

RINGKASAN

ANALISIS PENGARUH *REMEDIAL CEMENTING* TERHADAP KINERJA PRODUKSI DENGAN PERMASALAHAN *WATER CHANNELING* SUMUR “NB-16” LAPANGAN “L”

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Sumur “NB-16” mulai berproduksi sejak November 2013 dengan produksi awal 1529 bfpd/1345 bopd/ *water cut* 12%. Produksi minyak terus mengalami penurunan seiring dengan peningkatan *water cut* yang mencapai hingga 96%. Untuk mendiagnostik permasalahan yang terjadi dilakukan plot diagnostik Chan. Berdasarkan plot Chan terdapat indikasi bahwa sumur ini mengalami *water channeling* berupa *near wellbore water channeling*, interpretasi data log petrofisika terdapat zona air diatas zona perforasi dan pembacaan log CBL-USIT menunjukkan ikatan semen yang buruk. Maka, diputuskan untuk melakukan *remedial cementing* pada interval zona target, di antara zona target dan zona air, zona reperforasi, dan dilakukan perforasi baru. Berdasarkan indikator nilai amplitudo, *variable density log*, USIT, *Compressive Strenth* dan *Bond Index*, *remedial cementing* pada Sumur “NB-16” berhasil memperbaiki ikatan semen baik di zona target maupun di zona sekat air dan zona reperforasi. Grafik kinerja produksi setelah *remedial cementing* dan reperforasi menunjukkan adanya penurunan *water cut* yaitu dari 96% menjadi 79% setelah 1552 hari. Produksi minyak mengalami kenaikan dari 48 bopd sebelum *shut in* menjadi rata-rata 1602 bopd. Plot diagnostik Chan Sumur NB-16 setelah remedial menunjukkan nilai WOR dan WOR’ yang stabil sehingga dapat disimpulkan bahwa *near wellbore water channeling* yang terjadi pada Sumur NB-16 dapat tertangani dengan baik.

Kata kunci: *water channeling*, plot diagnostik Chan, *remedial cementing*

ABSTRACT

ANALYSIS OF THE EFFECT OF REMEDIAL CEMENTING ON PRODUCTION PERFORMANCE WITH WATER CHANNELING PROBLEMS IN "NB-16" WELL "L" FIELD

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The "NB-16" well began production in November 2013 with an initial production of 1529 bfpd (barrels of fluid per day)/1345 bopd (barrels of oil per day)/water cut 12%. Oil production continued to decline with an increasing water cut, reaching up to 96%. To diagnose the issues, a Chan diagnostic plot was conducted. Based on the Chan plot, there is an indication that the well experiences near wellbore water channeling. Petrophysical log data interpretation revealed a water zone above the perforation zone, and CBL-USIT log readings indicated poor cement bond. Therefore, it was decided to perform remedial cementing in the target zone interval, between the target zone and water zone, reperforation zone, and new perforations were made. Based on indicators such as amplitude values, variable density log, USIT, Compressive Strength, and Bond Index, remedial cementing in the "NB-16" well successfully improved cement bonding both in the target zone and the water zone barrier and reperforation zone. The production performance graph after remedial cementing and reperforation showed a decrease in water cut from 96% to 79% after 1552 days. Oil production increased from 48 bopd before shut-in to an average of 1602 bopd. The Chan diagnostic plot for the NB-16 well after remediation indicated stable WOR (Water-Oil Ratio) and WOR' values, concluding that the near wellbore water channeling issue in the NB-16 well has been effectively addressed.

Keywords: *water channeling, Chan's diagnostic plot, primary cementing*