



## First visible gold: Aurora Tank

---

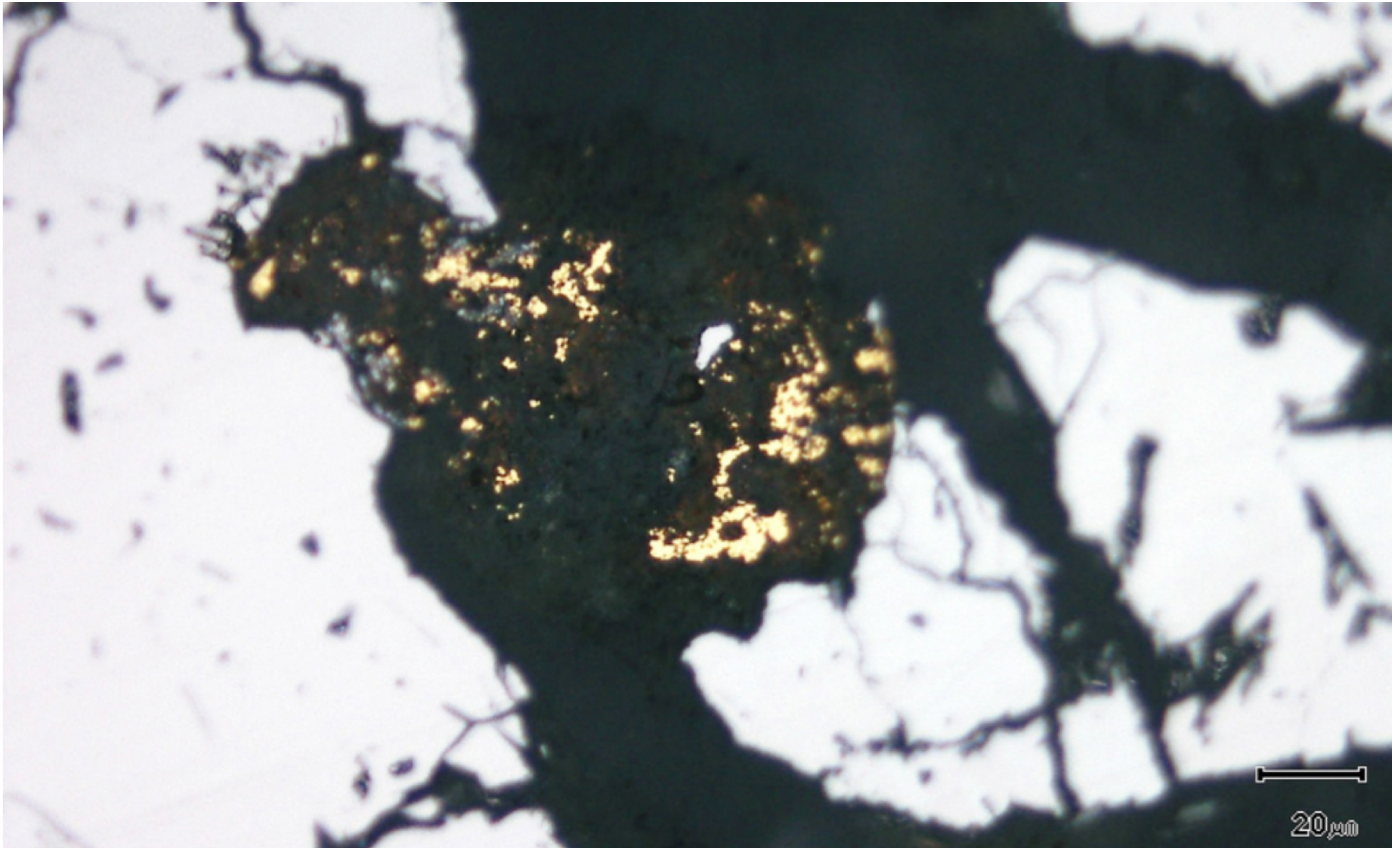
Marmota Limited (ASX: MEU) ("Marmota")

Marmota is very pleased to announce the first recordings of **visible gold** at Aurora Tank, from multiple samples.

