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Anchors aweigh for new gold model

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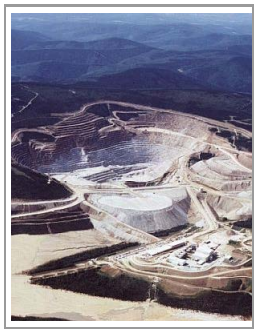
IT'S NOT often a new model for gold deposits is brought into the country, so recent talk by Anchor Resources about a new class of intrusion-related gold systems (IRGS) is worth a closer look. By David Upton



IRGS first appeared in the literature in 1999 and has taken off in the past decade.

Its proponents claim IRGS now account for about 18% of the world's gold reserves, and is growing by an impressive 10 million ounces a year. That's due to new discoveries, not the reclassification of existing deposits.

As the name suggests, the gold in an IRGS deposit is related to a host granitic intrusion, typically in a tectonic setting well inboard of a convergent plate boundary. The gold is found in sheeted quartz veins typically up to 1cm thick.

All the gold is in the veins, which typically grade in excess of 20 grams per tonne. The host rock is barren and shows remarkably little alteration or mineral zonation.

The economics of an IRGS deposit are therefore a function of the quartz vein density. The overall grade of mined material often averages less than 1gpt, however one discovery has averaged more than 30gpt.

According to the researchers, IRGS has distinctive differences from orogenic gold deposits, which most famously include the historic goldfields of Victoria. This includes a frequent association with tin and tungsten deposits.

The world epicentre for IRGS is the Tintina gold belt, stretching about 1500km across Alaska and into the Yukon of Canada's northwest.

The Fort Knox deposit was one of the first to be identified as an IRGS orebody. Open-cut mining of a resource of 9.2Moz began in the mid-90s, with Canada-based Kinross Gold Corporation buying 100% of the operation in 1998.

In 2013, the mine hit record production of 425,000 ounces and generated an operating profit of more than $US250 million, despite an average grade of less 1gpt.

Kinross recently reported Fort Knox remaining proven and probable reserves of 183 million tonnes at a grade of 0.49gpt gold at December 31, 2013.

IRGS deposits can also have their problems, as Novagold and Barrick have discovered with their equally owned 45Moz Donlin gold deposit in southwest Alaska.

For such a large deposit, Donlin has a high grade of more than 2gpt, but the gold is associated with

arsenopyrite and the partners have struggled with high development costs and environmental challenges.

The Australian connection with IRGS is Dr Craig Hart, a Canadian-born geologist who earned his PhD under the internationally renowned gold geologist Professor David Groves at the University of Western Australia.

For the past 15 years, Hart has been a research geologist based in Canada with a focus on IRGS-style deposits. He is currently with the Mineral Deposits Research Unit at the University of British Columbia in Vancouver.

Anchor Resource's consulting geologist, Graeme Rabone, was the first to see possible IRGS characteristics at some of the company's prospects in the New England Fold Belt, about 50km inland from Coffs Harbour.

A soil geochemical sampling program in 2011 at the Blick's gold project identified encouraging, widespread gold and base metal anomalies associated with multiple intrusives in a northeast trending zone known as the "Tyringham Corridor".

In November 2012, Hart agreed to make a site visit and concluded the Tyringham West and East gold prospects were strong analogues with the Fort Knox deposit.

A third prospect known as Tuting discovered by Anchor's systematic exploration along the Tyringham Corridor is somewhat enigmatic. It has a strong geochemical signature of a large porphyry tungsten-molybdenum±copper, right next door to an IRGS gold-bismuth-tellurium geochemical signature.

Rabone said the IRGS model "has been extraordinarily successful in being able to apply a lot of pragmatic aspects to successful exploration.

"I think the potential in Australia is encouraging. This style is not well understood here, but there are at least two local deposits that fit the IRGS model.

"The largest of these is the 3.5 million ounce Kidston mine, which has all the hallmarks but was mined out before the IRGS model was developed.

"The other deposit is known as Timbarra, near Tenterfield, with a resource of about 400,000 ounces. Development of the project was curtailed because of environmental issues."

Anchor is hoping it can drill some higher grade intersections at its Tyringham prospects to lift the count of IRGS deposits in Australia.

Managing director Ian Price said the company's geological team went to Canada in May this year to review the latest results with Hart and develop some of the next steps in the exploration program.

"We have yet to find the higher grades, but with persistent drilling and a bit of luck we believe we will get there," Price said.

The best result so far has been 20m at 0.41gpt gold from TDD-007 at Tyringham East.

Price said the region hosted a number of old mines including the Dundurrabin copper mine and Navin arsenic mine.

"We have found many old workings dating back we believe to 1890s. It's old logging country in hilly

terrain and not easily accessible which has contributed to the limited amount of historic exploration."

Anchor has enough backing to make a concerted effort at finding its own large tonnage, low grade IRGS deposit, thanks to the support of its 97% shareholder, China Shandong Jinshunda Group.

The parent recently increased a credit facility for Anchor from $A8 million to $13 million, with repayment not due until early 2017.

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