

# **Burial History and Thermal Maturity of the Chattanooga Shale, Northwestern Alabama**

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## **ABSTRACT**

The Chattanooga Shale is a petroleum source rock within the Black Warrior Basin. Several attempts have been made to exploit this formation as an unconventional gas play. However, past studies of the Chattanooga indicate an area of the shale should produce liquid hydrocarbons. This paper expounds upon the previous work by using old data to create a new model for the burial history and thermal maturation of the Chattanooga. This new basin model incorporates formation lithologies, ages, thicknesses, and thermal maturity indicators along with a sediment compaction analysis. The long history of the Black Warrior Basin includes a significant period of unroofing. Part of the model seeks to estimate the thickness of the missing section. The study also addresses complex maturation patterns observed in the basin by previous workers. The author concludes that an oil window exists in the Chattanooga Shale play, and may be economically significant at given commodity prices.