Workshop Schedule (Preliminary)

WS01 - Epithermal Polymetallic Deposits in the Porphyry System

www.seg2019.org/workshops.html#1

Date: Sunday, October 6, 2019
Time: 8:30am - TBD
Location: Sheraton Hotel
Presenter: Lluís Fontboté
University of Geneva, Switzerland
Language: Spoken: Spanish
Slides: English

This workshop will focus on the late epithermal, sulfide-rich polymetallic "Cordilleran" stage in upper parts of many porphyry systems. During this stage, large Zn-Pb-Ag-±Cu±Au deposits may form (e.g., "main-stage veins" in Butte, USA; Morococha, Julcani, Colquijirca, and Cerro de Pasco, Peru; Bor, Serbia). In other cases, this epithermal polymetallic stage is recognized but is not economic (e.g., Chuquicamata and La Escondida, Chile). Correct characterization and interpretation of mineralization, alteration, and zoning of this mostly epithermal polymetallic stage is essential to evaluate potential for base metals and is useful during exploration for hidden porphyry deposits.

This workshop will include an overview of the main characteristics of hydrothermal fluids, metal transport, and precipitation mechanisms, focusing on fluid evolution in porphyry systems to explain, under certain conditions, endowment of base metals in late epithermal stages. This introductory part will put in context the genesis of epithermal base metal deposits as part of the evolution of porphyry systems, along with that of porphyry Cu, skarn, and precious metal epithermal deposits. Polymetallic Cordilleran deposits show a consistent three-stage evolution that reflects, in the ideal case, transition from low to intermediate or high sulfidation conditions. Particular attention is placed during the workshop on to how to recognize these stages and their zoning in the field on the basis of key mineral assemblages and fabrics. Case studies allow for visualization of different deposit architecture and understanding of fluid evolution and base metal transport and precipitation. Discussion about transitions to other types of base magmatic-hydrothermal metal deposits and implications for exploration constitute the last part of the workshop.

(continued on next page)

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Sunday, October 6, 2019

- 8:30am - 10:00am: Basics of hydrothermal fluids and base metal transport and precipitation mechanisms
- 10:00am - 10:30am: Break
- 10:30am - 12:00pm: Porphyry-related epithermal polymetallic (Cordilleran) deposits: General introduction with focus on field observations
- 12:00pm - 1:00pm: Lunch
- 1:00pm - 2:30pm: Case studies in the Andes with focus on different deposit architecture
- 2:30pm - 3:00pm: Break
- 3:00pm - 3:45pm: Transitions to and comparison with other magmatic-hydrothermal deposits
- 3:45pm - 4:30pm: Exploration implications