Oil shale prospective development methods

Sergei Sabanov

SRK Consulting (UK), UK

Oil shale can be developed either by open and underground mining or by in-situ technology. Oil shale mining processes impact on the environment, economy and people; whilst there may be positive contributions to the economy and social progress through mining there are also negative impacts to the environment. The objective of this study is to carry out methods suitable for prospective development of oil shale deposits. The methodology is based on analysis of general characteristics of oil shale and related rocks from over one hundred oil shale deposits around the world. The approaches include technical and economic evaluations, mine design for conventional and unconventional mining, production scheduling and equipment selection, operating cost estimation and capital expenditure estimation, strategic planning, oil yield and production rate analysis. The results of this study using analysis of oil shale with different quality and composition give the possibility for choosing suitable technology for development of different type deposits. The prospects for development of a given deposit can be estimated taking into consideration geographical location, deposit type, depth, structural features, thickness and also seam orientation. The oil shale prospective development methods give an opportunity to find better ways for development of oil shale deposits in accordance with technological-economical socio-environmental consideration. The methods will facilitate the best decisions for the technological development of oil shale and can be used in the exploration, planning, and exploitation and closure stages.