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# Talisman Mining Ltd (TLM)

## Monty may be full of high grade copper

### Recommendation

**Buy** (Initiation)

Price

**\$0.67**

Target (12 months)

**\$0.90**

Risk

**Speculative**

### Expected Return

Capital growth **34%**

Dividend yield **0%**

Total expected return **34%**

### Company Data & Ratios

Enterprise value **\$87m**

Market cap **\$100m**

Issued capital **148.6m**

Free float **86%**

Avg. daily val. (52wk) **\$0.2m**

12 month price range **\$0.10 - \$0.785**

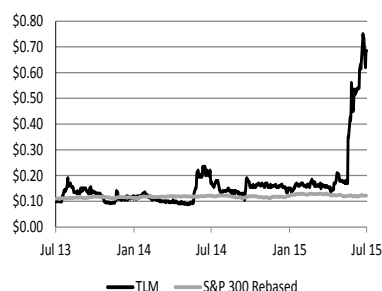
GICS sector

**Materials**

### Price Performance

	(1m)	(3m)	(12m)
Price (A\$)	0.54	0.16	0.20
Absolute (%)	25.2	332.3	235.0
Rel market (%)	23.2	336.8	233.7

### Absolute Price



SOURCE: IRESS

### Springfield Project shaping up as host to more than Monty

The recent exciting discovery of high grade copper-gold bearing massive sulphides at TLM's Monty Prospect in the Springfield Project is 10 km east of the DeGrussa copper mine of Sandfire Resources (ASX – SFR, Hold) in the Doolgunna Region of the Murchison in Western Australia. Springfield is being explored in joint venture (JV) with SFR. The discovery is in a volcanogenic massive sulphide (VMS) setting and points to the potential for more such discoveries. SFR has farmed into TLM's large Springfield Project as Manager and is earning up to 70% by expenditure of \$15m by mid-2018.

### Perseverance and good science make the breakthrough

The success at Monty comes after TLM and SFR in particular, but also other explorers, have spent considerable time and money exploring in the Doolgunna district with seemingly little or no success until now. Drilling indicates the district has suffered some extreme structural dislocation with abundant complex faulting, folding, shearing and over-thrusting. This tectonic disruption has hampered exploration and makes interpretation of the Monty discovery difficult, but SFR's high quality scientific work is being rewarded and subtle geophysical anomalies are receiving more attention now.

Discovery drill hole, TLDD0004A, intersected **16.5m at 18.9% Cu and 2.1g/t Au** from 409.5m down hole and TLDD0005, located 80m along strike, intersected **9.2m at 11.8% Cu and 2.9g/t Au** from 417m down hole within a broader zone of **13.1m at 8.4% Cu and 2.1g/t Au** from 416.7m down hole. Hole TLRC0004, 135m south, intersected **18m of much shallower copper-bearing massive sulphides** from 108m.

### Sinclair bound to produce more nickel from rich district

TLM acquired 100% ownership of the mothballed Sinclair Nickel Project with its extensive infrastructure and highly attractive portfolio of advanced nickel exploration projects for a fraction of its replacement cost in February 2015. Since then, TLM has been reviewing the Project's extensive data sets and formulating exploration and development plans. Given the exploration reluctance of the previous owner (Xstrata), despite numerous encouraging nickel discoveries, we see major upside from targeted exploration of mineralised trends near Sinclair that could yield early ore to supplement Sinclair mine inventory and underpin a very rewarding restart of the Sinclair operations.

### Investment thesis – Speculative Buy, Valuation \$0.90/sh

Discovery of the very high grade copper-gold mineralisation in a VMS setting at the Monty Prospect has ignited interest in the potential for the district to be "normal" and like other major camps which host significant VMS deposits. That could see the usual "cluster" of VMS deposits that invariably includes a "whopper" or two. As the geological setting of the Monty discovery is better understood and applied to the exploration nearby with the added benefit of SFR's strong local knowledge of the DeGrussa geology, it is far more likely that other similar deposits will be found in the district. Through its very constructive JV with SFR, TLM is extremely well placed to reap enormous benefit from being associated with a strong mine operator nearby.

In assessing the value of TLM, we have assumed a risk-weighted potential development at Monty and nickel development scenario at Sinclair. This results in a valuation of \$0.90/share, forming the basis for our Speculative Buy recommendation.

# Risks of investment

The key risks for resources investments include, but are not limited to:

- **Commodity price and currency volatility:** The relatively liquid nature of metal commodity markets such as for copper, nickel and gold and foreign currency markets such as trading in the value of the Australian dollar, exposes them to potentially wide fluctuations in price, particularly during more difficult economic times or major world events. Associated with commodity price and currency volatility are potentially different commodity prices and foreign exchange rate outcomes to our forecasts.
- **Lack of exploration success:** The difficulty of exploring in the Murchison district is related to the fact that the region has variable outcrop and further complexity comes from the geologically disturbed nature of the Archaean bedrock that hosts various types of mineralisation. The rocks have suffered extensive structural dislocation (faulting, shearing and over-thrusting) and variable alteration and weathering and may contain greater than expected geological complexities that may be difficult to resolve without extensive drilling programs and may inhibit the definition of adequate resources and reserves.
- **Lack of funding:** Exploration companies generally don't have a revenue source and so they require periodic injections of funding to enable adequate exploration and related development activities to continue so they can develop their projects.
- **Mining and metallurgical issues:** The mining and metallurgy of the Sinclair nickel deposit is well understood from previously successful operations and it is expected other nickel mineralisation in the surrounding district will have similar mining and metallurgical properties. Adequate investigations and testwork needs to be done on these other occurrences of nickel to confirm their suitability for mining and processing. Similarly, while visual inspection of the high grade copper-gold mineralisation in massive sulphides discovered at Monty indicates it may be very similar to the ore successfully mined and processed at the nearby DeGrussa mine, detailed testwork is needed to demonstrate its suitability for mining and processing. Adverse mining and metallurgical characteristics may result from such detailed investigations that could lead to a need for more complicated and expensive mining and processing requirements.
- **Regulatory and social licence approvals:** While there are currently no indications that there may be any difficulties with progressing through the necessary regulatory and social licence approvals processes to enable a suitable mining operation to be re-established at Sinclair or established at new areas near Sinclair and at Doolgunna, prolonged delays can result from adverse environmental or other regulatory issues and from the need to progress Native Title negotiations in a very careful and sensitive manner. Various stages of the regulatory approvals process can sometimes suffer unforeseen delays related to changes in personnel involved or from the need to resolve differences in interpretations. There may be some tenements in which the company has an interest or may acquire an interest in future which may contain areas over which legitimate common law native title rights of Aboriginal Australians exist. If native title rights do exist, the ability of the company to gain access to such tenements (through obtaining the consent of any relevant landowner) or to progress from the exploration phase to the development and mining phases of operations may be affected.
- **Weather impacts:** Cost overruns or operational delays can be caused by severe weather events because site access may be restricted due to the unsealed nature of roads and airstrips in the remote regions in which the company operates.
- **Inappropriate acquisitions:** The acquisition of other assets can divert management effort from the current focus and may yield inadequate returns.

# The Monty discovery changes everything

## Strong VMS style of Monty means there should be others

The discovery of significant high grade copper-gold bearing massive sulphides at the Monty Prospect in an apparently clearly VMS setting is not only an outstanding event in itself but it points to the potential for additional such deposits to be found in the neighbouring area given the propensity of such deposits to occur in clusters. While the extent and orientation of the rich mineralisation at Monty remains to be determined, its discovery has changed the perceptions of the Doolgunna district from being an important but “oddball” area to being part of a “normal” VMS system with significant upside.

