Ust-Tym median array is a fragment of Salair fold system. The array is located between the Pyl-Karaminsky and Low-Senkinskim inversion anticlines and is a continuation of Narym Kolpashevo depression. It is a large block structure of the foundation overlain by sedimentary formations of the Middle and Upper Paleozoic. The first structural stage, or intended folded base of the array, is revealed by a number of wells within the neighboring Narym Kolpashevo-depression; at Narym, Parabel, Tibinakskoy and Kargasoksky areas.

The array is divided into several blocks by north-westerly direction faults, which obviously have different thickness covering sedimentary complexes.

Younger complexes of Triassic sediments are developed in the lowered areas. Dimensions of descended blocks are quite large, about 10-15 km wide and about 100 km in length. Thickness of sedimentary complexes is small, about 1-2 km.

The array is completely blocked with sedimentary complexes of middle-upper Paleozoicand penetrated with the small capacity wells on Nikolskaya and Vartovskoy areas. It is composed of red-clastic sediments and limestones, clastic and carbonaceous deposits and acid volcanics. Apparently, the youngest deposits of Ust-Tym depression are located in the central part (Vartovskaya area). The deposits revealed inside the cavity in Nikolskaya Square, are older. There is reason to assume that part of the Middle Paleozoic sedimentary cover Ust-Tym median array in lithological relation may be close to Nurol deflection. This circumstance, in case of confirmation, may significantly increase the degree of prospect for oil a given basin. The rocks occur subhorizontally, those dipping at 60-70° angles are observed only in the zones of fracture (Vartovskaya area).

In the central part of the study area cones deltaic facies duct are expanding. Underwater delta plain facies are preserved in the north of Ust-Tym depression. Stream-mouth bars retain their border near Srednevasyugan megalitik bank, their boundaries are changed on Alexander anticlinal, they appear on Nikolskay area of Ust-Tym depression, and moved to the north-west on Chkalov area. On Alexander anticlinal regressive type bars shift westward from the Nazinskaya area to the Ilyakskaya; in Ust-Tym depression they appear on the Murasovskaya area and disappear on the Golovnaya one. Bars of transgressive type are reduced and form small islands in the area Myldzhinskaya and Prigranichnaya areas. Facies of coastal wetlands are preserved in the south of the territory. In the northern part of the territory, lagoon facies are expanded and moved west to Ambarskoy, South Nazinskoy areas.

Facial characteristic of the layer U^{12}. This layer differs with big drop of particle size distribution: predominantly silt composition, increasing of clay component. This may be associated with reduction of hydrodynamic activity in the sedimentation basin, the tectonic regime stabilization, decreasing of terrigenous material brings from supply area. In the area of the Alexander anticlinal insular land facies on the Chebachya area are replaced with lagoon sediments. Border regressive and stream-mouthbars reduce, land delta facies disappear. In the northern part of Ust-Tym depression ground deltaic facies pass into underwater, leaving only Mygytinskuyu area. In the area Srednevasyugan megalitik bank deltaic facies disappear.

Thus, it can be concluded that Ust-Tym depression is perspective for further investigation to find oil presence occurrences.

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SELECTION OF THE OPTIMUM CONDITIONS OF CORE SAMPLES PREPARATION TO PETROPHYSICAL STUDIES

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Reservoir rock properties acquired in laboratory conditions are needed for interpretation of well logging, reservoir parameters feasibility study and hydrodynamic reservoir modeling.

All existing types of core laboratory analysis start with the process of core samples preparation. Any deviations from the established procedure may affect veracity of resultant petrophysical parameters.

Pursuant to the requirements, stated in ref. [1, 2], it is necessary to identify heavily clayish core samples in process of their preparation for special and standard researches. This separate consignment of core samples with high content of clay needs drying at quite low temperature.

Despite the importance of this stage, methodological recommendations on how to perform this selection are currently missing from regulatory documents [1, 2]. Consequently it is being done on a subjective basis in petrophysical laboratories, which does not exclude the risk of «unsuccessful segregation». The incorrect core samples separation based on their clay content at the stage of samples preparation may cause the structural damage of their pore space.

Nowadays, the core samples clayiness is defined as pur results of granulometric analysis procedure or X-ray diffraction analysis of core samples. Both methods are quite labour-consuming and require special equipment.

