

ECONOMIC SUSTAINABILITY ANALYSIS OF INFILL DRILLING AS BEST OPTION BEFORE OPERATING COMPANIES IN PAKISTAN

Taimur Ashfaq¹, Farhad Haider¹, Hafiz Numan Malik¹, Ali Razaaq¹, Zanique Javaid¹ and Zeeshan Akram²

¹University of Engineering and Technology, Lahore

²National University of Science and Technology, Islamabad

ashfaqtaimur@gmail.com

Abstract

Infill drilling lies in the category of Improved Oil Recovery (IOR) techniques which enhances the production due to reservoir heterogeneous behavior. It is considered to be best possible option before operating companies in Pakistan against Enhanced Oil Recovery (EOR) methods because with technological progress it became possible to locate patch reservoirs precisely. Many other factors like low risk, more recovery of investment in less time, optimum cost of drilling cheap production holes are also contributing towards this shift. Infill drilling reduces the inter-well spacing, edifying flooding scenario in drive situations resulting productivity Improvement defined by Productivity Improvement Factor (PIF), improving volumetric sweep and recovering oil from respective counterparts. In order to achieve maximum recovery from the reservoirs within economic constraints additional wells are introduced in the field which reduces the average well spacing through which companies can generate more revenue in shorter time of span. This paper aims to illustrate production acceleration through infill drilling by analyzing a case study on Petrel, optimizing economic feasibility by correlating various successful past experiences. Moreover, infill wells are considered to be frequently used option in Pakistan because in this scenario these wells can be utilized further as injector wells for secondary and tertiary recovery, however in case of water floods these wells should be oriented properly to avoid excess production, this practice accelerates recovery in heterogeneous reservoirs by improving continuity between injectors and producers highlighting this aspect is also a main objective of this paper.