

RINGKASAN

PT Adaro Indonesia merupakan perusahaan tambang batubara yang berlokasi di Kabupaten Balangan dan Kabupaten Tabalong, Provinsi Kalimantan Selatan dimana didalamnya terdapat Pit North Tutupan yang menjadi lokasi penelitian. PT Adaro Indonesia menjual produk batubara dengan kalori sedang antara 4.000-5.000 kkal/kg Gar yang berasal dari berbagai macam kualitas batubara berdasarkan nilai kalorinya. Daerah penelitian Pit North Tutupan dibagi menjadi empat kualitas batubara, yaitu *high*, *med-high*, *med-low*, dan *low*. Pada tahun 2024 PT Adaro Indonesia memiliki rencana penjualan batubara perbulan dimana pada kuartal II 2024 untuk Pit North Tutupan memiliki sasaran produksi sebesar 2.594.000 ton batubara. Selain sasaran produksi tersebut juga terdapat kekurangan produksi batubara kualitas *med-low* pada kuartal I 2024 sebesar 350.403 ton. Berdasarkan hal tersebut maka diperlukan rancangan kemajuan penambangan dan perhitungan kebutuhan alat mekanis untuk mencapai sasaran produksi dan memenuhi kekurangan produksi batubara kualitas *med-low*.

Metodologi pada penelitian ini meliputi studi literatur untuk mengumpulkan referensi yang berhubungan dengan penelitian. Kemudian terdapat pengambilan data primer dan sekunder yang didapatkan dari pengamatan langsung di lapangan serta data yang diberikan oleh perusahaan. Pada kegiatan selanjutnya dilakukan pengolahan dan analisis data. Pengolahan data dilakukan dengan menghitung kebutuhan alat mekanis, geometri jalan, dan front penambangan. Sedangkan untuk analisis data dilakukan setelah menentukan kemajuan penambangan dimana hal yang dianalisis yaitu kemajuan tambang yang dibuat sudah sesuai dengan sasaran produksi atau belum. Pada penentuan arah kemajuan penambangan dilakukan dengan bantuan *software* Minex 6.5.8 untuk *scheduling* dan *software* Minescape 2023 untuk rancangan desain tambang dan perhitungan cadangan tertambang.

Penelitian ini bertujuan untuk mendapatkan rancangan kemajuan penambangan Pit North Tutupan pada kuartal II 2024 dan mendapatkan jumlah kebutuhan alat gali-muat dan alat angkut pada kegiatan produksi. Rancangan kemajuan penambangan yang dibuat mengacu pada sasaran produksi Bulan April 773.000 ton; 3.020.000 bcm; 3,91; Bulan Mei 945.000 ton; 3.620.000 bcm; 3,83; Bulan Juni 876.000 ton; 3.690.000 bcm; 4,21.

Berdasarkan penelitian didapatkan jumlah kebutuhan alat gali-muat batubara sebanyak 8 unit; 12 unit; 12 unit *backhoe* dan alat angkut batubara sebanyak 80 unit; 108 unit; 113 unit *dump truck*. Sedangkan jumlah kebutuhan alat gali-muat *overburden* sebanyak 19 unit; 18 unit; 19 unit *backhoe* dan alat angkut *overburden* sebanyak 171 unit; 153 unit; 153 unit *dump truck*. Pada rancangan kemajuan penambangan didapatkan hasil pada Bulan April 1.136.592,11 ton; 3.080.833,38 bcm; 2,71; Bulan Mei 2.150.773,50 ton; 3.881.806,35 bcm; 1,80; Bulan Juni 2.257.812,18 ton; 4.480.703,90 bcm; 1,98. Rancangan kemajuan penambangan yang dibuat dapat mencukupi sasaran produksi kuartal II 2024 dan dapat memenuhi kekurangan produksi batubara kuartal I 2024.

SUMMARY

PT Adaro Indonesia is a coal mining company located in Balangan Regency and Tabalong Regency, South Kalimantan Province where there is Pit North Tutupan which is the research location. PT Adaro Indonesia sells coal products with medium calories between 4,000-5,000 kcal/kg Gar which comes from various coal qualities based on its calorific value. The Tutupan North Pit research area is divided into four coal qualities, namely high, med-high, med-low, and low. In 2024 PT Adaro Indonesia has a monthly coal sales plan where in the second quarter of 2024 for Pit North Tutupan has a production target of 2,594,000 tons of coal. In addition to the production target, there is also a shortage of med-low quality coal production in the first quarter of 2024 of 350,403 tons. Based on this, it is necessary to design mining progress and calculate the need for mechanical equipment to achieve production targets and meet the shortage of med-low quality coal production.

The methodology in this research includes a literature study to collect references related to the research. Then there is primary and secondary data collection obtained from direct observation in the field and data provided by the company. In the next activity, data processing and analysis are carried out. Data processing is done by calculating the need for mechanical equipment, road geometry, and mining fronts. Meanwhile, data analysis is carried out after determining the mining progress where the thing that is analyzed is that the mining progress made is in accordance with the production target or not. In determining the direction of mining progress, it is carried out with the help of Minex 6.5.8 software for scheduling and Minescape 2023 software for mine design and calculation of mined reserves.

This study aims to obtain a mining progress design for the Tutupan North Pit in the second quarter of 2024 and obtain the number of digging and hauling equipment requirements for production activities. The design of mining progress made refers to the production target of April 773,000 tons; 3,020,000 bcm; 3.91; May 945,000 tons; 3,620,000 bcm; 3.83; June 876,000 tons; 3,690,000 bcm; 4.21.

Based on the research, it is obtained that the number of coal digging and unloading equipment needs is 8 units; 12 units; 12 backhoe units and coal transportation equipment as many as 80 units; 108 units; 113 dump truck units. While the number of overburden loading and unloading equipment needs is 19 units; 18 units; 19 backhoe units and overburden transportation equipment as many as 171 units; 153 units; 153 dump truck units. In the mining progress design, the results were obtained in April 1,136,592.11 tons; 3,080,833.38 bcm; 2.71; May 2,150,773.50 tons; 3,881,806.35 bcm; 1.80; June 2,257,812.18 tons; 4,480,703.90 bcm; 1.98. The design of mining progress made can meet the production target for the second quarter of 2024 and can meet the shortage of coal production in the first quarter of 2024.