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RESEARCH
INDEPENDENT INVESTMENT RESEARCH

# Talisman Mining Limited (ASX: TLM)

October 2019

INDEPENDENT
INVESTMENT RESEARCH

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# Contents

# Talisman Mining Limited (ASX: TLM)

Initiation - October 2019

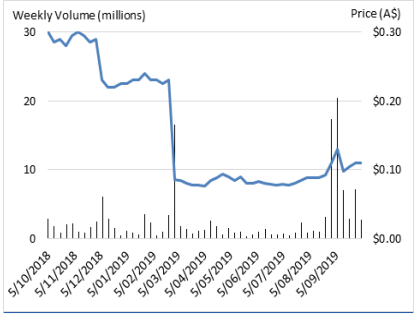
**Note**: This report is based on information provided by the company as at October 8, 2019.

| Investment Profile | |
|---|---|
| Share Price as at October 7, 2019 | A$0.11 |
| 12 month L/H | A$0.079/0.295 |
| Issued Capital | |
| Ordinary Shares | 185.7 m |
| Unlisted Options | 28.7 m |
| Market Capitalisation | A$20.43 m |
| Cash - Current | ~A$8 m |
| Cash from Sinclair Sale | A$10 m |

| Board and Management |
|---|
| MrJeremy Kirkwood: Non-Executive Chairman |
| Mr Dan Madden: Managing Director |
| Ms Karen Gadsby: Non-Executive Director |
| Mr Brian Dawes: Non-Executive Director |
| Mr Peter Benjamin: Non-Executive Director |
| Mr Tony Greenaway: General Manager - Geology |
| Mr Shaun Vokes: Company Secretary and CFO |

| Top Shareholders | |
|---|---|
| Kerry Harmanis | 18.45% |
| Jetosea Pty Ltd | 3.45% |
| Board and Management | 0.56% |
| Top 20 | ~46% |

**Price Chart (not adjusted for return of capital)**




Mark Gordon - Senior Analyst



## SUCCESSFUL EXPLORERS IN QUALITY GROUND

Since rewarding shareholders with a A$0.22/share return of capital and fully franked dividend from the sale of the 30% share in the Springfield JV in WA to Sandfire Resources (ASX: SFR, "Sandfire"), Talisman Mining Limited ("Talisman" or "the Company") is now concentrating exploration activities on the Cobar Basin in the Lachlan Fold Belt ("LFB") of New South Wales.

The Cobar Basin, which is the most mineralised poly-metallic basin in New South Wales, has a long history of mining dating back to 1871, and is the home to a number of past and present major base and precious metal operations, including, amongst others CSA and the Peak. The region continues to deliver very strong results from exploration, with our view being that further economically viable discoveries are still to be made.

Following the discovery of Monty (adjacent to Sandfire's DeGrussa operation), and the subsequent JV with Sandfire, the Company reviewed exploration opportunities in highly prospective terranes, and settled on the Cobar Basin - this has resulted in Talisman putting together a largely contiguous package of exploration ground over the highly prospective and prolific, but for all intents and purposes underexplored Canbelego-Mineral Hill Rift Zone on the eastern edge of the basin.

Although the region has seen significant previous exploration, it has been piecemeal (particularly south of Cobar), and thus with consolidating ground Talisman has the opportunity to undertake a concerted regional programme, concentrating from early stage work through to further appraisal of advanced prospects. The approach has paid off in the 24 months Talisman has been operating in the Cobar Basin, including confirming, through drilling, the potential of the advanced Blind Calf Cu prospect, and identifying a number of earlier stage prospects that now require follow up work, including drilling.

The NSW strategy has also resulted in a recent agreement to earn up to 70% of the Lucknow Gold Project ("Lucknow"), located near Orange in Ordovician volcanics of the Macquarie Arc - the NSW Ordovician is a globally significant Cu-Au province. Lucknow was reportedly the historically highest grade gold mine in Australia, and possibly globally, producing over 400,000 oz at grades of >100 g/t Au. Mining ceased in 1937, with only limited exploration since.

Recent discoveries have focussed market attention Eastern Australia - these include the discovery of a significant porphyry copper-gold system by Alkane Resources (ASX: ALK, "Alkane") at the North Molong Project in the Macquarie Arc, and Stavely Minerals' (ASX: SVY, "Stavely") high grade copper-gold lode discovery at the Thursday's Gossan Project in Victoria. Although the latter is not directly analogous to Talisman's holdings being older, the tectonic setting and rock types at the prospect are broadly similar to those hosting the Lucknow gold mineralisation.

Finally, the recent sale of the Sinclair Nickel Project ("Sinclair") in Western Australia will provide an extra A$10 million in cash to the Company, and also remove up to ~A$20 million of liabilities over the next five years, and allow the Company to focus exclusively on the New South Wales properties without the distraction of a non-core asset.

## KEY POINTS

**Quality exploration property portfolio**: Talisman has taken the opportunity, without the stress of a weak balance sheet, to assemble a portfolio of quality exploration properties over highly prospective geology in prolific mining districts.

**Healthy balance sheet - effective exploration:** With current cash of ~A$8 million, and A$10 million to come from the Sinclair sale the Company is well cashed up compared to other juniors, and thus exploration will be dictated by what is effective, and not by available cash.

**In a proven mining district with established infrastructure:** The Central West of NSW is a proven mining destination, with well developed transport and utility infrastructure, and ready access to skilled labour and services.

**Experienced personnel with a history of delivering value to shareholders:** This is demonstrated by the outcome from the WA Springfield discovery, JV and sale, and the results of exploration to date in the Lachlan Cu-Au Project, centred on the Cobar Basin.

**Leveraged to exploration success:** With an enterprise value ("EV") of under A$10.0 million, Talisman is well leveraged to exploration success, as has been seen with the recent Stavely and Alkane discoveries.

**Steady news flow:** We expect to see a steady and positive news flow with ongoing exploration activities - this includes work at all properties.

**Quality confirmed by our site visit:** IIR visited a number of prospects in the Cobar area in June 2019, with this confirming the quality of the Project, personnel, and work.

# SWOT ANALYSIS

## Strengths

- **Highly prospective holdings in a proven mineral district:** The Central West to Western regions of New South Wales, including the Cobar Basin and Macquarie Arc are well endowed, and in the case of the Cobar Basin, often overlooked mineral provinces. The Cobar Basin has a long history of high grade poly-metallic mining and of delivering through patient exploration. Likewise the Macquarie Arc, in which Lucknow is situated, is a globally recognised mining region, with the focus on porphyry and porphyry-related mineralisation.
- **Pipeline of targets:** In addition to the more advanced drill targets, significant tenement areas are conducive to relative low cost reconnaissance exploration.
- **Experienced people:** Company personnel have significant experience in the resources sector, with a history of exploration success and delivering value to shareholders.
- **Cashed up:** With ~A$8 million in the bank and A$10 million to come, Talisman is well cashed up, even after returns of capital totalling A$0.22/share over the past year.
- **Well developed infrastructure:** All company projects are located in areas of well developed transport and utility infrastructure, and with readily available experienced labour and services.

## Weaknesses

- **Difficult exploration:** Some of the mineralisation styles in the Cobar Basin, particularly the later, structurally controlled systems like CSA, have small surface footprints, and hence can prove to be difficult to find, and require significant drilling to delineate a potentially viable Resource.

## Opportunities

- **Exploration and drilling success:** Given the quality of the exploration ground and the results of work to date, there is a good opportunity for exploration success at all projects.
- **Acquisitions and earn-ins:** This is a perennial opportunity should the right opportunities come up, and this is helped by Talisman's balance sheet - this has been demonstrated by the Lucknow deal.

## Threats

- **Markets and funding:** These are major threats for resource companies and can turn on a dime – Talisman, by the virtue of a strong cash position, is relatively insulated against these risks in the medium term.
- **Poor exploration results:** This goes without saying, and is a perennial threat to junior explorers.

# OVERVIEW

## STRATEGY AND PROJECT OVERVIEW

- Following the late 2018 sale of their 30% interest in the Springvale Project JV to partners Sandfire Mining (ASX: SFR, "Sandfire") for A$72.3 million plus a 1% NSR, Talisman is concentrating exploration activities on the Lachlan Cu-Au project, largely located over the Canbelego-Mineral Hill Rift Zone, that forms the eastern edge of the highly mineralised Cobar Basin in the Lachlan Fold Belt of NSW (Figures 1 and 2) - the Cobar region has a long history of mining dating back to 1871, with exploration continuing to reward explorers.
- The first tenement, EL8615, was granted in mid-2017, with the ground position being progressively added to through applications and earn-in agreements to the current area of over 3,000 km$^2$, with an additional 276 km$^2$ being held in EL8451 over Silurian volcanics between Michelago and Bredbo, south of Canberra.
- More recently the Company has entered into a farm-in agreement to acquire up to 70% of the high grade Lucknow Gold Project, located over Ordovician units in the Macquarie Arc near Orange.
- Lucknow, which has seen little modern exploration, was historically one of the highest grade gold producers globally, with production reportedly including over 400,000 oz at an estimated grade of +100 g/t Au.
- Most recently the Company sold the Sinclair Nickel Project in Western Australia to Saracen Mineral Holdings (ASX: SAR, "Saracen") for A$10 million cash, and a 2% Net Smelter Return ("NSR") royalty on any metal production from the Sinclair tenements, and any non-precious metal production from Saracen's Waterloo Nickel Project, currently under care and maintenance - the sale is subject to approval by Xstrata Nickel Australasia Operations Pty Ltd, a subsidiary of Glencore International AG.
- Importantly, the sale removes future liabilities (and the distraction) from the Company, including holding costs (net of discretionary expenditure) of ~A$2 million/annum, and a contingent environmental liability of ~A$9 million.

**Figure 1: Project locations**


Source: Talisman

- An active exploration programme is underway over the Lachlan Project, which includes drilling at the Blind Calf prospect, a structurally controlled copper quartz-lode system akin to Cobar style mineralisation that has seen quality results from historic and current drilling.
- The Company's methodical and staged approach to exploration has included the follow up of promising exploration results from previous work that were not effectively pursued; this work has resulted in the definition of priority targets, including five high grade gold-in-soil anomalies.
- This note includes observations made during a site visit that we made to a number of prospects in June 2019, which reinforced the quality of the ground and team.

## FINANCIAL POSITION

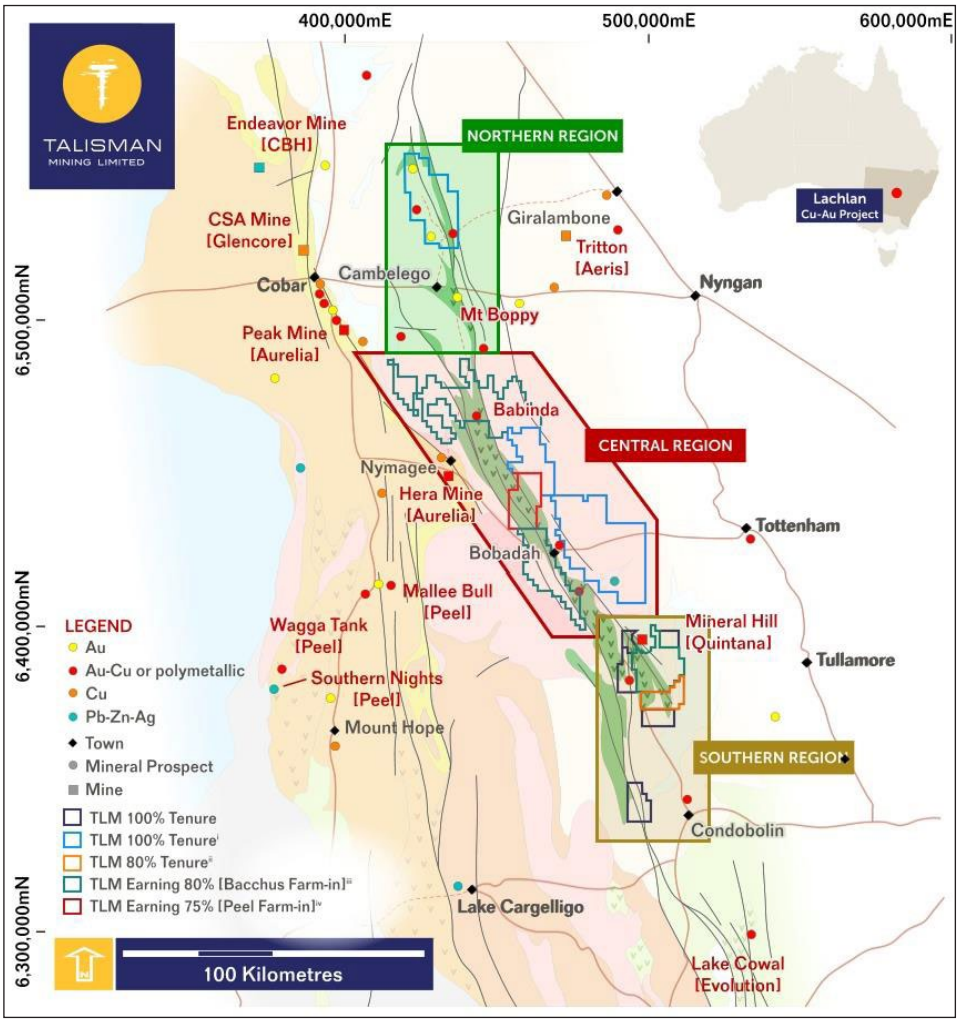
- As of the time of writing the Company had ~A$8 million in cash and no debt, with A$10 million to come from the sale of Sinclair.
- In the December quarter, 2019, the Company received A$72.3 million from the sale of its 30% interest in the Springfield JV (including the Monty Cu-Au operation) to Sandfire - this was partly used to pay out debt of A$18.628 million relating to the development of Springfield to Taurus Funds Management.
- Part of the proceeds were also used to pay back A$0.22/share to shareholders - this included a fully franked dividend of A$0.0.6375/share (A$11.838 million) and a return of capital of A$0.15625/share (A$29.016 million).
- Over the 12 months to June 30, 2019 Talisman spent A$4.758 million on exploration and evaluation and A$3.518 million on administration - this includes transactional and finance costs, and the estimated A$2 million/annum Sinclair holding costs, that, with the sale, will now not be payable.
- There will be income over the next few years from the 1% NSR held over the Monty deposit at Sandfire's DeGrussa operation, payable on copper and gold production over and above the 2017 Monty Mine Plan.
- Although the Sinclair sale includes an NSR, we are unable to estimate the timing and potential amounts of this.

