## Abstract

This project presents a study on upgrading the bentonite from Sabah, Malaysia, for the uses in the petroleum industry. Bentonite, as a common material used in water based drilling mud is the sodium bentonite. Since the Malaysian bentonite is proven to be calcium based, certain treatments are needed to convert this bentonite to the sodium variety. The successfully treated bentonite will be used as a material in drilling mud, which is cheaper as compared to the Wyoming and standard bentonite. Previously different treatment methods were carried out, namely, the wet treatment and electrolysis. Additional new treatment methods such as blending, adding of some cheap materials, and use of appropriate shearing speed are suggested to improve the Sabah bentonite in order to use it as an important constituent in drilling fluids. Earlier investigations suggested that treated bentonite failed to meet the API 13A Specification (American Petroleum Institute) requirements for rheological properties when used as a material in drilling mud. In general, the treated bentonite from Malaysia can be used as a replacement for the more expensive imported bentonite especially for local petroleum industry. In addition, the methods developed can also be used to convert similar types of bentonite from other locations.