

Weathering, provenance, and tectonic settings with geochemical approaches of oil shales from the Middle Miocene Hirka Formation

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This study materials include oil shales of Hirka formation of Miocene age. Oil shales of Middle Miocene Hirka formation in Beypazari basin were analyzed to use ICP-MS technique for the content of the element and pyrolysis analysis for organic geochemical analysis.

According to the results of these analyses, components of organic matter, inorganic element ratios and tectonic provenance of the samples indicate micro-environments with varying physicochemical conditions from oxic to euxinic in a lacustrine environment. Chemical weathering indices are commonly used for characterizing weathering profiles by incorporating bulk major element oxide chemistry into a single metric for each sample. Among the weathering indices evaluated here were calculated using indices such as the Weathering Index of Parker (WIP), the Chemical Index of Alteration (CIA), Chemical Index of Weathering (CIW), Plagioclase Index of Alteration (PIA) and Vogt's Residual Index (V

In summary we can say that provenance tectonic features occurred in a terrestrial sedimentary environments and various index calculated of oil shales were unaffected by weathering and alteration.