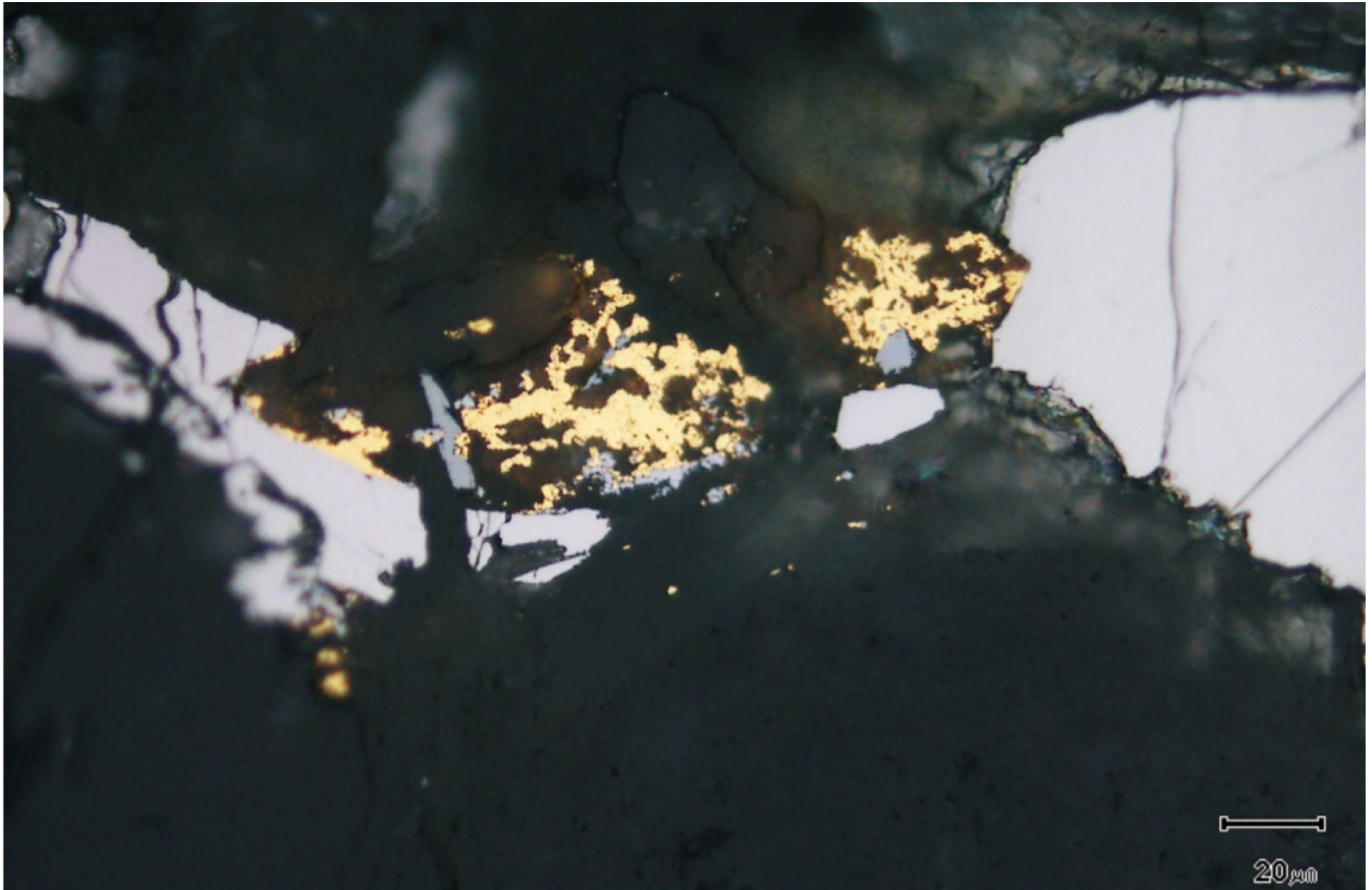
### Key Points

Fourteen samples of drill core from the recent diamond drill program [ [ASX:MEU 12 Jan 2018](#) ] at Marmota's Aurora Tank Gold Project (Goshawk) were examined by *optical microscopy* to facilitate a petrographic assessment of rock types, and also a *mineragraphic scanning* in reflected light to identify opaque minerals (including gold).

