

ABSTRAK

PERENCANAAN OPERASI *RE-ENTRY* SUMUR CED-1 PADA LAPANGAN DPR KALIMANTAN TIMUR

Oleh
Claudio Emre Depary
NIM: 113210099
(Program Studi Sarjana Teknik Perminyakan)

Sumur eksisting CED-1 merupakan sumur vertikal eksplorasi yang ditutup selama 9 tahun. Sumur ini direncanakan untuk diubah menjadi sumur produksi guna meningkatkan target produksi. Untuk mengubah sumur eksplorasi yang ditutup menjadi sumur produksi dilakukan kegiatan *workover* dengan metode *re-entry drilling* untuk sampai ke *pay zone*.

Dalam penelitian ini dilakukan perencanaan operasi *workover* yang bertujuan untuk mencapai target *pay zone* secara optimal. Perencanaan meliputi pemilihan rangkaian pipa bor dan penentuan *grade drill pipe* yang sesuai, penggunaan fluida pemboran berupa larutan CaCl_2 (*brine*), serta pemilihan *completion tools* yang mendukung keberhasilan produksi. Selain itu, disusun pula beberapa skenario rekomendasi *workover*, seperti *drilling out cement* pada kedalaman 164 – 328 ft dan 2624 – 2788 ft serta pelepasan 4 *bridge plug* pada kedalaman 2788 ft, 2959 ft, 3067 ft, 3123 ft. Penggunaan metode *fishing job* seperti *washover*, *mousetrap*, dan *milling*. Seluruh kegiatan tersebut dirangkum dalam jadwal kerja *workover* guna memperkirakan total durasi pelaksanaan operasi *re-entry* Sumur CED-1.

Hasil dari perencanaan menunjukkan bahwa operasi *re-entry* pada sumur CED-1 berpotensi untuk mengalirkan gas sebesar 6 MMSCFD dengan total pelaksanaan *workover* selama 15,75 hari. Implementasi perencanaan ini diharapkan dapat memberikan solusi teknis yang aplikatif bagi pemanfaatan sumur eksisting dalam pengembangan lapangan migas secara efisien dan berkelanjutan.

Kata kunci: *Drill string, completion fluid, fishing operation, re-entry,*

ABSTRACT

PERENCANAAN OPERASI *RE-ENTRY* SUMUR CED-1 PADA LAPANGAN DPR KALIMANTAN TIMUR

By

Claudio Emre Depary

NIM: 113210099

(Petroleum Engineering Undergraduated Program)

The existing CED-1 well is a vertical exploration well that has been shut in for nine years. It is planned to be converted into a production well in order to support production targets. To convert this shut-in exploration well into a production well, a workover operation using the re-entry drilling method is proposed to reach the target pay zone.

This study presents a workover operation plan aimed at achieving the target pay zone optimally. The planning includes selecting the appropriate drill string configuration and drill pipe grade, utilizing CaCl_2 brine as the drilling fluid, and selecting suitable completion tools to support production success. In addition, several recommended workover scenarios are outlined, such as drilling out cement at depths of 164 – 328 ft and 2624 – 2788 ft, and retrieving four bridge plugs at depths of 2788 ft, 2959 ft, 3067 ft, 3123 ft. The fishing methods considered include washover, mousetrap, and milling operations. All of these activities are compiled into a detailed workover schedule to estimate the total duration of the CED-1 re-entry operation.

The results of this planning indicate that the re-entry operation of the CED-1 well has the potential to produce up to 6 MMSCFD of gas, with a total workover duration of approximately 15.75 days. The implementation of this plan is expected to provide a practical technical solution for optimizing existing wells in the development of oil and gas fields efficiently and sustainably.

Keywords: Drill string, completion fluid, fishing operation, re-entry,