## Sinclair being readied for timely exploration and then a restart

Since completing the acquisition of the Sinclair Nickel Project earlier in 2015, TLM has been carefully reviewing all the historical data on the mine and surrounding exploration areas. This review has incorporated a reappraisal of the Mineral Resources and mine inventory and all the exploration data, leading to plans for targeted exploration on the highest priorities. While there is believed to be scope to resume mining at Sinclair now, that is not likely to happen as TLM wants to make a thorough assessment of the likely nickel resources potential within all its tenements. This will allow a resumption of mining with a much stronger, more substantial resource base and an optimised mine plan at a time when demand for nickel is expected to be more favourable.

## Operations driven by TLM’s highly capable management team

TLM has a very talented and experienced exploration and operations team that includes senior personnel who have previously been part of the management teams that successfully ran the Cosmos and Sinclair mining operations and who have also had broad experience in all facets of exploration and mining operations from other roles. We believe this gives TLM a distinct advantage and will enable it to actively participate and drive potential developments at Monty and Sinclair and other projects TLM may be involved with.

## Valuation based on assumed resources at Monty and Sinclair

Our valuations of TLM (Table 1) are based on the assumption that TLM can define relatively modest resources at Monty and Sinclair that can be converted into a mining inventory to support a mine life of about four to five years at each project. Development of Monty would use SFR’s processing facilities at DeGrussa. Potential reserves defined in the Sinclair Project would be treated at the Sinclair processing plant. With currently estimated cash of about \$12.3m, we believe TLM is adequately funded for its activities over the next year or so but we have assumed the company raises additional equity over the course of FY17 and our valuations have been diluted for this accordingly.

**Table 1 – Summary risk-weighted NPV-based valuations of TLM**

	\$m	\$ per share <sup>1,2</sup>
Exploration Assets – Doolgunna Project	68	0.41
- Sinclair Nickel Project	65	0.39
- Other	1	0.00
- Total	<u>134</u>	<u>0.80</u>
Administration	(6)	<u>(0.04)</u>
Net Cash, Additional Equity and Options <sup>3</sup>	<u>21</u>	<u>0.13</u>
<b>Total Valuation</b>	<b>149</b>	<b>0.90</b>

SOURCE: BELL POTTER SECURITIES ESTIMATES

NOTES: 1. MAY NOT ADD BECAUSE OF ROUNDING AND DILUTION EFFECTS.  
2. BASED ON EQUITY DILUTED SHARE CAPITAL OF 165.3M SHARES  
3. INCLUDES EXERCISE OF IN-THE-MONEY OPTIONS AND FORECAST OF ADDITIONAL EQUITY IN FY17.

# High grade VMS discovery at Monty

## TLM's work started the process that led to the major discovery

The success at Monty comes after TLM (which has spent in excess of \$20m) and SFR (estimated to have spent around \$50m) in particular, but also other explorers, have spent considerable time and money exploring in the Doolgunna district with seemingly little or no success until now. Thundellara Ltd (ASX – THX, not rated) has discovered relatively small but important high grade disrupted feeder pipe-like copper-gold mineralisation at its Red Bore Project adjacent to the DeGrussa mine and continues to do high quality work to locate the source of that mineralisation.

While the collective exploration effort in the Doolgunna district over the past five years or so has yielded only limited economic mineralisation, it has provided valuable information on the complex geological setting. Drilling indicates the district has suffered some extreme structural dislocation with abundant complex faulting, folding, shearing and over-thrusting. This tectonic disruption has hampered exploration and makes interpretation of the Monty discovery difficult but SFR's high quality scientific work is being rewarded and subtle geophysical anomalies are receiving more attention now.

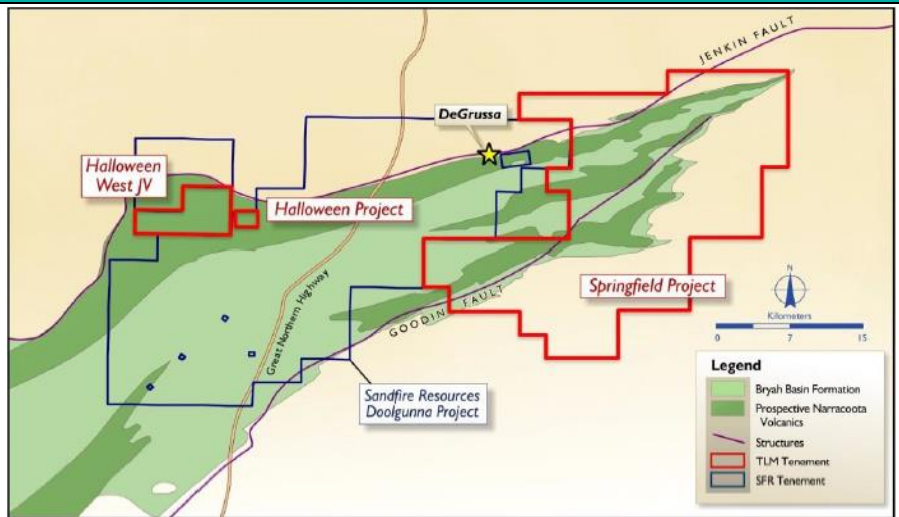
TLM had carried out extensive exploration on its Doolgunna Project, which included a focus on prospects such as Monty, Kink, Lovejoy, Salmon, Wedge and Abraham.

Figure 1 – Map of TLM's main projects



SOURCE: TALISMAN MINING LTD

Figure 2 - Map of TLM's Doolgunna Copper-Gold Project areas



SOURCE: TALISMAN MINING LTD

## Doolgunna JV with SFR makes lots of sense now

When TLM announced the major agreement with SFR to farm into TLM's Doolgunna Project, there was a perception that TLM had given the ground a very good going over (after spending \$20m on exploration) and perhaps SFR, frustrated by not having found anything significant after the DeGrussa mine on its own ground, was just going to be paying a lot of money to make sure there wasn't anything of great value in TLM's ground. Despite its proximity to the DeGrussa mine and the presence of several seemingly attractive targets like Monty, Homer and others, as all explorers in the region have found, the geology is structurally very complex (with much faulting, folding, shearing and over-thrusting) and even with the assistance of high powered, state-of-the art geophysics, unravelling the geological secrets in the area sufficiently to locate the previously expected other DeGrussa-like deposits has been a very difficult and frustrating task to date.

With its specialist proprietary knowledge of the nature of the DeGrussa deposits, and more particularly the vectors to mineralisation and ability to recognise when a near-mineralisation environment was encountered in a lone drill hole has enabled SFR's exploration team to achieve success. SFR was always going to be the natural JV partner for TLM in our opinion. Besides being able to bring more locally skilled geological manpower to the Doolgunna JV with TLM, SFR also brings the vital processing option in the event that the Monty discovery (and potentially other similar discoveries that are made in the JV area) is developed into a mine as its high grades suggest it should be.

### **Details of the SFR farm-in arrangement**

The JV arrangement between TLM and SFR involves three projects – the Springfield Project (which covers by far the largest area at 303km<sup>2</sup> and contains the Monty Prospect and numerous other prospects including several other advanced ones such as Homer); the Halloween Project; and the Halloween West Project (Figure 2). Under the terms of the JV, which began in December 2013, SFR can earn up to a 70% interest in the collective Projects by expenditure of \$15m over 5½ years. SFR must spend a minimum of \$5m within 2 years (which is believed to have already been achieved) before it can elect to either:

- Withdraw from the agreement with no further commitment and no project equity interest; or
- Spend an additional \$5m (for a total of \$10m) within a further 2-year period (total 4 years to that point) in order to earn a 51% interest in the Doolgunna Copper-Gold Projects, called the First Interest.

