Bedingungen auf dem realen Kernmaterial; Bau der Adsorptionsisotherme;
- Bestimmung des Verpressendesigns. Die Geschwindigkeitsmodellierung des Ablagerungsinhibitors von Volume des Hauptverpressens, Inhibitorkonzentration der Lösung, Volumenverdrängungsflüssigkeit;
- Entwicklung methodischer Unterstützung von Verpressenvorbereitung von Arbeitsprogrammen, Bestimmung von Anforderungen in technischen Anlagen und chemischen Reagenzien zum Verpressen.

Die Zweckmäßigkeit der Salzablagerung-Inhibitoren wird durch die Fähigkeit bestimmt, das Ausfallen von Calcit in bestimmtem Formationswasser zu inhibieren (das ist die Bestimmung der niedrigsten Betriebskonzentration, unter der der Inhibitor uneffektiv wird). [2].

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## GEOLOGICAL-GEOCHEMICAL AND MINERALOGICAL FEATURES OF BASALT FOR THE PRODUCTION OF DIFFERENT PRODUCT RANGE

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Today in the world, reserves of basalt have been identified and fixed correspondingly. It was found that the basalt rocks are the main component of the earth; its share reaches from 25 to 38%. There are basalts in the planets known to the science, including the earth satellite - the moon.

Countries with basalt deposits: Armenia and Georgia, the western regions of Ukraine, Eastern Crimea, southern and eastern regions of the Baikal region and western Transbaikalia, Eastern Siberia and the Kamchatka tundra Bolypezemelskaya, Komi and the Arkhangelsk region of the Russian Federation. Sufficient reserves of basalt rocks are in some parts of Western Europe, North and South America, Southwest Asia, etc.

In early sources, there is very little information about basalt reserves of Central Asia and, in particular, the basaltic deposits of our republic. F. Zirkel, German scientist in his work “Untersuchungen über die mikroskopische Zusammensetzung und Structur der Basaltgesteine” (Bonn, 1870.) states that “in Central Asia basaltic eruptions occurred in many places.” Next in their works, Mol, Bozhitski, Shteltsner, as well as Biree and Zaza also state that Jilinda (in modern Chengeldi) and Amalat (these are old names, some typical areas of Kyzyl-Kum), near the Dod-Nor. The only scientific substantiation of the existence of basalts in our area can be considered in a work of Saint - Petersburg University (Russia) Professor P.N.Venyukov, that was published in 1885, entitled “On some basalts of North Asia” (the modern Central Asia).

It was found that the basalts of Uzbekistan are the remains of volcanic eruptions of Pole – Asian Ocean, formed about 500 ÷ 600 million years ago. These basalts are greenish, dark - gray, almost black, viscous, sometimes yellowish solid rocks.

The basalts of Uzbekistan can be characterized as effusive basaltic igneous rocks since they are mainly found in the form of individual pieces. The analysis showed that they were formed closer to the surface and the ground surface. They were unable to become fully crystallized before solidification, and therefore have an incomplete crystal and glass structure. Therefore, the average diameter of the basalt pieces varies between 250 ÷ 300 mm, which are easily mined in open pit. These basalts are of columnar structure type. As porphyritic phenocryst, basalts often contain plagioclase, olivine and pyroxene. The bulk often is not crystallized; adelogenic ones frequently (without porphyritic phenocryst). Columnar structure is typical for basalt flows. For example, basalt deposits “Aydarkul”, “Asmansay” and “Gavasay” in Uzbekistan are characterized by a close genetic relationship between tholeitic and alkali olivinic magmas, which makes basalt division into several groups inappropriate.

These figures once again prove the oceanic origin of such basalts that further stayed on land forever. They emerged due to uneven cooling of the rock. Sea basalts often have pillow structure. It is formed by the rapid cooling of the surface of the lava flow by water. The incoming magma raises the earlier formed layer, and goes under it in a cold form, subsequently, in the form of pieces.

The basalts are very easily changed by hydrothermal processes. Thereat, plagioclase replaced by sericite, olivine - serpentine, the bulk is chloriticized and as a result acquires a greenish or bluish color. Particularly, basalts poured out on the seabed are intensely changed. They actively interact with water and their many components are emitted and settled down. This process is important for the geochemical balance of certain elements. Much of manganese enters the ocean in this way. Interaction with water radically changes the composition of sea basalts. This impact can be measured and used to reconstruct the conditions of ancient ocean basalts. During the metamorphism, basalts depending on the conditions turn into green greenschist, amphibolite and other metamorphic rocks. During the metamorphism, basalt at considerable pressure turns into blue slates, and at high temperatures and pressures into eclogite, consisting of pyrope garnet and

sodium clinopyroxene - omphacite.

