Discovery of the Nuevo Chaquiro porphyry Cu-Au-(Mo) deposit, Antioquia Department, Colombia

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Nuevo Chaquiro is a porphyry-type Cu-Au- (Mo) deposit located on the eastern flank of the Western Cordillera of Colombia. It is situated in the Quebradona District of the Middle Cauca Canyon Province at a distance approximately 60 km SW of Medellin. It is a blind deposit. Superficial characteristics of porphyry-type mineralization (pervasive sericitic alteration with local leached stockworks) were found and interpreted by AngloGold Ashanti (AGA) through its regional systematic stream sediment (-200 mesh) exploration program initiated in 2004. During 2006 to 2008, B2Gold, through a joint venture with AGA, explored the district. B2Gold conducted 13,320 m of drilling, directed at five shallow porphyry gold prospects throughout the district. In 2010, AGA restarted the project, focusing on deep porphyry style mineralization at the Nuevo Chaquiro target. Drilling of ~35,000 m by AGA has now outlined the presence of significant porphyry-type mineralization at Nuevo Chaquiro.

The geology of Nuevo Chaquiro consists of a Miocene volcaniclastic sequence (tuffs, andesites, basalts, agglomerates) intruded by small stocks and dikes of diorite and quartz diorite, also of Miocene age. The volcanic rocks at surface around Nuevo Chaquiro are sericitically altered with locally developed quartz- Fe oxide stockworks. Two dike/intrusive swarm centers at depth caused the alteration and mineralization at Nuevo Chaquiro; these dike/intrusive swarms are not evident in surface expression. Sericitic alteration extends from surface to the depths of 350-400 m, below which predominantly potassic (biotite-magnetite) alteration is encountered. There are zones of Ca-K alteration, containing actinolite and epidote, further at depth. The porphyry-type mineralization within the K and Ca-K alteration is represented by randomly oriented veinlets and disseminations of quartz, chalcopyrite, pyrite, molybdenite, and magnetite, with traces of bornite. The porphyry system is overprinted by an epithermal-ISS style of mineralization characterized by pronounced N-S oriented "D veins" carrying pyrite, quartz, and chalcopyrite with occasional sphalerite, galena, and gold, and with sericitic alteration selvages. These occur on the upper western flank of the deposit in a 600 by 200 m area that was traced from the surface to 300 m depth.

Outlined by >0.3% Cu limit, the Nuevo Chaquiro mineralization forms a body elongated in shape by 1,200 m in the E-W direction with dimensions of approximately 500 m in width and vertically. On the eastern flank, the porphyry mineralization occurs at 350 m depth whereas in the west it is first encountered at somewhat deeper depths (400-500 m depth).

Nuevo Chaquiro is a significant copper-gold porphyry deposit clearly demonstrating the potential for future new porphyry discoveries in the Middle Cauca Miocene volcanic belt of Colombia.