An Explorer’s Guide to Hydrothermal Alteration in the Yilgarn

A Centre for Exploration Targeting Course

7 - 8 February 2013
This course is aimed at the most important cog in the exploration wheel - you! Many geologists do not have the luxury of scanning the globe for their next project, but are confined to a group of tenements with responsibility for logging drill chips and core, mapping outcrops and generating drill targets.

An Explorer’s Guide to Hydrothermal Alteration in the Yilgarn Craton has been specially designed to combat this difficult issue by providing a review of hydrothermal alteration in the Yilgarn craton, with an emphasis on applications to gold exploration.

Run over two days this course will combine morning lectures and afternoons of practical, laboratory-based study using specimens from a range of gold deposits, including those in the Laverton, Leonora and Southern Cross districts. This course was originally developed for in-house training at Sons of Gwalia but has subsequently been delivered at several Western Australian mine sites, as well as expanded to include results of recent work carried out in completion of The Yilgarn Gold Targeting Atlas for the Geological Survey of Western Australia. Topics covered include:

— The basics of hydrothermal alteration.
— Recognition of the most common types of alteration in the Eastern Goldfields Superterrane.
— Recognition of the most common types of alteration in the Southern Cross district.
— Integration of geochemistry and hydrothermal alteration to gold exploration in the Yilgarn craton.
— Which geochemical parameters provide a vector to gold mineralisation that extends beyond visible alteration and the low-level gold anomaly?
— Gold deposits in the context of district-scale zoning; trace element chemistry and spectroscopic analysis of white mica in the identification of “Oxidised” and “Reduced” hydrothermal cells - alternatives to the fluid mixing paradigm.
— Syenite and porphyry-hosted deposits, sodic alteration and hematitisation.
PRESENTERS

Walter Witt
Dr Walter Witt has had forty years of experience in geological mapping, exploration, target generation and economic geology in Government, Industry and Academic sectors. Since 2005, he has consulted to Industry as The Walter Witt Experience. Most of this work has taken place in the Yilgarn craton but Dr Witt’s experience extends to Papua New Guinea, China, Democratic Republic of Congo, Botswana, Tanzania and Peru. In addition to gold exploration, Dr Witt has been involved in nickel, base metal (Cu, Pb, Zn) and rare earth element (carbonatite) exploration.

Steffen Hagemann
Prof. Steffen Hagemann is currently a Deputy Director of the Centre for Exploration Targeting at UWA. He has 23 years of experience in research of metallogenic ore deposits (Au, Fe, Ni, Cu, Zn), mainly in Australia, South America, Africa and Asia. He has also consulted to a variety of companies and governments. His research deals with the structural control, hydrothermal alteration and fluid flow in metallogenic deposits. He has lately used mineral system analyses of gold and iron deposits to develop robust exploration models.

Lydia Lobato
A geology graduate of Rio de Janeiro-Brazil in 1978, Dr. Lobato finished her Ph.D. in 1985 at the Univ. of Western Ontario-Canada, with Dr. William Fyfe. After a long period at the Brazilian state uranium company Nuclebrás, she joined the Geology Department at the Minas Gerais Federal University in 1988, teaching subjects on economic geology and supervising M.Sc. and Ph.D. students. Her career is dedicated to the study of hydrothermal mineral deposits, with emphasis on gold in Archaean and Proterozoic metavolcano-sedimentary sequences, especially in the greenstone belt terrane of the Quadrilátero Ferrífero region, but also hydrothermal-metasomatic BIF-hosted iron-ore deposits, manganese, copper and uranium. She interacts closely with the mining and exploration industry by way of receiving financial research support, offering applied courses and, at times, consulting, including various areas in Brazil, and also countries in South America, as well as Tanzania and Australia.

Paul Duuring
Paul is an Associate Research Professor at the Centre for Exploration Targeting, University of Western Australia (UWA). He has worked as a Postdoctoral researcher at Monash University (Melbourne), University of British Columbia (Canada), and Pukyong National University (South Korea) before joining UWA in 2009 to begin working on iron ore and VMS-style mineralisation in Western Australia. Paul has published internationally on hydrothermal alteration associated with the Tarmoola and Jupiter gold deposits as well as the Weld Range iron ore deposits, all in the Yilgarn craton. He has published on the structural modification of nickel sulphide deposits in the Agnew-Wiluna belt, W.A., as well as porphyry Au-Cu-Mo and epithermal Au-Ag deposits in British Columbia, Canada.

For more information please contact Cindi Dunjey at cet-training@uwa.edu.au, phone +61 8 6488 2640 or see www.cet.edu.au/education-and-training.
REGISTRATION FORM
AN EXPLORER’S GUIDE TO HYDROTHERMAL ALTERATION IN THE YILGARN

Please complete this form and either email cet-training@uwa.edu.au, fax (08) 6488 1178 or post to The Centre for Exploration Targeting, M006, The University of Western Australia, 35 Stirling Highway Crawley, WA 6009.

CONTACT DETAILS
This course will run from 7 to 8 February, 2013.

Title: ______ First Name: ___________________________
Surname: ___________________________________________________________________________

PAYMENT SCHEDULE

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Please specify dietary requirements _______________________________________

PAYMENT DETAILS

☐ Cheque: please enclose a cheque payable to the Centre for Exploration Targeting, UWA
☐ Visa Card ☐ Master Card

Card No.: ___________________________ / ___________________________ / ___________________________ Security No.: ___________
Cardholder’s Name: ___________________________________________________________________________
Expiry Date: _________________________________________________________________________________
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**Please ensure adequate credit limit for corporate cards.

REFUND POLICY

a. Any money transferred to UWA / CET will be fully refunded prior to and including the 31 January 2013 upon request.
b. After this date refunds will be individually negotiated by the CET Business Manager, CET Director & Academic Coordinator and will only be permitted under exceptional circumstances.