

ABSTRAK

ANALISIS PRODUKSI SUMUR CY-285 DENGAN PROBLEM KEPASIRAN MENGGUNAKAN *THRU TUBING SAND SCREEN* DAN *SAND CLEAN OUT* PADA LAPANGAN BUNYU

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Sumur CY-285 telah berproduksi sejak tahun 2019 dan telah melakukan *well service* sebanyak 4 kali. *Well service* dilakukan dengan indikasi adanya masalah kepasiran. Masalah kepasiran dapat menghambat produksi sumur dan dapat terjadi ketika butiran pasir dari formasi terbawa masuk ke dalam sumur selama proses produksi.

Bentuk penanggulangan yang dilakukan pada sumur CY-285 adalah pemasangan *thru tubing sand* (ukuran mesh 250) dan melakukan *sand clean out* (SCO) secara berkala. Dalam penelitian ini, dilakukan perhitungan sementasi batuan untuk mengetahui kekuatan antar batuan formasi. Laju alir kritis kepasiran juga perlu diperhitungkan untuk mengetahui batas maksimal laju alir untuk menghindari kepasiran. Setelah dilakukan *Sand Clean Out*, dilakukan evaluasi terhadap *Productivity Index* (PI) untuk melihat perbedaan potensi produksi sumur sebelum dan sesudah dilakukan SCO. Penelitian juga dilakukan dengan simulasi IPR untuk mengetahui potensi maksimum produksi sumur. Dilakukan perhitungan *skin* dengan validasi adanya pasir yang terakumulasi sehingga menurunkan produksi sumur. Dengan adanya masalah kepasiran, besar kemungkinan adanya *Lost Production Opportunity* (LPO) yang telah dihitung dalam penelitian ini dengan faktor laju alir kritis dan faktor downtime *well service* selama 23 hari.

Dalam Perhitungan sementasi batuan didapatkan nilai m sebesar 1,02 dengan klasifikasi batuan formasi *unconsolidated* sehingga masalah kepasiran terjadi dengan laju alir kritis sebesar 5,03 bbl/d sehingga sumur CY-285 akan tetap mengalami kepasiran selama produksi. Penggunaan Sand Screen dan melakukan SCO adalah bentuk usaha meminimalisir kepasiran tersebut. *skin* pasca dilakukan SCO didapatkan sebesar 0,31 sedangkan pada *current condition* didapatkan *skin* sebesar 0,50. Adanya peningkatan nilai *skin* diakibatkan oleh kenaikan jumlah pasir yang terproduksi. LPO dalam penelitian ini dengan faktor laju alir kritis sebesar 156,65 BOPD dan faktor downtime *well service* selama 23 hari sebesar 1.235,87 STB.

Kata kunci: Kepasiran, *Sand Clean Out*, *Tubing Sand Screen*

ABSTRACT

PRODUCTION ANALYSIS OF CY-285 WELL WITH SAND PROBLEM USING THRU TUBING SAND SCREEN AND SAND CLEAN OUT IN BUNYU FIELD

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Well CY-285 has been in production since 2019 and has undergone well service four times. The well services were conducted due to indications of sand production issues. Sand production can hinder well performance and occurs when sand grains from the formation are carried into the wellbore during production.

The mitigation measures applied to well CY-285 included the installation of a thru-tubing sand screen (with mesh size 250) and regular sand clean-out (SCO) operations. In this study, rock cementation calculations were performed to determine the strength between formation grains. The critical sand-free flow rate was also evaluated to identify the maximum allowable flow rate to avoid sand production. After each sand clean-out, the Productivity Index (PI) was evaluated to assess changes in production potential before and after SCO. The study also included IPR simulations to determine the well's maximum production potential. Skin factor calculations were performed and validated with the presence of accumulated sand, which was shown to reduce production rates. The presence of sand production poses a high risk of Lost Production Opportunity (LPO), which was quantified in this study based on the critical flow rate and a well service downtime of 23 days.

The rock cementation calculation yielded a cementation exponent (m) value of 1.02, classifying the formation as unconsolidated. As a result, sand production is expected to continue during production, with a critical flow rate of 5.03 bbl/d, meaning CY-285 will likely continue to experience sand issues. The use of sand screens and routine SCO operations are efforts to minimize this. After SCO, the skin factor was calculated to be 0.31, whereas under current conditions it was 0.50. The increase in skin was caused by the accumulation of produced sand. The LPO in this study, based on the critical flow rate factor, amounted to 156.65 BOPD, and due to the 23-day well service downtime, reached 1,235.87 STB.

Keywords: Sand Clean Out, Sand Problem, Tubing Sand Screen