

## MAJOR CENTERS OF HYDROCARBON GENERATION IN THE PROTEROZOIC AND PHANEROZOIC OF THE SIBERIAN PLATFORM

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Several centers of naphthide generation have been distinguished in the Siberian Platform (Fig. 1) and their tectonic evolution and the modern characteristic of their oil source formations have been considered (Kontorovich *et al.*, 1999).

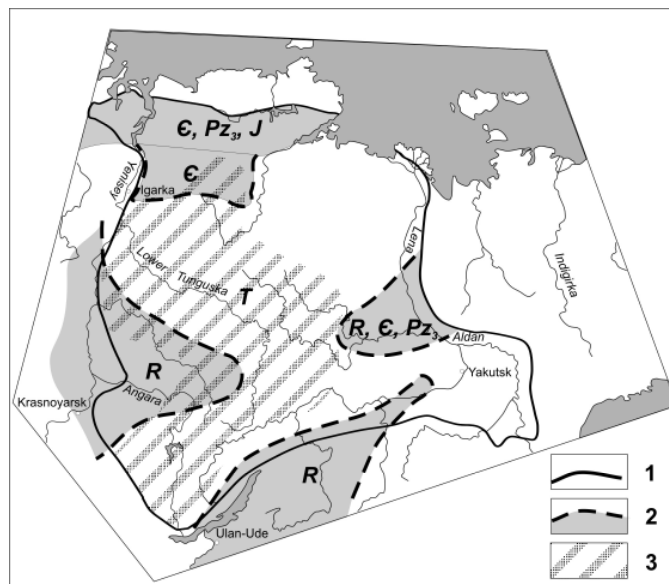


Figure 1. Oil and gas generation centers in Precambrian and Phanerozoic sedimentary basins of the Siberian Platform (1 – outlines of the Siberian Platform, 2 – major oil generation centers, 3 – areas of anomalous rock heating under the influence of trappean intrusions).

Geochemistry of oils and bitumens of the Siberian Platform and the eastern areas of the West Siberian plate has been studied (Kontorovich *et al.*, 1999, 2000, 2005, Kontorovich *et al.*, 2001, Timoshina, Kim, 2005). Based on the presence or absence of 12-, and 13-monomethylalkanes, distribution of steranes, terpanes, and isotopic and various physicochemical characteristics, oils are divided into realms and families. The differences in the composition of oils confirm the existence of numerous centers of naphthide generation with specific biocenoses and their different evolution after burial in the Siberian Platform in the past.

Geodynamic reconstructions of the development history of the North Asian craton and analysis of geology and geochemistry of oil and gas in intracratonic and marginal basins of

this craton make it possible to draw the conclusion that within its limits, the centers of naphthide generation and related zones of oil and gas accumulation (petroleum systems) repeatedly formed in the Late Precambrian and Phanerozoic. The integrated systemic consideration of the distribution of naphthide generation centers, oil and gas accumulation zones, oil and gas reservoirs in them, and geochemistry of naphthides shows that the processes of both lateral and vertical migration of hydrocarbons and repeated reformation of pools have occurred. The processes of transformations of hydrocarbon systems exerted strong influence on the present-day distribution of fields and oil and gas composition, as affected by heat of trappean intrusions at the end of the Permian – early Triassic, when temperatures, anomalous for naphthide genesis, occurred in the most part of the basins.

In total, all of these processes predetermined the modern regularities of distribution of oil and gas pools in the Siberian Platform. However, the investigations show that the genetic types of oil and gas accumulations, related to some centers of naphthide generation, are far from being revealed by the present time in the Siberian Platform. In particular, oil accumulations, related to oil generation in Cambrian black shale deposits have not yet been found.

The established regularities of naphthide genesis and naphthide accumulation in the Siberian Platform should serve as the theoretical basis to give more precise definition to evaluation of its petroleum potential for exploration of new giant oil and gas accumulations in this unique region.

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