Study of genesis and mechanism of glauconite formation in the Aitamir Formation at south east of Dargaz

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Abstract: Aitamir Formation (Albian–Cenomanian) crops out in the Kopet-Dagh basin in north-east Iran. This formation is mainly composed of sandstone, shale, siltstone, and several shellbeds. One of the major components in all of the siliciclastic facies is glaucony. They are autochthonus and paraautochthonus types which have formed in suitable physico-chemical conditions and replaced quartz, chert, feldspar, mica and carbonate cement. Nonselective replacement, poorly sorted, along with phosphate, fish teeth and morphological shrinkage are major evidences of autochthonus glaucony. These glauconies are pale green nascent, evolved and highly evolved. Glaucony within marine deposits (suitable host rock), associate with bioturbation, presence of pellets of nascent glaucony and debris of sparse glaucony within the matrix forms of greenhalo are others evidences of autochthonus glauconites. Characteristics of paraautochthonus glaucony, including: ooidal rims around rounded peletic glauconites, well sorted glauconys, presence of glauconites within cross lamination and low fractures in peletics glauconites due to local reworking into in early transgressive surface.

Keywords: Aitamir, glaucony, autochthonus, paraautochthonus.