## LACHLAN CU-AU PROJECT - TLM EARNING UP TO 100%

### LOCATION, TENURE AND INFRASTRUCTURE

- The Project comprises 13 Exploration Licences ("ELs") for over 3,000 km$^2$, stretching for some 300 km north south along the Canbelego-Mineral Hill Rift Zone in the Central West of NSW (Figure 2, Table 1) - the Rift Zone occurs on the eastern margin of the Cobar Basin.

**Figure 2: Lachlan Cu-Au Project tenements**




Source: Talisman

- The tenements are either 100% held, else subject to earn-in agreements with Peel Exploration (ASX: PEX, "Peel") or Bacchus Resources Pty Ltd ("Bacchus"), a private company - details of the agreements are presented later.
- The Company also holds the 276 km$^2$ EL8451, located south of Canberra (not shown, and not discussed further) as well as earning into Lucknow, which is discussed later.
- The region is well served by towns, transport and utility infrastructure, and, being in a proven mining jurisdiction is well served by skilled services, with regional mining towns including Parkes (population ~11,500) and Cobar (population ~4,000).
- Cobar is located some 700 km west by highway from Sydney, with Parkes some 360 km west of Sydney - Condobolin (population ~3,500), the closest town To Mineral Hill (and hence the key Blind Calf prospect) is 100 km west of Parkes.
- Operating mines in the region include CSA, Peak, Endeavour, Hera, Tritton, Lake Cowal and North Parkes (Figure 2); Mineral Hill is currently under care and maintenance.

**Table 1: Talisman NSW tenement register**

| Lachlan Project tenement register | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project / Tenement** | **Area km$^2$** | **Current Interest** | **Ultimate Interest** | **Expiry** | **Last Renewal/ Status** | **Joint Venture Partner / Farm-In Party** | **Area** |
| **LACHLAN PROJECT - NSW** | | | | | | | |
| EL8615 | 726 | 100% | 100% | 7/07/2023 | 7/07/2017 | Bacchus Resources Pty Ltd (right to 20% interest) | Central |
| EL8659 | 373 | 100% | 100% | 18/10/2023 | 18/10/2017 | | North |
| EL8677 | 193 | 100% | 100% | 8/12/2023 | 8/12/2017 | | Central |
| EL8414 | 174 | 0% | 75% | 2/12/2024 | 17/06/2019 | Peel Mining Ltd - TLM earning up to 75% | Central |
| EL8547 | 205 | 0% | 80% | 3/04/2022 | 3/04/2017 | Bacchus Resources Pty Ltd (TLM earning up to 80%) | South |
| EL8571 | 258 | 0% | 80% | 23/05/2022 | 23/05/2017 | | Central |
| EL8638 | 192 | 0% | 80% | 31/08/2022 | 31/08/2017 | | Central |
| EL8657 | 134 | 0% | 80% | 10/10/2022 | 10/10/2017 | | Central |
| EL8658 | 256 | 0% | 80% | 13/10/2022 | 13/10/2017 | | Central |
| EL8680 | 20 | 0% | 80% | 8/12/2022 | 8/12/2017 | | South |
| EL8718 | 86 | 100% | 100% | 27/03/2024 | 27/03/2018 | N/A | South |
| EL8719 | 191 | 100% | 100% | 27/03/2024 | 27/03/2018 | | South |
| EL8814* | 92 | 80% | 0% | 14/12/2024 | 14/12/2018 | Bacchus Resources Pty Ltd | South |
| **OTHER PROJECTS - NSW** | | | | | | | |
| EL6455 | 28 | 0% | 70% | 8/10/2020 | 9/6/2017 | Lucknow Gold - TLM earning up to 70% | Lucknow |
| EL8451 | 276 | 0% | 75% | 16/7/2019 | 16/7/2016 | Peel Mining Ltd - TLM earning up to 75% | Michelago |

Source: Talisman

* Talisman and its subsidiary Haverford entered into a joint venture with Bacchus in relation to EL8814. Talisman and Haverford have given notice to withdraw from this joint venture and are progressing with the transfer of their joint venture interest to Bacchus. Haverford will continue to be the registered holder of EL8814 until this process has been completed.

## FARM-IN AND PURCHASE AGREEMENTS

### Bacchus Resources Pty Ltd

- As announced to the ASX on January 9, 2018, Haverford Holdings Ltd (Haverford), a 100% owned subsidiary of Talisman, entered into a Farm-In Agreement ("Farm- in") with Bacchus Resources Pty Ltd (Bacchus) over certain Lachlan Cu-Au Project tenements.
- In accordance with the terms of the Farm-in:
  - Haverford can earn up to a 80% interest in the Bacchus Tenements (EL8547, EL8571, EL8638, EL8657, EL8658 and EL8680) by sole funding A$2.3 million of on- ground exploration expenditure over four years,

- The farm-in is in two tranches - Haverford can earn an initial 51% share through the expenditure of A$1.3 million over 36 months, with the additional 29% interest to be earned by spending a minimum of an additional A$1.0 million over the following 12 months.
- Should Haverford earn an interest in the Bacchus Tenements, Bacchus is entitled to receive a 20% interest in the Haverford Tenements (EL8615, EL8659 and EL8677) - should Haverford not earn an interest in the Bacchus Tenements, Bacchus may elect to take a 20% interest in the Haverford Tenements; and,
- Should Haverford earn into the Bacchus Tenements, a formal joint venture will be entered into which provides that Bacchus will be free carried for 10% of its joint venture interest until a decision to mine. Post a decision to mine, Bacchus can then elect whether to contribute or not, if Bacchus elects not to contribute, Haverford shall acquire Bacchus' interest in the joint venture for 95% of fair value as agreed by the joint venture participants.

**Peel Mining Limited**

- As announced to the ASX on November 23, 2017, Haverford has entered into a Farm-In Agreement (Farm-in) with Peel Mining Limited (ASX:PEX) over PEX's Mt Walton (EL8414) and Michelago (EL8451) Projects (collectively the Peel Tenements) - in accordance with the terms of the Farm-in, Haverford can earn up to a 75% interest in the Peel Tenements by sole funding A$0.7 million of on-ground exploration expenditure over five years.

**Kidman Resources Limited**

- As announced to the ASX on January 9, 2018, the Company acquired 100% of Kidman Resources Limited (ASX:KDR, "Kidman") Crowl Creek copper-gold project for A$250,000 - this included six ELs totalling 278 $km^2$ which Talisman subsequently relinquished and in parallel applied for and was granted new tenements covering the area.

## HISTORY AND PREVIOUS WORK

### Regional history and Discoveries

- The Cobar region has a long history mining and exploration, with the first operations at the Great Cobar copper mine commencing in 1871, following discovery in 1869, with activities initially concentrated on the 10 km of strike at Cobar that hosts a number of deposits, including Great Cobar, the Peak and Chesney amongst others.
- The basin, which is the richest poly-metallic basin in the LFB, has a pre-mining metal inventory of reportedly >2.2 Mt of copper, >7.0 Moz of gold, >4.7 Mt of zinc, >2.0 million tonnes of lead and >145 million ounces of silver.
- The period from 1869 until the 1910's saw intense activity, and the discovery and opening of a number of new base metal and gold mines, including Girilambone (1881), the Peak (1896) and CSA (1905).
- The fall of copper prices in 1908 saw the industry decline with generally hard times through to 1965 - this included the period from 1952 to 1965 when none of the major mines operated (although some exploration continued), however there was a resurgence in gold demand in the 1930s depression.
- The early 1960s again saw a resurgence of mining, with deep shaft sinking at CSA commencing in 1962, and operations of the deep mine commencing in 1965 - production has been continuous since then (albeit with some times of lean or no profit) with new lenses also being discovered.
- Elura (now Toho Zinc's Endeavour operation) was discovered by drilling of an aeromagnetic anomaly in 1973/1974, with operations commencing in 1983.
- One of the most recent discoveries was McKinnons Tank in 1988, and the first gold deposit to be found on the western side of the basin - this operated from 1995 to 2000 and produced some 131,000 oz of gold.
- Mineral Hill, an epithermal system proximal to Talisman's Blind Calf prospect was initially discovered in 1908, with intermittent small scale mining until the 1950s, and with modern mining commencing in 1989.
- The mine entered care and maintenance in 2005 - mining again commenced in 2011, however was suspended again in 2016.
- Drilling at Mineral Hill during phases of mining has delineated new zones of mineralisation, including Pearses, a gold rich part of the system.

- Blind Calf itself saw extensive small scale copper workings in the early 1900s, with 13 individual shafts being identified, and with RC and diamond drilling by Kidman prior to Talisman's purchase.
- Recent times have seen a number of discoveries of other "Cobar-style" systems, including, amongst others, Mallee Bull (Peel), Hera (CBH, 2001), with high grade polymetallic mineralisation also recently being discovered at Aurelia's Federation prospect 10 km south of Hera and at Dominion, also close to Hera.
- Exploration for Cobar-style deposits is not easy, however with perseverance by explorers the Cobar Basin continues to deliver strong exploration results and new discoveries; likewise continuing exploration has resulted in the discovery of other styles of mineralisation, and additional mineralised zones at known deposits.

### Talisman Tenement Package

- The ground held by Talisman, with the exception of some prospects, has seen very little coordinated and tenement wide exploration - the various areas have previously been held by a number of companies, and exploration activities have been largely piecemeal, and have included geochemical, geological and geophysical surveying.
- This work however has identified a number of quality prospects that have only had limited follow-up - a case is previous geochemical surveying highlighting geochemical anomalism in two parallel zones along trend to the south-east from Mineral Hill that has not been explained by the limited follow up drilling completed.
- The most advanced prospect is Blind Calf, which has seen significant work, including most recently the drilling of 44 RC and diamond holes by Kidman Resources between 2010 and 2013 - these intersected appreciable mineralisation.
- Other activities completed by Kidman included geophysical surveys (EM, IP and magnetics), geological mapping and geochemical sampling.
- Previous workers at Blind Calf included Horizon Explorations Pty Ltd (who drilled four diamond and seven percussion holes in 1970/1971 and completed two IP and an SP survey), BP Australia Gold in the 1980s and Triako - work by the latter two companies largely included geochemical sampling and geological mapping; BP Australia Gold also reanalysed some of the historic drill core for gold, however with only one interval recording gold above the detection limit.
- The drilling completed by Talisman at Blind Calf to date has confirmed the potential.

