

## **SCHEELITE BEARING VEINS WITH ENRICHMENT OF LIGHT RARE EARTH ELEMENTS (LREE'S) FROM HUTTI GOLD MINES, EASTERN DHARWAR CRATON, INDIA**

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### **Abstract**

India has a >200 years long history of gold mining and the giant Kolar Gold Fields in the Eastern Dharwar Craton (EDC) which had previously produced >1000t of Au from gold ore zones, strongly indicate that the geology is eminently favourable for hosting large amounts of native gold along with multi-minerals (Silver, Tungsten and Cobalt) and Light Rare Earth Elements (LREE) as well as invisible gold in pyrites. We have used an in-situ technique, Laser Ablation-Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS) to analyse the Scheelite occurring within quartz veins within the alteration zones of the world class Hutti Gold Mine of M/s. Hutti Gold Mines Co Ltd (HGML) in the EDC. The scheelite samples from Hutti are enriched in light rare earth elements up to 10.93 ppm and depleted in heavy rare earth elements up to 6.13 ppm, coupled with positive to negative Europium anomalies. The total REE (\* REE +Y) in the scheelite samples is 35.34 ppm and the ratio of LREE/HREE is 1.72. Scheelite REE binary pattern shows a positive correlation between MREE and HREE suggesting a strong influence of granitic fluids and data suggest that the Hutti deposit corroborates petrogenetically well with the Archean gold deposits occurring in Canada, Australia and China.

*Keywords:* EDC, Hutti Gold Deposit, Scheelite, REE, Scanning Electron Microscopy, Laser Ablation-TCP.