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**Theta Gold Mines Limited
(ASX:TGM)**

September 2019

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Note: This report is based on information provided by the company as at September 13, 2019

Investment Profile	
Share Price - September 13, 2019	A\$0.16
Valuation Midpoint	A\$0.35/share
Issued Capital:	
Ordinary Shares	410.0 m
Listed Options	31.4 m
Unlisted Options	11.3 m
Performance Shares	24.7 m
Fully Diluted	477.5 m
Market Capitalisation	A\$65.6 m
12 month L/H	A\$0.068/\$0.18
Cash (June 30, 2019)	A\$0.73 million
Subsequent Raisings	A\$8.00 million
Debt (31/12/2018)	A\$7.48 million

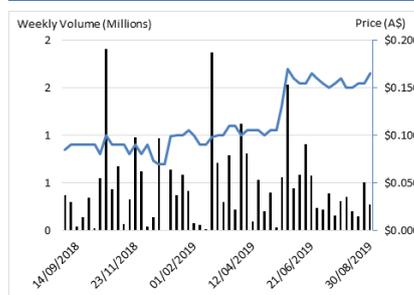
TGM Board - Please see bios section for South African directors and management

Mr Bill Guy: Non-Executive Chairman
Mr Rob Thomson: Managing Director
Mr Finn Behnken: Non-Executive Director
Mr Bill Richie Yang: Non-Executive Director
Mr Simon Liu: Non-Executive Director
Mr Brett Tang: Non-Executive Director

Major Shareholders

Fineway Creation	16.73%
Zenith (HK) Holding	11.64%
Tasman Funds Management	8.17%
Golden Asian Investments	7.77%
High Gift Investments	5.74%
Top 20	76.85%
Board	11.60%

Price Chart



Senior Analyst – Mark Gordon

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DEVELOPMENT READY HIGH GRADE GOLD

Theta Gold Mines (“TGM” or the “Company”) is close to executing the open cut strategy at the 74% owned high grade, low cost TGME Gold Project (“TGME” or the “Project”) as flagged in our March 2018 initiation report. The Company has made significant advances subsequent to the note, culminating in the recent completion of a robust Feasibility Study (“FS”) for the Theta Project, a starter open cut operation mining oxide material in the Theta Hill and Columbia Hill area, close to the existing plant site at Pilgrim’s Rest.

The FS envisages a five year starter operation producing ~200 koz of gold, which should provide more than ample cash flow to fund the expansion plans - these include increasing the open cut mining and milling rate to 1 mtpa targeting ~100,000 ozpa gold production, and then looking at opening up some of the numerous high grade underground opportunities within the Project, including Rietfontein and Beta, which were the subject of a previous robust Scoping Study and which is covered in our March 2018 note.

The Company’s plans are supported by a large, high grade Resource base of 6.03 Moz @ 4.18 g/t Au, which has grown significantly over the past few years, partially as a result of “Project Bentley”, which has included the first goldfield wide data compilation. This work has also identified the open cut oxide opportunities, including those included in the Theta Project as well as Vaalhoek, which is included in the expansion plans.

Extensive metallurgical testwork has been undertaken on the oxide material, which has highlighted excellent recoveries (in many instances >95%) through a standard CIL plant.

The Company is now concentrating activities on the conversion of the current environmental authority (“EA”) over the planned initial open cut mine areas to allow for open cut mining. Other planned activities include Resource upgrade drilling over other open cut targets to allow for conversion to Reserves.

KEY POINTS

Advanced project: TGME is an advanced, largely permitted brownfields project with the potential for a rapid restart of operations and short term cash flow.

Robust FS for open cut operations: The recently completed FS for the Theta Project highlights a robust starter operation that will generate significant cash - this provides ~US\$66 million in free cash flow from the five year, 201 ktpa operation, which includes the construction of a new 500 ktpa CIL plant - a key feature is a relatively low capex of US\$29.2 million.

High grades with significant Resource and Reserve upside: The current global resources of 6.03 Mt @ 4.18 g/t are relatively high grade when compared to peers; these include open cut Resources of 1.3 Moz, of which only 16% have been converted to Reserves to date, highlighting the upside potential - there is also upside in a number of the identified underground Resources as demonstrated by the positive Scoping Study for Rietfontein and Beta that was published in 2017.