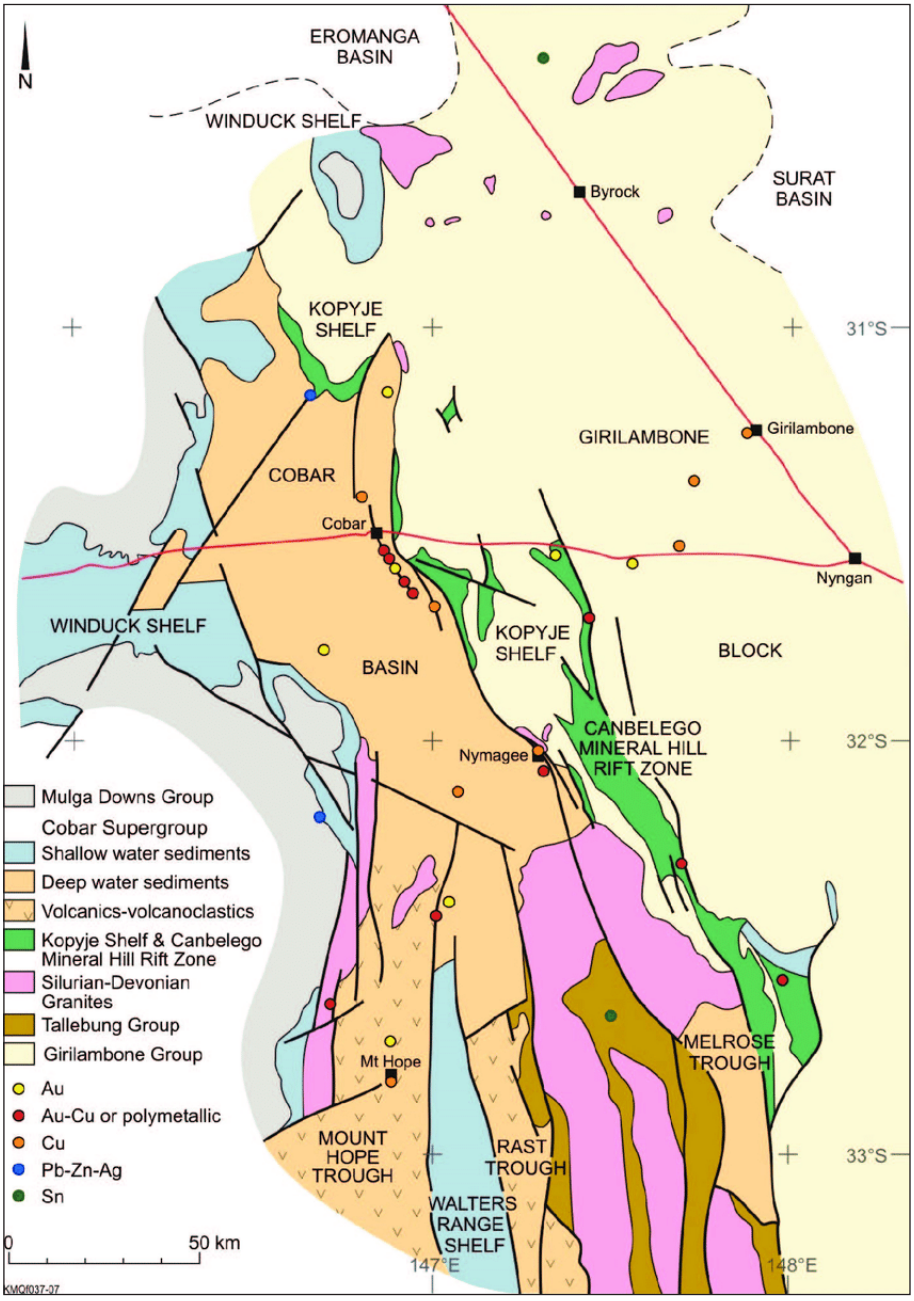
## GEOLOGY AND MINERALISATION

### Regional Geology

- The Project is largely located over the NNW trending Canbelego-Mineral Hill Rift Zone, which forms the eastern margin of the Cobar Basin (Figures 2 and 3).
- The Cobar Basin is a complex tectono-stratigraphic terrane in the western part of the Lachlan Fold Belt, with rocks including clastic and chemical sediments, and volcanics of the Cobar Supergroup.
- Sedimentation was initiated in the Late Silurian and extended into the Early Devonian in response to thin skinned extension, and was inverted during the Late Devonian Tabberabberan Orogeny and Middle Carboniferous Kanimblan Orogeny.
- The basin opening was the result of transtensional, NE-SW extension and closing by NW transpression.
- The basin, which formed as a half-graben with the major downthrow on the eastern side, developed as four deepwater troughs, including the Cobar Basin in the north, the Rast and Mt Hope Troughs in the south, and the Canbelego-Mineral Hill Rift Zone on the eastern margin (Figure 3).
- The various basin segments were separated and flanked by shelves, which are marked by carbonate reefs.
- Lithologies in the northern part of the basin are dominated by siliclastic sediments, with some felsic intrusives, with the two southern troughs including bimodal volcanics and intercalated sediments - likewise the Canbelego-Mineral Hill Rift Zone is marked by intercalated volcanics and sediments.

- Major structures include shallowly to steeply west dipping faults, which largely represent the original basin-bounding listric faults which were reactivated during compression; these are crosscut by a number of NE and NW striking, steeply dipping faults which represent transform/transfer structures.
- The basin architecture was also partly controlled by Silurian granite batholiths, with the margins forming zones of weakness and the batholiths themselves forming buffers.

**Figure 3: Cobar Basin architecture and geology**




Source: McQueen et al 2005

## Regional Mineralisation

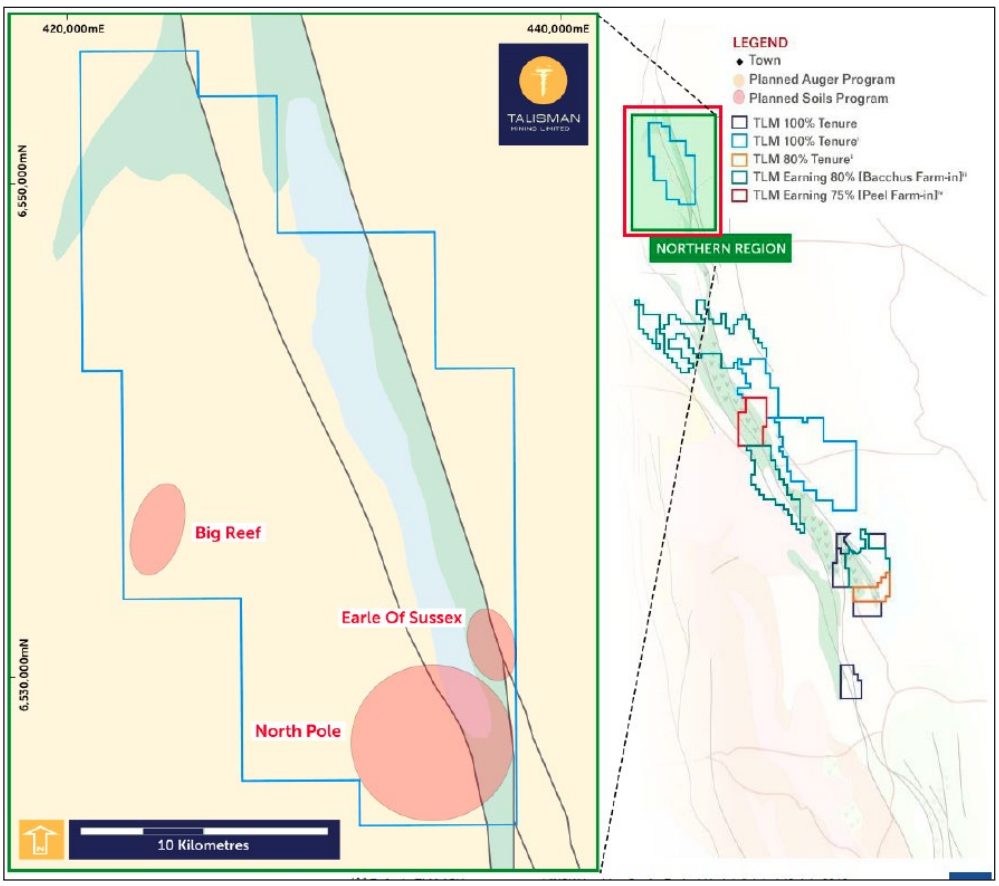
- The faults and intersections of them form the main controls on mineralisation in the region, with a continuum of mineralisation styles, ranging from those associated with initial rifting to those associated with compressional tectonics being present.
- Main mineralisation styles associated with rifting include:
  - Low sulphidation epithermal, with examples including Mineral Hill and the McKinnons gold deposit; and,
  - Volcanogenic massive sulphide ("VMS") associated, including the Girilambone copper deposit (although this is to the east of the basin).
- Mineralisation styles largely related to basin inversion include:

  - Polymetallic Cu-Pb-Zn-Ag shear related mineralisation, which forms the main style of mineralisation in the field, including CSA, Elura, the Peak, Great Cobar and other deposits along the Cobar Gold Field amongst many others - mineralisation varies from polymetallic to Cu-Au through to Cu with minor gold; and,
  - Mississippi Valley Type ("MVT") - examples include the Wonawinta silver deposit.
- There has also been overprinting of the earlier deposits by later events.
- The Cobar-style shear hosted mineralisation hosts the majority of mineralisation in the Cobar Basin, with these systems having a relatively small surface footprint, but can extend for many hundreds to a few thousand metres vertically.
- The dominant control on these systems are the major NNW trending structures (Figure 2).
- The often form as a series of en-echelon steeply plunging veins/lodes, with a number of deposits containing lodes which are blind to the surface - the CSA Mine is a case in point with underground drilling discovering new lodes over relatively recent history - other examples include recent discoveries by Aurelia near Hera.
- Blind Calf is an example of this style of mineralisation.

## WORK BY TALISMAN AND PROSPECT DESCRIPTIONS

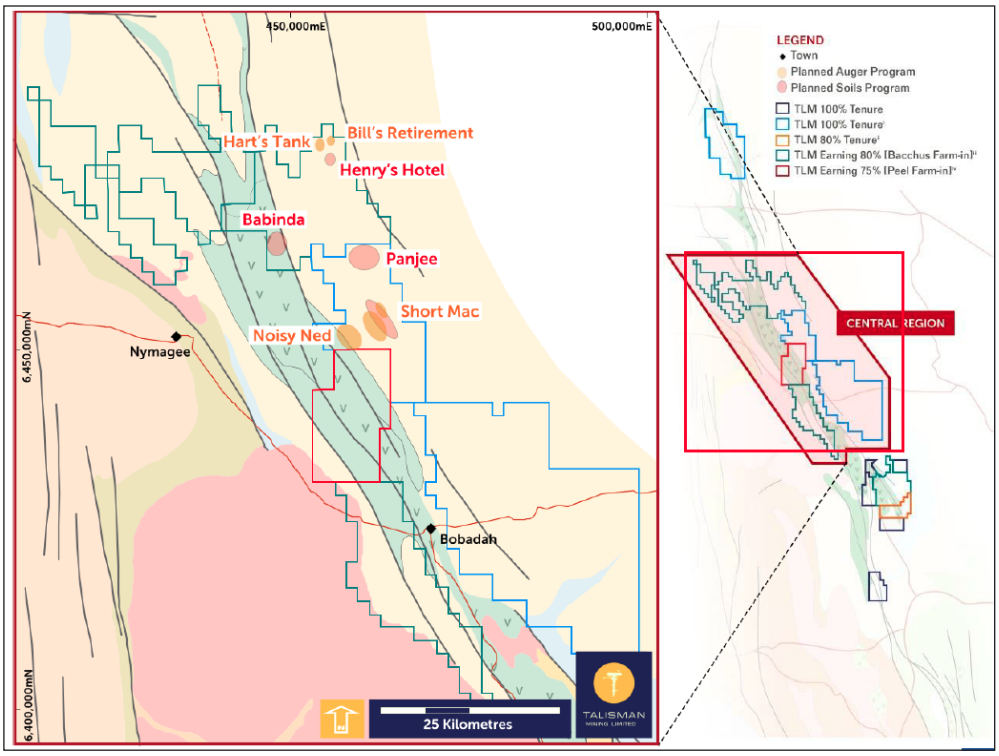
- Prospects delineated by the Company are outlined in Table 2, and shown in Figures 4 to 6 - in addition in early 2019 the Company completed a detailed aeromagnetics survey over 1,000 km$^2$ of selected areas of the Southern, Central and Northern project areas - the line spacing was 50 m with a survey height of 40 m.
- This data has been processed and merged with the publicly available data to provide a high resolution project wide dataset which will be used along with other regional data for prospect targeting.
- The Company has also recently completed a regional soil/auger sampling programme, largely over the southern tenements, with the results announced on July 22, 2019 - this work returned a number of high value gold anomalies.
- In this section we will firstly describe those prospects that have been drilled, including Blind Calf, Noisy Ned and Cumbine, and then review those covered by the soil sampling.

