Abstract: MA-II area is one of the most important parts of Cu-Au porphyry mineralization at Maherabad prospect area. Subvolcanic intermediate intrusive rocks (Upper Eocene), monzonite to diorite in compositions, intruded telescopically and are mostly altered. Monzonitic porphyries had major role in mineralization. These intrusive rocks are highly altered, have dense stockwork veinlets, and show highest geochemical anomalies. Hydrothermal alteration zones are: Quartz-sericite-pyrite, silicified-propylitic, propylitic, carbonate and silicified zone. Mineralization occurs as stockwork, disseminated, and hydrothermal breccia. Stockwork is the most important type of mineralization. Veinlets found within quartz-sericite-pyrite zone are: quartz, quartz-pyrite, quartz-pyrite-chalcopyrite and pyrite-chalcopyrite ± quartz. Veinlets within silicified-propylitic are: quartz-pyrite ± chalcopyrite, quartz-pyrite ± magnetite, quartz-pyrite-chlorite and quartz-magnetite. The density of quartz-sulfide veinlets is about 30 per m² (in center of MA-II in quartz-sericite-pyrite alteration zone). Most of sulfide minerals were oxidized. Secondary Fe-oxides are seen up to 15% in some places. Compositional variations of elements within MA-II area are as follow: Cu = 22-1073 (ppm), Au =16-886 (ppb), Mo = 5-54 (ppm), Zn = 40-754 (ppm), Pb = 14- 148 (ppm), As = 8-128 (ppm), Sb = 0.1-9 (ppm). High concentration of Cu and Au associated with high density of veinlets in quartz-sericite-pyrite zone in the center of MA-II area. There is positive correlation is between Cu and Au anomalies and veinlet density. Based on the obtained data, MA-II area is a part of porphyry Cu-Au deposit.

Keywords: Maherabad, Porphyry copper-gold, Quartz-Sericite-Pyrite, Stockwork mineralization, Lut block.