

An Investigation of Rebecca Vein (REBA) Gold Mineralization, JP Ross Property (JPR), Yukon Territory

JCM Alexander¹, M Cooley¹, R Harrap¹

¹Geological Sciences, Queen's University, Kingston, Ontario;

The gold-bearing Rebecca vein is an east-southeast-striking, south-southwest-dipping brecciated hydrothermal quartz vein located 50 km south of Dawson City in the Yukon's White Gold District of the Dawson Range Mineral Belt. The White Gold District lies within the Intermontane Yukon Tanana terrane of the west-central Yukon Territory, which is confined by the northwest trending dextral strike-slip Tintina Fault to the north, and by the northwest-trending dextral strike-slip Denali Fault to the south. A few gold occurrences in this area (Golden Saddle deposit of White Gold Corp., VG occurrence of Comstock Metals Ltd., and possibly others) are interpreted to occur in close association with apparent sinistral strike-slip faults that were mineralized by a middle-to-late Jurassic orogenic event (170-150Ma). The REBA vein occurs within the JP Ross property of White Gold Corp., and a recent regional structural summary for the JPR property and surrounding areas interprets that many early-formed, originally north-east-trending sinistral strike-slip faults, which were conjugate faults within the northwest-striking regional dextral system, have since been rotated clockwise into locally east-west trends. It is hypothesized that the Rebecca vein may have formed within a northeast-striking sinistral strike-slip fault that has subsequently rotated into its present azimuth. It is uncertain whether normal-dip-slip or strike-slip faulting contributed to gold mineralization, however, preliminary interpretations of televiwer data suggest mineralization occurred during a normal faulting event. To clarify the structural control on mineralization, this study has incorporated optical televiwer technology with geochemical assay data interpreted in the borehole logging software WellCAD. Preliminary results from structural interpretation of borehole imagery suggests a steep intersection of altered fracture and foliation families with shallow mineralized quartz veins coincident with geochemical spikes in Au and associated elements. The hydrothermally altered veins appear to be following the fracture alteration families which intersect foliation. Further evaluation of the shear system will determine what type of displacement contributed towards gold mineralization. This will be assisted by thin section analysis of a prospecting sample taken from the vein. The revised structural history and established relationship to mineralization will contribute to future exploration efforts in the JP Ross property. Determining the relationship between faults and mineralization in this way is an interpretive method novel to the mineral exploration industry.