

## **Maceral Variations and Maceral Assemblages within the Upper and Lower Members of the Bakken Formation, Williston Basin, Saskatchewan, Canada**

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### **Abstract**

From the application of organic petrology, the Upper and Lower Members of the Bakken Formation are found to have considerable variation in organic matter type and assemblages both along depth and across a given transect. Two variations of the maceral Bituminite (amorphous organic matter) were found and a trend exists such that the two replace on another across a given transect. Four organic facies are defined from the maceral assemblages present, and sub-divisions are defined based on the dominant maceral, or microfossils present. The Bakken Formation black shales were likely deposited under anoxic conditions, where changes in water chemistry and the availability of light were the primary mechanisms responsible for the variations in the type and amount of organic matter deposited.

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