Main Results of Geological Exploration for Oil and Gas for 1960 and Tasks for 1961 in the Azerbaydzhan SSR

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As a result of geological exploration in 1960 in Azerbaydzhhan, the new Karabagly gas-oil field was discovered, a commercial gas-oil productivity was determined for several horizons in new areas that are being worked, and the commercial oil reserves have been augmented.

New geological information has been obtained which has theoretical importance for selecting the direction of deep prospecting drilling and geological and geophysical work.

The new Karabagly (Fig. 1, 32) gas-oil field is located on the Kyurovdag-Neftechala anticlinal line between the Babazanan and Kyurovdag areas. See Fig. 1.

The favorable location of the area (low relief and paved roads) permits a high level of prospecting and development of this field. From 1937 up until the first deep prospecting wells there was a whole complex of geological and geophysical work at different times on this structure (magnetic, electrical, seismic, and gas surveys, and mapping and structural-exploration drilling). This work established that the Karabagly field is an independent buried brachy-anticline, which is located en echelon to the Kyurovdag and Babazanan folds and is composed of Pliocene sediments as are the latter structures. Its length is 15 km and the width is 4 km. The fold is cut by large longitudinal and transverse faults, the nature of which has not yet been adequately studied.

Prospecting well 6 (the discovery well) entered production on July 24, 1960 and produced oil from the first sandy member of the productive unit from a depth of 2771-2815 m. Production was 75 tons per day through a 5-mm choke with a pressure at the buffer of 96 atm. The oil is high in quality. The specific gravity is 0.889.

In the middle Apsheron and Akchagyl sediments, the section of this well contains up to five gas-oil horizons with a thickness of 10-15 m. These are well expressed on the electrical log and in the core samples. See Fig. 2.

In 1960 in the Kyurovdag area (33) a large new oil-bearing area was added in the northwest periclinal part of the fold. Prospecting well 78 was drilled 2.5 km from the extreme northwest well 69 (a good producer) and was placed in production on horizon III of the productive unit (depth of 3289-3294 m) with a yield of oil of more than 50 tons per day. During the process of exploitation drilling a commercial oil productivity of horizons II and III of the productive horizon was revealed at the crest of the fold.

Testing of prospecting wells 71 and 19 in the north part of the fold established the presence of commercial oil in the Akchagyl sediments; this discovery is of theoretical importance to exploration for oil pools in these sediments not only in the Kyurovdag area but also in other areas of the Kura region.

In the Kalmas area (27) the limit of the producing gas fields of horizons III and IV of the southwest flank of the fold was extended. Prospecting well 43 on the north flank disclosed 5-6 oil-gas horizons, thus showing the favorability of this part of the structure.

The oil bearing part of the pool of formation VII-x was extended on the south flank of the Karadag fold (17). Prospecting well 202, located 1.5 km northeast of well 195, was placed in production from a depth of 4050-4082 m with an oil production of 200 tons per day through a 19-mm choke with a pressure at 36 atm at the buffer. Well 121 located more than 1 km southwest of well 195 was placed in production with a similar high yield.

According to the electrical logging data the pool being drilled by prospecting well 194 extends farther to the east. Well 194 is located 1 km southeast of well 130, which produces gas and condensate from horizon VIII. New information has been obtained by prospecting drilling on the north flank of the Karadag fold which confirms the commercial productivity of the upper part of the Miocene sediments.

In the area of Peschanyy Island (10), prospecting wells, 49 and 58 were placed in production with a daily yield of 35 and 55 tons, respectively. These wells extended the boundary of oil productivity for the KaS sediment in the north tectonic field of the fold. Wells 66, 74, and 76 show indications of commercial oil productivity in horizons of the Balakhan formation, NKP, KS, and PK. This extends considerably the area of occurrence of the oil pool in these formations in the high part of the north tectonic field of the fold.

As a result of partial entry into commercial operation in the south field of the fold, only horizon X of the Balakhan formation has reached a high level of oil production in this area. The oil and gas reserves of Peschanyy Island are not as great as the initial reserves.