Case History
Enhanced Cuttings Slurrification

Products:- SAS116SC

Enhanced Drill Cuttings Slurrification

Surface Active Solutions has developed a water based enhanced slurrification product for use in Oil and Gas industry slurrification, inter-field transport and re-injection applications. The SAS microemulsion (ME) technology is an environmentally sound and highly effective enhanced slurrification product which can be applied directly to the waste stream to optimise this process. This water based product is currently being CEFAS certified and is simple and effective to use, will carry no flag for replacement or taint warnings and is readily biodegradable in the environment. The microemulsion forming product utilises the latest novel microemulsion technology to deliver superior performance in slurrification and associated inter-field transport and re-injection processes. The technology significantly reduces waste volumes, environmental impact and Health & Safety risks in such operations and therefore reduces operational and logistical costs.

Cuttings waste generated as a result of drilling operations is usually slurrified using sea water. However, large volumes are required in order to generate a slurry of suitable pumpable characteristics. This is especially the case with shale cuttings and solids comprising significant quantities of clay based materials. These geologies readily hydrate and swell absorbing large volumes of water before becoming suitably fluidised – sometimes requiring up to 6 times their own weight in sea water. Solids also settle out under gravity during transport forming cakes in tanks which is difficult to remove during interfiled transfer.

North Sea shale cuttings slurrified with 50%wt sea water under low / no shear mixing conditions.

North Sea shale cuttings slurrified using 2.5%wt SAS ME product and 2.5%wt sea water. Notice the enhanced fluidised nature of the waste.

Statistics

In order to demonstrate slurrifying efficiency a sample of industry shale waste drill cuttings was blended for 2 minutes using a rotor paddle mixer at 900rpm creating a low shear mixing environment. The performance of the SAS product was compared against the same process using large volumes of sea water by measuring the viscosity of each end product. The same geologies can be processed using SAS ME technology with the following advantages over currently used techniques:-

- The **SAS product is water soluble** + does not use polymer based products.
- The products are typically **effective at addition rates of 1%wt and above.**
- The SAS product **reduces viscosity of the waste stream by over 90%.**
- The SAS product **may not require the addition of any volumes of sea water.**
- Should additional water be required the product **is compatible with sea water.**
- The SAS product **suspends the solids** into a homogenious fluid for pumping.
- The product **facilitates tank cleaning and the cleaning of flow lines.**
- The product allows **for waste minimisation reducing waste volumes by up to 80%.**
- The SAS product is **robust** and can be used with all cuttings, muds and slops.
- The ME technology **prevents swelling in shale / clay based geologies.**
- The SAS product is surfactant based and **optimises lubricity** during the re-injection process **increasing efficiency and reducing risks of blockages.**

North Sea shale cuttings slurrified using 2.5%wt SAS ME product and 2.5%wt sea water assume free flowing fluid characteristics similar to OBM.

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