Infrastructure rich: TGME is well served by infrastructure, including power, water, roads and a readily available skilled workforce; in addition site infrastructure includes a fully permitted tailings storage facility which is sufficient for the initial five year operation; although there is an existing permitted CIL plant the decision was made to build a new plant that will be more amenable to the expansion plans.

Long mining history: South Africa is a country with a long history of mining, and is currently or has been a major global producer of a number of resources, including gold, PGEs, diamonds, iron ore and coal; as such it has in place highly skilled and capable labour and services.

Pro-mining government and improving Fraser Survey ranking: Both the President, Cyril Ramaphosa and Mines Minister, Gwede Mantashe have previously been involved in the mining industry, and are very supportive - this is reflected in recently improving ranking in the Fraser Institute surveys - South Africa is now ranked 2nd in Africa, only behind Botswana.

Positive outlook for gold: Recent times have seen strong gains in the gold price; whether current levels are sustainable is open for conjecture, however we would expect to see it continue to trade at above US\$1,200/oz.

Strong management and technical team: The Company has management and technical personnel with extensive experience in the junior resources sector, and a proven history of successfully taking projects through to operations; in addition directors have direct and indirect holdings in ~12% of the Company, thus aligning their interests with those of other shareholders.

Valuation: We have an indicative valuation range of A\$0.17 to A\$0.51/share, with a preferred midpoint of A\$0.34/share, equivalent to an EV of A\$30.58/oz of gold in Resources.

SWOT ANALYSIS

Strengths

- ◆ **Advanced, high grade permitted gold project:** TGME is an advanced, close to fully permitted brownfields gold project that has the potential for a quick start up and hence short term positive cash flows.
- ◆ **Near term open cut potential with robust economics:** The results of the Theta Project FS define a robust starter project that should provide more than the cash required to fund the planned expansion to ~100,000 ozpa - these results are supported by the 2017 robust results for the underground Scoping Study for Beta and Rietfontein.
- ◆ **Large resource base:** The current global resource of 6.03 Moz @ 4.18 g/t which includes higher grade underground resources (for example 2.88 Mt @ 8.42 g/t at Rietfontein) is high grade compared to peers, and should be sufficient to provide Reserves to support a long term operation.
- ◆ **Low cost exploration:** The Company's "drill to validate" strategy has resulted in low cost discoveries - Inferred Resources are initially defined from compilation and assessment of the results of previous work, including mining, with drilling then used as required to validate and upgrade the initial Inferred Resources.
- ◆ **Infrastructure in place:** TGME has all external infrastructure and the majority of project specific infrastructure in place (including the permitted tailings dam with ~2.5 Mt of available capacity), thus cutting project lead times and up-front capital costs. Although there is also a CIL plant on site, the Company has decided to install a new plant rather than refurbish the existing plant to allow for the planned expansions.
- ◆ **Robust BEE-compliant company structure:** TGM's South African subsidiaries are fully BEE-compliant, with the structures in place also ensuring that the recently introduced Mining Charter III will only have minimal effect.
- ◆ **Experienced people with skin in the game:** Company personnel have relevant experience and success in the junior resources sector including in project developments, and also have incentives tied to the share price and share holdings.

Weaknesses

- ◆ **South Africa:** This will depend on the risk profile of investors and experience in investment in the country, with some negative sentiment towards South Africa; however out view is that some stability and confidence has returned with the early 2018 appointment of Cyril Ramaphosa as President, and his subsequent re-election in 2019.
- ◆ **Variable metallurgical properties:** This is not a potential issue in the short to medium term with the oxide mineralisation returning very high recoveries through standard CIL processing. However, mineralisation at some other areas is refractory or partially refractory and may require a moderate incremental cost for processing should operations proceed at these deposits down the track; this is however mitigated by high grades and acceptable metallurgical recoveries of this material.
- ◆ **Narrow vein mineralisation:** The majority of the deposits are characterised by narrow vein mineralisation which can be nuggety; this is partially offset by high average grades, available experience in successful narrow vein underground mining, and lower costs of mining in South Africa when compared to most gold mines globally.