**Figure 4: Northern tenements showing main prospects**



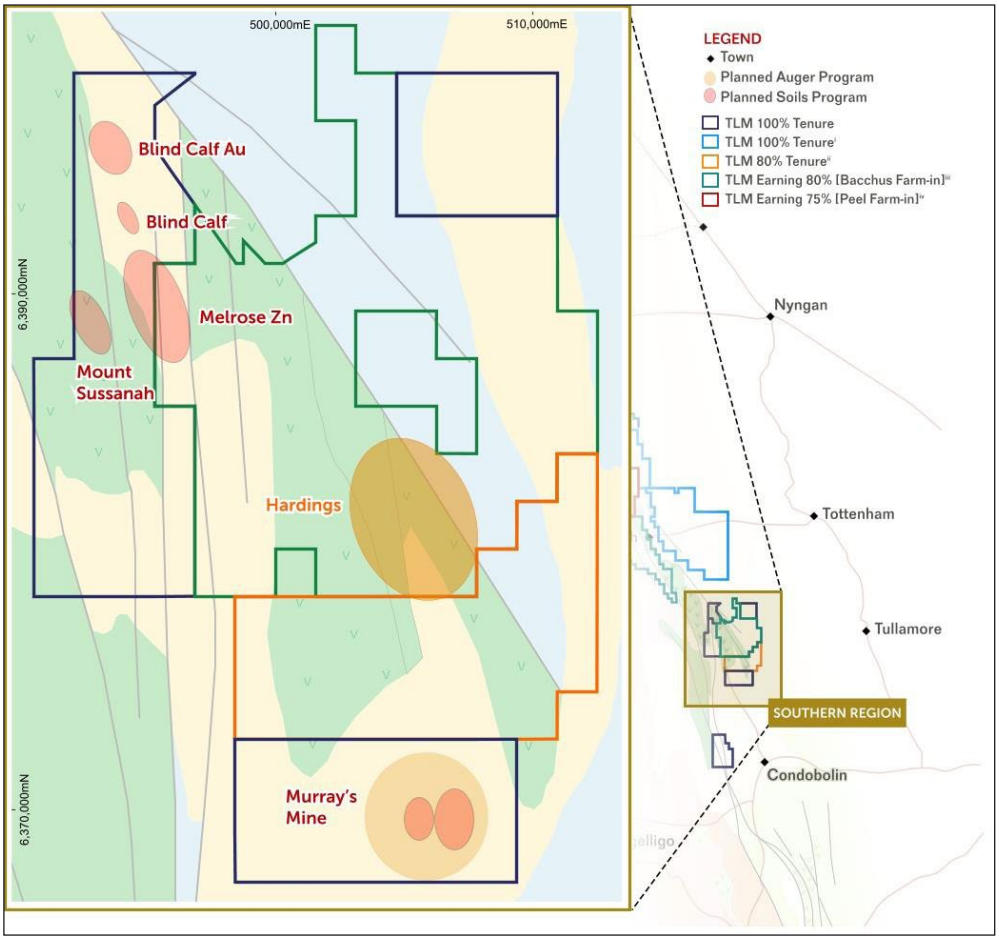

Source: Talisman

**Figure 5: Central tenements showing main prospects**




Source: Talisman

**Figure 6: Southern tenements showing main prospects**




Source: Talisman

**Table 2: Lachlan Cu-Au prospects**

| Lachlan Cu-Au prospects | | | | |
|---|---|---|---|---|
| **Prospect** | **Region** | **EL** | **Planned and Completed Activities** | **Recent Results** |
| Blind Calf | South | EL8719 | Soils, planned RC and DD drilling in 2019 | RC Drilling at Dunbars, Blind Calf East and Blind Calf - 34 RC holes for 6,442 m. Results include 13 m @ 5.71% Cu. |
| Blind Calf Au | South | EL8719 | Soils completed, planned RC drilling in 2019 | 2019 soil sampling identified a 1 km gold in soil anomaly coincident with a geophysical feature with similarities to the Blind Calf copper system. |
| Melrose | South | EL8719 | Soils completed, planned RC drilling in 2019 | 2019 soil sampling identified gold in soil anomalies over 2 km strike - still open along strike. |
| Mount Susannah | South | EL8719 | Soils | |
| Murrays Mine | South | EL8719 | Auger, soils | |
| Hardings | South | EL8547 | Auger, soils completed, planned RC drilling in 2019 | Gold in soil anomaly with a 1 km extent - peak value of +500 ppm Au - located over altered volcanic rocks. |
| Kaolin Shaft - Brooklyn | South | EL8547 | Soils completed, planned RC drilling in 2019 | 2019 sampling - Multiple gold in soil anomalies along SE extension of Mineral Hill Trend. This area contains numerous historic workings associated with altered volcanic rocks. |
| Bill's Retirement | Central | EL8658 | Auger, soils | |
| Hart's Tank | Central | EL8658 | Auger | |
| Short Mac | Central | EL8658 | Auger, soils | |
| Noisy Ned | Central | EL8677 | Auger, RC | 9 RC holes for 1,809 m, broad zones of zinc mineralisation in a lapilli tuff. |
| Panjee | Central | EL8677 | Auger, soils | |
| Babinda | Central | EL8677 | Auger, soils | |
| Henry's Hotel | Central | EL8658 | Auger, soils | |
| North Pole | North | EL8659 | Soils | |
| Earls of Sussex | North | EL8659 | Soils | |
| Big Reef | North | EL8659 | Soils | |
| Bobodah, Cumbine | Central | EL8414 | Geophysics, Auger, RC | Base metal - Cu, Zn, Pb anomalism identified in auger over 1 km strike parallel to Gilmore suture. 4 RC holes for 757 m. Some gold intercepts, including 7m @ 1.95 g/t Au. 3D modelling of magnetic data has shown a strong anomaly to the SE of previous drilling. |

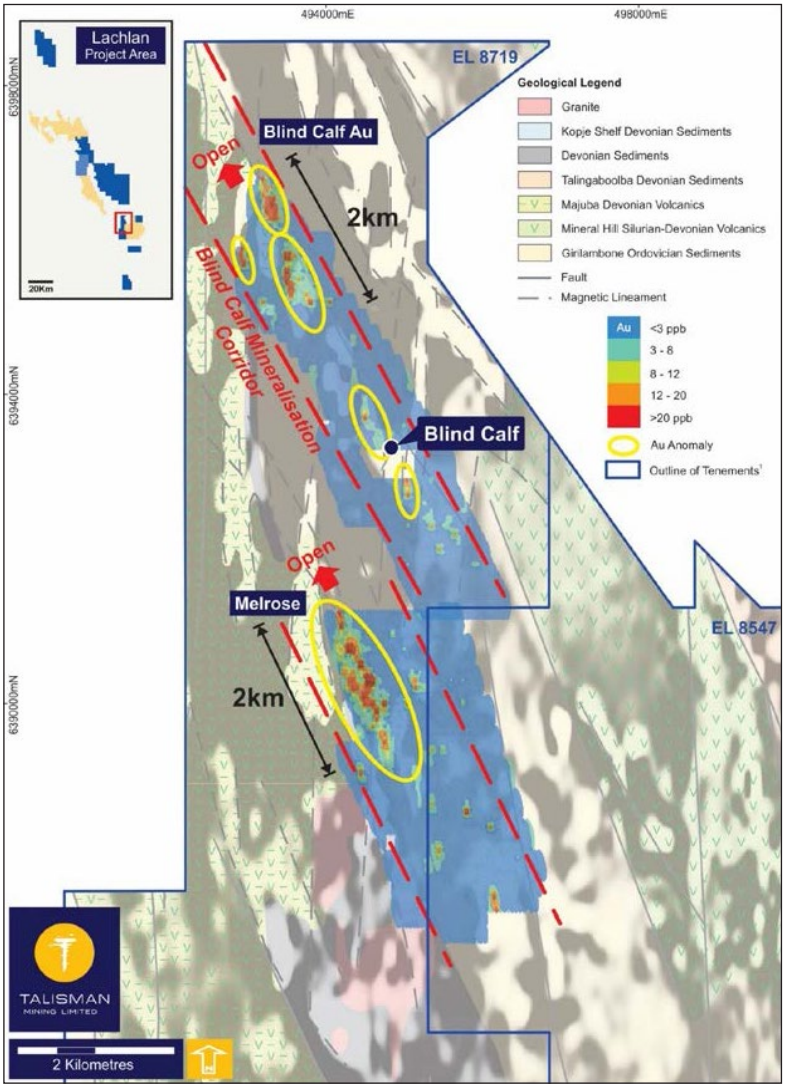
Source: Talisman, IIR analysis

## Blind Calf - TLM 100%

- Blind Calf is located within EL8719 in the southern project area - mineralisation takes the form of a number of parallel north-south striking quartz-sulphide lodes controlled by an overall NNW trending structural zone (Figures 7, 9 and 10), sub-parallel to the Mineral Hill Trend, which is located to the east.
- The lodes are hosted in strongly folded Devonian sediments,with the mineralisation being a copper rich member of the Cobar style deposits - up to five phases of deformation have been identified.
- The area is intensely silicified, with other alteration including sericite, chlorite and biotite, with magnesium rich chlorite close to mineralisation - the lodes do not have distinctive surface outcrop, and instead are marked by the intensity of alteration - areas of strong alteration are shown in Figure 9.
- Work to date by Talisman has included soil/auger sampling, rockchip sampling, RC drilling (34 holes for 6,442 m) and downhole electromagnetic ("DHEM") surveying.
- The soil and auger sampling, which was undertaken as part of a broader survey, has identified gold (and base metal) anomalism along NNW trends (Figures 6, 7 and 9) - these are interpreted as being offsets of each other, with the strongest gold anomalism at Melrose, adjacent to the interpreted structural break between the trends - this is an ideal site for mineralisation, being a structural intersection.

- RC drilling to date, which has been undertaken in three campaigns, targeted Blind Calf and parallel lodes, with Blind Calf returning the best intersections.
- There have been some issues with RC drilling (including lifting of the drill string that could not be controlled), with this resulting in the two deeper latest holes missing targets, however DHEM surveying of these holes identified off-hole conductors at the original target positions.

