

## **PROGNOSIS OF COVER SEDIMENTS CATAGENESIS IN OIL/GAS BEARING BASINS FROM SEISMIC VELOCITIES**

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A comparison of the catagenesis zones, which were ascertained in the sequences of the oil search wells by the standard method, and the layer velocities from the cross-sections of the multichannel seismic reflection data allowed to determine a definite correlation between them: an increasing of the catagenetic alterations with depth is accompanied by corresponding growth of the layer velocity. For instance, relations are revealed between catagenesis and layer velocity in the terrigenous sequences in Barents (Russia) and Scotian (Canada) shelves: protocatagenesis - 1.5-3.3, mesocatagenesis - 3.3-5.0 and apocatagenesis - over 5.0 km/s. The maximum thickness of catagenesis zones in these regions are accordingly 2-2.5, 3-4 and 4-5 km. Determination of the catagenesis zones on the base of the layer velocity data has a great importance in procedure of oil/gas bearing prognosis during all stages of the exploration; absence of the protocatagenesis zones and upper part of mesocatagenesis eliminates of hydrocarbon potential. Such a construction is investigated in the western part of the Barents shelf, where the sediments with the layer velocities 3.3-4.2 km/s are registered near the sea bottom. The work was supported by Russian Foundation for Basic Research (Grant No.99-05-64060).