Eosen Aged Sandstones In Gümüşhane, Ne Turkey: Sedimentology, Sedimentery Pertography And Provenance According To Plate Tectonic

SAYDAM, Ç.

KTÜ, Geology Department, 29000 Gümüşhane/Turkey, csaydam@ktu.edu.tr

Eosen aged sandstones in Gümüşhane in this study aimed of determining sedimentological, sedimentary petrographic properties and provenance according to plate tectonic.

Eosen aged sandstones which are widespread in Gümüşhane have two different characteristics. The sandstones have been deposited by turbidity currents in the vicinity of Unlupinar village to the South of Gümüşhane and volcano-clastic characteristics in the vicinity of Eski Gumushane to the West of Gumushane.

The thickness of the volcano-clastic sequence is 195 m. around Eski Gümüşhane and that of the turbiditic sequence is 280 m. around Ünlüpınar (Kelkit). Volcano-clastic sequence is composted of grey colored and medium, thick bedded limestone, grey, brown colored and thin, medium, thick bedded sandstone, green, grey, brown colored and thin, medium bedded marl-claystone and tuff. Turbiditic sequence is composted of grey, yellowish brown colored and thin, medium, thick bedded sandstone, green, greenish grey, brown colored and thin, medium bedded marl. It has been frequently observed locally interbedded with light grey colored, thin, medium bedded limestone, conglomerate and tuff. Sedimentary structures are graded bedded and parallel lamination. The graded bedded and parallel lamination have been seen as sedimentation structures.

The grains of Volcano-clastic sandstones are generally medium size and well – moderately sorted. Their graphic skewness range from near symmetrical to fine skewed. The sandstone gains of turbiditic sequence range from medium to fine size and very well sorted to poorly sorted. The graphic skewness of these sandstones have varied between coarse skewed and fine skewed.

The compost of the sandstones are quartz, feldispars, lithic fragments, opac mineral, accessory mineral, matrixs and cements. According to mineral ratios in the rock, the sandstones belonging to volcano-clastic sequence are as named arkose, lithic arkose and that of turbiditic sequence is as litharenite

The both of sequences are immature either mineralogical or texturally. The main provenance of two sequence are generally magmatic arc, recycled orogen region and back arc subduction complex source and their deposition environment is back arc basin.

Key Words: Sandstones, Turbidity, Provenance, Back arc basin