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Gas torches as the search feature of hydrocarbon deposits

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Currently everywhere is growing interest in the release of gases from the bottom sediments and thickness of the sea water. In this report presents the systematized data on the characteristics of gas-saturated soils and gas migration in the soil and water thickness. The authors performed an analysis of the obtained data and draw conclusions about the regularities of gas flares occurrence as a feature of the hydrocarbon deposits presence.

To date, in the world's scientific literature already collected a large amount of information which allows definitely associate gas release with accumulations of hydrocarbons in the earth's crust. Established a direct correlation between the amount of gas manifestations and hydrocarbon reserves in certain productive provinces [4].

In Ukraine carried out geological and geophysical studies of gas torches of the Black Sea, first of all on the north-western shelf, as it became obvious practical importance of such works, which today are least studied and caused most interest. In the Black Sea Dolphin and Komsomolske gas-condensate deposits are located close to the gas jets intensive fields [3]. The same dependence is inherent to oil and gas fields on many water areas. In the Strait Santa Bárbara (CA), more than half of gas manifestations focused only on the anticline South Elwood, where are concentrated huge reserves of hydrocarbons, which is extracted from the end of 60-th of the last hundred years[1]. A relation of gas excretion with the deep active faults shows a deep origin of the methane, although so far there is no single point of view on this problem. Two hypotheses are competing - the biological and ecological. According to the first hypothesis, methane gas excretions produced during decomposition of organic matter sediment [2]. However, the extent of the gas excretions during the Quaternary period and the absence of associating gas torches to places likely accumulation of organic material put into question the biological hypothesis of the methane genesis. [5]. Analyses of the chemical and isotopic compositions of gas-hydrates gases indicates that methane most likely has a predominantly deep origin. The decisive condition for the formation of gas torches by this mechanism is a tectonic activity in the region by the geological time scale. This activity forming the path of the gas migration and these paths are faults [6]. Gas torches on the periphery and the mud volcanoes in the deep depression of the Black Sea can become to search feature of oil and gas deposits and the source of the hydrocarbons direct extraction on the shelf and continental slope [7].

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