DESCRIPTIVE MODEL OF GOLD ON FLAT FAULTS

By Bruce A. Bouley*

DESCRIPTION Disseminated gold in breccia along low-angle faults

GENERAL REFERENCE Wilkins (1984).

GEOLOGICAL ENVIRONMENT

Rock Types Breccia derived from granitic rocks, gneiss, schist, mylonite and unmetamorphosed sedimentary and volcanic rocks. Rhyolitic dikes and plugs.

Textures Chaotic jumble of rock and vein material.

Age Range Unknown. Examples in southern California and southwestern Arizona are mainly Mesozoic and Tertiary.

Depositional Environment Permeable zones: source of heat and fluids unknown.

Tectonic Setting(s) Low-angle faults in crystalline and volcanic terrane. Including detachment faults related to some metamorphic core complexes and thrust faults related to earlier compressive regimes.

Associated Deposit Types Epithermal quartz adularia veins in hanging-wall rocks of some districts.

DEPOSIT DESCRIPTION

Mineralogy Gold, hematite, chalcopyrite, minor bornite, barite, and fluorite.

Texture/Structure Micrometer-size gold and specular hematite in stockwork veining and brecciated rock.

Alteration Hematite, quartz, and chlorite. Silicification. Carbonate minerals.

Ore Controls Intensely brecciated zones along low-angle faults. Steep normal faults in hanging wall. Sheeted veins.

Weathering Most ore is in oxidized zone because of lower cost of recovery. Mn oxides.

Geochemical Signature Au, Cu, Fe, F, Ba. Very low level anomalies in Ag, As, Hg, and W.

EXAMPLES:

Picacho, USCA	(Van Nort and Harris, 1984)
Copper Penny and Swansea, USAZ	(Wilkins and Heidrick, 1982)

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