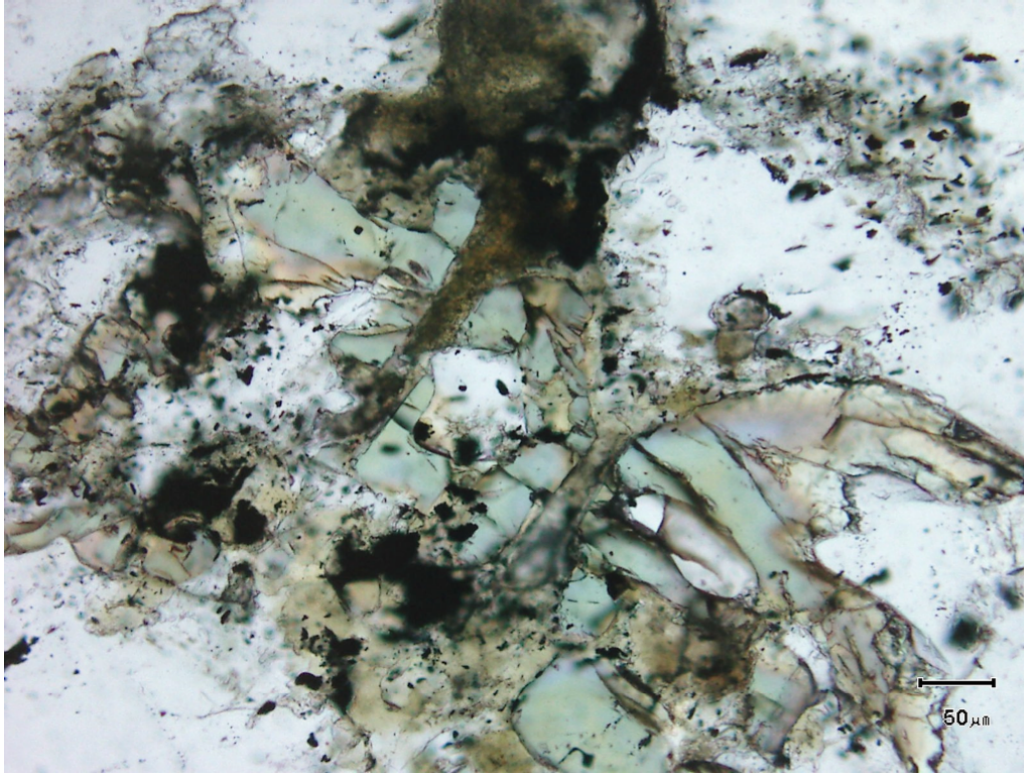
- 10 of the 14 samples examined reported highly anomalous gold from 5.9 g/t to 43 g/t gold
- **Visible gold** was seen by reflected light microscopy **in eight of these ten samples**
- The most common host mineral is quartz (with inclusions of gold alone or associated with indefinite clay). Most of the quartz host is interpreted as hydrothermal vein quartz, and **the gold therefore regarded as primary.**



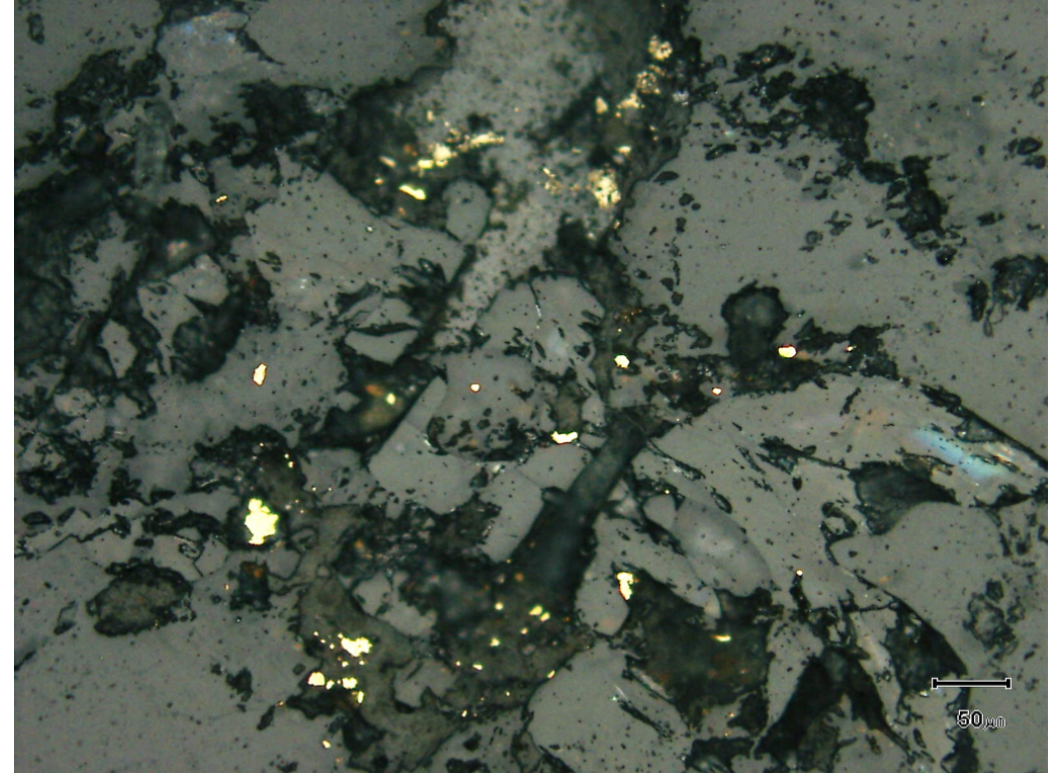
**Figure 1:** Detail of a cluster of individually very small gold grains within a vein of clay alteration (which is black in reflected light), filling fractures in massive vein quartz



