

O16-15**METHOD OF SECTION STRATIFICATION ON THE
PATTERN OF MIOCENE DEPOSITS IN THE WESTERN
AZERBAIJAN****DANIELLE VAILLANT**E-mail: gja@azeurotel.com

The Miocene complex is considered to be one of the prospective oil and gas bearing complexes existing on the territory of Azerbaijan. These deposits are also involved in geological formation of the Kura-Gabyrry interfluvial area. That is why the problems of stratification and correlation of Miocene regional stages are of top priority. The present paper describes the properties of the Miocene deposits in the area under consideration, determined as a result of combined study of the sections.

The major sources for study of the Miocene deposits in full volume are the data obtained through drilling of parametric, exploratory and deep exploratory wells. Stratification of the Miocene section in the Kura-Gabyrry interfluvial area was performed by three wells known methods: paleontological, lithological-petrographic, geophysical methods.

The results of processing of a large quantity of initial data obtained owing to many years of exploration work that was carried out on the territory of Kura and Gabyrry interfluvial, both, in the zones of Chatminskaya anticlinorium and Jeyranchel synclinorium, allowed us to determine the boundaries of the regional stages, included in the Lower and Middle Miocene subdivisions and stripped in their full thickness.

Each of the above mentioned do not always provide information on the age and bedding boundaries of deposits, if used individually. The use of all three methods as a complex for study of the section in structural exploratory wells, drilled by full core sampling, allowed to determine the electrical logging properties specific for each regional stage. Based on the regional stages determined, correlation of the sections was performed in the deep exploratory wells, in which sampling of core material was limited, and this proved absence of possibility for carrying out the full complex of investigations. Based on the regional stages determined, correlation of the sections was performed in the deep exploratory wells, in which sampling of core material was limited, and this proved absence of possibility for carrying out the full complex of investigation.

Three regional stages, Caucasian, Sacaraulskiy and Kotsakhurskiy, that are included in Maikopian suites of the Lower Miocene, have similar electrical logging properties. In the diagram they are represented by smooth lines of AR and undifferentiated PR curve; only individual peaks caused by rise of specific resistance and corresponding to sandstone and marlaceous layers can be observed. Each of the above mentioned horizons distinguishes the zones which are characterized by microfaunal complexes.

The Lower Miocene subdivision also includes the deposits of Tarkhan stage which are represented in the electrical logging diagrams in the form of slightly differentiated AR lines within the background values, but with rather increased resistances. One can notice smooth decrease of background values from the roof of Tarkhan to its foot, where reach the upper layers of Maikopian suites. In this case PR is represented by smooth line and corresponds to clayeyness of the Tarkhan stage. Subb. Et Chutz.

The Middle Miocene includes three stages. Chokrak, Karagan, Konk. The deposits of Chokrak stage are represented in the electrical logging diagrams by sharply toothed lines standing for AR with apparent specific resistance of 2-3 Ohm*m and clear "dagger-shaped peaks" which indicate to frequent and low thickness interlayers of marl, dolomite and sandstone with apparent specific resistance of 10-20 Ohm-m. The undifferentiated PR line characterizes the permeability of rocks composing the Chokrak section. The sections in the wells in Tarsdallar area provide somewhat different data due to increase of

coarse fragmentary material in the rocks' content. The Karagan regional stage is characterized by sharply toothed AR curve with apparent specific resistance of 2-3 Ohm-m and clearly marked "dagger shaped peaks" corresponding to marl, dolomite and sandstone layers of 1-3 m thickness with specific apparent resistance of 10-20 Ohm-m, and the PR curve appears in the form of undifferentiated line. The electrical logging properties show that the deposits of Konk regional stage can be distinguished even within the boundaries of the area under consideration. The cut-off line between the Konk and Karagan in its eastern part is expressed by decrease of resistance and permeability of rocks: in this case specific resistance does not exceed the values of 5 Ohm-m and maintains the overall background, close to 1.0 Ohm-m, and the AR curve looks like a comb with individual sharp "dagger shaped peaks" which are indicate of existence of marl and dolomite interlayers in the sections. The PR line is slightly differentiated. In the western and north-west parts of the interfluvium, which covers the areas Gurzundag, Aktakhtatapa, Damirtapa-Udabno, Sazhdag, Armudly, the foot of the Konk deposits exhibits tendency towards decrease of resistance starting with the layers in the karagan horizon towards the Konk rocks and further towards the lower Sarmatian and is characterized by apparent specific resistance of the layers up to 3 Ohm-m against the overall background equal to 1.0 Ohm-m. The undifferentiated PR line corresponds to overall shallification of the section with identification of marl and dolomite layers only. Thus, integrated use of the existing data on stratification of the Lower and Middle Miocene subdivisions to their components, stratigraphic units allows to carry out more accurate correlation of the section, and thus, to introduce a detailed picture of lithological and thickness variations, trace variations in composition of microfaunal complex and map equal thickness individually for each of the regional stages. Implementation of the suggested integrated method to study the sections of the Miocene complex within the boundaries of Kura and Gabyrry interfluvium, might also make it possible to investigate the similar sections in other prospective oil and gas bearing regions of Azerbaijan.