

Seal Risk and Expected Monetary Value

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Traditional methods of prospect assessment and valuation give a misleading EMV when applied to prospects with significant membrane seal risk.

Traditional methods assess the chance of finding a minimal amount of oil, and assume that the seal risk applies uniformly to the reserve size distribution of the mapped prospect. This is invalid where the column height (and therefore reserves) is limited by seal capacity.

The EMV of a prospect is commonly based on the mean of the reserves distribution. At a first approximation the seal risk should be assessed for the column height associated with this mean reserves volume – not the column height needed to trap a minimal amount of oil.

A better approach is to determine the EMV over a range of column heights and take the average. A convenient way is to tabulate the Chance of Success of top seal in ten percentiles and to determine for each the column height, associated reserves, Net Present Value and total COS. Finally compute the EMV for each ten percentile and average them.