



# Association of Applied Geochemists

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## 26<sup>th</sup> INTERNATIONAL APPLIED GEOCHEMISTRY SYMPOSIUM – ROTORUA, NOVEMBER 2013

The 26<sup>th</sup> International Applied Geochemistry Symposium (IAGS), incorporating the 35<sup>th</sup> New Zealand Geothermal Workshop (NZGW), was held at the Rotorua Convention Centre on 18–21 November 2013. Registrations included 536 delegates attending the technical programme (275 IAGS and 261 NZGW, including 104 students), 22 exhibitors and 34 accompanying persons, representing 31 countries.



Audience at the opening session in the Rotorua Convention Centre Theatre

The technical programme commenced with a plenary session of four keynote presentations on the geology, geothermal systems and geothermal mineralisation of the Taupo Volcanic Zone. Subsequently, the programme split into separate IAGS and NZGW plenary and concurrent sessions, with a total of 32 keynote, 222 oral and 55 poster presentations. There was a maximum of three concurrent IAGS sessions. The IAGS sessions included 6 sessions sponsored by the Society of Economic Geologists with some notable international speakers, such as Richard Arculus, Stephen Cox (both Australian National University), Rich Goldfarb (U.S. Geological Survey), David Groves (University of Western Australia), Iain Pitcairn (Stockholm University), Terry Seward (Victoria University of Wellington) and Stephen Turner (Newmont). The conference ended with a keynote presentation on wine terroir by Larry Meinert (U.S. Geological Survey), who explained why the Gimblet Gravels area in Hawkes Bay produces great wine. Apparently Gimblet Gravels is the only appellation in the world defined by a geological unit.

Eight short courses and workshops and 11 pre- and post-conference field trips were run in association with the IAGS/NZGW. All field trips were blessed with great weather. Short course registrations ranged from 8 to 29, whereas field trip participation ranged from 5 to 31 with the low numbers of the range representing the helicopter trips to White Island. An accompanying-persons programme provided tours on five days, beginning on Sunday.

The meeting had social functions on each evening, providing plenty of opportunity for networking. Sunday was the Powhiri and Welcome function. Monday was a 'Students Meet Industry' evening, but open to all. More than 320 attended the Tuesday night conference dinner held at the Blue Baths, a very attractive and historic venue. Wednesday night provided a choice of three activities: the Tamaki Maori Village Hangi and concert, attended by more than 80 of the overseas delegates, a pub crawl with more than 100 participants, and the Hydrothermal Fluid Society wine tasting attended by 27, with 83 bottles of wine up for tasting! Eighty delegates attended the Thursday evening farewell dinner poolside at the Millennium Hotel.



More than 320 attended the conference dinner at the Blue Baths.

The 2013 conference was a real departure from the norm for the biennial IAGS, because of the incorporation of the NZGW and SEG sessions. Positive responses from the delegates indicated that the combined conference was a great success.

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## RECENT ARTICLE PUBLISHED IN EXPLORE

**YULIA A. UVAROVA, JAMES S. CLEVERLEY, AARON BAENSCH, MICHAEL VERRALL (2014) Coupled XRF and XRD analyses for rapid and low-cost characterization of geological materials in the mineral exploration and mining industry. EXPLORE 162 (March 2014)**

A set of 200 pulps from a diamond drill hole at the Brukunga pyrite mine, South Australia, was analysed by portable X-ray fluorescence (pXRF) spectrometry and portable X-ray diffraction (pXRD). The corresponding diamond drill core was logged and the analytical data were interpreted in light of the logging data. The rocks intersected by the drill hole are fine-grained greywackes, quartzites, siltstones and pyrite- and pyrrhotite-bearing siltstones of the Nairne Pyritic Formation, in places intruded by dolerite dikes. The drill hole intersected the main pyrite-pyrrhotite ore body from 130 to 280 m and a number of thin zones with iron sulfide veins. Portable XRF and XRD analyses were performed on powdered material using an Olympus Delta Premium pXRF and Terra pXRD instruments. The pXRF data show that sulfide veins and main mineralisation are evident as sharp increases in Fe and S contents, whereas dolerite dikes are distinguished by well-defined peaks in Ca. The assemblage quartz-feldspar-biotite-muscovite  $\pm$  actinolite  $\pm$  chlorite  $\pm$  pyrite  $\pm$  pyrrhotite was identified in all samples studied with pXRD, and mineral percentages were quantified. Sulfides were identified in samples from the mineralised zone and veins, and actinolite was identified in samples from dolerite dikes. Our study shows that coupled portable XRD-XRF analysis offers rapid and low-cost characterization of geologic materials for mineral exploration and the mining industry and delivers elemental and mineralogical information of high quality. The integrated data can then be used to constrain lithologies and contacts between various units, hydrothermal alteration and ore types.

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