

LITHOFACIES ANALYSIS OF THE LOWER  
CRETACEOUS GLAUCONITIC SANDSTONE,  
MEDICINE RIVER AREA, ALBERTA

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Glauconitic sandstone deposits in the Medicine River area of south-central Alberta have been interpreted to be elements of a genetically related depositional system (Reichenbach, 1978, 1981) recently named the Medicine River delta and Hoadley barrier complex (Chiang, 1981). Medicine River Glauconitic sandstone sediments represent the lower delta plain of a mixed fluvial-wave-tide dominated delta, whereas the Glauconitic sandstones of the Hoadley area represent the delta front barrier sands. Comparison with modern delta systems indicates that a microtidal barrier system is most analogous to these sediments.

In the Medicine River area, the Glauconitic sandstone is composed of three sandstone units designated, on the basis of formation geometry, to be sheet sands, channel sands and bar sands. Sheet sandstones conformably overlie the Ostracode zone, and are disconformably cut by channel sands and related shale-filled channels. Bar sands display a conformable base and have limited lateral extent. Coal deposits form a continuous cover over all sheet sands, encroach upon the sandy channel deposits, but are not present over shale-filled channels.

Sheet and channel sands, both predominantly chert-rich sublitharenites, have undergone diagenetic modification and cementation by clay minerals.