**Figure 2:** Micro “nuggety” gold partly in clays, adjacent to larger subhedral crystals of As-Sb sulphide, collectively incorporated in massive vein quartz (black in reflected light)



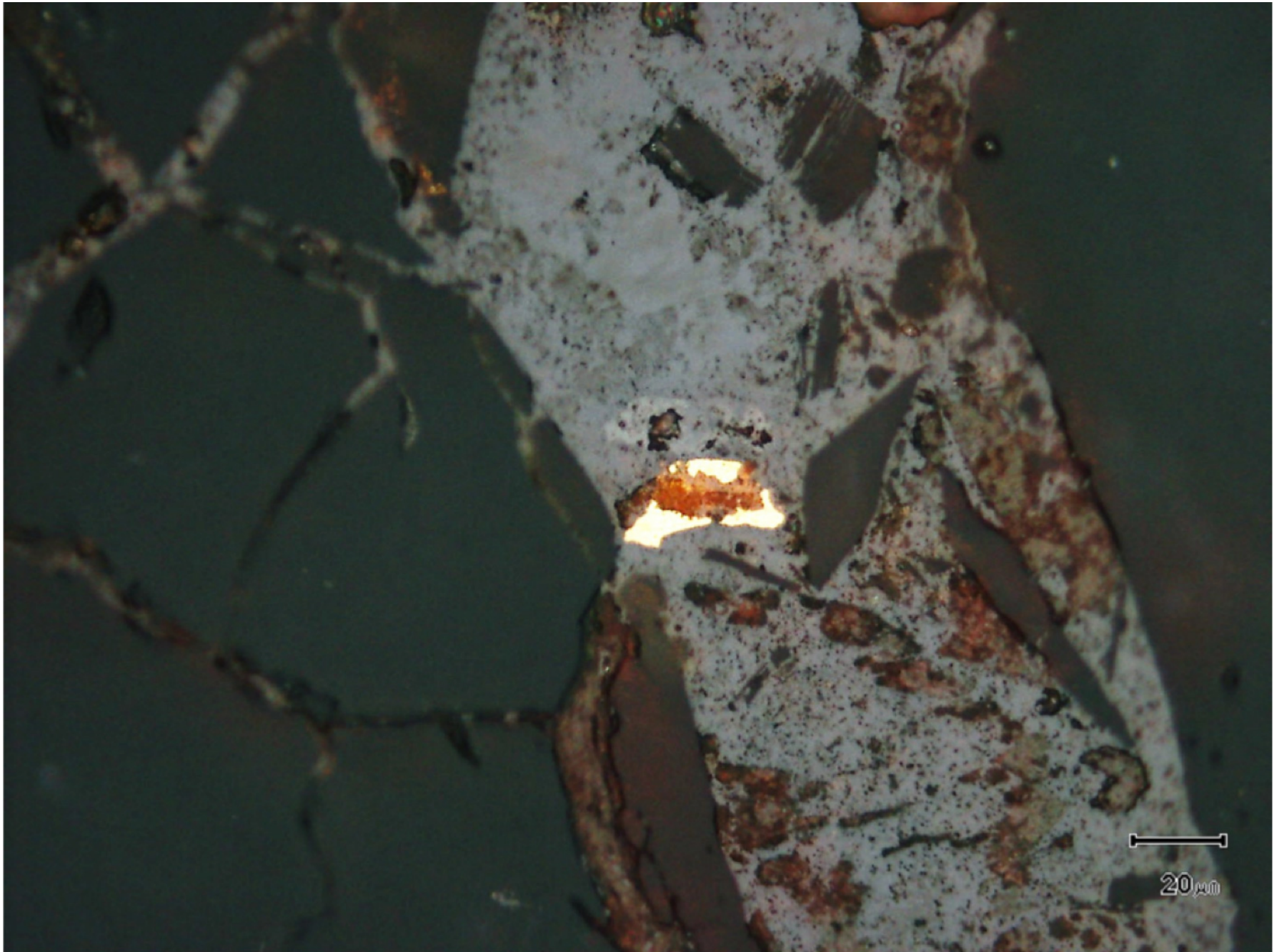
Fractured pale-greenish tourmaline within quartz and clay alteration



