

Analisis Potensi Keruntuhan dan Kestabilan Lereng pada Lereng Pit "X" PT Bumi Suksesindo, Banyuwangi, Jawa Timur = Analysis Potential of Slope Landslide and Slope Stability Pit "X" PT Bumi Suksesindo, Banyuwangi, East Java

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Abstrak

Emas merupakan komoditas logam yang dibutuhkan berbagai sektor industri, sehingga permintaan produksinya kian meningkat. Salah satu faktor yang perlu diperhatikan dalam pelaksanaan produksi emas di pertambangan terbuka adalah faktor keselamatan. Faktor keselamatan erat kaitannya dengan masalah kestabilan lereng, di mana keadaan lereng yang tidak stabil berpotensi mengakibatkan keruntuhan. Tujuan penelitian ini adalah untuk menganalisis kualitas massa batuan, tipe keruntuhan, dan kondisi kestabilan lereng pada setiap lereng tunggal di lokasi penelitian. Penelitian ini dimulai dengan pengambilan data yang meliputi orientasi bidang diskontinuitas, geometri lereng, sampel batuan, pengujian kuat tekan batuan, dan data sekunder lainnya. Data tersebut kemudian diintegrasikan dan diolah untuk mengetahui nilai kualitas massa batuan, analisis kinematika, dan analisis kestabilan lereng. Pengolahan data kestabilan lereng mengacu pada kerentanan lereng terhadap keruntuhan non-circular dilakukan melalui simulasi perangkat lunak Swedge, dan RocPlane. Hasil analisis menunjukkan bahwa kualitas massa batuan di daerah penelitian termasuk ke dalam kelas II (good rock). Tipe keruntuhan non-circular yang didapatkan melalui analisis kinematika menunjukkan bahwa keruntuhan baji berpotensi terjadi pada setiap lereng tunggal di lokasi penelitian. Potensi keruntuhan planar juga ditemukan pada lereng tunggal 2. Kestabilan lereng daerah penelitian menunjukkan kondisi stabil dan aman, dimana nilai faktor keamanan yang didapatkan bernilai lebih dari 1,3 ($FK > 1,3$).

.....Gold is a metal commodity that is needed by various industrial sectors, so demand for its production is increasing. One factor that needs to be considered when implementing gold production in open-pit mining is the safety factor. The safety factor is closely related to the problem of slope stability, where an unstable slope has the potential to cause collapse. The aim of this research is to determine the quality of the rock mass, type of failure, and slope stability conditions on each single slope at the research location. This research began with data collection which included discontinuity plane orientation, slope geometry, rock samples, rock compressive strength testing, and other secondary data. The data is then integrated and processed to determine rock mass quality values, kinematic analysis and slope stability analysis. Processing of slope stability data which refers to the vulnerability of slopes to non-circular failure is carried out through Swedge and RocPlane software simulations. The analysis results show that the quality of the rock mass in the research area is included in class II (good rock). The non-circular failure type obtained through kinematic analysis shows that wedge failure has the potential to occur on every single slope at the research location. The potential for planar collapse was also found on single slope 2. The stability of the slope in the research area showed a stable and safe condition, where the safety factor value obtained was more than 1.3 ($FK > 1.3$).