Opportunities

- ◆ **Rapid mine development and production growth:** This is a key opportunity for TGM, with numerous open cut underground mining opportunities recognised through the data compilation and subsequent drilling, which could lead to the reestablishment of a historically major mining district - to date only 16% of open cut Resources have been converted to Reserves highlighting the expansion potential.

Threats/Risks

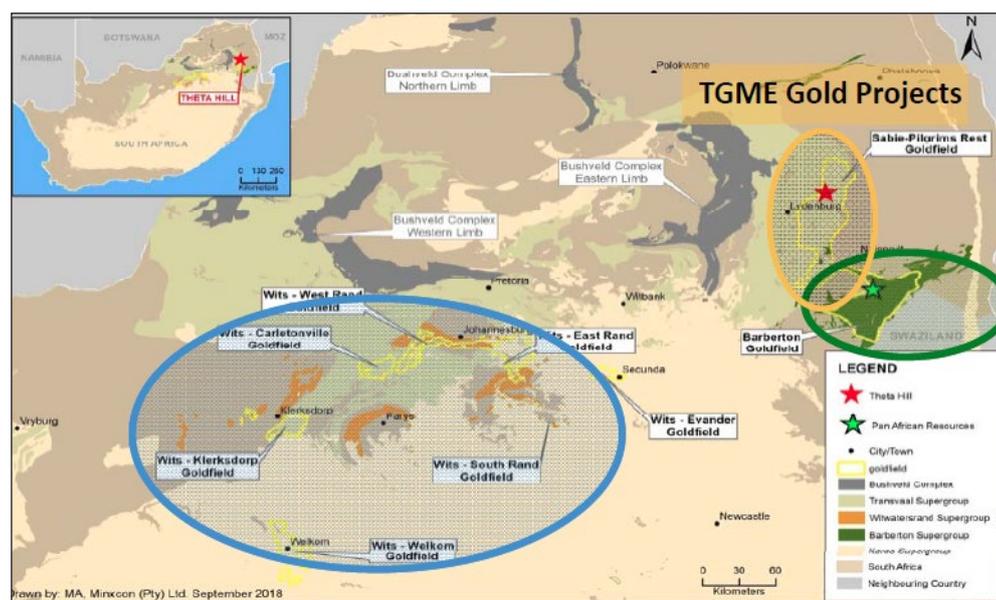
- ◆ **Permitting:** Although most of the Mining Rights are granted and permitted for underground operations, the risk here is the conversion of the Environmental Authorities ("EA") to allow for open cut mine - this largely relates to the Theta and Columbia Hill, and Vaalhoek areas. The risks here relate to either a failure to permit, else a slow permitting process - the latter also relates to the two MRs that have been granted, but are still going through the execution process.
- ◆ **Markets and metals prices:** A key perennial threat facing juniors are falls in the stock and gold markets, particularly when it comes to having to raise funds in a bad market - this will also impact with investors selling down the more risky juniors before other less risky investments