Acidity degree plays an important role for the magmatic rocks. Olivine is the main mineral in the underlying ultramafic rocks (peridotite and olivinites). The fact that they are removed from deep xenoliths (including the mantle) and the centers of volcanic eruptions in the event of kimberlite volcanic pipes indicated the depth formation of these rocks. There are two polymorphs of the same composition - olivine $(MgFe)_2(SiO)_4$ and "spinel" $Si(MgAl)_2O_4$; it is possible that the second modification in deep mantle is more dense. In main medium, acidic rocks, nesosilicates play the role of accessory minerals – these are certain granites, zircon and titanium.

So, all available information on the basalts is associated with geological processes of volcanic eruptions. Analysis of literature on the location of basalt rock deposits in Uzbekistan showed that the main occurrence of basaltic igneous rock can be seen on the ground. This arrangement of basalts occurred after a volcanic oceanic eruptions, during rapid cooling of magma that, along with numerous magmatic rocks, formed basalt.

It was revealed that in basalts, as in all magmatic rocks, $SiO_2$ and $Al_2O_3$ content is emitted, with a noticeable amount of $Fe_2O_3$ and MgO. The latter includes pyroxene, olivine and plagioclase, the share of which in the basalt sometimes reaches up to 90÷95%, which defines the structure, composition, and other physical properties of basalt rocks. Mostly the main component of the basalt mass belong to not crystallized volcanic glass, well impregnated with small particles of magnetite and a mixture of microscopic secretions of basic plagioclase, pyroxene and olivine, less with protease.

## THE STUDY OF THE PROPERTIES OF ELASTOMERS DURING ROUND-TRIP OPERATIONS

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In recent decades, the domestic downhole motors have been passed an evolutional way of the development, turning into an effective technical tool for drilling and repair of the oil and gas wells, which ensure high performance indicators. A great need for the mud motors due to the appearance on the market of a new generation of the low-speed cone-rock bits and the development of the new technologies of drilling — drilling of the directional, horizontal wells and sidetracks.

In every oil region in the intervals of drilling the downhole motors have provided fold increase in penetration over the chiseled compared to the turbo drill with a slight decrease in mechanical speed, which led to a significant increase in scheduled drilling speed and the cost of 1 meter penetration has been reduced. The problem solving of the wells repair of a wide variety of categories has become much easier and cheaper, the technical capabilities of the overhaul have been expanded, which has allowed in some cases to enter in the number of operating the emergency long-term idle wells.

"Working pair" is one of the names of the propulsion section of the hydraulic screw downhole motor, this node determines the basic energy parameters of the downhole motor, as well as its resource and the turnaround time. A disadvantage of the screw downhole motors is quick wear of the motor section, the real operating time of the engine is up to 250 hours relative to the estimated 400-500 hours.

In the process of operation of the downhole mud motor depending on the operation modes, properties, and composition of the fluid, there are different types of wear of the working surfaces of the rotor and the stator. The analysis of the operating conditions and the nature of wear of the working engine related parts demonstrates a combination of not one but several kinds of wear. Mainly the operability of the engine is related to wear of the elastomer plate of the stator.

The frictions of the metal profiled rotor at the mating helical surfaces of the rubber plate of the stator causes the unilateral frictional wear of the surfaces of the working engine related parts — on the left side of the rotor teeth of the right side branch of the profile of the stator, when viewed from the inlet side of the fluid in the working engine related parts. Increasing the load (pressure) and sliding speed (rpm) entails increasing the friction of the wear parts and the scrapping of the motor section.

The normal operation of the elastomer depends on the combination of the stress-strain state of the covering and corrosive properties of the pumped liquid, therefore when operating the downhole mud motor it is necessary to pay special attention to the choice of a suitable drilling mud. The engine design allows to apply various types of the drilling fluids:

1. Water-based (calcium, salt, clay, etc.)
2. Oil-based (with using of crude oil, diesel fuel, products of processing);
3. Polymer drilling fluids having a low viscosity and an enhanced ability to clean from the solid phase.

The elastomer as the technical material must have a low gas — and water-resistance, chemical resistance. However, most elastomers are able to absorb gases and light liquids.

The typical changes, which are elastomers under the influence of the aggressive agents are:

1. Swelling;
2. Shrinkage;
3. Solidification;
4. Softening.

In addition, the downhole temperature is a limiting factor in the operation of the engine. The serial domestic engines are designed for the continuous operation in downhole temperature up to 100 °C. When the temperature of rubber IRP-1226 used in most domestic engines, irreversible changes of the mechanical properties of the elastomer, which lead to increased wear of the elastomer lining of the stator, reduced performance and early failure of the working section of the