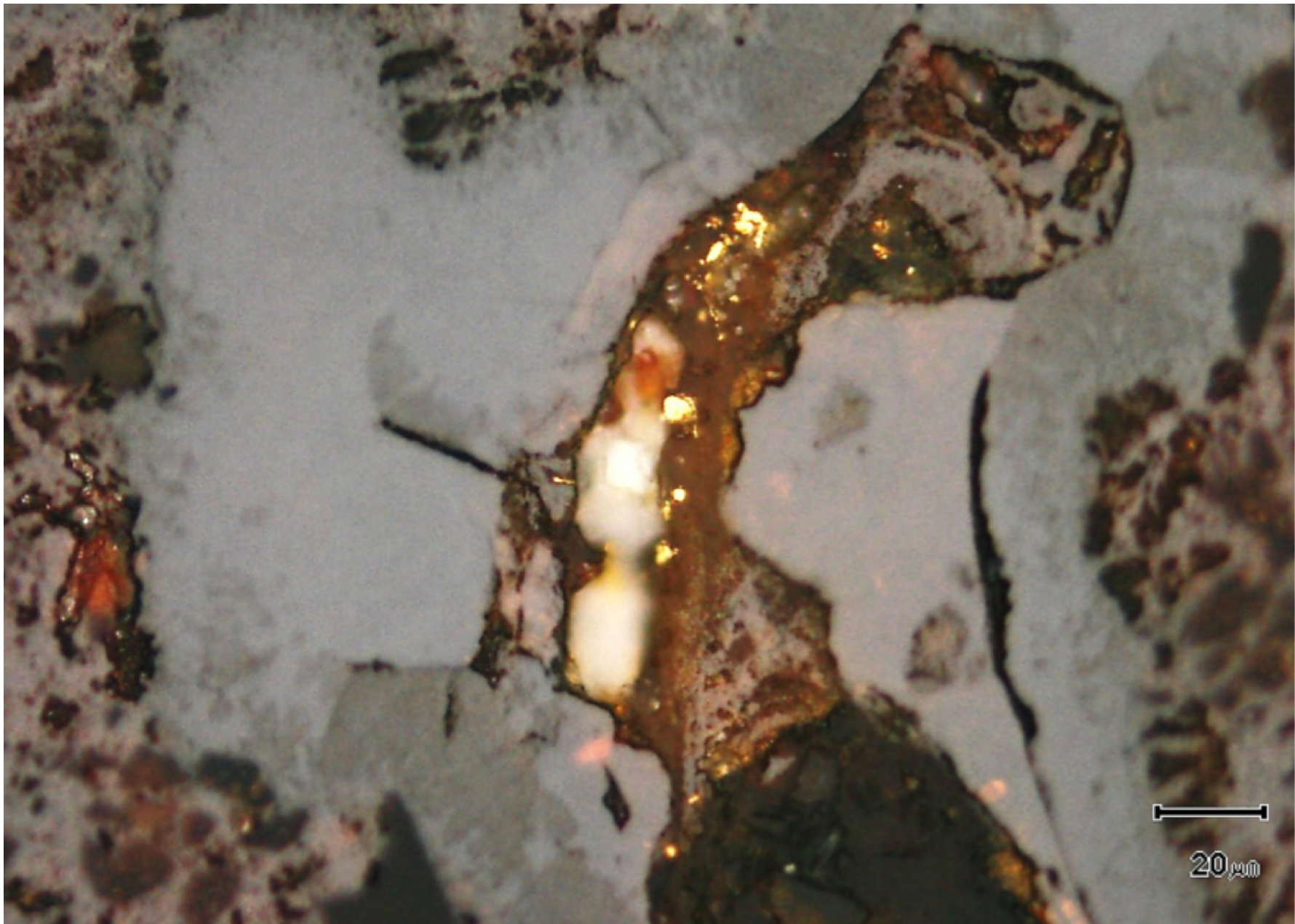
Same image as on LHS, but now **viewed in reflected light revealing dispersed fine gold** within dark clay and quartz between breccia fragments of tourmaline

