Burgan 3SU Reservoir; A Success Story in Development Planning and Reservoir Management

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ABSTRACT

Burgan 3rd Sand Upper (3SU) is one of the secondary units in the Burgan clastic sequence future production from SEK is dependent on the 3SU development. BP has been providing extended support to SEK through working jointly with the KOC team to identify and progress artificial lift optimisation and reservoir management for the 3SU reservoir over an 8 month period in 2016; the objectives were to deliver immediate production improvement options and improve resource, reservoir and well performance understanding to the support current and future development planning of the reservoir. This collaboration resulted in over 31,000bpd additional barrels of oil added from production optimisation activities and a further >80 well intervention opportunities awaiting execution. Initial support focused on developing a short-term activity hopper of both artificial lift optimization opportunities and reservoir management activities, which later was expanded to include framing of medium to longer term development plan requirements. Future development of the 3SU reservoir is dependent on water injection support for pressure maintenance; project work focused on defining the surveillance and reservoir management activity required to optimise the location of future injection and to improve understanding of reservoir heterogeneity and complexity. Integration of the geological understanding was key to the identification of opportunities and assistance in optimising the long term reservoir management strategy for the 3SU. Close collaboration between the teams and between KOC and BP was vital to the success of this project; not only for the 3SU depletion planning but for identification and communication of the potential interactions / interdependencies with other reservoir development plans which needed to be incorporated for field planning. A work plan was developed to integrate and enhance the subsurface description, performance prediction and activity plans for the 3SU reservoir and for identification of opportunities to maximize production through prudent reservoir management. This paper describes the achievements from the project and how the successes will lead into the long term reservoir workplans, the methods that developed the products, and recommendations for process improvements to increase efficiency. Descriptions of the tools developed and methodologies used to integrate and analyse data are discussed in the paper.