

Characterisation of Gold Mineralization at the West Porphyry Zone, Taylor Deposit, Matheson, Ontario

**L.D. Lepage¹, J.L. Wilson¹, L. Abbott¹, D. Cater², C. Todd², B. Harwood²,
R.L. Flemming¹, R.L. Linnen¹, N.R. Banerjee¹**

¹Department of Earth Sciences, University of Western Ontario, London, ON, Canada; ²St Andrew Goldfields Ltd., Toronto, ON, Canada;

Abstract

The Taylor project is located 53 km east of Timmins, Ontario and is owned by St Andrew Goldfields Ltd., a Canadian based gold mining company. The West Porphyry Zone, discovered and first drilled by Hollinger in 1962, is a vein type gold deposit within extensively altered host rocks with two stacked zones of gold mineralisation that were outlined by drilling and bulk sampling. Within the bulk sample there appear to be two types of intrusive rocks, as identified in the field: quartz-feldspar porphyry and albitite. The albitite, however, may not be a separate igneous lithology but may instead be formed through intensive alteration. The bulk of the mineralization is hosted in a bright “green carbonate” unit consisting of fuchsite-carbonate altered ultramafics. This is further complicated by the presence of olive green sericitic altered units of debatable origin. The geometrical relationship between the mineralised zones is not yet obvious and a better understanding of the gold mineralising system would provide a new model to help better define new drill targets and assess the potential of the deposit. Detailed analysis of 14 samples from 10 different representative lithologies, by geochemistry, petrography and XRD has already provided some understanding of the alteration, primary lithological distribution, and gold distribution characteristics. Another 26 underground samples were collected and pulverised for gold assays, XRF analyses for major and trace elements, and bulk mineralogy by XRD. Plots of major oxides versus silica suggest both igneous differentiation trends as well as evidence of alteration. Several trace elements exhibit similar correlation with Au suggesting these elements were mobilised together and may have potential as pathfinders for gold mineralisation. There is also preliminary geochemical evidence that mafic and ultramafic rocks are good hosts for mineralisation. Further work will better identify and characterise the alteration minerals and the potential source fluids.