MICELLAR-POLYMER FLOODING

This EOR method uses the injection of a micellar slug into a reservoir. The slug is a solution usually containing a mixture of a surfactant, co-surfactant, alcohol, brine, and oil that acts to release oil from the pores of the reservoir rock much as a dishwashing detergent releases grease from dishes so that it can be flushed away by flowing water. As the micellar solution moves through the oil-bearing formation in the reservoir, it releases much of the oil trapped in the rock. To further enhance production, polymer-thickened water for mobility control (as described in the polymer flooding process) is injected behind the micellar slug. Here again, a buffer of fresh water is normally injected following the polymer and ahead of the drive water to prevent contamination of the chemical solutions. This method has one of the highest recovery efficiencies of the current EOR methods, but it is also one of the most costly to implement.

CHEMICAL FLOODING
(Micellar-Polymer)

The method shown requires a preflush to condition the reservoir, the injection of a micellar fluid for releasing oil, followed by a polymer solution for mobility control to minimize channeling, and a driving fluid (water) to move the chemicals and resulting oil bank to production wells.