

ABSTRAK

PT Berau Coal merupakan salah satu perusahaan tambang Batubara yang memiliki tiga *site* penambangan aktif yaitu pada *site* Binungan, Sambarata dan Lati. Dalam melakukan kegiatan penambangan dilakukan pengupasan dan penimbunan lapisan tanah penutup. Penimbunan di PT Berau Coal dapat dilakukan pada *Out Pit Dump* (OPD) yang terletak di luar lubang bukaan tambang dan *In Pit Dump* (IPD) yang terletak di dalam lubang bukaan tambang.

Penimbunan di Pit Binungan Blok 7 East (7E) ialah *in pit dump*. Penimbunan material *overburden* dilakukan secara langsung ke dalam *sump*. Berdasarkan hasil pengujian *Standard Penetration Test* (SPT) ditemukan lapisan lumpur yang berpotensi menurunkan kestabilan lereng. Lereng *disposal* juga dipengaruhi oleh getaran dan gaya yang diakibatkan aktivitas penambangan aktif pada area *high wall*. Kondisi tersebut secara langsung dapat mengganggu kestabilan lereng, sehingga perlu dilakukan analisis.

Analisis dilakukan dengan menggunakan metode *finite element* untuk menentukan bidang gelincir dan metode *limit equilibrium* GLE/Morgenstern-Price untuk menentukan nilai Faktor Keamanan (FK) sebagai parameter kestabilan lereng. Potensi longsor yang terjadi adalah longsor busur *non – circular*.

Hasil analisis menunjukkan bahwa lereng *low wall*, lereng *disposal* bulan Mei 2018 aman dengan nilai $FK \geq 1,3$. Lereng *disposal* desain akhir 2018 tidak aman karena memiliki nilai $FK \leq 1,3$ sehingga, perlu dilakukan perbaikan geometri lereng berupa perubahan lebar, tinggi dan sudut lereng tunggal pada desain *disposal* 2018.

Kata kunci : *disposal*, lumpur, *low wall*.

ABSTRACT

PT Berau Coal is one of the coal mining companies that has three active mining sites, namely Binungan, Sambarata and Lati. In carrying out its mining activities, PT Berau Coal engages in the stripping and dumping of the overburden materials. The dumping at PT Berau Coal can be carried out at the Out Pit Dump (OPD) and In Pit Dump (IPD).

The disposal area in the Binungan Blok 7 East (7E) is an in-pit dump. The dumping of overburden material is located at low wall slopes, and dumping activities are carried out directly into the sump. Based on the results of Standard Penetration Tests it was found that there is a formation of mud. The presence of mud can decrease the slope stability. The disposal slopes also affected by vibrations and external forces by the high wall activities which could disturb the slope stability; therefore slope stability analysis needs to be done.

The analysis was done by using the finite element method to determine the possible slip surface and GLE / Morgenstern-Price limit equilibrium method to determine the value of Safety Factor (SF) as a parameter of slope stability. The failure potential that can occur is a circular non-circular failure.

The results of the analysis show that low wall and disposal slopes in May 2018 are safe with SF values ≥ 1.3 . The final 2018 design is not safe because it has the SF value of $\leq 1,3$. Thus, it is necessary to improve the slope geometry by changing the bench width, height and single slope angle in the 2018 final design.
Keywords: disposal, mud, low wall.