Analisa water based mud dengan aditif barit dan KCL berdasarkan analisa toksisitas pengujian TCLP dan LC50-96 jam = Water based mud analysis with barite and KCL as additives based on toxicity analysis TCLP and LC50-96 hours

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Abstrak

Lumpur bor berbasis air dengan aditif Barit (B) dan KCl (K) berpotensi toksik, sehingga Lemigas berupaya melakukan pencegahan berdasarkan pengujian TCLP dan LC50 - 96 jam terhadap Penaeus monodon. Kondisi uji disesuaikan pada Sumur Bangau #1 di Sesulu PSC, Selat Makassar. Dengan kombinasi Bmin, Bmax, Kmin, dan Kmax, konsentrasi Cu pada setiap formula (Bmin-Kmin: 26,17 ppm; Bmin-Kmax: 39,74 ppm; Bmax-Kmin: 21,47 ppm; Bmax-Kmax: 31,7 ppm) dan Pb pada Bmin-Kmin (9,369 ppm) melewati baku mutu lingkungan. LC50 Formula Bmin-Kmin memenuhi baku mutu lingkungan (44.058 ppm), sedangkan Formula Bmax-Kmax tidak memenuhi baku mutu lingkungan (13.269 ppm). Hal ini dipengaruhi oleh komposisi logam berat, toksisitas KCl, dan kondisi lingkungan. WBM jenis ini lebih baik digunakan pada pengeboran off-shore.
<hr>Water based mud with Barite (B) and KCl (K) as additives have toxicity potential, therefore Lemigas performed testing prevention effort based on TCLP and LC50 – 96 hours on Penaeus monodon. Testing condition environment was adapted to Sumur Bangau #1 at Sesulu PSC, Makassar Strait. Cu concentration in Bmin, Bmax, Kmin, and Kmax combinations (Bmin-Kmin: 26,17 ppm; Bmin-Kmax: 39,74 ppm; Bmax-Kmin: 21,47 ppm; Bmax-Kmax: 31,7 ppm) and Pb in Bmin-Kmin (9,369 ppm) are above the threshold. LC50 Bmin-Kmin Formula fulfill the threshold (44.058 ppm) while Bmax-Kmax Formula did not (13.269 ppm). It is influenced by heavy metals composition, KCl toxicity, and environmental condition. This type of WBM is better used in off-shore drilling operation.