After SFR acquires the First Interest, a JV will be formed between SFR (holding 51%) and TLM (holding 49%). At that time, SFR then has the option to sole fund a further \$5m (for a total of \$15m) on exploration expenditure within a further 18 month period to acquire a further 19% (Second Interest) in TLM's Projects, taking SFR's interest to 70%.

If SFR gives notice that it is ceasing to sole fund prior to acquiring the Second Interest, SFR will be deemed to have earned its 51% interest and the exploration JV will be operated on a pro rata contributing basis or under standard industry diluting terms. Once SFR has earned the Second Interest and therefore holds a 70% JV interest, TLM has the right to maintain its 30% interest by contributing to exploration on a pro rata basis or to dilute under ordinary industry standard terms. SFR manages all exploration activities during the farm-in period.

### **Homing in on an elusive target**

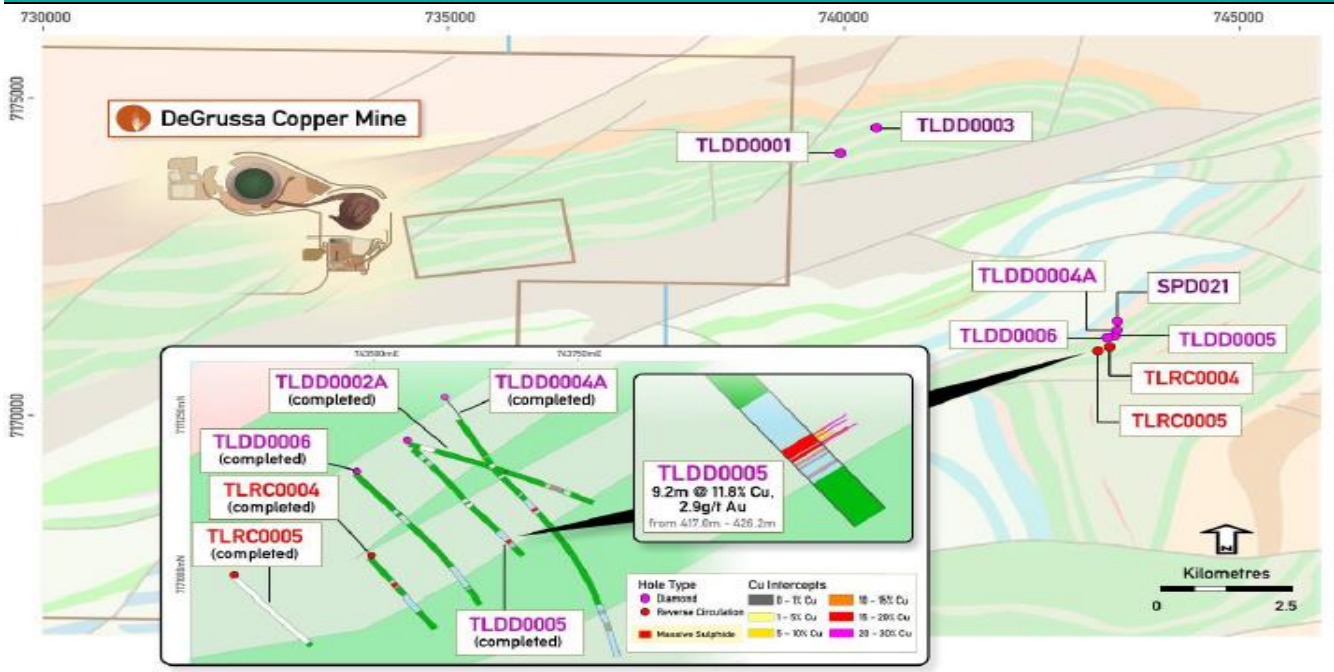
Recent exploration at the Doolgunna JV involved aircore drilling programs and high powered electromagnetic (EM) geophysical surveys. Detailed interpretation of the geochemical and geological results enabled the Manager, SFR, to generate exploration targets at the Monty Prospect within the Springfield Project, which it began to drill with RC and diamond methods in June 2015. Some of SFR's aircore holes in the vicinity of the Homer prospect were focused over the interpreted fold hinge south of the Red Bore East/Homer prospect areas and were in close proximity to previous aircore holes drilled by TLM so that SFR could calibrate its results with the significant amount of previous geological information generated by TLM.

The first few deep drill holes by SFR at the Monty Prospect apparently did not intersect any significant copper-gold mineralisation but they did intersect volcanic and sedimentary sequences that SFR regarded as encouraging and indicative of being near significant copper-gold mineralisation, based on their DeGrussa experience.

### Hole TLDD0004A intersects very high grade copper-gold

Discovery drill hole, TLDD0004A, intersected **16.5m at 18.9% Cu and 2.1g/t Au** from 409.5m down hole and TLDD0005, located 80m along strike from TLDD0004A intersected **9.2m at 11.8% Cu and 2.9g/t Au** from 417m down hole within a broader zone of **13.1m at 8.4% Cu and 2.1g/t Au** from 416.7m down hole (Figure 3). Hole TLRC0004, located 135m south of TLDD0005, achieved a surprise result in that it intersected **18m of much shallower copper-bearing massive sulphides** from 108m down hole. Assays are awaited for this unexpectedly shallow intersection. We understand hole TLRC0004 was intended as a pre-collar for a subsequent diamond tail, and it was not expected to intersect copper mineralisation in massive sulphides so shallow. The hole continued on to a depth of 306m and will provide an optimal platform for down hole EM (DHEM) surveys.

Figure 3 - Plan showing traces of drill holes at the Monty discovery



SOURCE: TALISMAN MINING LTD

### Significant faulting evident at Monty (as elsewhere in district)

The relationship of the surprisingly shallow intersection of massive sulphides in hole TLRC0004 to the two deeper intersections of massive sulphides is not known at this stage but it is apparent that there is significant faulting present, which is a feature of the district. A subsequent step-out diamond hole, TLDD0006, which was collared to intersect the interpreted strike extension of the previously intersected high grade mineralisation 80m further to the south-west from hole TLDD0005, was completed at a down hole depth of 553.9m without intersecting any significant mineralisation. Hole TLDD0006 did intersect a potentially significant fault zone and an extension of what is interpreted to be the sedimentary host horizon to the deeper massive sulphide mineralisation seen in holes TLDD0004A and TLDD0005. The fault zone was intersected over a down hole interval of 38m within a thick sedimentary sequence of 80m down hole thickness. SFR said the sedimentary sequence is similar to that observed on the margins of the massive sulphide mineralisation at DeGrussa. While it didn't intersect any massive sulphides, hole TLDD0006 did provide valuable geological information to assist with the interpretation of the extent and orientation of the high grade copper-gold mineralisation and that information will assist the ongoing drilling program.

## Our interpretation of the possible geological setting at Monty

With very little information available on the discovery of high grade massive sulphide mineralisation at Monty, there are many unknowns regarding its extent, orientation and mineralogy but some features point to it being a very significant occurrence in our opinion. We note from the photographs of the drill core of the massive sulphides that they seem to be in very competent ground conditions, despite the presence of major faults nearby and in the district generally. If the ground conditions are more competent in and around the massive sulphides, this could potentially have a favourable influence on mining methodology and costs. We also note the extensive presence of sedimentary units hosting the massive sulphide mineralisation at Monty, which indicates that this is a similar geological setting to that at DeGrussa and it also points to the formation conditions having been more tranquil than for many VMS deposits. This more tranquil formation setting indicates to us that there is potential for much larger bodies of massive sulphide to be present elsewhere in the quite extensive hybrid VMS system that formed the mineralisation.

