عنوان مقاله:

Challenges, Barriers and waste management in drilling industry

محل انتشار:

دومین کنفرانس ملی محیط زیست سالم و توسعه پایدار در پرتو حقوق شهروندی چالشها و راهبردها (سال: 1401)

تعداد صفحات اصل مقاله: 38

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خلاصه مقاله:

With introducing dewatering unit has been made lots of efforts to reduce the volume of drilling wastewaters, mud preparation costs and the consumption of fresh water where environment suffers from water shortage through recycling of wastewaters. In this whole research, the efficiency of drilling waste management to prevent organic contaminants in drilling waste from leaking in the environment were monitored. The experiments were done in a totally-randomized design. The statistical analysis was performed using the analysis of variance (ANOVA), and the multiple comparisons of the means of numerous treatments were performed applying the Tukey test. According to the obtained data, not only dewatering effluents have not been efficiently used for mud preparation but also has polluted the numerous areas especially in southwest of Iran. The amounts of Chemical Oxygen Demand (COD) in the wastewaters were far much more than the environmental legislation. COD in wastewater also increased dramatically when drilling fluid shifted from water base mud to oil base mud. Almost all drilling fluids and produced water were rich in chloride ions, sometimes reached saturated level. Dewatering unit just succeeded to reduce Total Suspended Solid (TSS) under standard level. Capsulation of hydrocarbons in oil base mud cutting with cement and sodium silicate was not acceptable, having maximum ۲۵% free hydrocarbons in treated cuttings. Unfortunately, at the end of the drilling operation about ۸۰ per cent of hazardous wastewaters remain at well locations penetrating into the environment. In conclusion, several effective techniques are introduced to address problems of drilling waste management.

کلمات کلیدی:

drilling environmental technologies; waste management; drilling waste; dewatering unit