

**ANALISIS KESTABILAN LERENG MENGGUNAKAN METODE BISHOP
PADA PENGGALIAN PASIR DI KELURAHAN KALUMATA
KECAMATAN TERNATE SELATAN**

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ABSTRAK

Pada Penggalian Pasir di Kelurahan Kalumata Kecamatan Ternate Selatan terdapat lereng dengan kondisi tidak aman yakni diketahui dari kenampakan langsung lereng tersebut yang memiliki kemiringan dan ketinggian yang sangat besar. Kestabilan lereng dapat diketahui dengan menghitung nilai faktor keamanan terhadap pengaruh muka air tanah. Metode analisis kestabilan lereng yang digunakan dalam penelitian ini adalah metode bishop. Metode Bishop bekerja berdasarkan prinsip keseimbangan batas yaitu menghitung kekuatan geser yang akan mempertahankan kemantapan, dibandingkan dengan besarnya tegangan geser yang bekerja. Hasil dari perhitungan faktor keamanan lereng berdasarkan pendekatan muka air tanah dari hoek dan bray kondisi lereng kering memperoleh FK perhitungan slide 0.826 sedangkan FK perhitungan manual 0.844, kondisi lereng setengah jenuh memperoleh FK perhitungan slide 0.825 sedangkan FK perhitungan manual 0.830 dan kondisi lereng jenuh memperoleh FK perhitungan slide 0.800 sedangkan FK perhitungan manual 0.806 menunjukkan bahwa lereng pada lokasi penggalian pasir di kalumata berada pada kondisi tidak aman karena nilai $FK < 1.3$ berdasarkan ESDM Nomor 1827 K/30/MEM/2018 Tentang Pedoman Pelaksanaan Kaidah Teknik Pertambangan Yang Baik.

Kata kunci : kondisi Lereng, faktor keamanan, Bishop

SLOPE STABILITY ANALYSIS IN SOUTH TERNATE KALUMATA SAND EXCAVATION USING BISHOP METHOD.

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ABSTRACT

In sand excavation in Kalumata , South Ternate, there are slopes with unsafe conditions, which are known from the direct appearance of the slopes which have very large slopes and heights. The stability of the slope can be determined by calculating the value of the safety factor on the influence of the groundwater level. The slope stability analysis method used in this study is the Bishop method. Bishop's method works based on the principle of limit equilibrium, which is to calculate the shear strength that will maintain stability, compared to the magnitude of the shear stress that works. The results of the calculation of the slope safety factor based on the groundwater level approach from Hoek and Bray dry slope conditions obtained SF for slide calculations 0.826 while SF for manual calculations is 0.844, semi-saturated slope conditions obtained SF for slide calculations 0.825 while SF for manual calculations is 0.830 and saturated slope conditions obtained SF calculations slide 0.800 while the SF manual calculation is 0.806 showing that the slopes at the sand excavation site in Kalumata are in an unsafe condition because of the SF value is <1.3 based on Ministerial Decree of the Minister of Energy and Mineral Resources Number 1827 K/30/M/2018 regarding implementing Guidelines on Good Mining Practices.

Key word: Slope Conditions, Safety Factor, Bishop