## Monty assumed to be about a third to half the size of DeGrussa

Based on the present limited drilling results, we have applied some assumptions to estimate that there is a potential resource at Monty of around 0.7Mt with an average grade of about 12% copper and 2g/t gold containing about 80kt of copper and 45koz of gold. We have assumed there are two separate ore zones at Monty – a deeper one at vertical depth of about 350m and a shallower one at a vertical depth of about 90m. Assuming the mineralisation is similar to DeGrussa, those estimates have been increased to allow for multiple lenses, more extensive down dip extents, and greater true thicknesses to arrive at our estimate of the resource base for Monty of 5.4Mt at an average grade of about 6.6% copper and 1.4g/t gold containing about 360kt of copper and 238koz of gold (Table 2). That would make Monty about a third to a half the size of the DeGrussa resource (based on the Mineral Resource at 31 December 2014 and the material mined to that date) of 15.7Mt at an average grade of 4.7% copper and 1.7g/t gold.

## Monty likely to be developed via separate decline and open pit

Based on this estimate for a potential resource at Monty, we believe it would represent a very economically attractive deposit that could potentially be readily mined and processed at the DeGrussa processing plant 10km to the east. Our early stage development scenario for Monty assumes construction of a decline to mine material in the deeper ore zone and a separate and relatively small open pit nearby to mine the shallower ore zone. At this stage we have not assumed any continuity between the two ore zones.

**Table 2 - Assumptions for forecasts relating to valuation of the Monty Prospect**

Variable	Assumptions
Assumed resource base	5.4Mt at 6.6% copper, 1.4g/t gold
Contained metal in assumed resource base	360kt copper, 238koz gold
Assumed mining inventory	6.5Mt at 5.3% copper, 1.1g/t gold
Assumed metallurgical recoveries	Copper 90%; gold 45%
Total pre-production capital cost	\$58m
Average annual production rate	Approx 62kt copper and 45koz gold
Assumed start date	Mid-2018
Assumed mine life	5 years
Long term commodity price forecasts	Copper \$US 3.17/lb; Gold \$US 1,320/oz
Long term \$US/\$A rate	\$US/\$A = 0.75
Average C1 cash operating costs	\$US1.90/lb (net of by-product credits)
Unrisked NPV (10% discount rate)	\$418m

SOURCE: BELL POTTER SECURITIES ESTIMATES

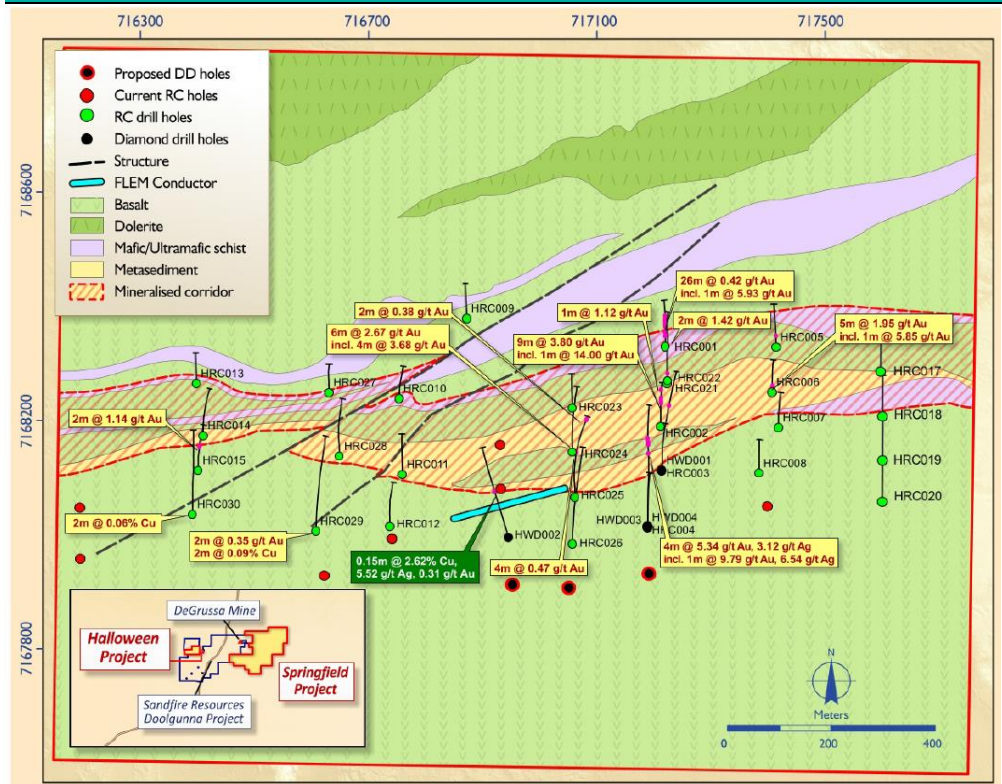
### Homer Prospect returns encouraging signs in initial drilling

At the Homer Prospect, located about 10km directly along strike from the DeGrussa mine (Figure 3 on page 6), TLDD003 was drilled to test the eastern strike extent of the interpreted C5 host horizon roughly 450m east-north-east of the TLDD001 intersection. The location of the drill collar coincided with a recently completed seismic line to facilitate stratigraphic interpretation. TLDD003 intersected haematitic exhalite with jasper clasts, which is interpreted to represent the C5 target horizon. This horizon returned weakly anomalous base metals and trace elements. The hole confirms that the C5 host horizon continues to the east and it supports further work in the area, heading further east along strike.

### Halloween Project

The Halloween Project is approximately 16.5km west of the Springfield Project and about 11.5km south-west of the DeGrussa mine (Figure 1). The Project covers the interpreted western extension of the Narracoota Volcanic Formation, which locally hosts the DeGrussa deposit. Anomalous VMS pathfinder elements have been identified from several programs of drilling at Halloween with 3D geological and geochemical modelling indicating a thickened volcano-sedimentary unit over a strike length of 600m with coincident gold-copper-zinc-manganese and sulphur enrichment that increases towards a cross-cutting fault zone (Figure 4) that may have acted as a primary conduit for the mineralising fluids. The best result from the drilling at Halloween was 0.15m averaging 2.6% copper, 5.5g/t silver and 0.3g/t gold from 164.7m down hole although numerous intersections of elevated gold were obtained (Figure 4).

Figure 4 - Geological plan of Halloween Project showing significant gold and copper intercepts



SOURCE: TALISMAN MINING LTD



## **Halloween West Project**

The Halloween West Project was previously a joint venture between TLM and Chrysalis Resources (Chrysalis) but TLM acquired the interest held by Chrysalis in May 2012 and the project is now part of the Doolgunna Copper-Gold Project JV with SFR. TLM has previously completed several programs of RC and diamond drilling at Halloween West after earlier programs of soil sampling and RC drilling identified copper-gold-zinc-manganese-bismuth anomalism in a magnetic package of strongly sheared volcanic sediments, cherts and intercalated ultramafic volcanic rocks. These rocks are thought to be prospective for VMS and/or structurally controlled copper-gold mineralisation.

## **SFR could spend \$15m on TLM JV tenements by FY17**

We have assumed that SFR carries out a very extensive drilling program over the next year at Monty to define the extent of mineralisation and to explore for other similar occurrences within TLM's Springfield JV tenement and the nearby JV tenements that collectively comprise the Doolgunna JV with SFR. Under the terms of that JV with TLM, SFR is funding \$15m of expenditure to earn a 70% in all three JV areas. We understand that approximately \$5m had been spent by SFR on TLM's Doolgunna JV tenements up until about June 2015. Allowing for an acceleration in drilling activity over the course of the next year, and assuming that SFR proceeds to earn its maximum interest, we estimate that SFR will spend about \$7.5m on the TLM JV in FY16 and the remaining approximately \$2.5m in early FY17 to take its expenditure to \$15m.

