Epithermal deposits: geological characteristics and genetic processes for exploration and discovery

One day short course, Sunday 17 November

Presenter

Stuart Simmons at stuart@hotsolutions.co.nz

Short course description
Epithermal deposits are diverse and attractive exploration targets for precious metals because they can contain high metal grades and large resources, and they can overlie deep porphyry mineralization. This course focuses on the geological characteristics of epithermal deposits, their hydrothermal alteration patterns, and the processes that produce them. The topics include: geological settings and controls on mineralization, hydrothermal minerals and their zonation, precious-metal transport and deposition, spatial and temporal scales of mineralizing processes, exploration strategies, and case studies. Emphasis is placed on understanding the exploration potential of a project and the depth-level of erosion.

Short course schedule
8:00-10:00 am  Characteristics of epithermal ore deposits
10:30-12:00 pm Active geothermal systems: chemical & thermal structure
12:00-1:00 pm  Lunch
1:00 to 2:00 pm  Gold (silver) transport and deposition
2:15 to 4:15 pm  Hydrothermal alteration and mineral zonation patterns
4:30 to 5:00 pm  Exploration considerations
**Stuart Simmons**
Stuart is a Research Professor (Geology and Geological Engineering, Colorado School of Mines) and a consulting geoscientist, with >30 years of research/teaching experience on hydrothermal processes, epithermal mineralization, and geothermal resources. He has a PhD in Economic Geology (University of Minnesota), and much of his professional career was spent in New Zealand, at the Geothermal Institute, University of Auckland. As a consultant, he serves clients around the Pacific rim in the exploration and development of gold-silver and geothermal resources. For more information see www.hotsolutions.co.nz.

**Minimum number of participants:** 10

**COST:** $160. Cost includes morning and afternoon coffee/tea and lunch.

**FURTHER INFORMATION:** Email Stuart Simmons at stuart@hotsolutions.co.nz
Depth level zonation-epithermal deposits

Enargite ± Au
Alunite-kaolinite Au ± Cu
Adularia-illite Au ± Ag
Propylitic alteration

Volcanic domes & cones
Hot springs & fumaroles
Barran alteration blankets
Cretaceous veins, breccias & disseminated
Dikes & intrusions

Empire Vein, Golden Cross, New Zealand