**Figure 7: Broader Blind Calf area showing geochemical anomalies, geology and structural trends**

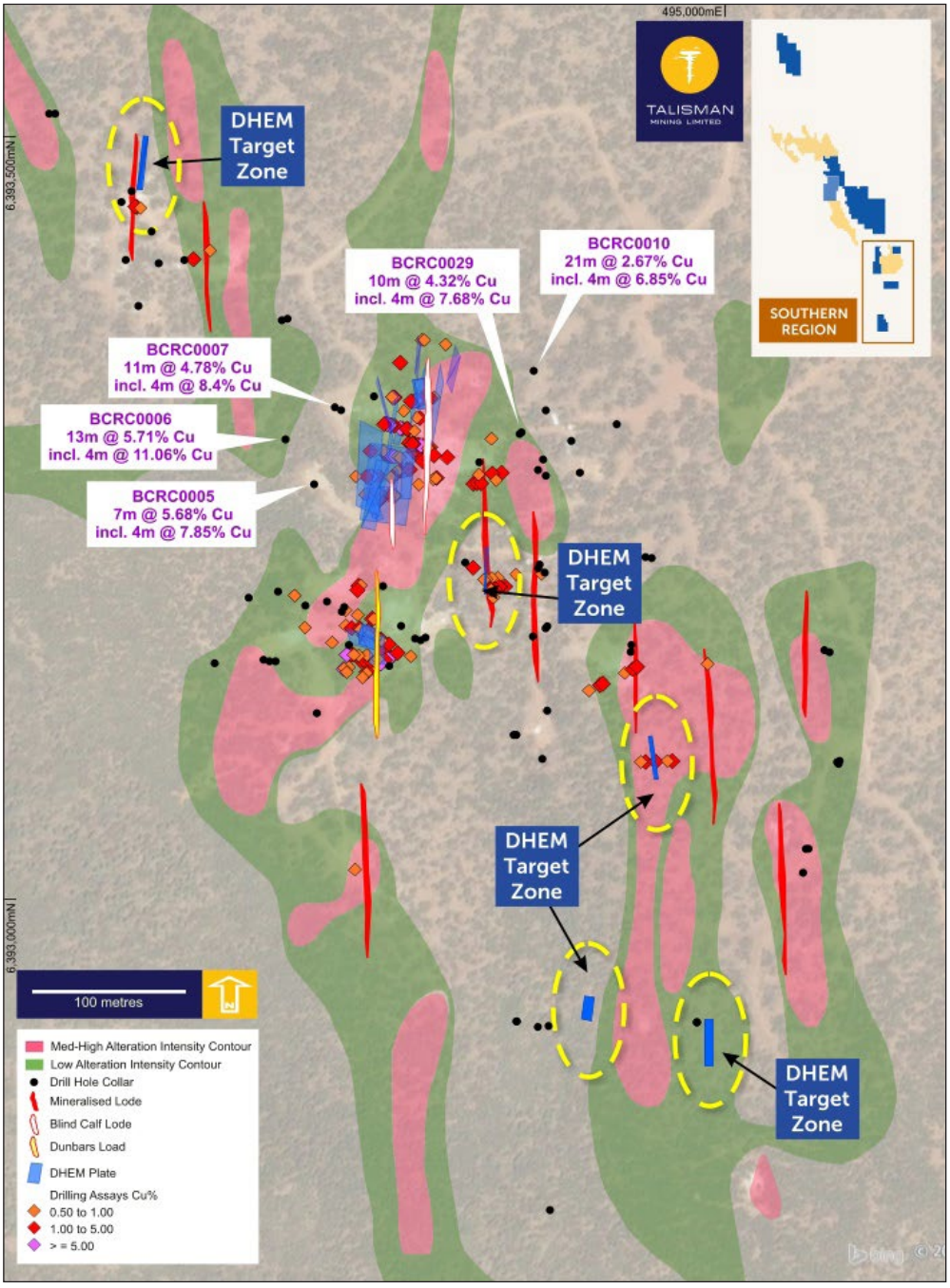



Source: Talisman

**Figure 8: Drilling at Blind Calf**

Source: IIR

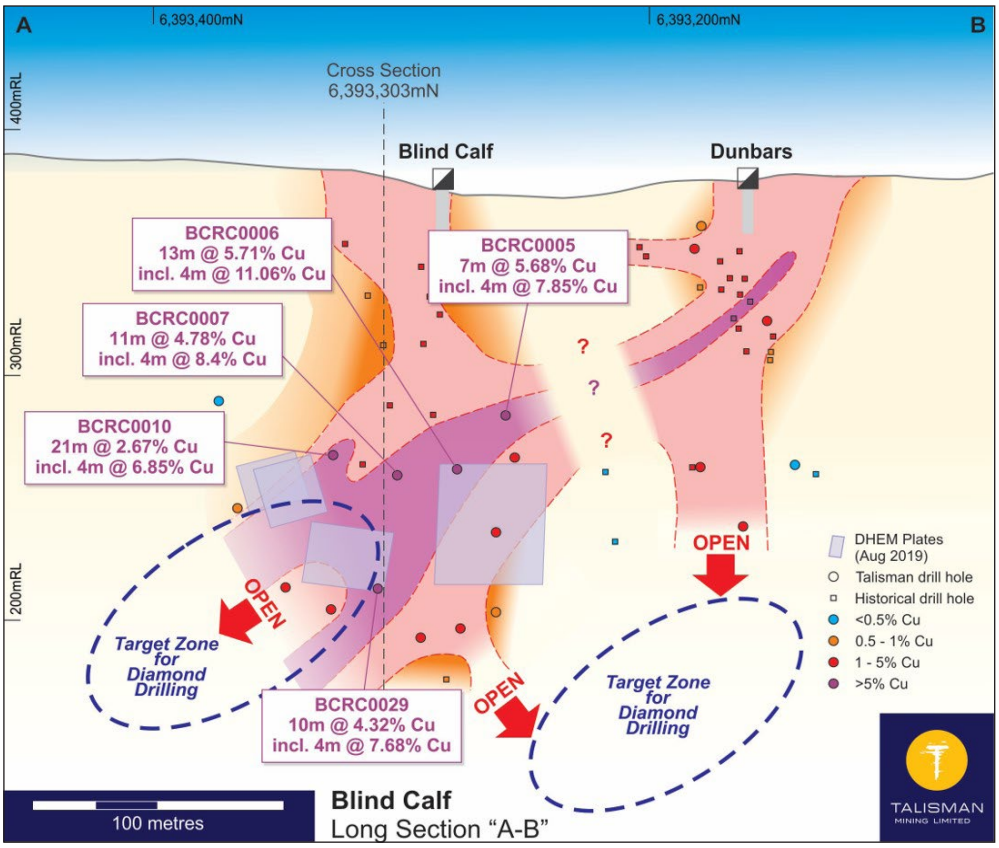
**Figure 9: Blind Calf prospect showing drilling, interpreted lodes and geochemistry**




Source: Talisman

- The drilling into the main Blind Calf-Dunbars copper lode system has continued to expand the main north plunging shoot (Figure 10) - this remains open down plunge to the north and vertically down dip; high tenor intersections in this zone include, amongst others:
  - 7 m @ 5.68% Cu from 98 m in hole BCRC005,
  - 13 m @ 5.71% Cu from 129 m in hole BCRC006
  - 21 m @ 2.67% Cu from 117 m in hole BCRC010; and,
  - 10 m @ 4.32% Cu from 176 m in hole BCRC029.
- True widths are between 60% and 80% of the intercepts, and even as such, these are significant copper intersections by any measure.

**Figure 10: Long section through Blind Calf and Dunbar's lodes, looking west**




Source: Talisman

- Although drilling into the other interpreted parallel lodes did not intersect appreciable mineralisation, anomalous copper was intersected and DHEM targets outlined (Figure 9), highlighting the exploration potential of these areas.
- This can be expected in these types of systems, with pinching and swelling within the overall structures controlling mineralised shoot geometry as demonstrated in Blind Calf-Dunbars - there is the potential for shoot development above or below the anomalous drill hole intercept points.
- Further RC and diamond drilling is planned for the Blind Calf area, with diamond drilling essentiial to obtain structural information that can be used in planning further drilling.

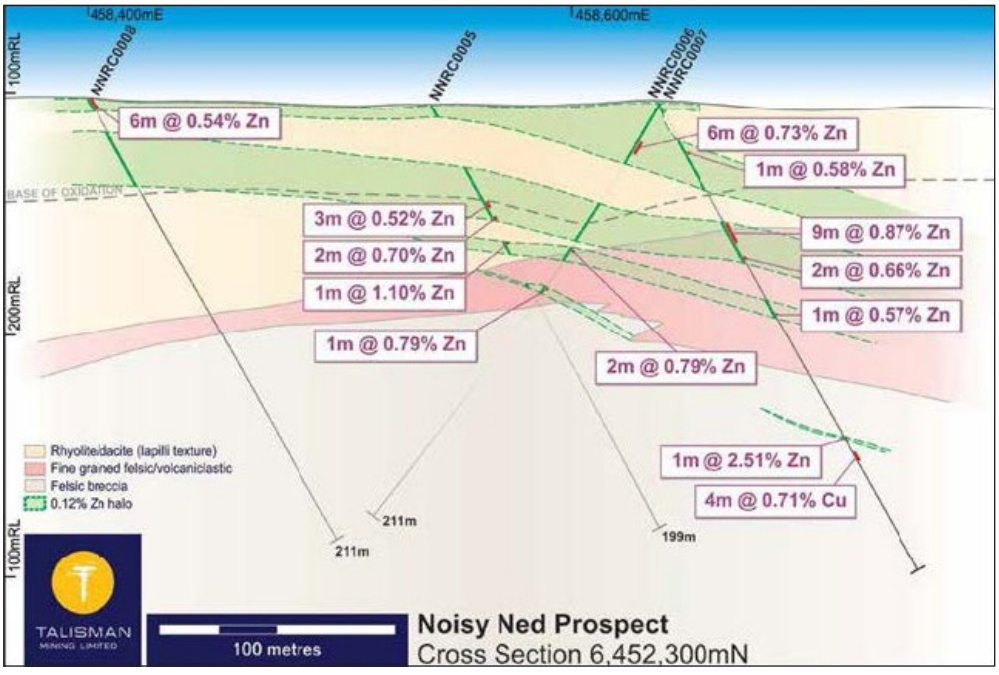
## Noisy Ned

- Noisy Ned is located in the central group of tenements, with work to date including auger drilling, which was followed up by RC drilling (9 holes for 1,809 m, Figure 11).
- The prospect is situated over a package of flat to shallowly easterly dipping highly altered felsic volcanics, including a brecciated rhyolite with an intercalated tuffaceous unit - strong to moderate silicification and pyrite alteration is ubiquitous through the rocks drilled.
- Structurally, the prospect is located adjacent to the Gilmore Suture, a major crustal scale structure that is a regional control on mineralisation.
- The RC drilling was designed to follow up a strong multi-element auger geochemical anomaly that has a strike length of over one kilometre along the Gilmore Suture.
- The drilling intersected broad zones of anomalous zinc, lead and copper mineralisation on all sections across the N-S trending structural zone (Figures 11 and 12), with mineralisation appearing to be slightly discordant to bedding, and with a shallow dip to the east.
- It is interpreted that these results are indicative of the diffuse margins of an epithermal mineralising system, with further work, including DHEM and auger sampling being undertaken to vector in on the higher grade, gold/silver mineralised core.

**Figure 11: Noisy Ned drill collars**


Source: Talisman

**Figure 12: Noisy Ned cross section, looking north**

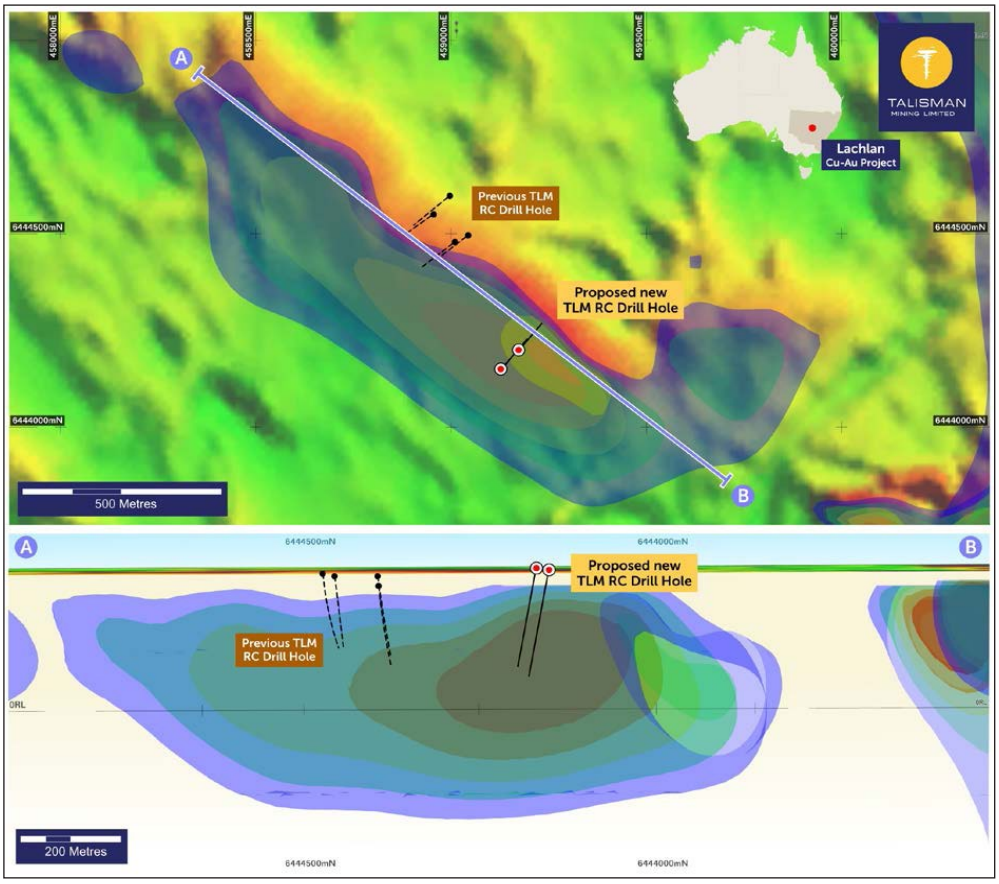



Source: Talisman

## Cumbine

- Drilling at Cumbine (Figure 13), which included four RC holes for 757 m, targeted an IP anomaly that was coincident with soil and rock chip anomalism at the flank of an outcropping volcanic sequence.
- The drilling intersected zones of quartz veining and brecciation, with gold intersections of up to 7 m @ 1.95 g/t Au - these have been interpreted as fault zones.
- Subsequent interpretation and 3D modelling of the newly flown magnetics data has highlighted a strong magnetic anomaly with the core to the SE of the previous drilling, which is planned to be tested by two RC drill holes.

