

Gold course has record numbers

by Professor Neil Phillips, VIEPS Geology of GOLD Course Leader, FAusIMM

VIEPS Geology of GOLD was held in the first week of April continuing a tradition that started with the precursor course, VicGold, in 1995.

The week started with an overview of the gold industry and gold's behaviour in nature including chemical and physical controls. There was a focus on viable mechanisms to give the 1000-fold enrichment needed to turn several parts-per billion level of gold in the average Earth crust to the several parts-per-million level needed to form an economic ore deposit. The achievement of such extreme enrichments for gold without enriching base metals (copper, lead, zinc) in the same process provided important limits on likely processes.

A field trip to Ballarat - Bendigo gave many students their first real taste of active mining. Students witnessed first hand gold operations at Ballarat, old deep lead mine sites, exploration drilling in the Castlemaine goldfield, underground geology in Bendigo, and open pit mining and bio-oxidation processing at Fosterville. Lihir Gold Ltd, Castlemaine Goldfields Ltd and Northgate Minerals Corp. are thanked



Monash Honours students in a small open pit in Bendigo (20 Moz goldfield) estimating likely gold production from the pit and studying the quartz veins and their weathered alteration haloes.

for facilitating various aspects of the field trip. CSIRO Minerals, Newcrest Mining Ltd, The AusIMM, University

of Melbourne, Monash University and AMIRA Data Metallogenica all provided assistance to the course.



Students gathered around the bus outside the new Lihir offices in Ballarat. How a company operates inside a major city was one of the learning experiences from this visit. Ballarat has produced 10 MMoz since mining started in 1851.



Honours student Frances Parkhowell enthusiastically explaining some geology to course leader, Dr Martin Hughes (centre) surrounded by the three New Zealand participants - Matt (left), Katie (2nd from left) and Andrew (2nd from right). In the background are the old deep lead workings of the 2 MMoz Creswick goldfield.



Wes Edgar (explaining core features) and Gary Scanlan (obscured) were hosts at their exploration site at Wattle Gully mine, near Castlemaine. Wes is describing the deep drilling to search for new mineralisation in this 5 MMoz goldfield.



Looking at core at Fosterville gold mine to supplement earlier views of the regolith profile in the open pit. Quartz veining is scarce in the open pit profiles and throughout early mining, but it well expressed in some core intersections.

The second component of the lectures involved a systematic coverage of the main gold deposit types including Witwatersrand, greenstone, slate belt, epithermal, porphyry, Carlin, placer and iron-oxide copper-gold-uranium styles.

As in previous years, industry participants from Victoria and New Zealand added an important dimension to the course and an experienced commercial edge.

Dates for next 2009 VIEPS Geology of

GOLD are 30 March to 3 April 2009.

**VIEPS: The Victorian Institute of Earth and Planetary Sciences is an alliance between geoscience groups at Melbourne, Monash and Ballarat universities. ■*