APPLICATION CLAYLESS INHIBITED MUD OIL AND GAS FIELDS UZBEKISTAN

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During the drilling of a borehole in clay sediments, stuck drilling tool happens in almost all oil and gas fields of JSC «Uzgeoburneftegaz». The cause of the stuck drilling tool in all cases is the scree and the collapse of the borehole wall. Applied drilling fluids for drilling a borehole in an unstable clay deposits do not meet passable rocks.

From the practice of drilling, a wellbore known to prevent complications related to the instability of the borehole wall widespread use, found inhibiting muds [1, 2]. Applications that provide prevention of accidents and complications in wiring borehole in unstable clay deposits.

The standard formulation of drilling fluids is regulated to maintain the index filtration when drilling argillaceous rocks less than 10 cm 3/30 min, which should provide work for reagents stub analyzer in an alkaline medium, i.e. E. At pH greater than 7, especially at elevated temperatures, and mineralization. The authors of [3], has been developed formulation of drilling mud with a pH = 6.5 ... 7.0. The proposed formula does not contain chemicals, having in its composition of sodium (caustic soda, soda ash, etc.).The formulation of drilling mud to a pH of about 7 and an indicator of filtration of up to 20 cm3 / 30 minutes, VM-6 was successfully used in the drilling of deep wells, lowering and cementing intermediate casing diameter of 219 mm to a depth of 4100 m in the range of occurrence of mudstone.

With this in mind, we conducted laboratory studies on the development of the composition of inhibiting mud with a pH less than 7 and a low filtration rate. In laboratory studies for the preparation inhibiting drilling fluids, we used not hydrolyzed poly acrylamide, salt, potash, oil, graphite, and for adjusting the density of marble powder.The laboratory results showed that because of not hydrolyzed poly acrylamide can be prepared without inhibiting clay muds with stable processing characteristics. Unimportant advantage of the proposed composition of the mud is to preserve the original processing properties at high temperatures. This is due to the fact that the other synthetic polymeric reagents acrylic series is not hydrolyzed poly acrylamide has high heat resistance up to 170-1800 C, and salt tolerance in relation polyvalent salts.

Based on laboratory tests and the results obtained composition without inhibiting clay mud used in the drilling of the borehole under the technical column in hard currency. №20 Square. Chunagar.

In foreign currency. №20 Square. Agar Chung to prepare, without inhibiting clay mud we used not hydrolyzed poly acrylamide, salt, potash, oil, graphite, and for adjusting the density of marble powder. Cooking without inhibiting clay mud in the following order: First, a 2.0% aqueous solution of hydrochloric poly acrylamide during 8-10 hours. Then, an aqueous solution of PAA was saturated with sodium chloride in an amount of 30% by volume of the solution and addition of 5% potassium

chloride. Without stopping the mixing process, the oil is injected in an amount of 10% graphite and 3% clay by volume without inhibiting mud. With the introduction of the mud without inhibiting marble powder in an amount of 25% of the index increased density to 1250 kg / m3 to create pressure in the borehole wall to prevent the collapse of the talus and rocks. According to the above formulation prepared without clay inhibiting fresh drilling mud in a volume of 180 m3, with the following process parameters: density -1250 kg / m3; The relative viscosity of 35; fluid loss - 4.0 cm3 / 30 min; the thickness of the filter cake - 1.0 mm; pH = 6.0.Then fired clay transition working circulating mud is used before a new one without inhibiting clayey mud. For drilling, a borehole was used in the layout of the boring tool diamond bladed chisel China. With flushing without inhibiting clay, mud began the process of deepening the wellbore. In the process of deepening wells, circulating drilling fluid is easily separated from major cuttings and colloidal clay particles by vibrating and sand separator.

At the same time technological parameters of the circulating drilling fluid remains unchanged, as small clay colloidal particles interacting with flocculants - not hydrolyzed poly acrylamide aggregated to form a paste-like mass that can be easily removed with the help of treatment plants. Thanks to this, the process of deepening the wellbore technological parameters of the circulating mud remained unchanged.However, after a certain time, there was an increase and a decrease in filtration rate relative viscosity of the working circulating without inhibiting clay mud, which occurred because of not reducing the amount of hydrolyzed poly acrylamide solution composition. Reducing the number is not hydrolyzed poly acrylamide was observed by enveloping drill cuttings, the flotation of small colloidal particles of clay and rock formation on the walls of the well of the polymer film.To restore the original technological parameters of the circulating drilling mud further input is not hydrolyzed poly acrylamide and CMC.

When preparing the clay without inhibiting drilling fluids we abandoned widely used chemicals and materials. In particular, we have not been used clay, caustic and soda ash, and polymeric reagents, as K-4, Polyantsev poly pack, VPRG, Uniflok and organic diluting if and potash quartz, which are imported to our country from abroad for hard currency.

When using the composition without inhibiting clay mud wells. Number 20 Sq. Chunagar in the process of deepening has not been observed to increase the relative viscosity index and density as small colloidal particles of clay rocks do not go of it, and they are completely removed in sewage treatment plants. Therefore, the chemical treatment was carried out with the introduction of fresh cooked without inhibiting clay mud with the above process parameters. Due to this change, it has been warned of the hydraulic pressure in the well-reservoir system.

During the ascent and descent of the drilling tool is not seen tightening and planting tools. In addition, this in turn indicates the termination of the hydration and swelling clay rocks forming the walls of the wells.Preventing, hydration and swelling of argillaceous rocks is provided by the simultaneous action of several inhibiting additives, as well as due to creation on the wall of the borehole thin solid impermeable filter cake formed from not hydrolyzed, poly acrylamide and marble powder and lubricant additives. In addition, the use of the proposed composition of the mud help to prevent the formation of bit balling and calibrators.

With the application of the proposed composition of inhibiting mud, process of deepening the well was carried out without complications and accidents related to the instability of the borehole wall and dramatically reduce the time spent on chemical treatment of the circulating mud. Rose, penetration rate compared to the use of clay mud, which is widely used in the practice of construction of oil and gas wells of Uzbekistan. The average penetration rate was 8-10 m / h. As a result, it reduces the time spent on wiring borehole clastic sediments.

The casing is lowered to the design depth and cementing made. By obtaining the nominal diameter of the well №20 Chunagar area, behind the casing formed a solid impermeable cement stone. Moreover, that, ultimately, led to the improvement of technical and economic indicators of well construction.

Because of the industrial tests and the results, obtained composition without inhibiting clay mud has been used successfully in drilling wellbore Square. Shurtan №295, YangiKaratepa №21, New Alan №8.

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