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The Process of Risking Plays within PEMEX Exploration and Production (PEP) Cédula for Evaluation and Registry of Exploration Play Opportunity (CERPlay): Play Risk Assessment - a New Generation

According to Peter Rose, "the most difficult and crucial decision in petroleum exploration is not which prospect to drill, but rather, which new play to enter". The wrong choice of plays can strongly affect the future reserves of an E&P company. To date, most of the industry has been confined to assessing plays by the Baker-White-Rose (BWR) approach. Play shared probability is based on a subjective estimate of charge and migration timing. Play independent probability is based on an "average" prospect. This method can be used where a good analogue play is available and is improved with petroleum systems modelling to estimate charge.

PEP is implementing CERPlay into their workflow in two phases. The first phase includes a modified BWR approach in which a distribution for the number of traps in a calibration area is extrapolated to determine the trap density for the entire play. Then BasinMod Risk is used to evaluate the charge potential and to perform reality checks on estimated play reserves.

In the second phase, the software identifies plays while new modeling techniques eliminate the need to specify play shared and play independent probabilities. Monte Carlo charge modeling provides probability distributions of migrated hydrocarbons to multiple plays. Stochastic migration modeling uses a 3-D oil and gas migration simulator.

Results include distributions of expected economic reserves, play failure cost, $PV/BOE, play ENPV, probability of play economic success, in-place oil and gas reserves, total, commercial, and economic field size distributions, and the probability of commercial and/or economic traps.