

**PEMILIHAN BERBAGAI RANCANGAN FORMULASI
FLUIDA PEMBORAN UNTUK SUMUR MINYAK BUMI
PT. PERTAMINA EP DOH JAWA BAGIAN BARAT
AREA OPERASI TIMUR DI LABORATORIUM PT. CPM
DRILLING FLUIDS JAKARTA**

SKRIPSI

**Diajukan untuk memenuhi dan melengkapi persyaratan dalam menempuh
Ujian sarjana strata satu Teknik Kimia**



Disusun oleh

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EP DOH JAWA BAGIAN BARAT AREA OPERASI TIMUR DI
LABORATORIUM PT. CPM DRILLING FLUIDS JAKARTA**

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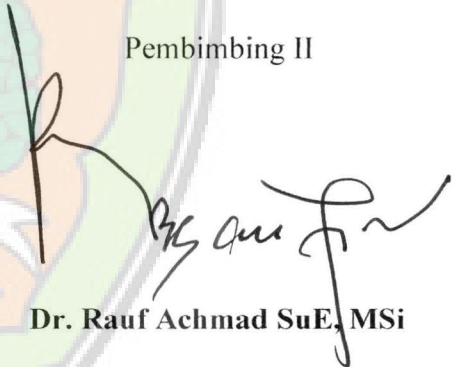
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ABSTRACT

Election of various device of drilling fluids formulation in using for oilwell of PT. Pertamina EP DOH West Java of East Operation Area including district of Jati Barang and Indramayu. Election here pursuant to fullfiling of entire all specification of properties drilling fluids which have been specified by seen from facet of expense formula which its price is cheap. Drilling fluids or often be referred as drilling mud represent one of very factor determine successfulness at process of drilling of oilwell and also gas, that goodness is well of development and also exploration well. In operate for drilling in this time have gone forward in such a manner. Early system rotary drilling mud only be intended to lift piece of drilling (cutting) from well bottom to surface. But onward technological of mud have a lot of function and earn to overcome problems that happened in drilling operation. With of existence of types of this additif mud which can control each every mud behavior. To yield delicate mud quality, each every materials of mud have to be up to standard as according to standard which have been agreed on API standard which can become elementary reference of quality product control. To see materials quality of mud can only be known through laboratory test. All mud type have to be taken care of the nature of its physical in order to remain to be in a good condition, so that when used in drilling operation will not influence or other formation drilled. If in character mud of disagree with drilled formation will cause losses of such as kick which can cause blow out, its jam in stuck pipe and or loss circulating.

This writing aim to get correct composition from drilling fluids formula to be used at drilling of petroleum well of PT. Pertamina EP DOH West Java of East Operation Area, where seen from nominal amount of expense of big enough drilling fluids, hence of vital importance make and chosen device of formulation of correct drilling mud.

Before conducted by drilling process, well owner that is PT. Pertamina EP beforehand chosen mud type to be used by and its specification properties. Afterwards type of drilling mud therewith specification passed by company of contractor of drilling mud which at this writing is PT. CPM Drilling Fluids to be conducted by formulation in

the laboratory scale by trial and error until all specification fulfilled. In laboratory will be tried some formula be fulfilled by the existing specification. Then reached by formula of specification, one of material changed with other dissimilar material having function which much the same and conducted by trial and error again be reached by specification of the desired. This material replacement aim for the comparator so that be got by two appropriate formula of specification and earn compared to in the price and taken by a cheap price. Formula fulfilling specification and cheap price will be used at drilling process. Drilling mud have in making in existing mud tanks of drilling location with formula which have been selected. Used materials here shall be as follows; Bentonite, Sodium Hidroxiide, CF Lignosulfonat, CMC-HV, Potassium Hidroxiide, Potassium Chloride, Starch, Xanthan Gum, Gilsonite, PAC-R, PAC-LV, Soltex, Polydrill, PHPA-L, Sodium Sulfite, HT-STAB, Biocide, and Barite. Taken the materials at random from warehouse PT. CPM Drilling Fluids.

Result of election of drilling mud formulation for oilwell of PT. Pertamina EP DOH West Java of East Operation Area shall be as follows

- a. System of Mud Lignosulfonate @ 120 °F with composition; Bentonite 14 ppb, Sodium Hidroxiide 0.6 ppb, CF Lignosulfonat 2.5 ppb, PAC-R 1 ppb, Barite 5 ppb
- b. System of Mud KCL-POLYMER @ 250 °F with composition; Bentonite 10 ppb, Potassium Hidroxiide 0.35 ppb, Potassium Chloride 17 ppb, PAC-R 3 ppb, Starch 4 ppb, Xanthan Gum 0.6 ppb, Gilsonite 3 ppb, PHPA-L 1 ppb, Sodium Sulfite 0.5 ppb, HT-STAB 0.2 Ppb, Biocide 0.3 ppb, Barite 0.3 ppb
- c. System of Mud KCL-POLYMER @ 325 °F with composition; Bentonite 12 ppb, Potassium Hidroxiide 0.7 ppb, Potassium Chloride 20 ppb, PAC-R 3 ppb, PAC-LV 4 ppb, Xanthan Gum 0.8 ppb, Soltex 6 ppb, Polydrill 8 ppb, PHPA-L 1.5 ppb. Sodium Sulfite 0.5 ppb, HT-STAB 0.4 ppb, Biocide 0.3 ppb, Barite 30 ppb.

At system of mud Lignosulfonate @ 120 °F, among both of formula of there are price difference of equal to US\$ 0.06/bbl mud, the price do not too inferential significant so that CMC-HV And PAC-R serve the purpose of fluid loss reducer and viscosifier of mud of this mud type. At system of mud KCL- Polymer @ 250 °F, among both formula (

Starch and PAC-LV) there are price difference of equal to US\$ 0.37/bbl mud, the price enough significant so that for this mud system is more recommended by use of Starch than PAC-LV. From system of mud KCL- Polymer @ 325 °F which compared by performa of material of Gilsonite and Soltex. This mud system, among both formula of there are very price difference of significant that is equal to US\$ 6.85/bbl mud. Soltex performace is better than Gilsonite, although both functioning of equal that is as shale stabilizer and fluid loss reducer at high temperature (> 300 °F). Hence can be pulled by conclusion that Soltex more hold up to temperature than Gilsonite.



KATA PENGANTAR

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