**Figure 13: Cumbine collars and geology**




Source: Talisman

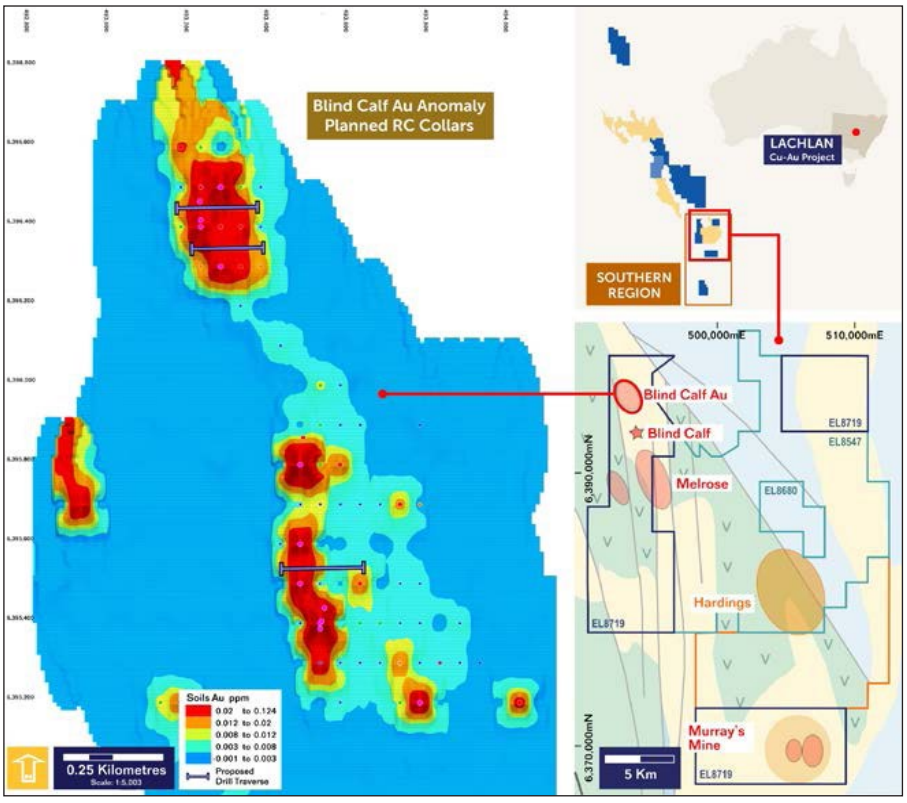
## Regional - Soil Sampling

- In early to mid 2019 the Company undertook a comprehensive soil sampling programme, largely covering the southern group of tenements.
- This work, as reported to the market on July 22, 2019, delineated a number of quality anomalies as presented in Figures 14 to 18 - these figures also show planned RC drillhole fences, with drilling planned for all prospects.

### Blind Calf Au

- Sampling at the Blind Calf Au prospect, located approximately 1 kilometre NNW west along strike from the Blind Calf copper prospect has delineated a high tenor gold-in-soil anomaly that extends for a strike length of approximately 1 kilometre (Figure 14).
- This is associated with a structural flexure interpreted from magnetic data - such a feature is also associated with alteration at the Blind Calf copper lodes, with these style of structural features a common focus for mineralisation.
- As mentioned earlier it is not uncommon to see Cobar-style deposits exhibiting a range of metal contents - a case in point is the Cobar group of deposits which have gold rich and copper rich members amongst others.

**Figure 14: Blind Calf Au soil gold anomalies**

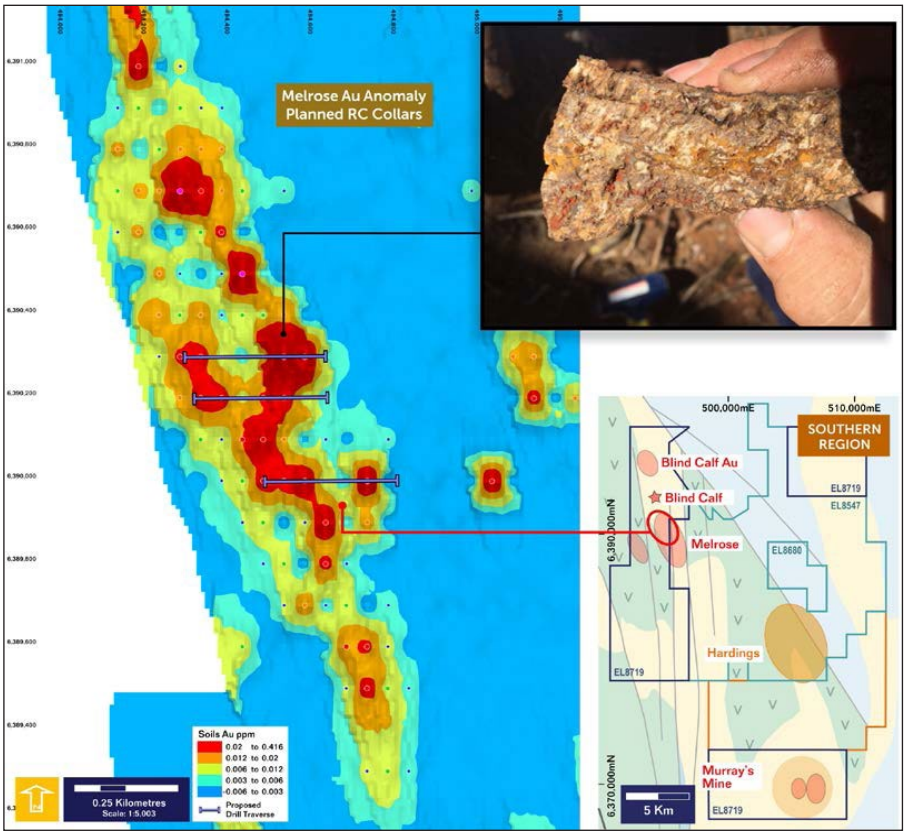



Source: Talisman

## Melrose

- The Melrose prospect (Figure 15), located south of Blind Calf, returned a 1.5 km long gold-in-soil anomaly with peak values of up to 400 ppm (0.4 g/t) gold - this is a very high value for gold soil geochemistry.
- The anomaly is still open to the north, and ground verification identified a strongly altered gossanous unit and quartz veining in altered volcanic rocks.

**Figure 15: Melrose soil gold anomalies**

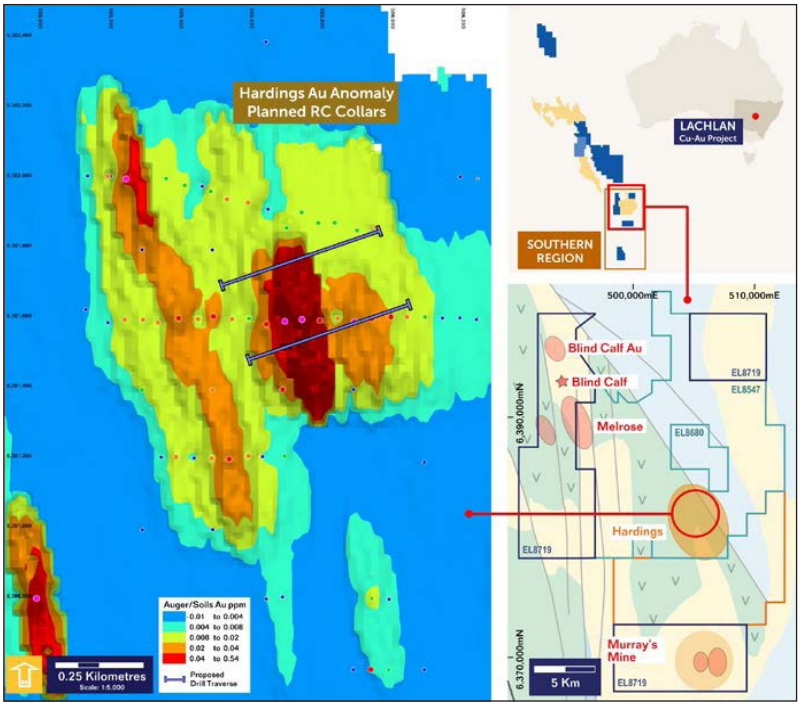



Source: Talisman

### Hardings

- Hardings, located approximately 15 km SSE of Blind Calf (Figure 16), returned a high tenor (up to +500 ppb (0.5 ppm) gold-in-soil anomaly, associated with strong alteration, including silicification, of volcanic rocks interpreted as being part of the Mineral Hill volcanic sequence.
- This was one of the prospects visited on our site trip, with our observations confirming the nature of the geology and alteration.

**Figure 16: Hardings soil gold anomalies**




Source: Talisman

### Kaolin Shaft - Brooklyn

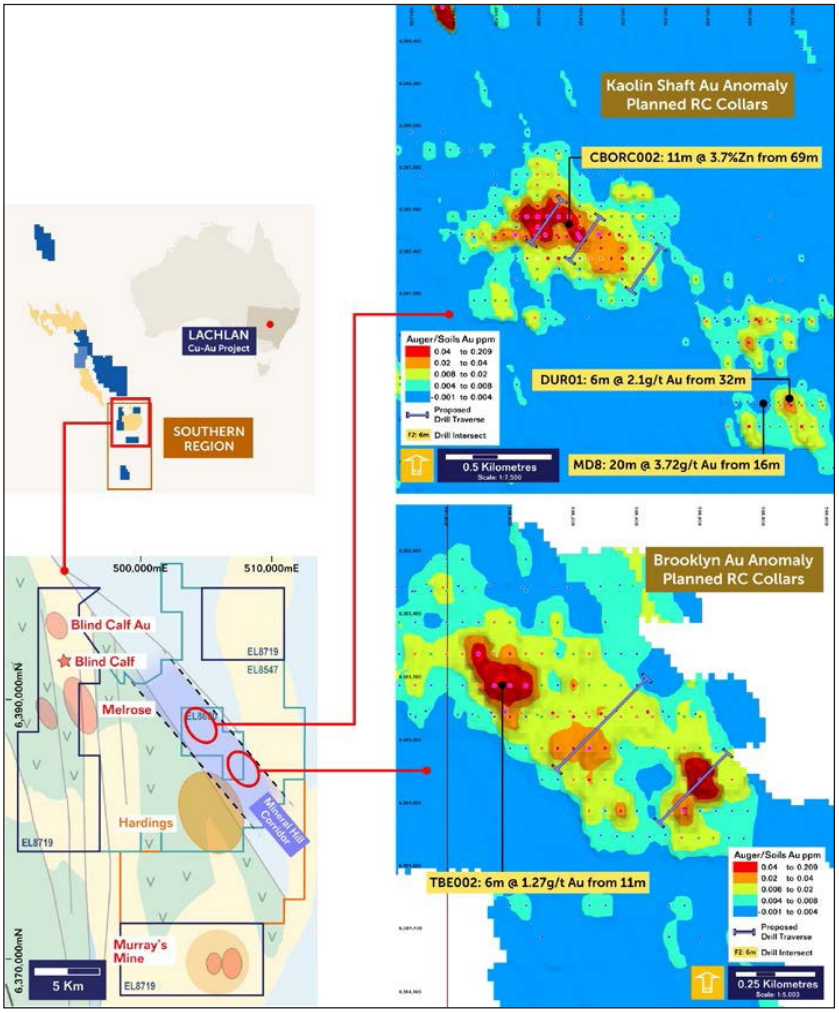
- Kaolin-Brooklyn (Figure 18) forms a SE trending line of gold-in-soil anomalism, along strike from Mineral Hill - the area is marked by a number of historic workings, with previous explorers carrying some drilling over a number of prospects.
- The geology, as confirmed by our site visit, is dominated by a low, wooded ridge of silicified dacite/rhyolite; another feature is significant base metal anomalous goethite (iron oxide) at the Brooklyn prospect (Figure 17), coincident with a circular colour anomaly in Google Earth.

**Figure 17: Brooklyn prospect showing strong iron oxide staining**

Source: IIR

- The prospect has seen a number of holes drilled in various directions - a comment made to the writer following the site visit by a 3rd party mentioned that limestone/marble chips were seen in one drill hole.
- This could be significant, as skarn mineralisation (hosted in limestone/marble) is commonly associated with epithermal mineralising systems, and goethite is commonly associated with weathered skarns.

**Figure 18: Kaolin Shaft - Brooklyn soil gold anomalies**




Source: Talisman

# LUCKNOW GOLD PROJECT - TLM EARNING 70%

## LOCATION, TENURE AND INFRASTRUCTURE

- Lucknow includes EL6455, centred approximately 15 km SE of Orange, and located adjacent to the Great Western Highway (Figure 19).
- The EL, which is in good standing, has an area of 10 sub-blocks (~29 km$^2$), and is subject to an earn-in agreement from private company Lucknow Gold Limited ("Lucknow Gold") - summary terms of the agreement include:
  - Talisman subsidiary, Talisman B has the right to earn up to 70% of Lucknow through the sole funding of expenditure of A$1.5 million on exploration over four years and the issuing of A$250 k of Talisman shares within the first two years,
  - The Company can earn an initial 51% through the expenditure of A$700 k over two years - this includes a minimum expenditure of A$350 k in year one; and,
  - At the Company's election it can earn an additional 19% (taking the total interest to 70%) through sole funding a further A$700 k of exploration over the next two years.
- Talisman shall be operator and manager during the earn-in period, and at the end of either the first or second earn-in period Talisman can elect to form an unincorporated joint venture.
- Talisman can also elect to withdraw at any time, subject to completing the minimum year one expenditure.

