

Heavy Minerals Distribution in the Recent Stream Sediments of Diyala River Basin, Northeastern Iraq

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Abstract : Twenty one samples of stream sediments were collected from the Diyala River Basin (DRB), which represent one of three major tributaries of the Tigris River at northeastern Iraq. This study is concerned with the heavy minerals (HM) analysis in the + 63 μ m fraction of the Diyala River sediments, distribution pattern in the various river basin sectors, as well as comparing the present results with previous works. The metastable heavy minerals (epidote, staurolite, garnet) represent more than (30%) Whereas the ultrastable heavy minerals (pyroxene and amphibole) make only about (19 %). Opaques are present in high proportions reaching about (29%) as an average. The ultrastable (zircon, tourmaline, rutile) heavy minerals are the minor constituents (7%) in the sediments. According to the laboratory analytical data of heavy mineral distributions the studied sediments are derived from mafic and ultramafic rocks are found in northeastern Iraq that represent Walash - Nawpordan Series and Mawat complexes in Zagros zones. The presence of zircon and tourmaline in trace amounts may give an indication for the weak role of acidic rocks in the source area whereas the epidote group minerals give an indication for the role of metamorphic rocks.

Keywords : heavy minerals, mineral distribution, recent stream sediment, Diyala river, northeastern Iraq

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