OVERVIEW

STRATEGY & PROJECT OVERVIEW

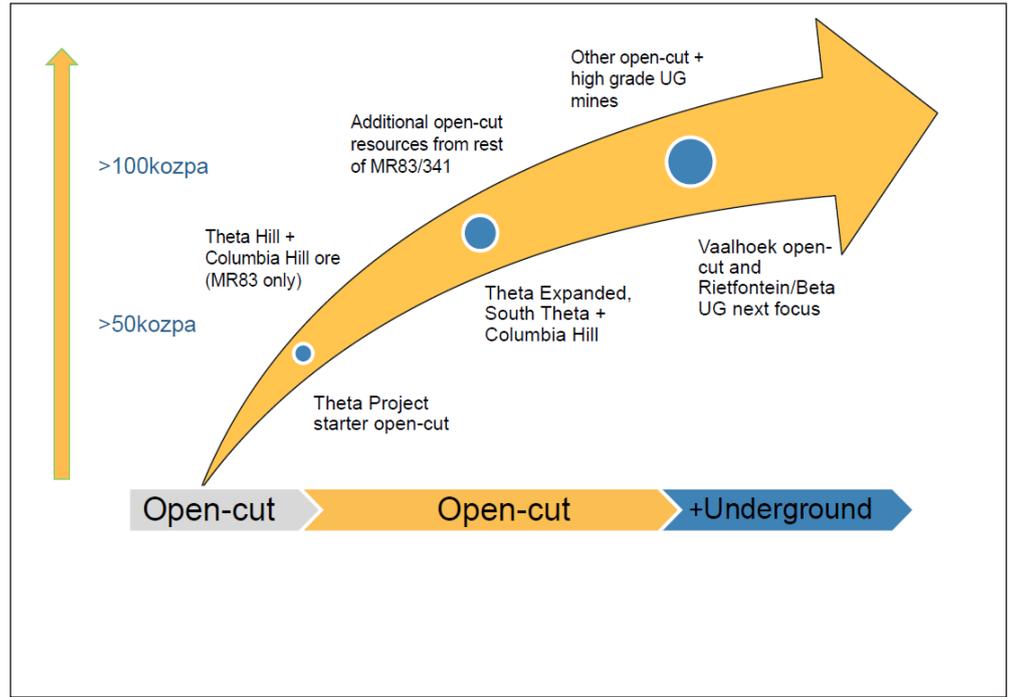
- ◆ TGM's strategy is to re-commence production in the near term at the 74% owned, 6.03 Moz brownfields TGME Gold Project located over the historic Sabie-Pilgrims Rest Goldfield in Mpumalanga Province of northeastern South Africa (Figures 1 and 3).
- ◆ The goldfield, the oldest in South Africa, has produced over 7 Moz of gold since mining commenced in 1873, third only behind the Witwatersrand and Barberton, though at a much higher grade, reportedly of around 10 g/t Au.
- ◆ The Company's strategy is to commence mining on a five year, 500,000 tpa open cut starter operation, mining and treating oxide mineralisation from the Theta Hill and Columbia Hill areas (Figures 3 and 12); plans are then to expand the open pit operations to 1 mtpa, and to then progressively add in underground operations, with expansions funded from operating cash flow - the growth strategy is shown schematically in Figure 2.
- ◆ Key areas of the proposed operations are largely permitted, including the CIL treatment plant (including tailings dam), which is an operating facility under current legislation - it however is planned to replace the existing treatment facility with new plant whilst initially using the existing tailings facility.
- ◆ In addition, although MR83 (the site of planned initial mining operations) is a granted and permitted Mining Right, the current Environmental Authority ("EA") is for an underground operation only - the Company is in the process of varying this to allow an open cut operation, which requires a new Environmental Impact Assessment ("EIA") - the Company expects approval by Q1 2020.
- ◆ This strategy has been developed following "Project Bentley," which, amongst other outcomes, has included a compilation of all historic data (the first for the gold field), and involved identifying open cut oxide opportunities to provide the basis for the start-up operation and subsequent open cut expansions; initial underground operations have previously been identified, and were presented in a Scoping Study completed in 2017, prior to the adoption of the open cut strategy.
- ◆ The ASX-listed Company underwent a name change from Stonewall Mining to Theta Gold Mines in late 2018 - we will refer to the Company as TGM throughout this report, although many activities were undertaken under the Stonewall name.

Figure 1: Regional gold districts - Witwatersrand - blue, Barberton - green, Pilgrims Rest - Sabie - Orange