Based on the above assumption, we have assumed that TLM is likely to need to raise additional funding in FY17 to enable it to meet its likely share (30%) of the JV expenditures – see Table 4 on page 14.

# Sinclair being readied for sustained return

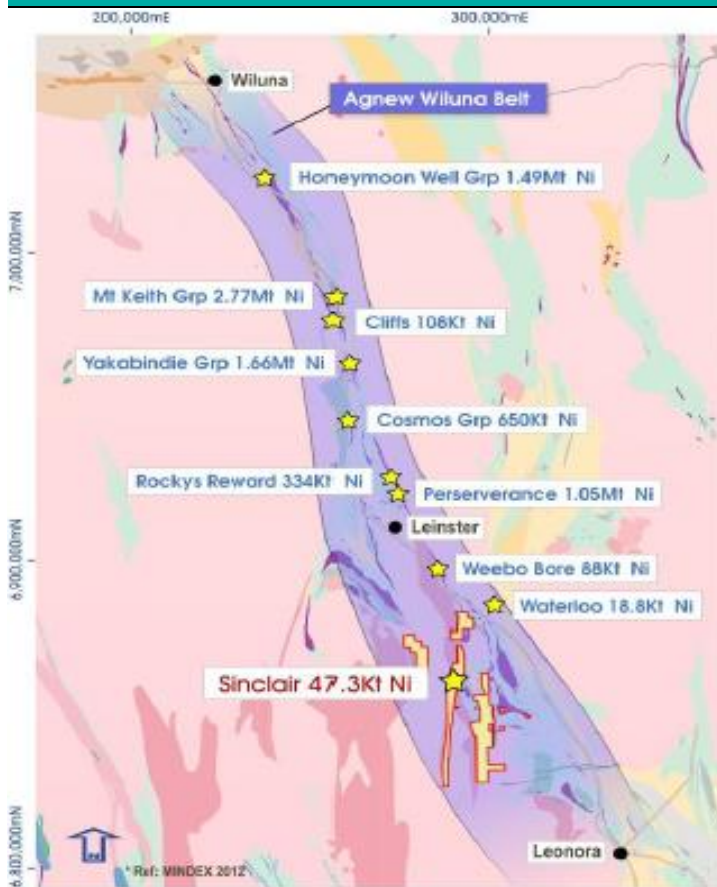
## Sinclair mine caught up in corporate, GFC, nickel price chaos

The Sinclair Nickel Project is located about 8km north of Leonora in the prolific nickel-bearing Agnew-Wiluna Greenstone Belt (containing a total resource endowment of over 9Mt of nickel metal) in the Eastern Goldfields of Western Australia (Figures 1 and 5). The Sinclair deposit was discovered in 2005 by Jubilee Mines, which was subsequently acquired by Xstrata Plc in March 2008 in a \$3b acquisition. The 2007 (pre-takeover) JORC Resource was 1.2Mt averaging 2.77% nickel for 33.7kt of contained nickel.

The Sinclair mine was brought into production in 2009 in the aftermath of the Global Financial Crisis. The mine was operated until August 2013, when it was put on care and maintenance following a prolonged decline in nickel prices that coincided with the Glencore/Xstrata merger. The open pit and underground mining operations at Sinclair produced a total of 1.6Mt of ore averaging 2.44% nickel containing about 38.5kt of nickel. The mine was mothballed very carefully with a view to being able to be brought back into operation at short notice in the future when nickel prices recovered.

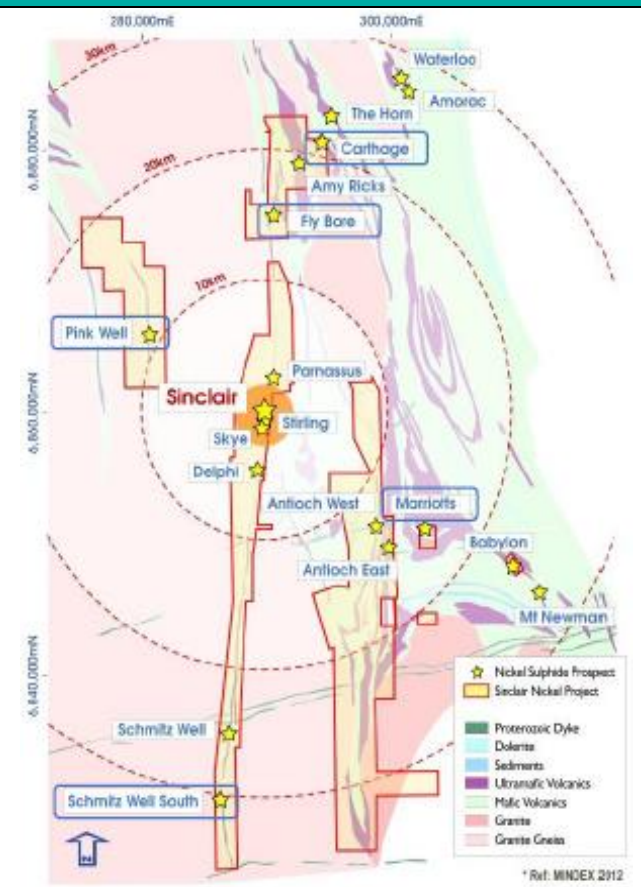
TLM acquired the Sinclair Nickel Project from Glencore Plc for a total of about \$8.5m (including stamp duty) in February 2015. Another \$2m is conditionally payable in relation to future production. The Project assets include the Sinclair open pit (essentially exhausted) and underground mine with significant drill indicated extensions (Figure 7 over page), an extremely well preserved processing plant with extensive associated infrastructure, equipment and spares, and a 300km<sup>2</sup> package of highly prospective mining and exploration tenements within a 30km radius of the mine (Figure 6).

Figure 5 – Map showing location of Sinclair Nickel Project



SOURCE: TALISMAN MINING LTD

Figure 6 - Map of TLM's main prospects in Sinclair Project



SOURCE: TALISMAN MINING LTD

## Sinclair acquisition

The assets acquired by TLM that comprise the Sinclair Nickel Project include:

- The Sinclair open pit and underground mine;
- The near-new 300ktpa processing plant;
- The potential Sinclair deposit extension;
- Two highly promising nearby nickel discoveries to Sinclair (Skye and Stirling);
- A large and highly prospective surrounding regional exploration tenement holding;
- An extensive inventory of spares and various equipment (including fleet of light vehicles, refuge chambers and even some mining equipment); the well maintained infrastructure of a fully equipped camp, offices and workshops; a sealed airstrip; and all mining and geological data that includes the extensive core farm with all the diamond drill core from the mine and regional exploration.