In [3, 4] the method of core clayiness determination by express analysis is presented. This method verifies the compliance with range incorporating heavily clayish rocks (the method of indicator solution).

The present study is aimed to evaluating whether or not it is possible to apply express-analysis of determination clayiness of core samples by means of the optical method. The samples were taken from reservoirs in Western Siberia on the basis of their compliance with the range attributable to heavily clayish rocks.

Photoelectric photometer CPC-3-01 was used to determine the indicator solution optical density observing optimal conditions for spectral registration. Mass scale shaliness value was determined based on the data from granulometric analysis.

The research has shown that the optical density of indicator solution falls down to zero for heavily clayish core samples.

As a result, the developed and tested indicator solution allows subdividing core samples objectively into two separate groups in process of sample preparation for petrophysical researches based on their clayiness range.

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ELEKTROMAGNETISCHE UND AKUSTISCHE EMISSION VON MAGMA

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Im 20. Jahrhundert wurde bekannt, dass natürliche elektromagnetische Emissionen in Folge der seismischen Aktivität, beim Erhitzen oder bei einer Deformation von Gesteinen entstehen können und es ist grundsätzlich sinnvoll akustische und elektromagnetische Spektren zusammen zu beobachten und miteinander zu korrelieren. Ein früher Nachweis der geogenen Emissionen gelang Stepanov A.V. bei einer Deformation von Sylvin [6]. Später waren bei Erdbeben elektromagnetische Emissionen nachweisbar [3,5]. Auch wurden niederfrequente Emissionen vor Vulkanausbrüchen beobachtet [7].

Laborversuche von Frid zeigen, dass in Gesteinsproben die Wellenfrequenzen von 10 Hz bis 28 MHz existieren [1]. In der Lithosphäre haben elektromagnetische Emissionen gleiche Frequenzbereiche wie unter labormäßigen Bedingungen, zusätzlich treten aber noch tiefere Frequenzen unter 10 Hz auf [4]. Ihre Ausbreitungsdistanz wird in Abhängigkeit vom 4 Frequenzbereich der elektromagnetischen Wellen im Gestein definiert: Wellen mit Frequenzen weniger als 1 kHz breiten sich auf größere Distanzen als hochfrequente Wellen aus [4]. Die Ausbreitung der EMR ist anisotrop; außerdem ist sie parallel zur Entwicklung der Risse am stärksten.

In einem Vulkan sind grundsätzlich mehrere Quellen für mikroseismische Emissionen vorstellbar:

1. Zunächst findet durch die Platznahme des Magmas eine Veränderung des Gesteinszugs mit Bildung von Mikrorissen bis hin zu offenen Spaltenbildung statt.
2. Die Entgasung des Magmas dürfte ähnlich dem Entweichen von CO_2 aus einer Sprudelflasche kontinuierlich mikroseismische Geräusche hervorrufen.
3. Das Abkühlen von frisch erstarrten Magmen führt zu Thermospannungen und zur Bildung von Mikrorissen mit mikroseismischen Signalen.

Es existiert eine Korrelation der mikroseismischen Signale mit elektromagnetischen Signale [2].

In dieser Wissenschaftsarbeit werden transiente elektromagnetische Strahlungen in einem vulkanischen Umfeld untersucht. Forschungsgegenstand ist Stromboli, Italien. Die Ergebnisse wurden mit seismischen Daten, Magnetfelddaten und Wetterdaten verglichen.

Im Laufe des Feldversuchs wird für die Messung der Emissionen das hochempfindliche portable Messgerät «Cereskop» verwendet. Das Messprinzip des Cereskops basiert auf der passiven NEMR-Methode (natural elecromagnetic radiation), bei der selektiv die transienten Signale registriert werden. Die Messung erfolgt mit Hilfe der «impulse-averaging»-Technik, bei der die Totzeit zwischen den Impulspaketen nicht gemessen wird, sondern nur transiente Signale aufgenommen werden. Die Aufteilung und der Unterschied des Rauschens und der transienten Signalen wird durch den Energieinhalt und Periodizität ausgeführt. Die transiente Emission pulsiert unregelmäßig und weist höhere Energien auf.

Die Messungen der elektromagnetischen Impulse am Stromboli wurden im Laufe von sieben Tagen durchgeführt. Der Zeitraum verlief vom 26.07.16 bis zum 1.08.16. Es wurden vier Frequenzbereichen gewählt: 5-8 kHz, 5-12 kHz,