



## **Hydrocarbon potential of hydrocarbon source rocks of the New Siberian Islands, Russian Arctic**

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The New Siberian Islands are bridging the Laptev Sea with the East Siberian Sea. The Laptev and East Siberian Seas cover large areas of the continental margin of northeastern Arctic Russia. The East Siberian Shelf encompassing an area of 935.000 km<sup>2</sup> is still virtually unexplored and most of the geological models for this shelf are extrapolations of the geology of the New Siberian Islands, the Wrangel Island and the northeast Siberian landmass. Apart from few seismic reflection lines, airborne magnetic data were the primary means of deciphering the structural pattern of the East Siberian Shelf. The Laptev Shelf covers an area of about 66.000 km<sup>2</sup> and occupies a shelf region, where the active mid-oceanic spreading ridge of the Eurasian Basin hits the slope of the continental margin.

During the joint VSEGEI/BGR field expedition CASE 13 (Circum Arctic Structural Events) in summer 2011 we sampled outcrops from the New Siberian Archipelago including the De Long Islands. 102 samples were collected and the Upper Palaeozoic to Lower Cenozoic units are found to be punctuated by several organic-rich intervals. Lithology varies from continental dominated clastic sedimentary rocks with coal seams to shallow marine carbonates and deep marine black shales. Rock-Eval pyrolysis, gas chromatography/mass spectrometry and organic petrography studies were performed to estimate organic matter contents, composition, source, and thermal maturity. According to the results of our analyses, samples from several intervals may be regarded as potential petroleum source rocks. The Lower Devonian shales have the highest source rock potential of all Paleozoic units. Triassic samples have a good natural gas potential. Cretaceous and Cenozoic low-rank coals, lignites, and coal-bearing sandstones display some gas potential. The kerogen of type III (humic, gas-prone) dominates. Most of the samples (except some of Cretaceous and Paleogene age) reached the oil generation window.