Source: TGM

Figure 2: TGM growth strategy



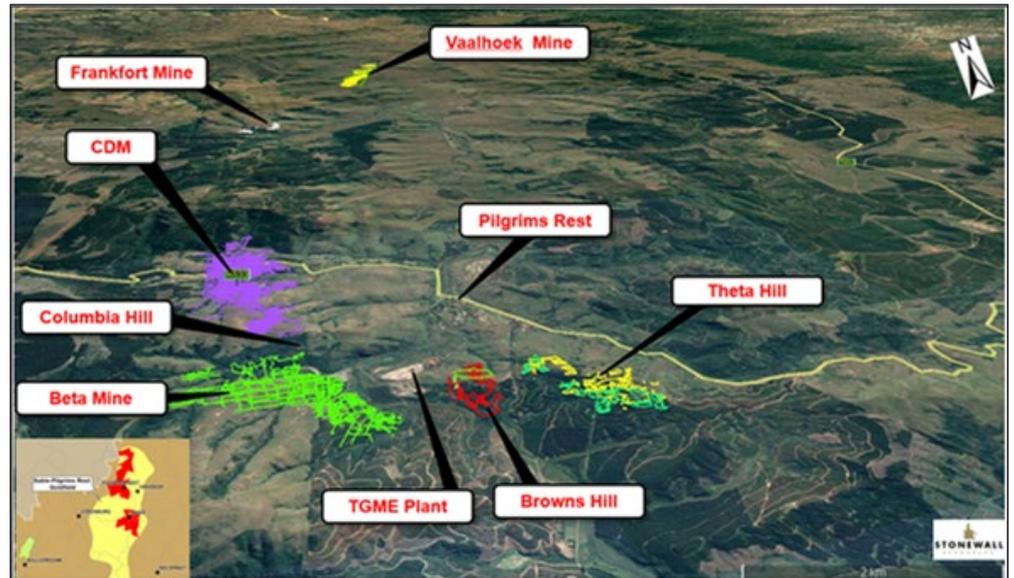
Source: TGM

TGME GOLD PROJECT, SOUTH AFRICA

LOCATION AND TENURE

- ◆ The Project is centred around the historical mining village of Pilgrims Rest (Figure 3), located some 375 km by road northeast of Johannesburg and 100 km NNE of the regional centre of Nelspruit.
- ◆ The Project has excellent access to infrastructure, including sealed and all weather gravel roads, grid power (there is an existing active connection to the TGME processing plant) and water.

Figure 3: TGME area view, looking north



Source: TGM

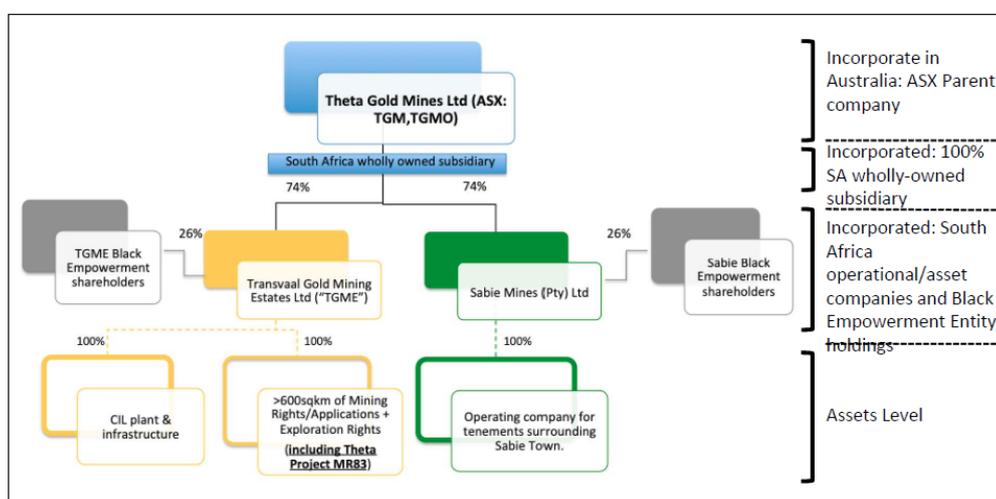
- ◆ In addition there is readily available skilled and unskilled labour in nearby communities, including personnel who have previously worked at TGME.
- ◆ The Project includes two separate corporate entities - Transvaal Gold Mining Estates Limited ("TGME") and Sabie Mines (Proprietary) Ltd ("Sabie") - the former holds the properties from Pilgrims Rest northwards, with Sabie holding the southern rights centred around the town of Sabie (Figure 5).

- ◆ The Project covers some 620 km², extends for ~70 km north-south and up to 25 km east-west, and includes nine granted New Order Mining Rights - two of these are currently in the process of execution, which follows on from the grant.
- ◆ The MRs have expiry dates of between 2023 and 2028 and can be readily extended with the applications covering 40 farms or portions thereof - farms are shown in Figure 5.
- ◆ In South Africa mineral rights are generally defined by farm boundaries or parts thereof, and not the graticular system that is used in Australia - this arises from the fact that, prior to the Mineral and Petroleum Resources Development Act No 28 of 2002 coming into effect in 2004, mineral rights were generally owned by the surface rights holder.
- ◆ The majority of the farms are owned by the local community groups, which were granted ownership following land claims under the Restitution of Land Rights Act of 1994 (and for which the previous owners received compensation).