**We estimate the current replacement cost of the mining assets and infrastructure established at Sinclair would be of the order of at least \$125m and it would take at least a year to build them.**

## Sinclair contains significant potential resource extensions

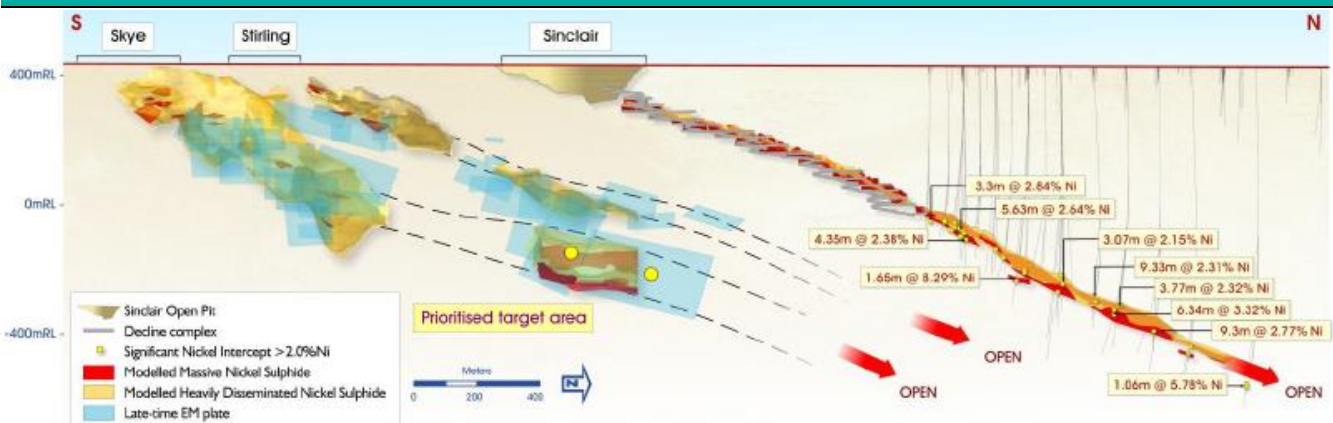
Significant resource potential exists at the Sinclair mine. Mining only extended to a depth of 445m involving about 1km plunge extent of the orebody but close spaced drilling has shown that the deposit continues for at least another 1km of plunge extent with many quite thick intersections grading over 2% nickel (Figure 7). There are also likely to be considerable remnant mining opportunities.

We estimate that the potential depth extension to Sinclair could contain a resource of similar size to what has previously been mined (i.e. about 1.4Mt averaging about 2.3% nickel for about 32kt nickel). The Sinclair deposit is still open at depth, indicating potential for a similar amount of mineralisation again down to a vertical depth of about 1,300m, which is likely to be the limit of underground mining in ultramafic rocks based on experience elsewhere in Western Australia.

## Skye and Stirling represent very attractive prospects

The Sinclair Project contains some very advanced exploration areas in and around the Sinclair mine such as the Skye and Stirling Prospects, which contain interpreted mineralised ultramafic channels adjacent and parallel to the Sinclair mine (Figure 7). The presence of the Skye and Stirling ultramafic channels is based partly on drilling and partly on strongly compelling evidence from EM geophysical surveying.

**Figure 7 - Cross section of Sinclair nickel mine and extension showing interpreted parallel mineralised channels (Skye and Stirling)**



SOURCE: TALISMAN MINING LTD

Most of the drilling of Skye and Stirling is shallow but it does include some significant although relatively broadly spaced intercepts but there is only limited drilling down plunge. The pattern of multiple parallel ultramafic channels is now well recognised in some of the major komatiitic nickel belts in the Eastern Goldfields, such as at Kambalda.

TLM's detailed review of the geological and geophysical data for Skye and Stirling has highlighted several highly prospective zones with strong EM plates that are interpreted to be indicative of potential massive sulphides. Targets for early drilling have been defined and prioritised and the Program of Work (POW) for this drilling has been submitted.

### Potential for 100kt of nickel at Sinclair-Skye-Stirling

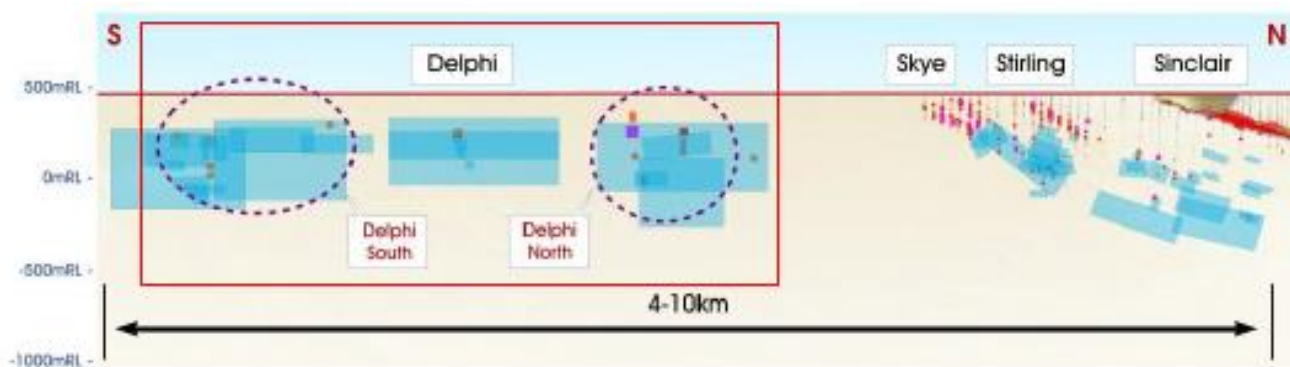
We estimate there is potential for remaining nickel resources of the order of three times the size of what has been mined at Sinclair (approximately 35kt of nickel), giving TLM a potential resource base of 100kt of nickel within the Sinclair-Skye-Stirling deposits within the three channels. We believe this could ultimately support a potential 10-year mine life at the most recent actual treatment plant capacity (of 350ktpa versus nameplate of 300ktpa) to produce around 7.5ktpa of nickel in concentrate at estimated total cash costs of around \$5 – 6/lb of nickel in concentrate (\$US3.75 – \$US4.50/lb), although we have considered a shorter initial mine life in our valuation of the Project (see page 13). Additional potential nickel resources are likely to be found in TLM's extensive and highly prospective regional exploration tenements that could give extended mine life and/or expanded nickel output.

### Delphi has high potential for hosting a new nickel discovery

The Delphi Prospect was generated from regional targeting that highlighted it as a high priority target because of the similarity of its magnetics to the pattern at Sinclair and the strength of its EM anomalies. The magnetics point to the potential for several ultramafic channels at Delphi. Delphi begins 4km to the south of the Sinclair mine (Figure 8) and it extends for about 6km in the same ultramafic sequence. The strong similarities between Delphi and Sinclair means Delphi has greater potential to contain massive sulphides than was previously recognised.

Broad spaced drilling at Delphi North has intersected sulphide mineralisation containing up to 5.4% nickel in a sequence of high-MgO ultramafics.

Figure 8 - Cross section along Sinclair ultramafic trend showing location of sparse drilling into EM anomalies at the Delphi Prospect



SOURCE: TALISMAN MINING LTD

NOTE: BLUE OBLONG SHAPES ARE EM PLATE ANOMALIES

At Delphi South, a thick sequence of potentially favourable high-MgO ultramafics has also been interpreted and disseminated nickel mineralisation has been intersected in relatively sparse drilling but the interpreted basal contact has not been tested by drilling. The regional magnetics also highlight the potential for a repeat of the Sinclair "terrace" structure while distinct EM plate targets have been identified.

TLM is proposing to carry out high powered surface EM surveying at Delphi North and Delphi South, which is expected to generate high priority drill targets for which POWs have been approved.

### Ongoing development of regional targets

TLM's highly prospective 300km<sup>2</sup> tenement package (Figure 6) contains about 80 strike kilometres of prospective ultramafics within a 30km radius of the Sinclair mine. Many of these tenements have only had very limited historic exploration, particularly in the last five years when important advances have been made in exploration technology (especially in geophysics and particularly in EM). While TLM has some very attractive exploration targets at the Skye, Stirling and Delphi Prospects, there is considerable merit in the company's ongoing exploration targeting of other areas as they could rapidly advance in status and could represent attractive additional sources of nickel sulphide ore for easy trucking to the Sinclair treatment plant.

