

MINERALOGY-PETROGRAPHY AND GEOCHEMISTRY OF KONYA MIOCENE VOLCANIC UNITS AND GENERAL DETERMINATION OF NEOFORMED CLAY MINERALS

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ABSTRACT.-Volcanic, sedimentary and volcano-sedimentary units are wide spreaded in south and southwest of Konya. Mineralogy and micromorphology of ignimbrite and nuee ardentes as well as domes exhibit characteristic of rhyolite, dacite, andesite, basalt and tuff. Tuffs are classified as vitric, lithic and crystal tuffs, based on the volcanic glass, rock fragments and crystal properties while Argillisation and limonitisation are common in tuff, these alteration products are less or not present in the other volcanic rocks. Generally, argillisation and limonitisation are dominant in the fracture of volcanic glasses, which is the main component of tuffaceous units. In addition, argillisation is observed in feldspar and opacitazat and chloritisation in biotite and hornblende. As a result of XRD studies in the tuffaceous units Halloysite, kaolinite, smectite, palygorskite and illite type clay minerals and opal-CT, feldspar, quartz, amphibole, serpentine, minamiite and jarosite type non-clay minerals are determined SEM studies indicate that halloysite, kaolinite and smectite are generally developed in the dissolution voids and fractures of volcanic glasses. Chemical analyses reveal that halloysite, kaolinite and smectite units and adjacent volcanic rocks are similar. Formation of clay minerals in the study area are controlled by the movement of water as well as the mobility of the ions of volcanic glass and feldspar. The field observation, mineralogical, chemical, and micromorphological determinations indicate that halloysite, kaolinite and smectite could be formed diagenetically following the period of depositions of tuffaceous materials by the effect of ground and meteoric water.