Fluid Inclusion Analysis of Auriferous Type 2 & Type 3 Veins Across the Estelle Pluton Complex

Elizabeth Freeman, Claudia Cannatelli
University of Alaska Anchorage

Introduction

- Favorable market conditions and high spot gold prices have created a renewed interest in the mining districts located about 170 km northwest of Anchorage in the South-Central Alaska Range

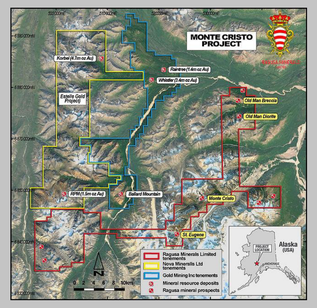

Fig.1 Project areas for Nova Minerals (Estelle), Gold Mining (Whistler), and Ragusa (Monte Cristo) (Ragusa Minerals, 2023)

- In 2011, an ore characterization study was conducted which identified two primary vein types associated with mineralization

Background

- Fluid Inclusion Assemblages (FIAs) observed in the 2011 study suggest ore fluid genesis for Type 2 and 3 auriferous veins

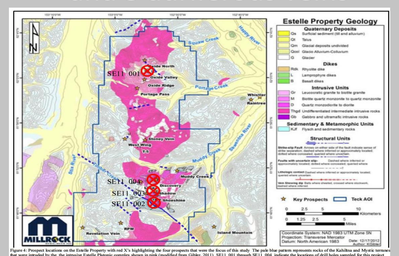

Fig.2 Previously sampled prospects in the Estelle plutonic complex (Flagg, 2014)

- FIAs observed show consistent distribution across the Korbel and Discovery prospects

Objectives

- Determine and quantify trace element composition in selected fluid inclusions across the Estelle property
- Analyze fluid inclusions of Type 2 and Type 3 veins for nanoparticles of gold

Methods

To ensure a thorough and systematic petrographic study, samples will be characterized by vein
- assemblage and cross cutting relationship of veins based on characterization described in Flagg (2014)

Descriptions of the samples will include qualitative observations and quantitative mineral abundances
- by using Laser Inductively Coupled Plasma- Mass Spectrometry (LA-ICP-MS) on individual fluid inclusions (Randive et al.,2014)

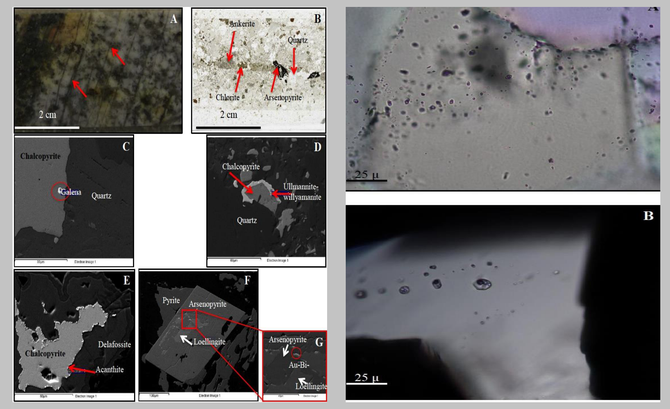

Fig.3 Polished section image of Korbel sample displaying a mineralized Type 3 vein, and associated fluid inclusion assemblage (A) (Flagg, 2014)

Discussion

- The Estelle project requires a more extensive study due to its current feasibility as a profitable development mineral project

- Results from Flagg (2014) ore characterization study were successful in identifying Type 2 and Type 3 veins that contain the gold mineralization across the Estelle property (Fig.3)

- Using similar methods will ensure additional knowledge and provide insight into vein styles and mineralization trends

Fig.4 Previously sampled prospects in the Estelle plutonic complex are denoted by a green checkmark. Note that RPM North which contains Bonanza grade gold remains under sampled. (Nova Minerals LTD,2023)

References

Flagg, Ember, "Ore Characterization of the Estelle Property in the South-~Central Alaska Range" (2014). *UNLV Theses, Dissertations, Professional Papers, and Capstones*. 2082.

Kirtikumar & Hari, K.R. & Dora, M.L. & Malpe, D.B. & Bhondwe, Abhijeet. (2014). Study of Fluid Rand Inclusions: Methods, Techniques and Applications. Gondwana Geological Magazine. 291. 19-28.