

**EVALUASI PENERAPAN *LOST CIRCULATION MATERIAL*
(LCM) *NUT PLUG* DAN *CALCIUM CARBONAT* (CaCO₃)
DALAM MENANGGULANGI *LOST CIRCULATION* PADA
SUMUR RS-1 DAN RS-2 DI LAPANGAN BOB PT. BSP
PERTAMINA HULU**

RIZKI SEPRIYADI
133210228

ABSTRAK

Pemboran sumur dengan kondisi tekanan hidrostatik lumpur lebih besar dari tekanan rekah formasi (tekanan maksimum formasi) akan menyebabkan terjadinya *lost circulation* pada saat operasi pemboran. Sehingga akan mengakibatkan kerugian pada perusahaan dan penambahan biaya pada operasi pemboran. Salah satu metode untuk menanggulangi kondisi tersebut yaitu *lost circulation material* dengan penambahan material *nut plug* dan *calcium carbonate* (CaCO₃), dikarenakan terjadi *lost* pada zona produktif dan nonproduktif.

Sumur RS-1 dan RS-2 merupakan sumur pengembangan yang tujuannya untuk menambah titik serap pada lapangan Rama. Pada sumur RS-1 terjadi *total lost circulation* pada zona produktif dan nonproduktif masing-masing zona 2 kali, yaitu pada kedalaman 6055,00-6055,40 ft TVD sebanyak 170 bph, 6085,00-6085,83 ft TVD sebanyak 150 bph, 6325,42-6355,49 ft TVD 450 bph dan 6355,49-6385,97 ft TVD sebanyak 330 bph. Sedangkan pada sumur RS-2 terjadi *partial lost* pada zona produktif di kedalaman 6090,00-6120,00 ft TVD sebanyak 210 bph, 6120,00-6150,00 ft TVD sebanyak 210 bph dan 6150,00-6180,00 ft TVD sebanyak 150 bph.

Material pemberat *lost circulation* berhasil dimasukkan kedalam formasi ada sumur RS-1 dan RS-2 tanpa menyebabkan formasi tersebut rekah atau pecah. Berdasarkan perhitungan pada kedalaman 6355,49 ft TVD didapatkan besar tekanan hidrostatik baru (2908.272 psi) lebih besar dari tekanan formasi (1814.663 psi), BHCP (2108.274 psi) lebih kecil dari tekanan rekah formasi (3328.272 psi)

Kata kunci : *lost circulation*, LCM, *partial lost*, tekanan hidrostatik, tekanan formasi, tekanan rekah formasi.

**APPLICATION OF LOSTCIRCULATION MATERIAL (LCM) NUT
PLUG AND CALCIUM CARBONAT TO HANDLE THE LOST
CIRCULATION IN RS1 AND RS2 WELLS IN FIELD OF BOB PT.BSP
PERTAMINA HULU**

RIZKI SEPRIADI
133210228

ABSTRACT

Drilling wells with hydrostatic pressure conditions greater than mud pressure fracturing formations (maximum pressure formation) will cause the occurrence of lost circulation drilling operations at the time. So will result in the loss of the company and adding costs to the operations of drilling. One of the methods to menganggulangi the condition i.e. lost circulation material with the addition of plug and nut material calcium carbonat (CaCo3), due to happen lost productive zone and nonproduktif.

Wells RS-1 and RS-2 is a development well is the goal to increase the absorbency points on the field of Rama. On the RS-1 wells occurred a total of lost circulation in the zone of productive and nonproduktif each of the two zones, namely at a depth of 6055,00-6055,40 ft TVD as much as 170 bph, 6085,00-6085,83 ft TVD as much as 150 bph, 6325,42-6355,49 ft TVD 450 bph and 6355,49-6385,97 ft TVD as much as 330 bph. While in the well of the RS-2 going partial lost productive zone in the depths of 6090,00-6120,00 ft TVD as much as 210 bph, 6120,00-6150,00 ft TVD as much as 210 bph and 6150,00-6180,00 ft TVD as much as 150 bph.

Lost ballast material circulation successfully added into the formation there are wells RS-1 and RS-2 without causing the formation fracturing or cracking. Based on calculations in depth 6355.49 ft. big hydrostatic pressure obtained TVD (2,908,272 psi) is greater than the pressure of the formation (1,814,663 psi), BHCP (2,108,274 psi) of pressure fracturing formations (3,328,272 psi)

Keywords: *lost circulation, LCM, partial lost, pressure hydrostatic pressure, pressure formation fracturing formations.*