THE SLEEPING GIANT: COPPER–IRON-GOLD SKARN DEPOSITS OF PUMPKIN HOLLOW, YERINGTON, NEVADA

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High grade copper-iron-gold skarn mineralization in the Pumpkin Hollow area southeast of Yerington Nevada has been known for years. Magnetite-rich skarn bodies, commonly greater than 40% iron, hosted by Mesozoic sedimentary and igneous rocks were originally discovered in 1959 by US Steel Corp. using airborne magnetics. Later work by Anaconda and other companies outlined copper rich areas within the system where drilling intercepted grades ranging from 1 to 20 % Cu. A recently completed resource study at a 0.2% copper cutoff now stands at 7.9 billion pounds of copper, 1.2 million ounces of gold, and 57 million ounces of silver. Iron resources at a 10% iron cutoff total 145 million tons of iron.

For a variety of reasons the property has lain dormant for years. Whether exploration was hampered by low copper or iron prices, changing company dynamics, or partial property positions many companies were unable to fully understanding the extent of the mineralization. The mineralization forms manto-like ore bodies hosted in skarn banded hornfels of the Gardnerville Formation, marble and skarn of the Mason Valley Limestone, and endoskarn-altered Jurassic granodiorite. Fine-grained skarn, skarn breccias, and massive magnetite mineralization associated with the Pumpkin Hollow deposits is distal to the Jurassic Yerington Batholith that hosts porphyry deposits in the region: Yerington Pit, Ann Mason, and McArthur deposits.

The sediments of the Gardnerville Formation have been metamorphosed to pyroxene-garnet hornfels and later veined and replaced by epidote-garnet-actinolite-calcite skarn accompanied by chalcopyrite, pyrite, magnetite, and pyrrhotite. Copper mineralization is widely disseminated as well as fracture-controlled, higher grades are found as fracture fillings in skarn breccias. The copper-skarn mineralization within the Mason Valley Limestone appears to follow favorable strata above and at the contact with a large sill of granodiorite endoskarn. Fine-grain massive magnetite mineralization replaces marble and extends hundreds of feet into underlying calcic endoskarn. Sulfides are disseminated throughout the magnetite and are particularly concentrated; in strata-bound skarn-breccia zones, at the endoskarn-marble contact, and at the replacement front between marble and magnetite. Late stage talc is present peripheral to and locally over-prints copper mineralization. A later stage of chlorite + calcite + pyrite veining overprints the entire system.

The early magnetite-hosted endoskarn resembles island-arc calcic magnetite skarn deposits with low-grade disseminated chalcopyrite and elevated cobalt. The higher grade copper mineralization with accompanying gold and silver is typical of porphyry-related skarns. These deposit types are consistent with the district setting of Jurassic porphyry mineralization in a terrane of Triassic through Jurassic island arc and related sedimentary rocks.