

Heavy mineral suites in the Statfjord and Nansen Formations of the Brent Field, North Sea: a new tool for reservoir subdivision and correlation

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ABSTRACT

Heavy mineral data provide an independent basis for subdivision and correlation of the Statfjord-Nansen reservoir sequence in the Brent Field, UK North Sea. Because of its continental fluvial depositional environment, this sequence lacks a well-defined biostratigraphically-based correlation framework. Detailed well correlations are difficult because of the heterolithic nature of the reservoir and the lack of chronostratigraphically significant markers. Three major heavy mineral zones and a number of subzones have been established. These can be confidently correlated in cored sections across the Brent Field. The correlations made using the heavy mineral scheme generally parallel the boundaries between reservoir units, giving confidence to the current reservoir zonation and indicating that it has a sound geological basis. However, the mineralogical zonation of a crestal, faulted well, 211/29-D44 (BD44), differs significantly from the reservoir zonation. This illustrates the difficulties inherent in establishing field-wide correlations without support of independent correlation schemes.