Strategic Mine Planning Approach Applied to Large Scale Copper open Pit Mines by Comparing The Impact of three Different Bloc Models of the Same Deposit, On the Long Term Mine Plan

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***Abstract*—The Kamoto Oliveira Virgule (KOV) open pit mine is located at 300Km from Lubumbashi, second largest city of the Democratic Republic of the Congo, in the mineral rich province of the Lualaba (EX-Katanga province).KOV pit is located 10Km south of the Kolwezi town and it is essentially constituted of sedimental rock, in a major portion of the so called "Lambeau Geologique de Kolwezi", which is a part of the well-known copperbelt mineralization. In 2006, a joint venture of Glencore, Gecamines (the DRC State owned Company), and Simco, took over the open pit mine, which was previously owned by Gecamines, and formed the Kamoto Copper Company (KCC).KOV open pit mine is classified as a large scale open pit mine due to his dimensions (approximately 2.5km East-West and 3Km North-South).the mine has also a high strip ratio ranging from 8 to 10 in some areas. At his initial stage (Prefeasibility study), SRK released a bloc model which is still be used by the Kamoto Copper Company (KCC), but since the geology department addressed the issue about grade control model ore discrepancies, when comparing it to the SRK model, the management hired another contractor that constructed another bloc model. Internal adjustments using the grade control model data to better predict tonnes and grades have been also implemented but reported very poor results .since reserves have been officially reported to the market in 2014 to the TSX, the reserve report had to remain consistent with the 2014 report, despite that the issue has been fixed ,it still for a matter of interest to conduct a comparative analysis, to check on the impact of the other bloc model on the life of mine and the mine schedule .since we know by comparison that the other model (OBM) has a difference in its 3D distribution of ore and waste material. This paper will be focused on determining the impact on the life of mine and the mine schedule of the KOV pit with regards of those differences, between the bloc models.**

***Index Terms*: Mine planning, mine scheduling, mine optimization, life of mine, ultimate pit.**

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