

**BANDED IRON FORMATION DEL BASAMENTO PRE-FAMATINIANO DE SAN LUIS:
PRIMER REGISTRO EN ARGENTINA**

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Abstract

Few layers of Banded Iron Formation (BIF) were found during the mapping of the Western Metamorphic Complex of the Sierra de San Luis. This complex consists mainly of metapelites, metaquartzites, mafic metavolcanics, gneisses, migmatites and amphibolites with minor BIF, marbles and calcsilicates. The deposition of the volcanic-sedimentary sequence as well as the tectonic and metamorphic evolution of the complex probably took place during pre-Famatinian times (Proterozoic?). The NW-SE to WNW-ESE trend of strike is the relictual and typical orientation of the older structural fabric of the region (folds and foliation). The deformation and metamorphic grades vary from prograde greenschist facies, with well preserved protoliths, up to the amphibolite facies. During the Lower Paleozoic Famatinian deformation the pre-Famatinian rocks were retrogressed up to a new greenschist facies and were reorientated to the NNE-SSE trends of strike. The intrusion of the monzonitic Barroso Pluton cut and partially re-arranged the fabric. The BIF appears as scarce and thin layers (<2m thick) of up to —150m of length, interbedded with metaquartzites and quartzitic gneisses. Despite the medium to high grade metamorphism, the BIF still preserves the compositional banding-lamination of the original sequence. The lamination consists mainly of interlayered laminae with variable proportions of magnetite, quartz, garnet, apatite, grunerite and antophyllite-gedrite (?). The preliminary whole rock geochemical features (major elements) of the BIF show normal contents of Fe_2O_3 for this type of rocks and high $Al_2O_3-P_2O_5$, moderate $MnO-CaO$ and low TiO_2-MgO . Electron microprobe analyses of selected mineral grains of the BIF show normal contents of Ti and traces of Cr-Ni-Zn in the magnetite as well as Fe-Mn enrichment/Mg-Ca depletion in the garnets.