PROJECT OWNERSHIP AND BEE STRUCTURE

- ◆ The Project is fully Black Economic Empowerment (“BEE”) compliant, with 26% of the two corporate entities being held by compliant parties - the corporate structures are shown in Figure 4.

Figure 4: Company structure



Source: TGM

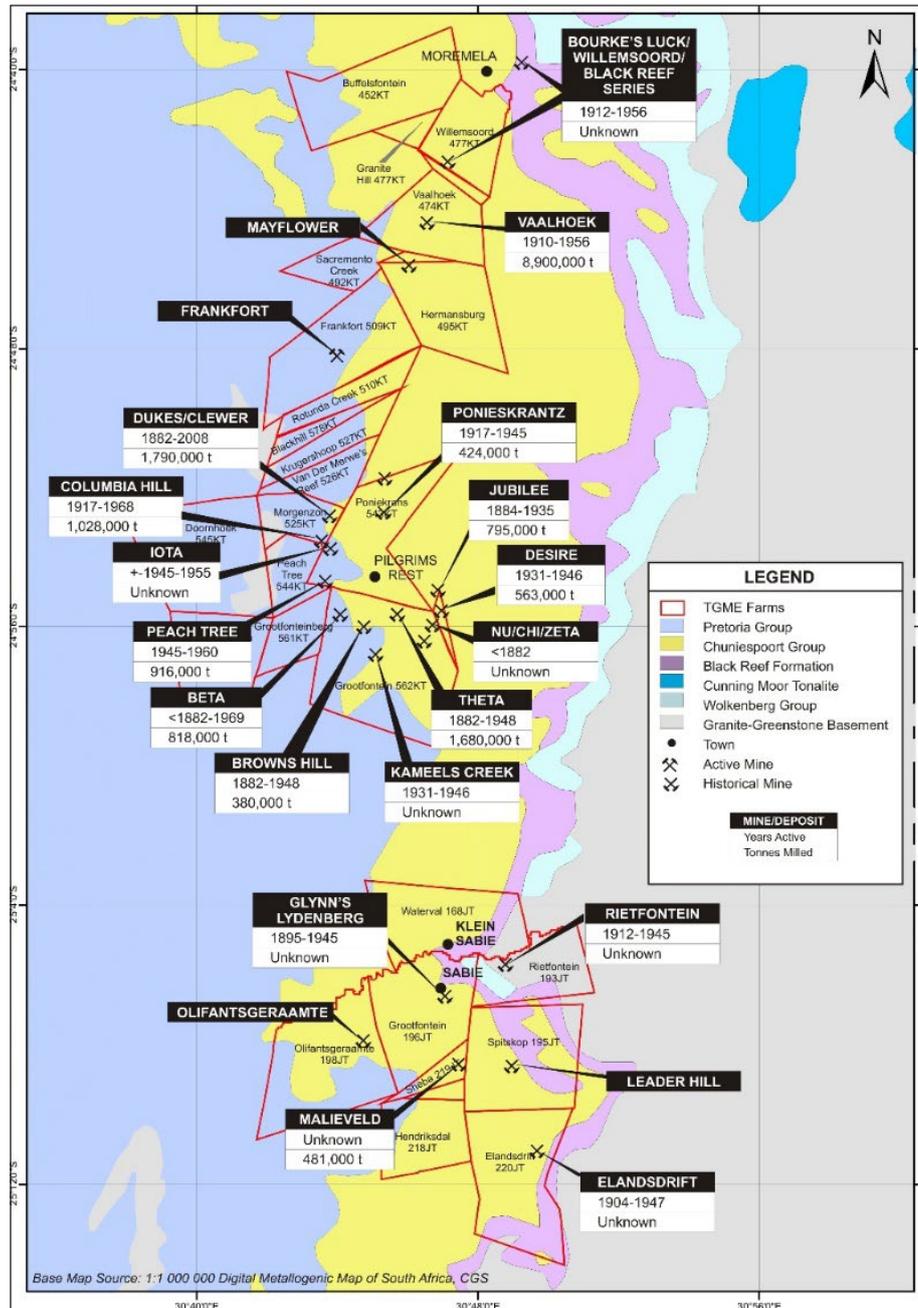
- ◆ The acquisition of shares by the BEE groups in the two TGM entities was funded by interest free loans from the respective companies, with these shares being pledged to Stonewall Mining (Proprietary) Ltd (“Stonewall SA”, TGM’s 100% owned South African subsidiary) as security for payment of the shareholder loans.
- ◆ Repayment of these and intercompany loans (which total US\$112 million, including US\$10.86 million owing by the BEE partners) will be funded out of dividends from future operations - whilst any loans are outstanding 80% of dividends will go to repayment of the loans and 20% to the various parties within the empowerment company.
- ◆ The BEE shares cannot be transferred without TGM’s consent, and if transferred, the recipient must be BEE compliant.
- ◆ In addition to the BEE-compliant structure, and as part of mineral rights approvals, the Company has put in place a Social and Labour Plan (SLP) covering all of the MRs and MR applications - this has been approved by the Government.
- ◆ A number of programmes are already active or have been proposed under the SLP, however the degree of funding made available to these programmes will be dependent upon TGM’s cash flow, and programmes may change with ongoing community consultation.

