RINGKASAN

Pengolahan lumpur pengeboran terhadap partikel yang berada di dalamnya saat pengeboran menjadi parameter yang diperhatikan dalam mencapai performa yang diinginkan. Lumpur yang kurang baik karena kelebihan partikel *solid* pada lumpur dapat dilakukan dengan *Chemical* atau *Mechanical Treatment*. *Chemical Treatment* dapat dilakukan dengan *Additive*, namun biaya yang dikeluarkan cukup tinggi, sehingga alternatif penambahan *Vertical Cutting Dryer* perlu dilakukan.

Vertical Cutting Dryer (VCD) memiliki keunggulan yaitu *Mud Recovery*, lumpur dan *cutting* yang melalui *Shale Shaker* dipisahkan dengan dibantu *Decanter* untuk mengolah lumpur, maka kualitas lumpur memenuhi Aspek *Rheology* & *Properties*, dengan C_a <5% sehingga tidak memicu problematika. Kapasitas *Screw Conveyor* #1, #2 dan #3 rata-rata 27,57ton/jam, *Screw Conveyor* #4 26,28ton/jam, dan *Screw Conveyor* #5 dari *Decanter* DE-1000 FHD optimum pada 27,82ton/jam (<30ton/jam). VCD memiliki *Optimum Screen Size* berukuran 0,020", dengan Q_{max} 50 ton/jam, *Feed Capacity Screw Conveyor* #1, #2 dan #3 27,57ton/jam (55,14% dari Q_{max}), dengan *Load* 40%, dan RPM Optimum VCD pada 855rpm. Q_{disc} *Decanter* DE-1000 FHD optimum dengan Nilai Aktual 2,02gpm. Q_{return} Optimum pada Nilai Aktual 7,43gpm. Rata-rata %OOC sebelum *treatment* 14,15% direduksi hingga 3,60%, sehingga rata-rata 10,55% sebagai *Recovered Mud*. Sampel Trayek 12-1/4" sesuai dengan berat lumpur 9,3ppg, *Centrate* pasca proses 8,9ppg, %LGS 2,30% (<6%), %OWR 75,8/24,2, PV/YP menunjukkan kesesuaian.

Nilai Keekonomian Model Kombinasi VCD mencatatkan Aspek Efisiensi oleh VCD pada *Cost Saving* dari *Mud Recovery* sebesar USD 526.930,27 (4,64%). Aspek Pengeluaran VCD USD 79.477,30 dengan persentase 0,70% dari AFE *Cost* Sumur KLO-31 (USD 11.355.967,00). Simulasi Model Konvensional Sumur KLO-31 USD 750.595,51 (6,61%). Sudi Kasus Model Konvensional Sumur KLO-30 Trayek 12-1/4" sebesar USD 149.904,89, dibandingkan dengan pengeluaran oleh VCD di Sumur KLO-31, hanya USD 79.477 (53%) dari Biaya Sumur KLO-30.

Kata Kunci: ***vertical cutting dryer, mud conditioning, drilling, solid control equipment, drilling waste management*.**

RESUME

The processing of drilling mud against the particles in it when drilling is a parameter that is considered in achieving the desired performance. Mud is not good due to excess solid particles in the mud could be done with Chemical or Mechanical Treatment. Chemical Treatment can be applied with additives, but the costs incurred are quite high, therefore the alternative addition of a VCD needs to supporting the operations.

Vertical Cutting Dryer (VCD) has the advantage of Mud Recovery, oily cutting which through the Shale Shaker is separated with the support of a Decanter to mud processing. The quality of the mud meets the required, with a C_a of <5% therefor it does not trigger problems. Screw Conveyor capacities #1, #2 and #3 average 27.57ton/h, Screw Conveyor #4 26.28ton/h, and Screw Conveyor #5 of Decanter DE-1000 FHD optimum at 27.82ton/hour (<30ton/h). The VCD has an Optimum Screen Size of 0.020", with Q_{max} of 50 tons/h, Feed Capacity Screw Conveyor #1, #2 and #3 of 27.57ton/hour (55.14% of Q_{max}) in a Load of 40%, and an Optimum RPM of VCD at 855rpm. Q_{disc} Decanter DE-1000 FHD optimum with Actual Value of 2.02gpm. Optimum Q_{return} at Actual Value 7.43gpm. The average %OOC before treatment was 14.15% reduced to 3.60%, the average was 10.55% as Recovered Mud. Sample 12-1/4" Section corresponding to mud weight in 9.3ppg, post-process centrate in 8.9ppg, %LGS in 2.30% (<6%), %OWR in 75.8/24.2, PV/YP showed compatibility.

The Economic Value of the VCD Combination Model recorded Efficiency Aspects by VCD on Cost Saving by Mud Recovery of USD 526,930.27 (4.64%). VCD Expenditure USD 79,477.30 with a percentage of 0.70% of the AFE Cost of the KLO-31 Well (USD 11,355,967.00). Conventional Model of KLO-31 Well USD 750,595.51 (6.61%). The Case of the KLO-30 Well 12-1/4" Section was USD 149,904.89, compared to the expenditure by the VCD in the KLO-31 Well, only USD 79,477 (53%) of the KLO-30 Well Cost.

Keywords: vertical cutting dryer, mud conditioning, drilling, solid control equipment, drilling waste management.