

# **CAN GEOCHEMISTRY HELP IN STRATIGRAPHIC PROBLEMS? THE CASE OF THE ITUZAINGÓ FORMATION (MIDDLE MIOCENE), NORTHEASTERN ARGENTINA**

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The Ituzaingó Formation sands are a very typical heterolithic succession of sandy-muddy beds that cover all the northeastern of Argentina and the southwest of Paraguay.

The sandy lithofacies are characterized for a well sorted, very fine grain, very well rounded and gray to white in colour. Recent architectural studies over the sandy lithofacies, show a typical assemblage of internal structures that are diagnostics of a tide-dominated depositional environment.

Hummocky cross stratification, herringbone cross stratification, reactivation surfaces, and tidal bundles-beddings are present.

An erosion unconformity was proposed between the heterolithic succession and the mudrocks that overlies itself.

Recent trace elements studies led to the interpretation that the mud beds that cover conformable the heterolithic succession, has the same geochemical anomalies. The infralying unit was generally interpreted as in discordance. Geochemical trace elements data analysis shows the same anomalies in the muddy lithofacies interleaving with very fine sands. All the mud beds analyzed had the same geochemistry anomalies. As a result, we interpreted them as formed under similar sedimentologic conditions.

Trace element proves to be a suitable tool in order to help to solve stratigraphic problems always together with architectural analysis.