**Figure 3:** Same Image on LHS and RHS — RHS is viewed in reflected light revealing gold

Diamond Hole 17ATDD004 @ approx. 33m



**Figure 4:** Gold grain to 50 $\mu$ m in limonite vein filling a fracture in vein quartz



**Figure 5:** Numerous minute grains of gold in partly oxidised clays, and boxwork between semi-colloform goethite

## Geological Commentary

The main aim of the petrology analysis was to report on the presence, mode of occurrence and grain size of visible gold and associated minerals. Photographs, mineragraphy, petrology analysis and petrographic descriptions were prepared and produced by Pontifex and Associates Pty Ltd of Hazelwood Park, South Australia. The images above were produced from the thin sections of diamond drill core examined. The scale bar in photographs is in micron units ( $\mu\text{m}$ ). Gold particle grain sizes range from  $\sim 2 \mu\text{m}$  to rarely  $50\mu\text{m}$  maximum, and these mostly occur as relatively isolated individuals, but locally several in loose clusters within a common host mineral. The most common host mineral in both circumstances is quartz with inclusions of gold alone or associated with indefinite clay. Most of the quartz host is interpreted as hydrothermal vein quartz, and **the gold therefore regarded as primary.**

The almost only other host to gold grains is goethite/limonitic, together with virtually ubiquitous clay alteration, variably in simple veins, network veins, and random patchy matrix. Gold grains in this limonitic oxide material tend to be marginally coarser than gold in quartz, but gold grains in clay matrix have variable size. Since both the limonite and interstitial clays may be regarded as “secondary”, (indeed supergene), then any carried gold may likewise be regarded as supergene.

Other ‘ore’ minerals in this suite are minor arsenopyrite/gudmundite, and various forms of pyrite. The arsenic/antimony sulphides occur as fine to medium size scattered single crystals, and in small patches, where they were confirmed by XRD. Much sparser, minute disseminated grains of these minerals are also tentatively identified in other samples. **Gold is not seen to be physically composite with these arsenic, antimony sulphides** but are interpreted to belong to the same primary mineralisation event. This is important as gold particles not attached to or included within sulphide grains are more likely to be free-milling and yield high gold recovery levels during processing. The latter is consistent with Marmota’s first metallurgical testwork at Aurora Tank (Goshawk) [ see ASX:MEU [30 Oct 2017](#) ] which returned excellent gold recoveries of 94% to 97%.

Accessory to trace pyrite is the only other significant sulphide mineral present, occurring more or less throughout this suite, variably as disseminated minute grains, rare small (3mm) patchy aggregates, some microscopically framboidal, also as threads and stringer-veinlets together with marcasite in several (non-gold) samples.

One final mineralogical comment is the presence of tourmaline in almost all samples, variably accessory to minor, but up to 30% in one sample. Dark tourmaline crystals occur as scattered individuals, up to several mm size in some samples, but more commonly they are about 1mm as inclusions in biotite and quartz.

Rare gold grains locally occur in quartz  $\pm$  clays filling fractures in tourmaline crystals, but gold is not seen physically composite with tourmaline. However, like the arsenic/antimony sulphides, tourmaline would seem likely to be part of the hydrothermal quartz-rich primary mineralisation event which also carried gold. This has important exploration implications, and will be incorporated into the Company's exploration strategies going forward.



