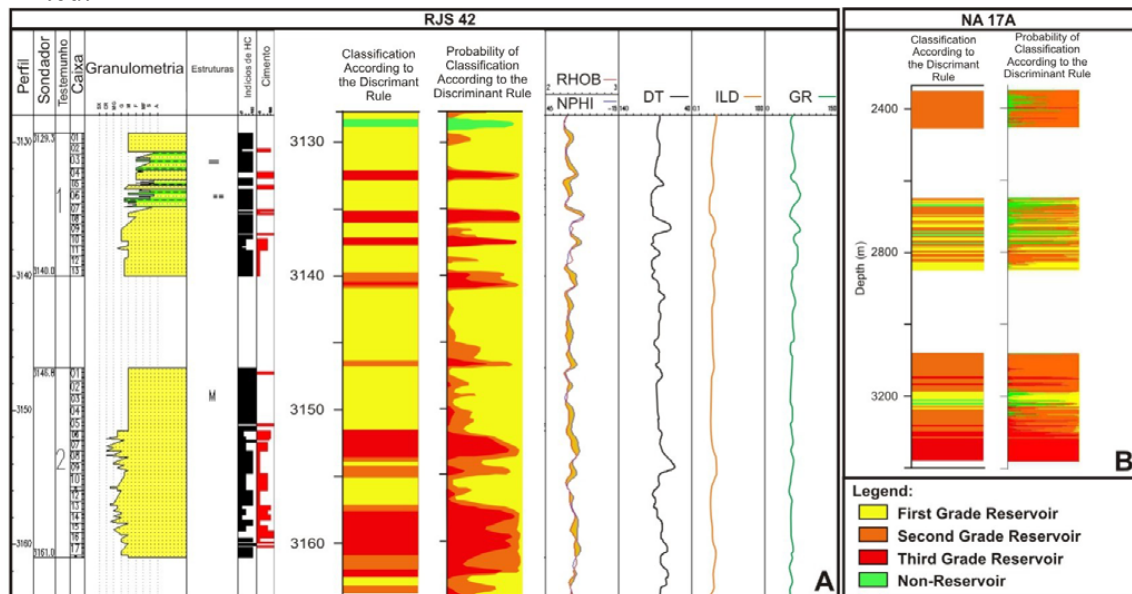


Reservoir modeling is fundamental for many stages in reservoir development, including new well location, and the geological model can be constructed in different ways. Each model depends on the data used in its construction and, consequently, shows various levels of uncertainty. Therefore, a model generated using core description, for example, has desirable features like high resolution and reliability. Still, obtaining well cores is very expensive, and sometimes recovery is poor. Thus, core availability is usually too limited.



Example of the validation and application stages. (A) shows the RJS-42 well, where the validation of the discriminant rule was applied. (B) shows the NA-17A well, used in the application stage.

On the other hand, geophysical data generally are abundant and available. Such data are indirectly obtained and show variable uncertainty and resolution. Seismic data, for example, have resolution that normally is sufficient for delimitating a reservoir's top and base, but they can't discriminate its internal stratigraphic units. Well logs have higher resolution than seismic data and can be used for generating stratigraphic models. This application is widely known as "logfacies modeling." Lithofacies is a mappable subdivision of a stratigraphic unit that can be distinguished by its facies or lithology—the texture, mineralogy, grain size, and the depositional environment that produced it. Logfacies includes direct rock observation in well cores, outcrops and cuttings, and analysis of lithology, cementation, fluids, etc., and it consists of indirect rock recognition using well logs, by distinguishing well logs' behavior, such as high resistivity and low radioactivity.

The results of the study showed it is possible to reach an efficient workflow for logfacies modeling using geophysical well data. The recognized facies, according to the adapted procedure, correspond to a few numbers of compound facies, which generally differs from the great quantity of lithofacies derived from the core descriptions. The limited number of logfacies is adequate for reservoir simulation. The application of the logfacies

modeling workflow in the Namorado Field, Campos Basin, presented satisfactory results, which will be applied to the construction of a three-dimensional model of that field.

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies. Copyright © 2006, SAS Institute Inc. All rights reserved.

---