

SUMMARY

PT Karya Investama Mining (PT KIM) is one of the mining companies providing mining contractor services. PT KIM is located in Koninis, Simpang Raya District, Banggai Regency, Central Sulawesi Province. The company operates in the Murai Block within the Mining Business License Area (WIUP) of PT Koninis Fajar Mineral. The mining system used is open cast mining with block mining method. This study aims to design the mine sequence, waste dump, and mechanical equipment needs from March to May 2024.

The research begins with a literature review to find the references related to the study. Subsequently, field orientation and observation regarding the existing problems are conducted. The data collected include primary and secondary data. Primary data include mining front conditions, mechanical equipment cycle times, and types of equipment used. Secondary data include topography, slope recommendations, production targets, equipment specifications, pit boundary design, and quarterly block models. Next, the data are processed to obtain monthly technical design conclusions that meet the target production of nickel ore of 150.000 tons per month.

The results of this study are the technical design of mining progress capable of meeting the production targets set by the company. Based on the March design, nickel ore of 158.372 tons was obtained, with waste of 60.600 m³ at SR of 0,38 :1. In the April design, nickel ore of 154.536 tons was obtained, with waste of 86.600 m³ at SR of 0,56 :1. In the May design, nickel ore of 184.402 tons was obtained, with waste of 83.600 m³ at SR of 0,45:1. The waste dump design is located approximately 1 km from the pit and is made to accommodate waste mined from the pit with a total capacity of 268.122 m³ and a dumping area of 3,33 ha. The dumping method used is valley fill because the dumping location is between two hill slopes. Additionally, the need for mechanical equipment in March is three units of excavators and nineteen units of dump trucks. In April, it is four units of excavators and twenty-two units of dump trucks. In May, it is three units of excavators and eighteen units of dump trucks.