ASSESMENT OF HEAVY MINERALS IN STREAM SEDIMENTS OF WELLAWAYA AREA

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Abstract

The study of heavy minerals placer deposits of the stream sediments in Wellawaya in Uva province in Sri Lanka at boundary of Highland Vijayan complexes was carried out; the surface sediment samples from ten locations of different tributaries along the kirindi oya are collected. The main framework of this research is to study the identification of various type of heavy minerals in stream sediments in Wellawaya and analyze grain size distribution in stream profile. The heavy mineral analysis involved separation of sand grains into different sizes; density separation of heavy minerals using heavy liquid, and magnetic separations and identify types of each mineral using transmitted light microscope. Results show that the sediments with 0.125mm grain size dominate in all the samples. Studying stream profile is involved measuring weight of each sieve fractions and they analyze using graphs. Identified heavy minerals in sample locations are Ilmenite, Rutile, Garnet, Sillimanite, Zircone, Monozite, Hornblende, Magnetite, Biotite, Muscovite, and Limonite. Magnetic, Physical, and optical properties of minerals are used to identify types of heavy minerals. There are six stream layers and two of them are gravel layers while others are poorly sorted.