

Characterization and Modeling of Rheological Behavior of a Mud System for Reverse Emulsion

Abderrahmane Mellak¹

1. Hydrocarbons and Chemicals Faculty - LGHP –
University of Boumerdes,
Boumerdes – Algeria.
mellakabder@yahoo.fr

K. Benyounes¹

1. Hydrocarbons and Chemicals Faculty - LGHP –
University of Boumerdes,
Boumerdes – Algeria.
Khaled_benyounes@yahoo.fr

N. Kherfella²

2. Drilling Division, Upstream Activities, Sonatrach,
Algiers – Algeria.

K. El Heit³

3. Mouloud Mammeri University,
Tizi Ouzou, Algeria
kaddy62003@yahoo.fr

Abstract

The present work is a contribution aiming to improve the characterization and the modeling of rheological behavior of oil based mud. It also aims to enhance operational forecasts of oil fields through a better approach of fluid injected into an oil field. Since several the drilling mud focused attention due to its fundamental role in viscous drillers and for its unwanted recognized function to ensure the evacuation of broken rock cuttings in the well. Actually it is recognized from the study of the drilling mud several useful functions to perform a drilled well. Then numerous studies and researches are carried out regularly in order to better understand and improve these fluids. This study aims to in investigate one of the many problems encountered in the use of invert emulsion drilling mud, namely the apparent viscosity when increasing temperature. It is known that the apparent viscosity varies with shear rate and temperature. This viscosity appears as a decreasing function due to the temperature increasing; it tends to approach Newtonian behavior at high shear rates.

Keywords

Oil drilling, rheology, temperature, modeling, characterization.

Biography

Abderrahmane MELLAK is Professor and Researcher Lecturer at the Faculty of Hydrocarbons and Chemistry of the University of Boumerdes, Algeria. He is an engineer in Oil Drilling (graduated in Algeria) and also holds a DEA (Diploma of Advanced Studies), a DESS (Diploma of Specialized Higher Studies) and a PhD, obtained in French Universities. It is Responsible for a team of researchers, Head of Bachelor and Master Drilling Wells, frames of United Engineers, Master, the Magister and Doctorates. The Prof. Dr. Abderrahmane MELLAK is a Member of the National Commission of Universitaires Habilitation Programs (CNH) and the National Commission for the

Evaluation of Algerian Universities (CNE), the Ministry of Higher Education and Scientific Research. He has to his credit several participations in world congresses and national and international conferences with papers and has several publications in recognized national and international journals. He participated in several television round tables (Canal Algeria, UFC) on the Quality of Higher Education, the University-Business Relationship ...). The Prof. Doc. MELLAK Abderrahmane organizes and manages her time between Higher Education, Scientific Research, the Supervision of Students and PhD students, the Consulting and Associative Life.