

Mineralization Processes and Paragenetic Constraints of the Manto-type Cu Occurrences of Sierra Azul Project in La Guajira, Colombia

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Sediment (Volcanic)-Hosted copper accounts for nearly 20% of the global Cu reserves but rivals the left 80% of other deposits because of high grade, high tonnage, and volumetrically consistent concentrations and basin-wide anomalies. In that category, Manto-type Cu deposits are volcanic-hosted occurrences related to a reductant agent, such as pyrobitumen, as occurs in Sierra Azul. A multi-technique analysis using petrography, microthermometry, X-Ray diffraction (XRD), Electron-Probe Micro Analyzer (EPMA), and thermogravimetry led to an understanding of the sequence of events and the relation between rock-types, copper enrichment, and its relationship with the reductant agents, as well as the structural and stratigraphic control. This led to the conclusion that the studied localities constitute typical Manto-type copper mineralization hosted in andesites clustered in nearby mineralized localities that resemble the district type distribution of Chilean Mantos, standing the definition of this type of deposits in Colombia.