Future skills and workforce evolution: Training and skills development for Mining Operation Engineer and Drill & Blast Engineer in Surface Mineral Mine PT Indo Muro Kencana

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ABSTRACT

PT Indo Muro Kencana (PT IMK) is gold and silver mine located in Mt. Muro area, Central Kalimantan province, Indonesia. The mining operations of multiple open pits using combination of excavator and haul truck is operated and of two shifts in a day is performed. The articulated dump truck with capacity of 40t and 60t deliver ore to the mineral processing plant and discard waste material to the waste dump area. PT IMK's mining department is consisting of two sections, namely mining operation section and drill & blast section. Mine operation section is responsible to manage loading, hauling, pit service (mine dewatering, earthwork, road maintenance) and mine operation engineering. Secondly, drill & blast section is in charge to manage drilling and blasting (blast engineering, blasting operation, explosive permit and magazine). Additionally, conventional blasting method (ore-waste blasting) with non-electric initiation system is used and sleep blasting is undertaken as bulk explosive is buried for maximum two days. The first purpose of this paper is to elucidate about role of mining engineer (mining operation engineer and D&B Engineer) in PT IMK. At this point, mining operation engineering practice (fleet management system, production control and mining manpower management) and also blasting practice (surface blast design, explosive engineering, sleep blast practice and the concept of scaled depth of burial application to ensure a safe work environment in blasting activity) will be elucidated. Next, the second purpose of this paper is to explore future skills and workforce evolution, such as training and skills development for mining engineer. Mining continuous improvement program, training and skills development for mining engineer (D&B engineer and mining operation engineer) in order to develop their skills is also discussed. It is expected that in the future, these future mining leaders will become mining superintendents, D&B superintendents and mining managers. In conclusion, it is clear that workforce evolution, training, skills development and mining continuous improvement program are essentially required as professional development for mining engineer (mining operation engineer and D&B engineer), in order to be commercially competitive in their future career.