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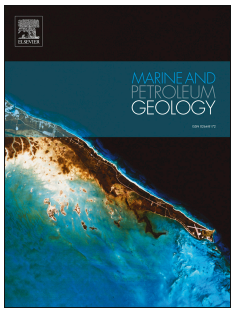

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How are diagenesis and reservoir quality linked to depositional facies? A deltaic succession, Edgeøya, Svalbard

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Abstract

Middle to late Triassic strata exposed at Edgeøya, eastern Svalbard, represents an uplifted part of the northwestern corner of the Barents Sea. This reservoir interval is characterized by a predominantly mud-dominated deltaic depositional system where rocks with petroleum reservoir potential are expected both in delta front and channelized sandstone deposits. Recent drilling campaigns into time-equivalent rocks in the Barents Sea have however been disappointing, with porosity and permeability below expectation. This study improves the current understanding of reservoir potential within depositional systems of this kind by examining the link between different depositional facies, diagenesis and their impact on reservoir quality. Five depositional facies were mapped and correlated: channel, floodplain, shallow marine, prodelta and offshore. Our study suggests that diagenetic signatures that