Other exploration areas where active exploration targeting is being developed include:

- Fly Bore
- Carthage
- Schmitz Well South
- Marriotts
- Parnassus
- Pink Well

### Sinclair valuation based on development of a modest resource

Our valuation of the Sinclair Nickel Project is based on our assumptions for a modest Mineral Resource (Table 3) to be established at depth in the extensions to the Sinclair deposit but this Resource could also come from successful exploration and evaluation of the Skye and Stirling Prospects. We have assumed that a small mining Reserve is established from the Mineral Resource that underpins an initial mine life of 3.5 years. This could generate a healthy free cash flow which could be used to conduct more extensive exploration within the Sinclair Nickel Project or for other growth-oriented purposes.

**Table 3 - Assumptions for forecasts relating to valuation of Sinclair-Skye-Stirling mineralisation**

Variable	Assumptions
Assumed Mineral Resource	2.8Mt at 2.6% nickel
Assumed Mineral Reserve	1.2Mt at 2.4% nickel
Contained metal in assumed Mineral Reserve	29.4kt nickel
Assumed metallurgical recovery	Nickel 88%
Total pre-production capital cost	\$ 20m
Average annual production rate	Approx 7.4kt nickel in concentrate
Assumed start date	Mid 2017
Assumed mine life	3.5 years
Long term commodity price forecasts	Nickel \$US 8.75/lb
Long term \$US/\$A rate	\$US/\$A = 0.75
Average C1 cash operating costs	\$US3.80/lb (excluding any by-product credits)
Unrisked NPV (10% discount rate)	\$73m

SOURCE: BELL POTTER SECURITIES ESTIMATES

We have assumed that TLM carries out a very active exploration and development program, particularly at the Delphi Prospect and on other high priority areas amongst the regional targets listed above, over the next two years that includes a considerable amount of resource drilling and development studies.

# Valuations based on assumed initial Resources for Monty and Sinclair

We have adopted a combination of net present value (NPV) based methodology for estimated resources at Monty and Sinclair along with some exploration prospectivity estimates to assess the more grass roots mineral exploration assets of TLM (Table 5). We have based our NPV valuations on our long term copper (\$US3.17/lb), gold (\$US1,320/oz) and nickel (\$US8.75/lb) price forecasts and \$US/\$A (0.75) exchange rate forecasts. Discount rate used is 10% for the NPV estimates.

## Adequately funded now after recent capital raising

TLM recently raised \$8m to provide support for any potential future requirements for TLM to contribute to joint venture funding at its Doolgunna Project; to progress the company's growth strategy at its Sinclair Nickel Project; and for working capital. We believe TLM is now adequately funded for all its planned activities for the next year or so. We have assumed that TLM will raise additional equity capital of about \$7.5M over the course of FY17 to coincide with the likelihood of TLM needing to contribute funding for its likely 30% share for the Doolgunna Project JV by then (see page 9 and Table 4). We have assumed this additional capital will be raised at the current share price even though there could be favourable outcomes from the current exploration and evaluation drilling at Monty and at the Sinclair Nickel Project that may lead to a share price re-rating by the time that capital is actually sought.

**Table 4 - Forecast additional equity to be raised by TLM in FY17**

Year to June	2017e
Gross amount to be raised <sup>1</sup> (\$ m)	7.5
Share price assumed (\$)	0.67
Number of shares to be issued (m)	11.2
Total number of shares on issue at year end(m)	159.8

SOURCE: BELL POTTER SECURITIES

NOTE 1. BEFORE CAPITAL RAISING COSTS

## Valuations are risk-weighted to allow for uncertainty

We have applied risk adjusted discount factors of 50% to the unrisks Monty valuation and 35% for the unrisks Sinclair valuation in determining our valuations for the whole company (Table 5). These valuations have been used to determine an equity diluted valuation per share, which is diluted to account for potential additional shares issued in FY17 (Table 4).

**Table 5 – Summary risk-weighted NPV-based valuations of TLM**

	\$m	\$ per share <sup>1,2</sup>
Exploration Assets – Doolgunna Project	68	0.41
- Sinclair Nickel Project	65	0.39
- Other	1	0.00
- Total	<u>134</u>	<u>0.80</u>
Administration	(6)	<u>(0.04)</u>
Net Cash, Additional Equity and Options <sup>3</sup>	<u>21</u>	<u>0.13</u>
<b>Total Valuation</b>	<b>149</b>	<b>0.90</b>

SOURCE: BELL POTTER SECURITIES ESTIMATES

NOTES: 1. MAY NOT ADD BECAUSE OF ROUNDING AND DILUTION EFFECTS.  
2. BASED ON EQUITY DILUTED SHARE CAPITAL OF 165.3M SHARES  
3. INCLUDES EXERCISE OF IN-THE-MONEY OPTIONS AND FORECAST OF ADDITIONAL EQUITY IN FY17.

# Capital structure, shareholders and Board

## Capital Structure

TLM has 7.3m employee options on issue of which 5.6m are currently in the money. There are no performance rights on issue.

**Table 6 - TLM capital structure**

Issued shares m	148.6
Share price \$/sh	0.67
Market cap \$m	99.5
Net cash \$m	12.3
<b>EV (undiluted) \$m</b>	<b>87.3</b>
Options (in the money) m	5.6
Issued shares (diluted) m	154.1
Market cap (diluted) \$m	103.3
Net cash + options \$m	14.5
<b>EV (diluted) \$m</b>	<b>88.8</b>

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

## Major shareholders

**Table 7 - TLM major shareholders**

Major shareholders	million shares	% of total
Kerry Harmanis	18.6	13
Board and Management	2.4	2
Other (free float)	127.5	86
<b>Total</b>	<b>148.6</b>	<b>100</b>

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

## Board of Directors and Management

### Board has extensive recent mine operating and exploration expertise

TLM's Board of Directors complements the company's highly competent and energetic management that was an integral part of the operations team at the nearby Cosmos nickel mine and then the Sinclair mine until it was closed. That strong operations experience gives TLM a major advantage in the resources sector, enabling it to rapidly assess, prioritise and execute the exploration and mining programs required and which could see TLM actively participating in the exciting evaluation and potentially rapid development of the new Monty copper-gold discovery and also Sinclair's resumption of highly profitable nickel production. These potential developments could see TLM generating strong operating cash flow and building the company into a powerful resources midcap.

**Table 8 - TLM Board of Directors**

Director	Background
<b>Alan Senior</b> <i>Non-Executive Chairman</i> <i>Assoc. Mech. Eng,</i> <i>FIEAust, FAusIMM</i>	Alan is an engineer with over 37 years of experience in design and project development, mainly associated with mining and mineral processing in Australia. He has experience of a wide range of projects and operations from pre-feasibility through to commissioning and operations and for a range of commodities. He was previously a Director of Jubilee Mines and is currently a Non-Executive Director of Amex Resources.
<b>Gary Lethridge</b> <i>Managing Director</i> <i>B.Com, CA, FCIS, FGIA,</i> <i>MAICD</i>	Gary is an experienced mining executive. His experience encompasses all facets of the resources industry including mineral exploration and discovery, feasibility, development and operations. Prior to joining TLM in early 2009, Gary was Executive General Manager – Corporate and Chief Financial Officer for Jubilee Mines, being part of the management team from 2003 until that company was acquired by Xstrata in 2008. Prior to that, Gary held senior executive positions with Lion Ore Mining International (now Norilsk Nickel).
<b>Brian Dawes</b> <i>Non-executive Director</i> <i>B.Sc. Mining,</i> <i>MAusIMM(CP)</i>	Brian is a mining engineer with over 30 years of experience in project development and operations across Australia and internationally. Prior to joining TLM as an Executive Director in 2009, Brian was Executive General Manager Operations and Projects for Jubilee Mines after having previously held the position of General Manager Operations for Western Areas with responsibility for the development of the Flying Fox mine and the Forrestania Nickel Project. Prior to that he was Group Mining Engineer for Lion Ore Mining.
<b>Karen Gadsby</b> <i>Non-executive Director</i> <i>B.Com, FCA, MAICD</i>	Karen has over 28 years of experience in finance, having worked for North Ltd for 13 years in various executive roles including General Manager Finance, Chief Financial Officer and Company Secretary. She is now predominantly a Non-Executive Director of various community and environmental organisations.

