TG07

Well log editing and pseudo well log generation workflow

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SUMMARY

Well log data are essential input for petrophysical analysis, fluid substitution, AVO modeling, synthetic seismogram to surface seismic tie, seismic inversion, seismic data processing, rock physics, reservoir characterization, 4D modeling, pore pressure prediction, rock mechanic,....etc. The first step in any project that has well log data is well log audit and edit. After editing well log data well by well, field-wide data consistency for all studied wells should be applied. Missing well logs or poor quality measured logs is always a big challenge in oil and gas industry. We are dealing most of the time with either poor quality measured logs or missing logs. Errors due to poor quality measured logs or not quality controlled pseudo logs will lead to wrong results and bad costly decisions. There are many published global relationships for pseudo log generation, for example Faust (1951) to calculate compressional velocity using resistivity and depth, Gardner et al (1974) to calculate density from compressional velocity, Castagna (1985), and Greenberg-Castagna 1993), to calculate shear velocity from compressional velocity and many other relations. The important question one should ask is should I apply any of these relations blindly to my area of study? You may agree with me that the answer is definitely no. The reason is because those relations were built using certain data set in specific location. It may be applicable to your area of study or may not be applicable. This paper is showing pseudo log generation workflow.