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An Epoch-based Metallogenic Scheme for Northern Guyana: A Tool for Mineral Resource Assessment

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Abstract: *The need for mineral resource assessments in Guyana has reached a decisive point in view of the country's Low-carbon Development Strategy (LCDS) within the UN Reduced Emissions from Deforestation and Degradation (REDD+) mechanism. Should the government decide to severely restrict mining in forested lands (which cover over 80% of the country) as part of its LCDS, systematic assessments of the mineral potential of forested lands are needed to provide information on the types and economic value of the undiscovered mineral resources likely to be foregone. An epoch-based metallogenic scheme constitutes an effective first-order tool to help in assessing undiscovered mineral endowment. In this paper, such a scheme is constructed to replace older less satisfactory schemes. The paper reviews existing metallogenic schemes for Guyana to assess their reliability as a tool for mineral resource assessment. A new scheme or conceptual model that uses metallogenic epochs as its building blocks is then proposed for and applied in northern Guyana, where most of the country's mineral wealth is located. Seven metallogenic epochs are suggested for northern Guyana. Known and possible deposit types are discussed within this framework. The advantages of the new model over the older schemes are discussed. An epoch-based metallogenic scheme is shown to provide more refined insights into Guyana's mineral potential.*

Keywords: *Metallogenic epoch, mineral resources assessment, mineral deposit*