**Figure 19: Lucknow location**


Source: Talisman

## PREVIOUS WORK

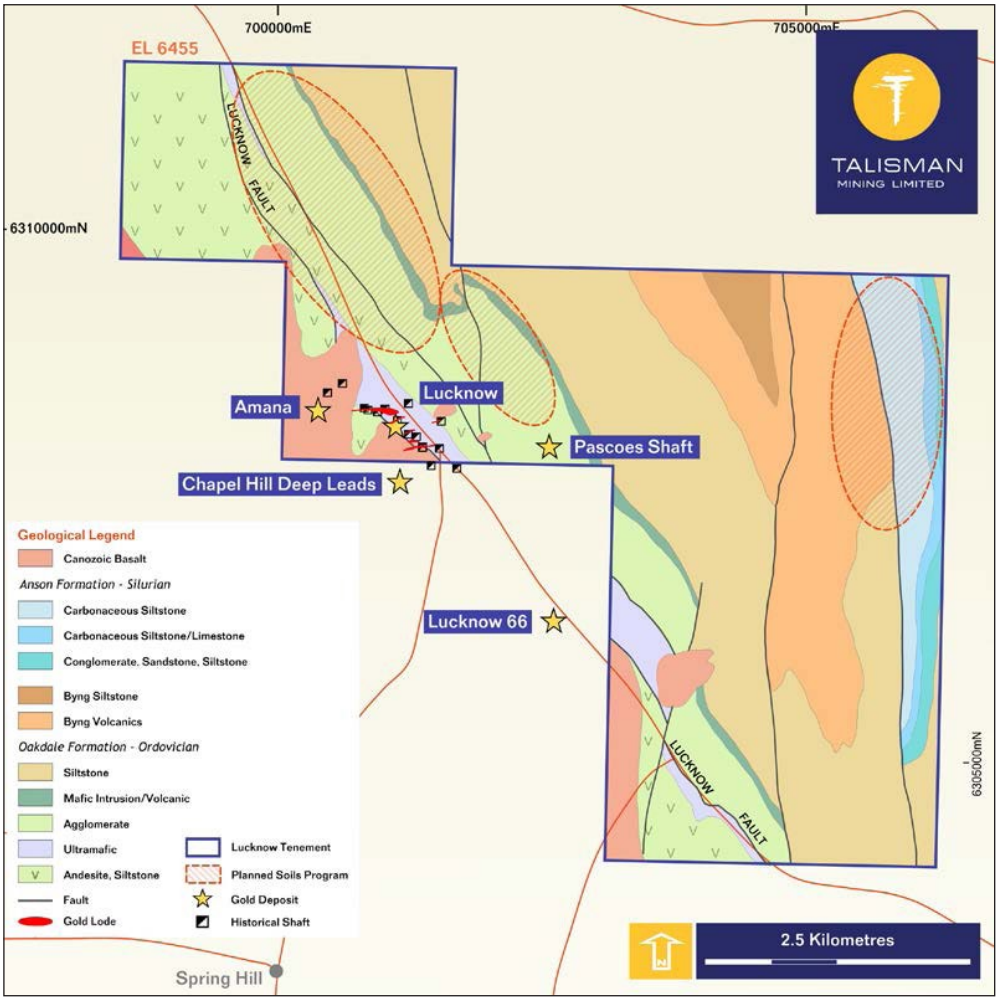
- Mining commenced at Lucknow in 1851, with over 600,000 oz of gold reportedly being produced over a number of separate periods from 1851 to 1937.
- Although some of the earlier mining was alluvial, the majority was from hard rock operations, with most gold coming from veins occurring over a strike length of ~1,000 km and to a depth of generally <180 m - that being said mining did extend in a limited zone to a depth of 465 m.
- A feature of Lucknow are the extremely high grades mined - it is estimated that the average grade of all production was ~100 g/t Au, with bonanza shoots producing handpicked ore with grades of ~50 oz/t (~1,550 g/t), with many parcels returning grades of over 500 oz/t (15,500 g/t, or 15.5 kg/t).
- There was a hiatus of activity from 1937 until 1965, after which exploration recommenced in the area - this included a brief period of work by The Newcastle Wallsend Coal Co. Pty. from 1965 to 1967, which was then followed by another hiatus until 1985.
- Periods of exploration have been sporadic from 1985 until the present, with this work including limited RC/diamond drilling, RAB drilling and geophysical/geochemical/geological surveying.

## GEOLOGY AND MINERALISATION

- Lucknow is underlain by volcanics of the Late Ordovician Oakdale Formation, which includes volcaniclastic and turbiditic sediments, with lesser intercalated lavas and intrusives (Figure 20).
- A key feature is the NNW trending, NE dipping Lucknow Fault, with a dilational flexure in this controlling the location of the gold mineralisation - another key control on mineralisation are serpentinites that are juxtaposed against the Oakdale rocks by the fault - these serpentinites, which occur in the hanging wall (Figure 21) are interpreted as representing sheared and metamorphosed ultramafic intrusives.
- Mineralisation occurs as a series of east-west striking, steeply plunging veins/shoots within the dilation zone, and controlled by the faulted contact between the volcanics and the serpentinite (Figure 21).
- 20 such shoots have been identified, with these occurring at irregular intervals along the contact within the fault jog - there is the potential for down plunge extensions or additional lenses of serpentinite (Figure 21), that, where against the fault, provide additional targets for mineralisation.
- Cu-Au anomalism to the NW along the Lucknow Fault also provides additional targets for mineralisation (Figure 20).

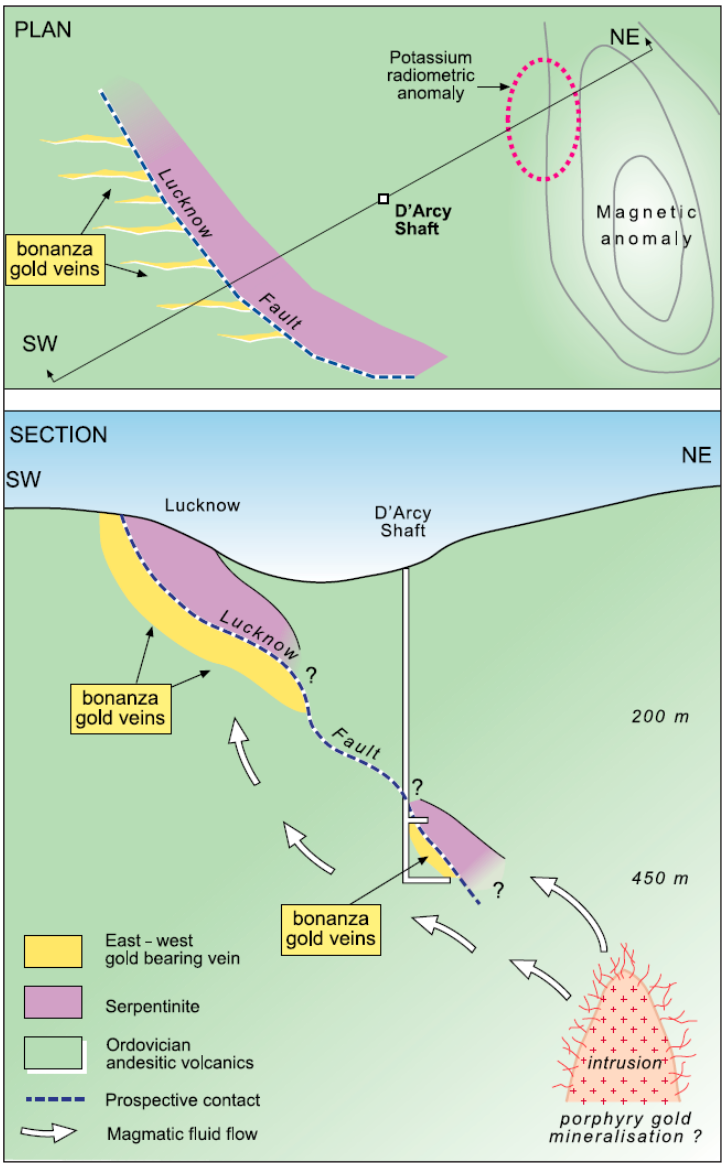
- Additional copper-gold anomalism has been identified along a north-south trending fault to the east (Figure 20) - this may indicate leakage from a similar style of system at depth - we note that limestones and carbonaceous siltstones have been mapped to the east of this structure, with these being potential reactive hosts to mineralisation.
- It has been postulated that a deep seated intrusive may be the source of the ore-forming fluids, with this travelling up and along the structures, and with mineralisation being deposited when the fluids reach the reactive ultramafics - this is similar to skarn formation, except that skarns are generally associated with limestone and marble.
- We note that high grade massive sulphide lode-style mineralisation recently intersected by Stavely at the Thursday Gossan Project in Victoria appears to be controlled by a faulted ultramafic contact in an overall porphyry-related environment, a similar setting to that at Lucknow.
- The style of mineralisation is also considered analogous to the high grade lodes at both Butte in Montana and at the San Miguel Copper Mine in Arizona - the high grade copper lodes at these deposits are associated with and interpreted as having been driven by an underlying porphyry copper system.

**Figure 20: Lucknow geology and prospects**




Source: Talisman

**Figure 21: Interpretation of Lucknow mineralisation**




Source: Lucknow Gold 2011 Prospectus

# PLANNED ACTIVITIES

## LACHLAN AU-CU PROJECT

- Near term work will include RC drilling of Cumbine and the high grade gold-in-soil anomalies as described previously - it is expected that this work, for which approvals are in place, will commence in early October, depending upon availability of drilling contractors.
- Diamond and further RC drilling is being planned to test both the main and parallel lodes at Blind Calf - the diamond drilling will be used to help determine the structure, which we consider essential in understanding the system, and in targeting repeats of the mineralisation.
- Other activities will include a review of recently acquired data, including the detailed magnetics that have been integrated with the publicly available data to provide a detailed project wide dataset to aid in exploration targeting.

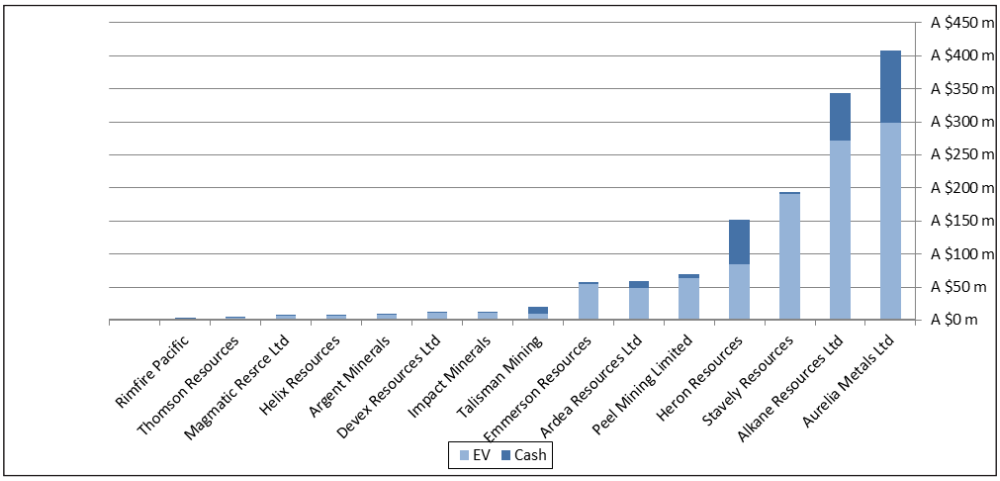
## LUCKNOW

- Initial work at Lucknow will include geological mapping and geochemical sampling along the Lucknow Fault to the NW of the workings, as well as over the north-south trending fault to the east.
- The Company will also review the geological interpretation of the Lucknow Goldfield, with the results of all work to be used in planning future work, including drilling.

## PEERS

- Talisman's peer group includes ASX-listed juniors operating largely in NSW - these are shown in Table 3 and Figure 22 - we have also included two current mid-cap producers in Alkane and Aurelia.
- This highlights Talisman's strong cash position when compared with most peers - this is critical in allowing for effective exploration.
- In addition the potential for uplift with exploration success is highlighted, particularly with respect to Peel which has made some Cobar Basin discoveries, Stavely with the recent Thursday's Gossan discovery and Alkane with the Molong North porphyry discovery.
- Alkane's recent discovery saw the share price double, with that for Stavely increasing by 500%.

