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## **Complex exploration approach in hedging the geological risks and optimization of exploration expenditures to develop the hydrocarbon prospects**

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The knowledge of the petroleum potential targets is in most cases obtained in a result of seismic work, when the sites are being prepared to drilling.

The major issue to be settled at the exploration stage, especially in off-shore projects, is the necessity to reduce drilling risks to drill the dry or non-commercial borehole. This is most important for the targets related to the complex-type hydrocarbon traps: structural-tectonic, stratigraphic and lithologic. Such targets are the challenge for the seismic survey as this method ensures high accuracy of mapping of the geological section structural parameters, however it is low-sensitive to a reservoir fluid (oil/gas/water) composition. Proposed exploration methodology, combining geoelectric, geochemistry and gravimagnetic methods prior to further seismic work within the localized areas allows significant diminishing the risks of not crossing the commercial hydrocarbons while drilling. By implementation of such approach, the location of exploration wells will be justified to cross the commercial hydrocarbons at the high probability. The concept of drilling is to drill the exploration borehole which can be transferred into production stock. It will result in some increasing of exploration borehole cost, but allow drastically decrease the production drilling cost.

Basing on this concept, the casing diameter of exploration borehole at the targeted production level shall make it possible to use the well itself as a production one, or to perform the spudding in of a horizontal production borehole when determining well productivity.

