



## Description:

Increase oil production of heavy oil reservoirs while minimizing operational issues using alkali-free surfactant-polymer flooding.



## Application:

Heavy oil reservoirs where thermal methods are not applicable. From Primary to Tertiary recovery.



## Results:

Oil recovery of a Canadian Heavy oil greater than 90% ROIP (after polymer flooding) has been obtained at lab scale with the injection of a small surfactant-polymer (SP) slug.

## Challenges:

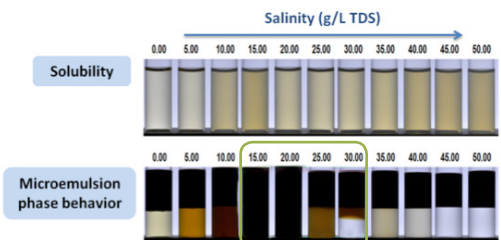
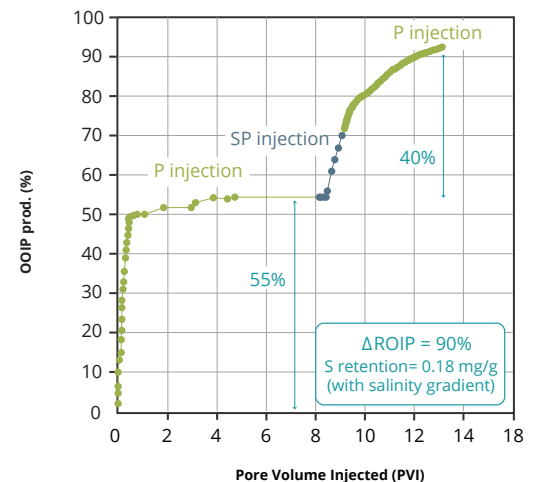
- Chemical EOR is far from being a mature technique for Heavy and Extra-Heavy oil.
- In-situ surfactant generation with alkali is attractive but raises scaling, corrosion and logistical concerns.
- Heavy oil mobilization and transport in the reservoir by means of SP/ASP are difficult to predict by numerical simulation.

## Solutions:

- Surfactant-polymer formulation ensuring good mobility control and low interfacial tension.
- To be able to perform relevant economical feasibility assessments by reservoir simulation.

## Objectives:

- Develop customized SP formulations for heavy oil reservoirs.
- Validate and optimize the formulations performances at core scale.
- Generate all case-specific surfactant and polymer data for reservoir simulation.
- Evaluate the economic feasibility through pilot or pattern scale simulations.
- Assess for the impact of Surfactant and Polymer on separation and water treatment.



References: SPE169715, SPE169697, SPE179857, SPE179624, SPE184086, SPE189745, SPE190418, SPE190361.

An Alliance between:

