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Title: THE SUPER-GIANT PEBBLE COPPER-GOLD-MOLYBDENUM PORPHYRY DEPOSIT, SOUTHWEST ALASKA

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Author 1 (CONTACT AUTHOR)

Name: James Lang

Org: Lang Geoscience Incorporated

Country: Canada

Author 2

Name: John Payne

Org: Hunter Dickinson Incorporated

Country: Canada

Author 3

Name: Mark Rebagliati

Org: Rebagliati Geological Consulting

Country: Canada

Author 4

Name: Keith Roberts

Org: Hunter Dickinson Incorporated

Country: Canada

Author 5

Name: James Oliver

Org: Hunter Dickinson Incorporated

Country: Canada

Other Authors: Jason McLaughlin, Hunter Dickinson Incorporated, Canada

jasonm@hdgold.com

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Abstract: The giant Pebble Cu-Au-Mo porphyry deposit is located 380 km west of Anchorage, Alaska. It was discovered in 1989 by Cominco America and since 2001 has been owned and explored by Northern Dynasty Minerals Ltd. Pebble comprises the contiguous West, Central and East Zones. Total resources as of February 2007 were: 1) West and Central Zones, 4.13 billion tonnes @ 0.29% Cu, 0.31 g/T Au and 0.015% Mo (0.30% copper equiv. cutoff); and 2) East Zone, which remains open in four directions, 3.38 billion tonnes @ 0.57% Cu, 0.36 g/t Au, and 0.036% Mo (0.6% copper equiv. cutoff).

Pebble is located in the Kahiltna terrane, near splays off the northeast-trending, crustal-scale, Lake Clark translational fault. The northern Kahiltna terrane is dominated by Late Triassic basalt, andesite and sedimentary rocks overlain by Jura-Cretaceous andesitic turbidites; these were intruded by intermediate to felsic Cretaceous plutons, and capped by Tertiary volcanic and sedimentary units and by Quaternary glacial deposits.

The Pebble district comprises gently folded, upright Jura-Cretaceous andesitic argillite, siltstone and wacke, cut by diorite sills. Diverse Cretaceous intrusions occupy a major northeast-trending structural corridor. Older intrusions (98-96 Ma) have an alkalic affinity and comprise biotite pyroxenite, monzosyenite, and monzonite intrusion breccia. Subalkalic granodiorite intrusions (91-89 Ma) include the mostly fresh Kaskanak Batholith to the west, and smaller granodiorite bodies satellitic to its eastern margin which are genetically related to Cu-Au-Mo mineralization.

The Pebble West and Central Zones extend from surface to ~500 m depth. The East Zone, which extends to at least 1700 m depth, was partially eroded and is concealed by an eastwardly thickening wedge of Paleocene/Eocene volcanic and sedimentary rocks. The West Zone is centered on several small granodiorite cupolas emplaced into a complex of sedimentary rocks, diorite sills, and 96 Ma intrusions and associated breccias. The East Zone encompasses the large Pebble East granodiorite pluton, and sedimentary strata and granodiorite sills that emanate from its western margin. The Central Zone is a peripheral, up-dip expression of the East Zone along these granodiorite sills, and is in fault contact with the West Zone. Mineralization occurs mostly in strong K-silicate alteration dominated by K-feldspar with highly variable biotite and with mostly no to low concentrations of magnetite, and in multi-generational stockworks of quartz-carbonate-sulfide veins. Peripheral, laterally extensive sericitic alteration overprints the margins of the deposit, and propylitic and SCC (sericite-chlorite-clay) assemblages are locally developed. The main ore minerals are chalcopyrite, molybdenite, and native gold found mostly within chalcopyrite. Abundant high-grade, bornite-bearing mineralization was discovered in the core of the East Zone in 2006.