ABSTRAK

ANALISIS KINERJA *CRUSHING PLANT* DALAM UPAYA PENINGKATAN EFISIENSI PADA CV TRI CAHYA MANDIRI

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CV Tri Cahya Mandiri merupakan perusahaan pengolahan batu andesit yang menggunakan *crushing plant* untuk menghasilkan produk dengan ukuran tertentu. *Throughput* aktual *crushing plant* sebesar 116,31 ton/hari masih berada di bawah target produksi perusahaan sebesar 148,10 ton/hari sehingga diperlukan evaluasi kinerja untuk mengidentifikasi faktor penyebab dan menentukan upaya perbaikan yang tepat.

Penelitian dilakukan melalui pengamatan lapangan, pengukuran langsung, pengumpulan data operasional, analisis distribusi ukuran material, serta perhitungan parameter kinerja yang meliputi *throughput*, *availability*, *utilization*, efisiensi kerja alat, *reduction ratio*, dan *circulating load ratio* (CLR). Selanjutnya dilakukan evaluasi terhadap faktor operasional, kondisi peralatan, karakteristik material, dan beberapa alternatif perbaikan.

Hasil penelitian menunjukkan bahwa *mechanical availability* dan *physical availability* seluruh peralatan termasuk kategori sangat baik, namun nilai *use of availability*, *effective utilization*, dan efisiensi sebagian besar alat masih rendah akibat keterbatasan pasokan bahan baku. Nilai *Reduction Ratio Jaw Crusher* A dan C berada dalam kisaran tipikal *Jaw Crusher*, sedangkan nilai CLR sebesar 6,55% menunjukkan jumlah material yang mengalami sirkulasi ulang relatif kecil. Faktor yang mempengaruhi efisiensi meliputi karakteristik material, kondisi peralatan, pengaturan *crusher setting*, dan pasokan bahan baku. Rekomendasi terbaik adalah meningkatkan frekuensi pengumpanan menjadi 14 kali/jam dan mengubah *closed side setting* (CSS) *Jaw Crusher* A dari 30 mm menjadi 25 mm.

Kata kunci: andesit, *crushing plant*, efisiensi, *Reduction Ratio*, *throughput*.

ABSTRACT

ANALYSIS OF CRUSHING PLANT PERFORMANCE FOR OPERATIONAL EFFICIENCY ENHANCEMENT AT CV TRI CAHYA MANDIRI

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CV Tri Cahya Mandiri is an andesite processing company that utilizes a crushing plant to produce materials with specific size distributions. The actual crushing plant throughput of 116.31 tons/day was below the company's production target of 148.10 tons/day, indicating the need for a performance evaluation to identify the causes and determine appropriate improvement efforts.

This study was conducted through field observations, direct measurements, operational data collection, particle size distribution analysis, and calculations of performance parameters, including throughput, availability, utilization, equipment efficiency, reduction ratio, and circulating load ratio (CLR). Furthermore, operational factors, equipment conditions, material characteristics, and several improvement alternatives were evaluated.

The results showed that the mechanical availability and physical availability of all equipment were classified as excellent. However, the use of availability, effective utilization, and efficiency of most equipment remained low due to limited raw material supply. The Reduction Ratios of Jaw Crusher A and Jaw Crusher C were within the typical operating range of Jaw Crushers, while the CLR value of 6.55% indicated a relatively small amount of recirculating material. Factors affecting crushing plant efficiency included material characteristics, equipment condition, crusher setting configuration, and raw material supply. The most suitable recommendation was to increase the feeding frequency to 14 cycles/hour and reduce the closed side setting (CSS) of Jaw Crusher A from 30 mm to 25 mm,

Keywords: andesite, crushing plant, efficiency, Reduction Ratio, throughput.