

**Detection of Hydrocarbon Microseepage Anomalies in the Kirthar Fold & Thrust Belt, Pakistan Through Application of Image Enhancement and Gis Techniques**  
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This study is based on spectral analysis of rocks exposed in Kirthar Fold and Thrust Belt, Pakistan. It is considered that oil and gas escaping from subsurface reservoirs may interact with surface rocks, soil, and vegetation and produce visible effects that may be interpreted as suggestive of hydrocarbons occurrence. The host rocks may be altered due to chemical and biological interaction with the seeping hydrocarbons. Such rocks have specific spectral responses in various bands of electromagnetic spectrum of light and thus give rise to a number of anomalies which may be used as suggestive of hydrocarbon presence.

The study identifies areas of spectral anomalies (sweet spots) which are considered to be related to the possible presence of working petroleum system in the Kirthar Fold and Thrust Belt, Pakistan. This objective is achieved through application of Advanced Remote Sensing and GIS techniques and geological understanding of the region.