Geometallurgical analysis for increasing gold recovery – Córrego do Sítio Mine, Brazil

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ABSTRACT

In Brazil, the Rio das Velhas Greenstone Belt, largely located in the Quadrilátero Ferrífero region of the State of Minas Gerais, is the most important gold district in the country. The Córrego do Sítio Mines, the target of this work, are gold deposits operated in underground mine by AngloGold Ashanti Brazil.

In these mines, besides the grade variation, numerous other parameters can directly influence the costs and revenues of a mine. Examples of these parameters are variation of hardness, liberation of ore minerals, mineralogy, porosity and others.

The work aims to demonstrate geometallurgical use of these parameters, among the operating areas of an active gold mining, by identifying the variability of the metallurgical behavior of different types of ores and, in addition, the stability of the supporting processes. The implementation of the Geometallurgical Process began in the year 2015 covering the definitions of the sampling plan, types of tests and analysis and the use of the data in the operational routine.

Through the pursuit of this knowledge involving a more detailed geological characterization and correlated to the metallurgical characteristics, the suitability of the ores treatment were reached, with increasing in the efficiency of the system treatment - metallurgy, beyond the predictability of metallurgic behavior.