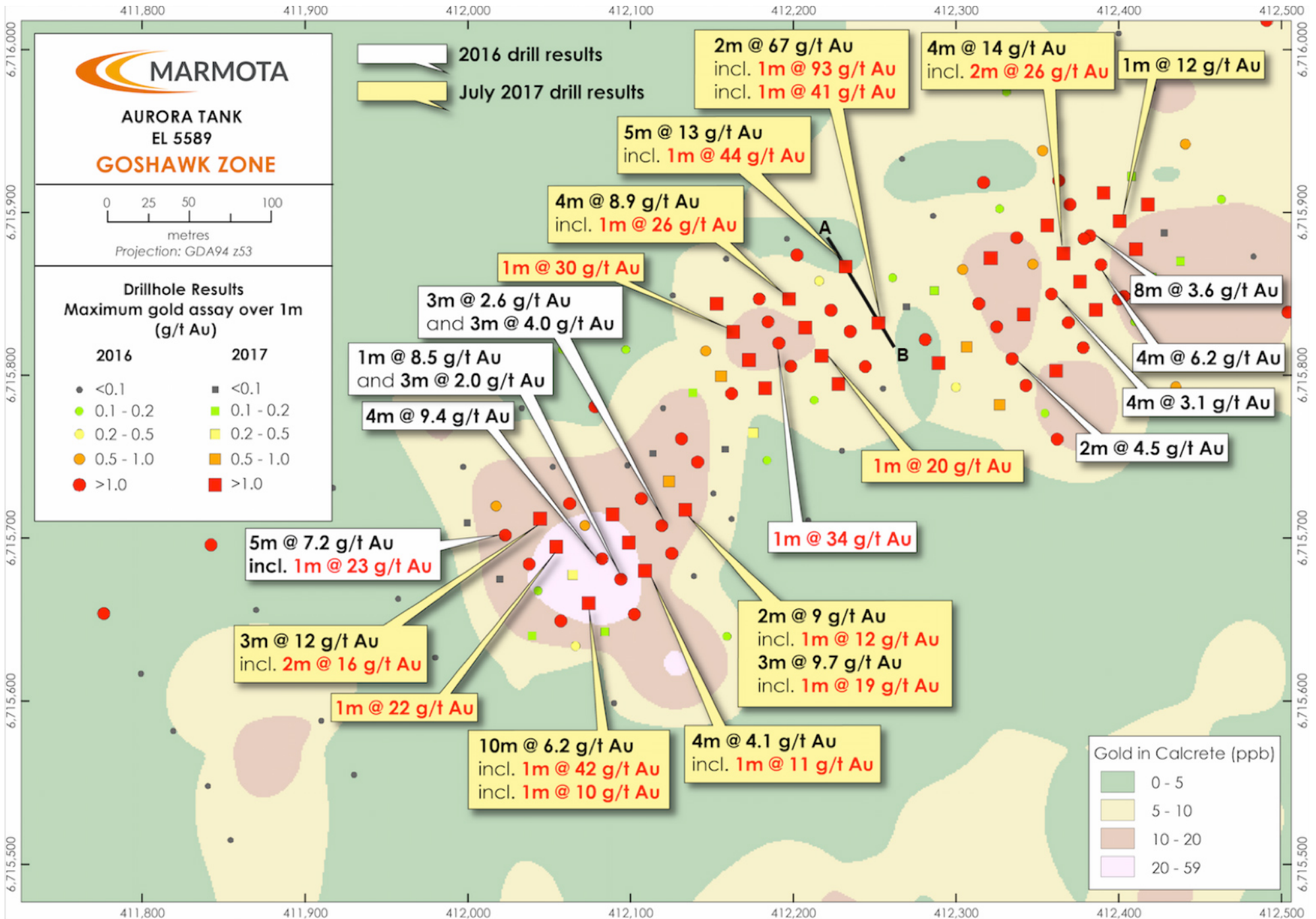
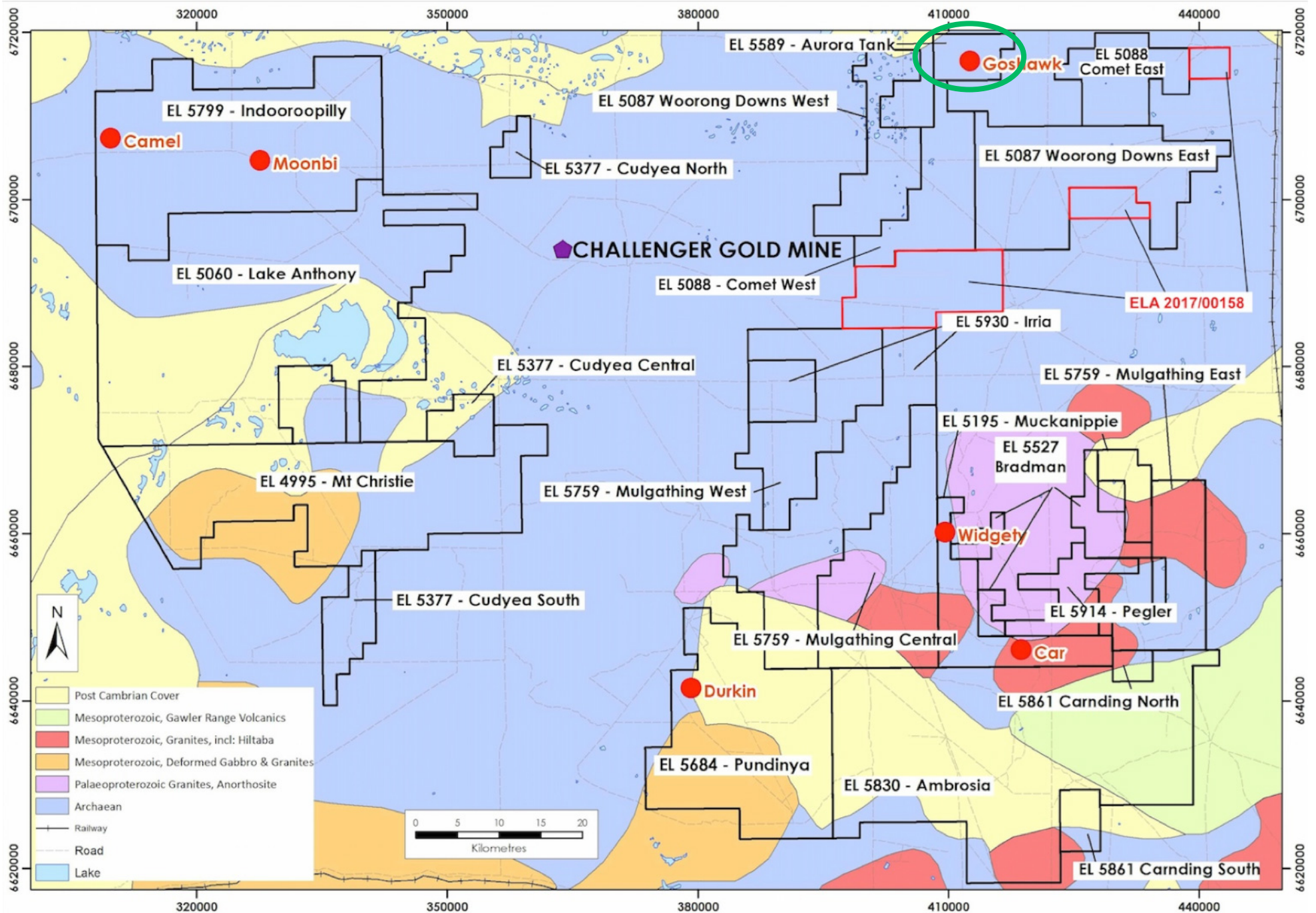


