Zonation and Macroscopic Mineralogy of Pampano Skarn, Peru

Ivan Eliud Brañes, Carlos Joel Rodriguez, Roger Feliciano Pino, and Juan Carlos Salva

Universidad Nacional de Ingenieria, Facultad de Ingenieria Geologica Minera y Metalurgica,Escuela de Geologia, Lima, Peru

*Corresponding author : e-mail, ivbranesv@gmail.com

The Pampano skarn area, Ica, Peru, is located in the western Cordillera. The host rocks are the Imperial Group, consisting of dark gray limestone and a Lower Cretaceous diorite intrusion of the Pampahuasi Superunit. The skarn deposit has a stage of prograde mineralization of garnet and calcium pyroxene, with restricted retrograde phase.

The mapping shows a zonation, from the intrusion into the host rocks, corresponding to the following:

(a) Intrusion with phaneritic texture and quartz (25%), plagioclase (35%), and biotite and hornblende (<40%).

(b) Exoskarn zone with garnet greater than pyroxene; prograde skarn affects the host rock, although there are some retrograde calcite veins. Garnet and pyroxene are present as subhedral crystals in granular form, and the calcite veins are crystalline.

(c) Exoskarn zone with massive garnet in greater proportion than pyroxene, developed on limestone; garnet is zoned and corresponds to grossularite-andradite, with garnet (70%) and fine-grained calcium pyroxene (15–20%).

(d) Limestones with wollastonite (sample SK-4) have a general structure N80°E. Relict dark limestone (20%) is replaced by well-developed wollastonite and calcite crystals.

(e) Zone of porphyritic andesites (Samples SK-2), which cut the skarn, consisting of hornblende and other phenocrysts (30%), biotite, and epidote veins in an aphanitic matrix.

The study area corresponds to a skarn deposit with garnet, pyroxene, wollastonite, calcite, and marble. The garnets and pyroxene of the prograde zone are interpreted to have formed by infiltration, with later calcite veins due to the intrusion. Wollastonite and calcite recrystallized in contact with marble belong to the distal skarn.