THE EFFECT OF HIGH TEMPERATURES AND CONSTANT PRESSURES ON THE PROPERTIES OF WATER-BASED DRILLING MUD

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ABSTRACT

To meet the increased global demands on oil and gas exploring deep and ultra-deep wells is increasing rapidly. Drilling at such faces a wide range of difficult challenges and issues, one of the challenges is the negative impact on the rheological properties of the drilling fluids when exposed to high temperature high pressure (HT/HP) conditions. For a successful drilling operation, the drilling engineer must have a good estimate for the values of rheological properties of drilling fluids, such as viscosity, density, yield point, gel strength etc. in this work, experiment was conducted on water-based mud (Glydril mud), from ambient condition to very high temperature and constant pressure. In this paper, the effect of elevated pressure up to (500 psi) and elevated temperature up to (200 C^0) on the rheological properties of water- based mud (Glydril) mud has been presented.

Keywords: *drilling fluid, rheological properties, yield point, plastic viscosity, gel strength*