**Figure 22: Peer group EV and cash**




Source: IRESS, company reports and releases

**Table 3: Talisman peers**

| Talisman peers | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Company** | **Price** | **EV** | **Precious Metals** | **Base Metals** | **Specialty Metals** | **Where?** | **Notes** |
| Aurelia Metals Ltd | $0.470 | A $407.9 m | Y | Y | | NSW | Hera, The Peak |
| Alkane Resources Ltd | $0.680 | A $344.1 m | Y | Y | Y | NSW | Tomingly, Peak Hill, DZP, Molong North |
| Stavely Resources | $1.070 | A $193.9 m | Y | Y | | VIC | Stavely Belt |
| Heron Resources | $0.380 | A $91.8 m | Y | Y | | NSW | Woodlawn VMS |
| Peel Mining Limited | $0.290 | A $70.4 m | Y | Y | | NSW | Cobar Basin polymetallic discoveries - includes 6.76 Mt Mallee Bull discovery |
| Ardea Resources Ltd | $0.560 | A $59.4 m | Y | Y | Y | NSW, WA | Lewis Ponds polymetallic et al |
| Emmerson Resources | $0.135 | A $57.4 m | Y | Y | | NSW, NT | Various Macquarie Arc Exploration Areas |
| Talisman Mining | $0.110 | A $20.4 m | Y | Y | | NSW | Lachlan Cu-Au - Cobar Basin |
| Impact Minerals | $0.010 | A $13.2 m | Y | Y | | WA, NSW | Commonwealth Hill Polymetallic |
| Devex Resources Ltd | $0.090 | A $12.0 m | Y | Y | | NSW, NT | Junee, Bogong |
| Argent Minerals | $0.020 | A $9.3 m | Y | Y | | NSW | 21.8 Mt Kempield Ag rich polymetallic |
| Helix Resources | $0.018 | A $7.6 m | Y | Y | Y | NSW | Collerina, Cobar Basin |
| Magmatic Resources | $0.059 | A $6.9 m | Y | Y | | WA, NSW | Divesting NSW projects |
| Thomson Resources | $0.037 | A $4.2 m | Y | Y | | NSW, QLD | Bygoo tin, Chillagoe Gold |
| Rimfire Pacific | $0.003 | A $3.2 m | Y | Y | Y | NSW | Fified Project, includes Sorpresa Au-Ag |
| Golden Cross | $0.019 | A $1.9 m | Y | Y | | NSW | Copper Hill Porphyry |

Source: IRESS, company reports and releases

## CAPITAL STRUCTURE

- Talisman currently has 185.7 million fully paid ordinary shares and 28.72 million unlisted options on issue - exercise dates range from 31/10/2019 to 31/10/22, with exercise prices of between A$0.141 and A$0.504.
- The largest shareholder is Kerry Harmanis (direct and indirect, with 18.45%); Directors and Management hold ~0.6%, with the top 20 holding ~46%.

## BOARD AND MANAGEMENT

- **Mr Jeremy Kirkwood – Bcom ANU - Non-Executive Chairman**: Jeremy Kirkwood joined Talisman in April 2016 and has extensive experience in corporate strategy, investment banking and global capital market and provides invaluable strategic input and guidance to the Company's board and management team.

  Jeremy is a principal of Pilot Advisory Group and was previously a Managing Director at Credit Suisse, Morgan Stanley and Austock. He has primarily worked in public markets, undertaking merger and acquisitions and capital raisings for companies principally in the metals and mining, energy and infrastructure sectors.

  In the 3 years immediately before the end of the financial year, Jeremy also served as a Director of ASX listed Zenitas Ltd (formerly BGD Corporation). He is also the Chair of Geelong Grammar School and a Director of Independent Schools Victoria.

  Jeremy serves on the Company's Audit, Nomination and Remuneration Committees. With extensive industry experience, Jeremy is considered qualified to hold these responsibilities.

- **Mr Dan Madden - BComAcc, ACA, Governance Institute Australia - Managing Director**: Dan Madden was appointed as Managing Director on 1 July 2016 and has been with Talisman since 2009 in his previous roles as acting CEO and Chief Financial Officer and Company Secretary. Dan has more than 16 years' experience in the resource sector, including Xstrata Nickel Australasia, Jubilee Mines NL and Perilya Ltd.

  He graduated from the University of Birmingham with a degree in Commerce and Accounting before joining Deloitte in the UK and Australia. He is an Associate Member of the Institute of Chartered Accountants of England and Wales and a member of the Governance Institute of Australia.

- **Mr Brian Dawes – B.Sc. Mining, MAusIMM - Non-Executive Director**: Brian is a mining engineer with extensive international mining industry experience. He holds a BSc in Mining from the University of Leeds UK, and is Member of the Australasian Institute of Mining and Metallurgy.

  He has worked in the UK, Africa, the Middle East and across Australia and holds several First Class Mine Managers' Certificates of Competency. Brian's diverse expertise covers all key industry aspects from exploration through the discovery, feasibility, funding, approvals, project construction, commissioning, operations, optimisation, logistics, marketing, and closure phases. This includes site management and corporate responsibilities in a diversity of challenging and successful underground and open pit operations across many commodities and geographies; mainly in copper, nickel, gold, zinc and lead, with iron ore, graphite, and coal. Prior to joining Talisman, Brian held senior positions with Jubilee Mines NL, Western Areas, LionOre Australia, WMC, Normandy Mining, and Aberfoyle.

  In the 3 years immediately before the end of the financial year, Brian did not hold any other directorships.

  Brian serves on the Company's Audit, Nomination and Remuneration Committees. With extensive industry experience and being financially literate, Brian is considered qualified to hold these responsibilities.

- **Ms Karen Gadsby – B.Comm, FCA, MAICD - Non-Executive Director**: Karen is a professional Non-Executive Director with over 30 years' finance and commercial experience across several sectors. She worked as an Executive for North Ltd throughout Australia for 13 years including at Robe River Iron Associates and Energy Resources of Australia Ltd.

  In the 3 years immediately before the end of the financial year, Karen also served as Chair of Strategen Environmental Consulting Pty Ltd and Community First International Ltd, and as a director of Landgate.

Karen is the Chair of the Audit Committee and a member of the Nomination and Remuneration Committees. With her extensive experience in finance and having chaired a number of Audit Committees, Karen is considered qualified to hold these responsibilities.

- **Mr Peter Benjamin B.Sc (Hons), Grad Dip (Exploration), (Bus. Admin), MAusIMM, AICD, AAIM - Non-Executive Director:** Peter Benjamin was appointed as a Non-Executive Director in July 2019. Peter is an experienced geologist who has worked in the mining industry for more than 40 years, predominantly in senior exploration, project, operational and executive management roles with junior and mid-tier ASX-listed companies.

  These positions have included Managing Director of gold and copper explorer Kalamazoo Resources Ltd, Managing Director for Shaw River Manganese Ltd, General Manager Geology for Iluka Resources Ltd and Divisional Project Manager for Newcrest Mining Ltd.

  These roles have included significant experience in the development and subsequent operations for open pit and underground precious, base metal and bulk mineral mines throughout Australia.

  During his career Peter has overseen large gold and base metal exploration programmes which have resulted in new mineral discoveries and the extension of Mineral Resources and Ore Reserves. This includes operating exploration and project development programmes in the Lachlan Fold Belt of NSW, which is a key focus area for Talisman.

  Peter is Member of the Australian Institute of Mining and Metallurgy, a Graduate of the Australian Institute of Company Directors and a Graduate and Mentor at the Australian Institute of Management.

  Peter serves on the Company's Audit, Nomination and Remuneration Committees. With extensive industry experience, Peter is considered qualified to hold these responsibilities.

- **Mr Tony Greenaway - General Manager Geology:** Tony has over 25 years' experience in the resource industry, having conducted and managed exploration from grass roots evaluation and project generation through to advanced feasibility studies for copper, gold, platinum group metals and iron ore across a broad range of geographical settings and mineralisation styles.

  Prior to joining Talisman, Tony has held senior management positions with small and mid-tier ASX listed and private exploration and mining companies, exploring throughout the West Australia goldfields and Pilbara regions, South East Asia, South and West Africa and South America.

  Tony is a current member of the Australasian Institute of Mining and Metallurgy (AUSIMM), having a BSc (Geology) from Curtin University and Grad DipEd from the University of Western Australia.

- **Mr Shaun Vokes – Co-Company Secretary**: Shaun joined Talisman in February 2016. He is a finance professional with over 25 years' experience in the metalliferous resources industry gained predominantly in senior operational and management roles within Australia and Africa.

  Prior to joining Talisman, Shaun spent five years as Manager, Business Services/CFO for Kabanga Nickel Company Ltd in Tanzania. Shaun's experience includes project evaluation and financing, business development, contract negotiation, metals marketing, risk management and corporate and financial governance for both private and ASX-listed entities across a range of base and precious metals.

  Shaun is a graduate of Curtin University and holds a Bachelor of Business degree and is a member of the Australian Society of Certified Practicing Accountants.

# APPENDIX 1 - NSW MINERAL DEPOSITS

| Deposit | Current Ownership | Tonnage (Mt) | Au Grade (g/t) | Ag Grade (g/t) | Cu Grade (%) | Pb Garde (%) | Zn Grade (%) | Au Moz | Cu Kt | Style | Age | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Browns Creek | ANL | | | | | | | 0.99 | 13 | Cu-Au Skarn | Silurian | DPI summary sheet |
| Cadia Group | Newcrest | 3,460 | 0.39 | | 0.40 | | | 43 | 8,700 | Porphyry and related Cu-Au | Late Ordovician - Early Silurian | Latest Company Statement |
| Copper Hill | Golden Cross | 87 | 0.32 | | 0.36 | | | 0.90 | 313 | Porphyry Cu-Au | Late Ordovician - Early Silurian | Golden Cross website |
| Cowal | Evolution Mining | 240.64 | 0.96 | | | | | 7.43 | | Low sulphidation epithermal Au, possibly related to an alkalic porphyry at depth | Late Ordovician - Early Silurian | Latest Company Statement |
| CSA | Glencore | 17.7 | | 21 | 5.11 | | | | 904 | Cobar-style Orogenic | Middle Devonian | Resources and Energy Dec 2018 |
| Elura | CBH/Toyo | 45 | | 69 | | 5 | 8.5 | | 0 | | Middle Devonian | Pre-mining Resource |
| Hera | Aurelia Metals | 2.70 | 4.12 | 34 | | 3.67 | 4.86 | 0.36 | | Cobar-style Orogenic | Middle Devonian | Latest Company Statement |
| Hill End | | 5.32 | 3.4 | | | | | 0.58 | | Orogenic Au | Late Devonian - Early Carboniferous | Latest Company Statement |
| Kempfield | Argent | 21.8 | 0.12 | 47 | | 0.44 | 0.89 | | | Ag rich VMS | Silurian | Latest Company Statement |
| Mallee Bull | Peel Mining/CBH | 3.92 | 0.3 | 32 | 2.3 | | | 0.04 | 90 | Cobar-style Orogenic | Middle Devonian | Company Website |
| Manuka (Wonawinta) | | 38.8 | | 42 | | 0.61 | | | | MVT | Middle Devonian | Resources and Energy Dec 2018 |
| Marsden | Evolution Mining | 123 | 0.27 | | | | | 1.07 | | Porphyry Cu-Au | Late Ordovician - Early Silurian | Latest Company Statement |
| McPhillamy's | Regis Resources | 68.9 | 1.04 | | | | | 2.30 | | Orogenic ? | Silurian | Latest Company Statement |
| Mineral Hill | Quintana | 21.38 | 0.47 | | 0.32 | | | 0.32 | 68 | Epithermal | Middle Devonian | Latest Company Statement |
| Mt Boppy | Black Oak Minerals | 0.46 | 3.4 | | | | | 0.05 | | Epithermal? | Middle Devonian | Black Oak release, 2015 |
| North Parkes | CMOC/ Sumitomo | 578 | 0.2 | | 0.57 | | | 3.72 | 3,295 | Porphyry Cu-Au | Late Ordovician - Early Silurian | China Moly website |
| Nymagee | Aurelia Metals | 8.10 | | 9 | 1.2 | 0.3 | 0.7 | | | Cobar-style Orogenic | Middle Devonian | Resources and Energy Dec 2018 |
| Owendale | Platina | 35.6 | | | 405 ppm Sc, 0.05% Co, 0.22 g/t Pt, 0.10% Ni | | | | | Laterite, developed over an ultramafic intrusive | Late Ordovician - Early Silurian - intrusive age | |
| Peak Gold Mine | Auralia | 10.89 | 1.64 | 10.1 | 1.48 | 0.96 | 1.04 | 0.57 | 161 | Cobar-style Orogenic | Middle Devonian | Latest Company Statement |
| Peak Hill | Alkane Resources | 17.02 | 1.4 | | 0.08 | | | 0.77 | 14 | High-sulphidation epithermal Au | Late Ordovician - Early Silurian | Company, historic production and current resources |
| Syerston (Sunrise) | CleanTeq | 56 Kt Ni, 10Kt Co, 10 Kt Sc | | | | | | | | Laterite, developed over an ultramafic intrusive | Late Ordovician - Early Silurian - intrusive age | Latest Company Statement |
| Tomingly | Alkane Resources | 6.78 | 1.8 | | | | | 0.39 | | Orogenic? | Late Ordovician | Latest Company Statement |
| Tritton Total | Aeris Resources | 20.7 | 0.13 | | 1.5 | | | 0.09 | 311 | VMS | Middle Devonian | Latest Company Statement |
| Wagga Tank | Peel Mining | 3.76 | 0.31 | 75 | 0.27 | 2.1 | 5.5 | 0.04 | 10 | Cobar-style Orogenic | Middle Devonian | Latest Company Statement |

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