SOURCE: TALISMAN MINING LTD

The management of TLM has considerable mining experience from their broad careers that has included many of them working together successfully for Jubilee Mines and Xstrata Nickel.

**Table 9 – TLM Management Team**

<b>Team Member</b>	<b>Background</b>
<b>Graham Leaver</b> <i>Exploration Manager</i>	<p>Graham is an experienced exploration and mining geologist with over 20 years in the Western Australian nickel industry that has encompassed exploration targeting, discovery, development and production. Prior to joining TLM, Graham spent 10 years with Jubilee Mines and later Xstrata Nickel, most recently as Exploration Manager. He was a senior geologist with the team that discovered and developed the Sinclair Nickel Project and was Geology Manager during open pit operations. Prior to that he held positions with WMC and Black Swan Nickel which included working in the prolific Norseman-Wiluna Greenstone Belt.</p>
<b>Ben Wilson</b> <i>General Manager – Sinclair Nickel Project</i>	<p>Ben is a mining engineer with over 20 years of broad experience in all facets of mining operations including pre-feasibility and feasibility studies through to the development and management of mining operations across a range of commodities including nickel, copper, gold and lead-zinc. Prior to joining TLM, Ben has worked in Australia and overseas with Gold Fields, OZ Minerals, Oxiana, Newmont and Henry Walker Eltin.</p>
<b>Dan Madden</b> <i>Chief Financial Officer and Company Secretary</i> <i>B.Com, ACA</i>	<p>Dan has over 14 years of resources industry experience that included the position of audit manager for Deloitte and Financial Controller for Jubilee Mines NL and Xstrata Nickel Australasia. Most recently he held the position of General Manager – Finance for Xstrata Nickel Australasia.</p>

SOURCE: TALISMAN MINING LTD



# Talisman Mining Ltd (TLM)

## Company description

TLM currently owns 100% of the Doolgunna Copper-Gold Project in the Murchison district of Western Australia that comprises three individual projects collectively covering about 350km<sup>2</sup> adjacent to the DeGrussa copper-gold mine of SFR. SFR is currently farming into the Doolgunna Copper-Gold Project, where TLM has previously spent over \$20m on exploration over the past four years. SFR can earn up to 70% of the Project by expenditure of \$15m over 5½ years. Drilling in the Springfield Project within the Doolgunna JV with SFR has just discovered high grade copper-gold mineralisation in massive sulphides in a VMS setting at the Monty Prospect, where further drilling to evaluate the discovery is underway. TLM owns 100% of the Sinclair Nickel Project, which it purchased for \$8.5m in early 2015 and which is also in the Murchison of Western Australia. The Sinclair Project contains the recently mothballed Sinclair nickel mine and associated treatment plant and infrastructure and extensive and highly prospective exploration tenements in the surrounding area that are currently the subject of detailed reviews as the company formulates an exploration and development program.

## Investment Thesis – Speculative Buy, Valuation \$0.90/sh

Discovery of the very high grade copper-gold mineralisation in a VMS setting at the Monty Prospect has ignited interest in the potential for the district to be “normal” at last and to be like other major camps which host significant VMS deposits. That could see the usual “cluster” of VMS deposits that invariably includes a “whopper” or two. As the geological setting of the Monty discovery is better understood and used to explore nearby with the great benefit of SFR’s strong local knowledge of the De Grussa setting, it is far more likely that other similar deposits will be found, if they do occur in the district. Through its very constructive JV with SFR, TLM is extremely well placed to reap enormous benefit from being associated with a hungry nearby mine operator.

In assessing the value of TLM, we have assumed a risk-weighted potential development at Monty and nickel development scenario at Sinclair that results in a valuation of \$0.90/sh, forming the basis for our Speculative Buy recommendation.

## Valuation

Our valuation of TLM is based on a risk-weighted sum-of-the-parts DCF-based valuation for the Monty and Sinclair projects (using a discount rate of 10%) plus an estimated valuation for TLM’s other various exploration prospects.

## Risks

The key risks for resources investments include, but are not limited to:

- **Commodity price and currency volatility:** The relatively liquid nature of metal commodity markets such as for copper, nickel and gold and foreign currency markets such as trading in the value of the Australian dollar, exposes them to potentially wide fluctuations in price, particularly during more difficult economic times or major world events. Associated with commodity price and currency volatility are potentially different commodity prices and foreign exchange rate outcomes to our forecasts.
- **Lack of exploration success:** The difficulty of exploring in the Murchison district is related to the fact that the region has variable outcrop and further complexity comes from the geologically disturbed nature of the Archaean bedrock that hosts various types

of mineralisation. The rocks have suffered extensive structural dislocation (faulting, shearing and over-thrusting) and variable alteration and weathering and may contain greater than expected geological complexities that may be difficult to resolve without extensive drilling programs and may inhibit the definition of adequate resources and reserves.

- **Lack of funding:** Exploration companies generally do not have a source of revenue and so they require periodic injections of funding to enable them to carry out adequate exploration and related development activities in order to continue to develop their projects.
- **Mining and metallurgical issues:** The mining and metallurgy of the Sinclair nickel deposit is well understood from previously successful operations and it is expected other nickel mineralisation in the surrounding district will have similar mining and metallurgical properties. Adequate investigations and testwork needs to be done on these other occurrences of nickel to confirm their suitability for mining and processing. Similarly, while visual inspection of the high grade copper-gold mineralisation in massive sulphides discovered at Monty indicates it may be very similar to the ore successfully mined and processed at the nearby DeGrussa mine, detailed testwork is needed to demonstrate its suitability for mining and processing. Adverse mining and metallurgical characteristics may result from such detailed investigations that could lead to a need for more complicated and expensive mining and processing requirements.
- **Regulatory and social licence approvals:** While there are currently no indications that there may be any difficulties with progressing through the necessary regulatory and social licence approvals processes to enable a suitable mining operation to be re-established at Sinclair or established at new areas near Sinclair and at Doolgunna, prolonged delays can result from adverse environmental or other regulatory issues and from the need to progress Native Title negotiations in a very careful and sensitive manner. Various stages of the regulatory approvals process can sometimes suffer unforeseen delays related to changes in personnel involved or from the need to resolve differences in interpretations. There may be some tenements in which the company has an interest or may acquire an interest in future which may contain areas over which legitimate common law native title rights of Aboriginal Australians exist. If native title rights do exist, the ability of the company to gain access to such tenements (through obtaining the consent of any relevant landowner) or to progress from the exploration phase to the development and mining phases of operations may be affected.
- **Weather impacts:** Cost overruns or operational delays can be caused by severe weather events because site access may be restricted due to the unsealed nature of roads and airstrips in the remote regions in which the company operates.
- **Inappropriate acquisitions:** The acquisition of other assets can divert management effort from the current focus and may yield inadequate returns.

**Recommendation structure**

**Buy:** Expect >15% total return on a 12 month view. For stocks regarded as 'Speculative' a return of >30% is expected.

**Hold:** Expect total return between -5% and 15% on a 12 month view

**Sell:** Expect <-5% total return on a 12 month view

*Speculative Investments are either start-up enterprises with nil or only prospective operations or recently commenced operations with only forecast cash flows, or companies that have commenced operations or have been in operation for some time but have only forecast cash flows and/or a stressed balance sheet.*

*Such investments may carry an exceptionally high level of capital risk and volatility of returns.*

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