of greenstone belts provided the source of ore matter for the large gold deposits associated with conglomerates. The gold-bearing conglomerates are unique by the involvement of many stages of formation, which are reflected in a large number of minerals (more than 100) with a high gold standard (>1000).

The second group includes gold deposits associated with metamorphic and terrigenic series containing carbonates and graphitic rocks. The major gold concentrators are sulfides and bio-organic matter. The As, Sb, Zn, Pb, Bi, Ag, U, Th, Mo, Ba, Corg (?), Te, and Hg minerals predominate. Supergene processes with the development of the crusts of weathering played an important role in the regions where the deposits of the second groups were formed.

Regarding the platinum group elements in large ore deposits, the authors' noted their exceptional variability: Occurrence in the form of solid solutions and as intermetallic compounds (aurides, stannites, plumbites, bismuthites, antimonides, tellurides, arsenides), and sulfides. Platinum minerals associated with chalcopyrite predominate in large deposits, while palladium minerals predominate in more “poor” deposits. Rhodium concentrates in pyrrhotite ores.

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Mineralogy of carbonates from large-superlarge gold deposits in Shandong Peninsula, N.China

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The mineralogy of carbonates from nine large – superlarge gold deposits in Shandong Peninsula is described below.

1. Wide-spread of carbonates, occurring more than 100m away from the orebody, both in the overlying and underlying wall rocks (in the latter rocks up to over 180 m from the ore body).

2. Multiple species, including calcite, dolomite, ankerite and siderite, but no pure, with common isomorphic substitution of Ca, Mg, Fe and Mn. Calcite contains MnO, FeO, MgO up to 4.64 wt%, 3.80 wt% and 2.58 wt% respectively. Contents of FeO in ferrous dolomite-ankerite are 6.13-20.19 wt% with the contents of MnO up to 4.42 wt%. Siderite contains CaO, MgO, MnO up to 1.88 wt%, 3.91 wt% and 12.07 wt% respectively.

3. Presence of metallogenic chalcopyl elements Zn and Cd, frequently found as isomorphic admixtures, and Au, Ag as mechanical mixtures. Contents of ZnO in calcite, ferrous dolomite-ankerite and siderite are up to 0.36, 0.22 and 4.7 wt% respectively. CdO contents in ferrous dolomite are 0.14-0.30 wt%. Contents of Au in calcite, ferrous dolomite-ankerite and siderite are up to 4.1 ppm, 16.7 ppm and 1.6 ppm respectively. Those of Ag in calcite, ferrous dolomite-ankerite and siderite are 1.8, 1.4 and 2.2 ppm respectively.

4. A very distinct spatial zonation with respect to the orebody: Dissemination of carbonates in the altered wall rocks, combined with veinlets in the proximity to the ore bodies, and mainly as veinlets