

Abstract

During the drilling when using water-based drilling fluid, the swelling issue is encountered, particularly in reactive clay section. After a bibliographical review showing a fundamental divergence from already published results depending on the type of system and shale inhibitors products used, this paper describes an experimental plant to measure inhibition level of KCl/PHPA system on reactive clays. For this, the current study provides more information on the potential of the mud system as well as its influence on the essential properties of drilling fluids. Qualification testing reported here shows that the use of combination of PHPA product and KCl meets the characteristics of performance. The series of X-rays Diffraction analysis were conducted on cutting samples collected from different depths of Ain Amenas field, the results obtained allowed to say that all the samples have different percentages of swelling clay that represent a source Potential of high-reactivity clay materials. Moreover, a series of physico-chemical and rheological analysis were performed on these cutting samples, in order to allow the valuation of the KCl/PHPA system in water based drilling fluids.