



Unlocking “Tight” Oil Plays

Tight oil—that held in low-permeability, hard-to-access formations such as the Bakken, Viking, Lower Shaunavon and Cardium—is the new frontier of petroleum production in Western Canada.

Thanks to horizontal drilling and multistage fracturing techniques, this resource is booming, but primary production from it declines rapidly. Gas flooding is a technically viable follow-up, but limited gas sources and high upfront facility costs hinder its wide application.

SRC is applying its extensive expertise in enhanced waterflooding to the challenges posed by tight oil formations to recover the vast volumes of residual oil after primary production. Enhanced waterflooding is cost-effective and relatively simple to implement. New generations of surfactants offer the potential to overcome the reservoir’s extremely high capillary pressure that traps oil by either reducing oil/water interfacial tension or altering matrix wettability.

SRC’s work in this area focuses on screening and evaluating new surfactants alone and in tailored mixtures of surfactants or surfactants plus gas. We augment experimental studies—conducted in a setup especially designed for tight oil—with numerical simulation to understand and advance this promising approach to tight oil recovery.

SRC Tight Oil Services

- Tight core analysis (e.g., capillary pressure curves, wettability, injectivity)
- Corefloods using field samples
- Phase behaviour (PVT) studies
- Surfactant screening/evaluation (absorption, interfacial tension)
- X-ray diffraction
- Numerical simulation for performance prediction



CONTACT

Petro Nakutnyy
Saskatchewan Research Council
129 - 6 Research Drive
Regina, SK, Canada, S4S 7J7
T: 306-564-3522
E: petro.nakutnyy@src.sk.ca