A Sedimentologic, Sequence Stratigraphic, and Ichnologic Characterization of the M2 Sandstone of the Cretaceous Napo Formation, Eastern Ecuadorian Basin

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ABSTRACT

The Napo Formation has been considered the source rock of almost all hydrocarbon accumulations discovered in Ecuador. Even though the Napo Formation has large amounts of organic matter, precise information on the associated depositional environments is limited. In addition, reservoir rocks are present in the Napo Formation, but their paleoenvironmental characterization is still limited. The purpose of this project is to analyze and interpret the sedimentology, sequence stratigraphy and ichnology of the M2 Member of the Napo Formation based on the study of cores and outcrops. In addition to conventional facies and trace fossil analysis, the study of thin sections will allow to refine sedimentologic descriptions and interpretations, particularly regarding diagenesis and mineralogic composition. Ichnologic analysis will comprise both ichnofacies and ichnofabric characterization. Samples will be collected in different outcrops in the Eastern Ecuadorian Basin. Stratal stacking pattern will be analyzed based on the integration of outcrop and subsurface data. Integration of these different lines of evidence will allow the proposal of a more robust depositional model. It is expected that the results of this study will have a significant impact in the hydrocarbon industry in Ecuador.

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