



Chapter 5

Geology and Discovery History of the Money Knob Gold Deposit, Tolovana Mining District, Eastern Alaska

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Abstract

The Money Knob deposit is a major new, bulk-tonnage, gold discovery located 110 km northwest of Fairbanks, Alaska, within the Tintina gold belt. The deposit was discovered in 2007 and by the end of 2009 contained a combined indicated and inferred resource of 389 metric tons (t) of gold at a grade of 0.85 g/t gold using a 0.5 g/t gold cutoff grade. Gold mineralization is hosted within a fold and thrust sequence of Cambrian and Devonian rocks intruded by 90 Ma dikes and sills, which are contemporaneous with the main-stage gold event. Gold mineralization occurs as shallowly dipping, east-west-trending, tabular bodies within permeable sedimentary and volcanic rocks, with higher grade zones related to north-northwest-trending crosscutting structural zones.

The discovery of the Money Knob deposit evolved from a series of exploration programs conducted by eight different companies during a 30-year-long period. An examination of the successes and failures during the exploration history outlines three key concepts that were important in the discovery: (1) the need to operate with multiple, working exploration models that are driven by high-quality data and observations; (2) recognition that large mineral systems are rare and should be fully evaluated in light of potential long-term changes in commodity price, technology, and deposit characteristics; and (3) successful exploration requires a champion and a talented team with vision and perseverance.