's throughput. The high molecular weight polymer can degrade to fragments of significantly lower molecular weight after passing through mainline pumps or other regions of high shear, but is stable and will not degrade during normal heavy crude pipeline flow.

Contact your Baker Hughes representative to learn how our FLO ULTIMA heavy crude DRA can help enhance your pipeline's throughput and reduce OPEX.

### Application

Pipeline transportation of asphaltenic crude oil

### Features and benefits

- Latex-based drag reducing agent
  - Dissolves in asphaltenic crude
- Higher achievable drag reduction in asphaltenic crude
  - Increases pipeline flow rate by more than 25%
  - Enhances asphaltenic crude throughput
  - Improves speed to market for heavy crudes
  - Reduces pipeline pressures
  - Enables shutdown of intermediate pump stations
- Non-flammable product, simple storage, and cleanup
  - Lowers HSE risk
  - Reduces OPEX and nitrogen-pressurized storage requirements