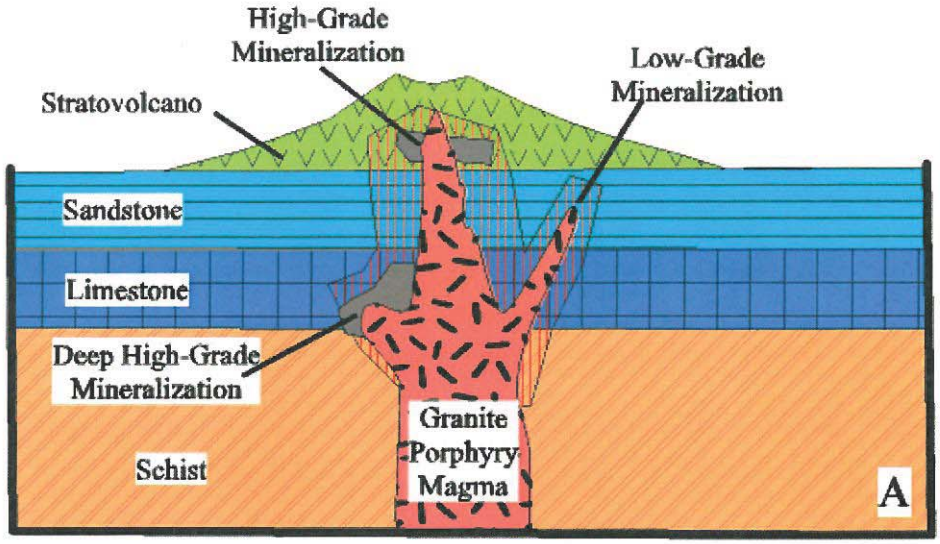
STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

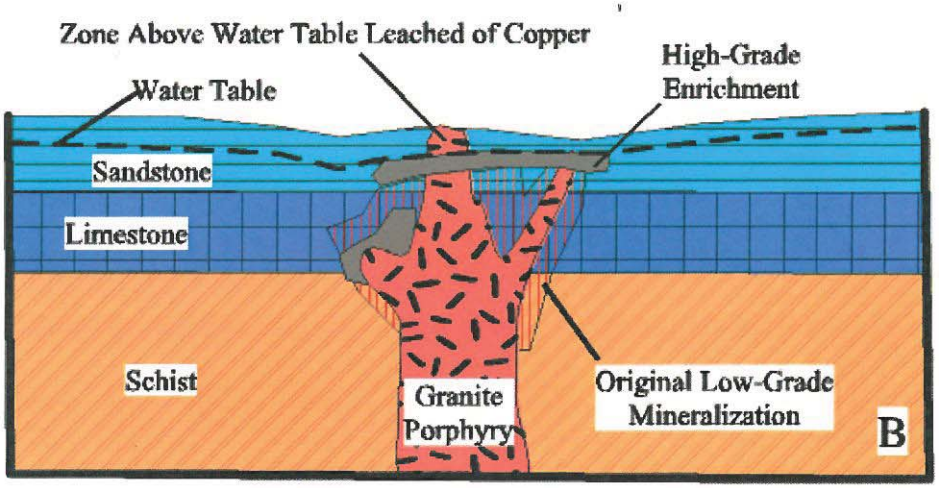
In the Matter of:	)	
PROPOSED AMENDMENT TO 20.6.2 NMAC (Copper Rule)	)	**No. WQCC 12-01(R)**

EXHIBIT LANDE – 5

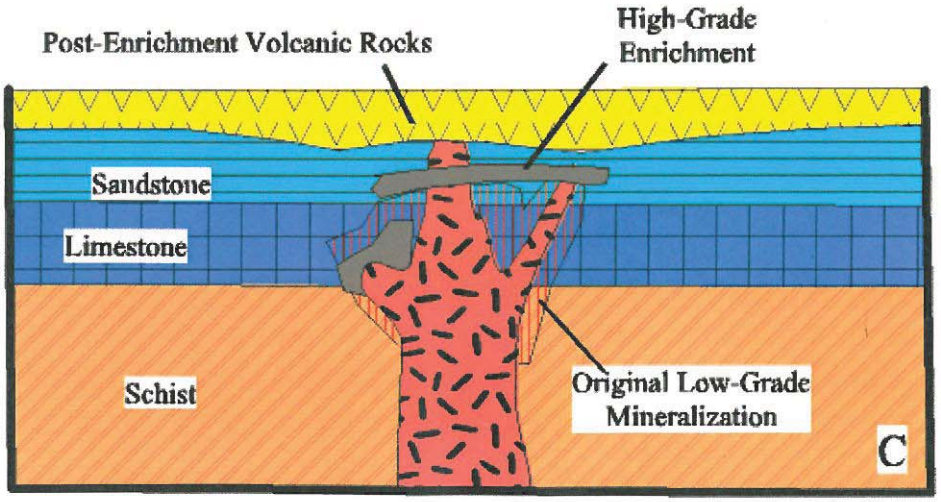
Figure 1. Formation of a Porphyry Copper Deposit



Initial formation of a porphyry copper deposit associated with a magma chamber beneath a stratovolcano. Hot water circulating near the magma forms low-grade copper mineralization next to the solidifying magma. High-grade mineralization forms over the top of the magma and in chemically reactive wall rocks, like limestone.



Erosion removes the stratovolcano and top of the original copper deposit. Rainwater and weathering cause copper to be leached from the top of the deposit and redeposited as the downward-moving groundwater reaches the water table. The resulting enriched zone is commonly high grade and fairly flat.



After erosion and enrichment, the deposit is covered by younger rocks, in this case volcanic rocks. The high-grade enriched zone is protected from further erosion, but now is buried and hidden. The volcanic landscape at the surface may contain few clues to the geological riches that lie at depth. Finding the deposit may require special methods (e.g., geochemical or electrical surveys), a number of risky drill holes, persistence, or luck.