Figure 6: Aurora Tank – Best Aircore/RC downhole gold results at Goshawk Prospect



**Figure 7:** Marmota's Gawler Craton tenements around the Challenger Gold Mine  
 Aurora Tank circled in green; new tenements in red

**For further information, please contact:**

**Marmota Limited**

**Dr Colin Rose** Executive Chairman  
Email: [colin@marmota.com.au](mailto:colin@marmota.com.au)

Unit 6  
79-81 Brighton Road  
Glenelg SA 5045  
ABN: 38 119 270 816  
T: (08) 8294 0899  
F: (08) 8376 8633  
[www.marmota.com.au](http://www.marmota.com.au)

---

**About Marmota Limited**

Marmota Limited (ASX: MEU) is a South Australian mining exploration company, focused on gold, copper and uranium. Gold exploration is centred on the Company's dominant tenement holding in the highly prospective and significantly underexplored Gawler Craton, near the Challenger gold mine, in the Woomera Prohibited Defence Area. The Company's copper project is based at the Melton project on the Yorke Peninsula. The Company's uranium project is at Junction Dam adjacent to the Honeymoon mine.

For more information, please visit: [www.marmota.com.au](http://www.marmota.com.au)

**Competent Persons Statement**

Information in this Release relating to Exploration Results is based on information compiled by Dr Kevin Wills, who is a Fellow of the Australasian Institute of Mining and Metallurgy. He has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves." Dr Wills consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Where results from previous announcements are quoted, Marmota confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.