2009 Project:

Title: *Improved Recovery of Heavy Oil with Bottom Water using Vertical Wells with Downhole Water Sink (DWS) Completions*

Objectives: The study aims at capturing the difference between heavy and light oil production in terms of mobility ratio effect, recovery dynamics prior to and after water breakthrough, and water cut control with production rate. Most of heavy oils with bottom water cannot be economically recovered using "cold" (non-thermal) method and conventional (single completed) wells. In these wells, operational range of production rates with variable water cut is very small comparing to light oils. Thus, heavy-oil wells would promptly (within days) switch from water free production to "all water" production.

Second objective is to perform a feasibility study into potential application of downhole water sink (DWS) technology in shallow sand containing very significant deposit of heavy oil. For the purpose of this study a DWS well should be modeled and compared with a conventional well using a commercial reservoir simulator.