

Some result of well log and VSP data integration for Black Sea offshore, Ukraine

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Complex of VSP and logging allows more in detail and exactly to define physical descriptions and geological structure of bowels of the earth. Most successful is a joint analysis of velocities P and S waves of VSP and multichannel acoustic logging. Also perspective is a joint study of polarization descriptions of VSP and parameters of dip logging. These works were conducted on one of areas of the Black sea.

CASE STUDIES

At the first stage of the analysis of VSP data and logs were evaluated convergence velocity characteristics of vertical travel time curve for P and S waves, which were obtained according to the VSP and multi-channel acoustic logging data. (Figure 1). Convergence of results is good enough. This led to a rapid qualitative analysis for thick layered model according to the VSP and thinly laminated model - according to the acoustic logging. Anomalously low values of Poisson's ratio allowed allocating a zone violation in the hole, and the high values of Poisson's ratio and the decrements of absorption allowed specifying the area of the fluid. Data dip logging and polarization characteristics of the VSP (Figure 2) have good correlation. Joint analysis of these data allowed specifying a structural plan, allocating development zone of fracturing in the shales and clarifying the faults position.

CONCLUSIONS

Work on the joint analysis of data logging and VSP have shown its effectiveness. Further development of this direction should be developed for other regions and areas.

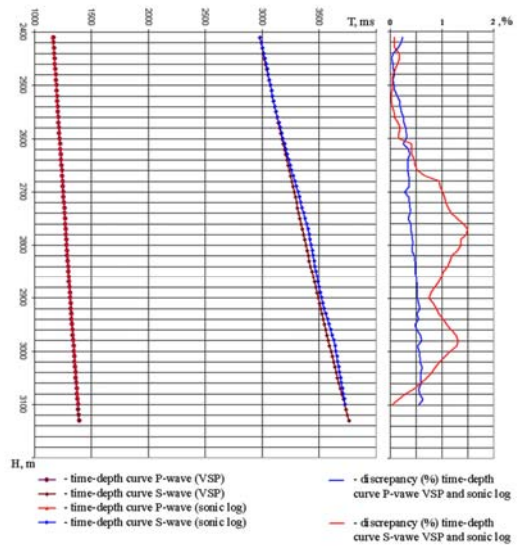


Figure 1. Time-depth curve of VSP and sonic log for P and S waves

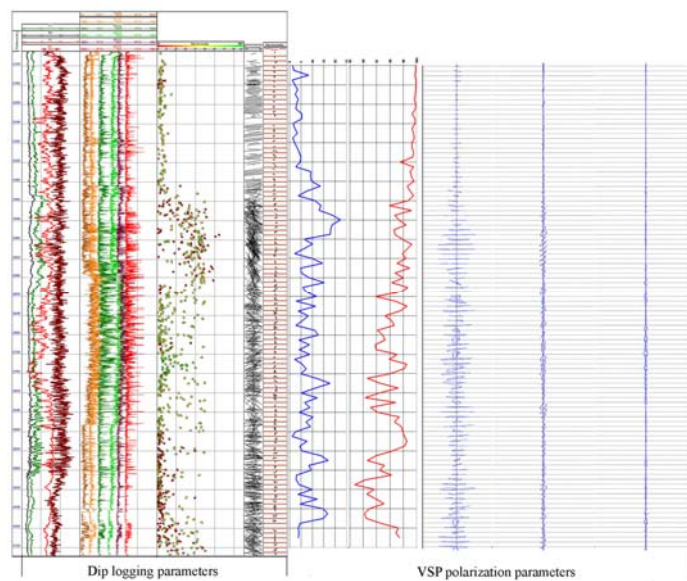


Figure 2. Dip logging and VSP parameters