EXPLORATION AND MINING HISTORY

- ◆ As mentioned previously mining commenced at Sabie-Pilgrims Rest in 1873, with operations continuing in various forms until 2015, and with ~6 Moz of gold produced from 43 separate deposits from 1895 until 1970 by Sabie Mines and TGME, with these shown in Figure 5; it is suggested that a further 1 Moz has been produced since the 1970’s.
- ◆ The initial discovery was alluvial gold, on the farm “Geelhoutboom” (yellowwood tree), near Sabie, which prompted a gold rush on what were referred to as the MacMac diggings, but officially named the New Caledonia Gold Fields.

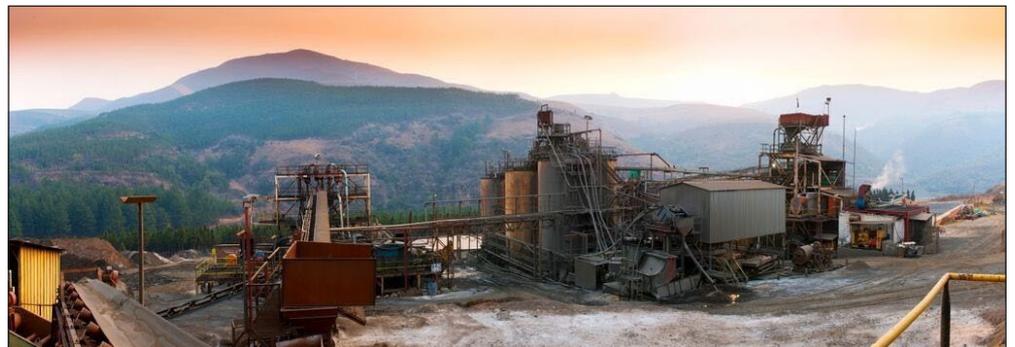
- ◆ The next alluvial discovery was in Pilgrims Creek (previously Peach Tree Creek, which runs past the present TGME plant site) in 1873, which sparked off the biggest gold rush of the time, with Pilgrims Rest being officially declared a gold field on September 22, 1873, and which was home to over 1,500 diggers working some 4,000 claims.
- ◆ The story is that the field was found by an Australian, Alex "Wheelbarrow" Patterson, who had originally pushed a wheelbarrow 2,600 km from Cape Town to the MacMac diggings, and then seeking his own company, moved on to find Pilgrims Rest.
- ◆ The field produced a number of nuggets, with the largest recorded one being the 214 oz "Breda" nugget, however there were stories of nuggets of up to ~350 oz being found.
- ◆ The alluvial gold began to dwindle in the 1880's, with many diggers moving to Barberton, some 100 km away - the remaining miners started to dig for oxidised primary mineralisation, initially in shallow open cuts (including at Theta Hill) and then underground, including at Beta.
- ◆ In 1895 several of the small mining companies combined to form TGME (Transvaal Gold Mining Estates), the same entity that is now the 74% owned subsidiary of TGM.
- ◆ Mining continued until 1969, however with a suspension of operations during the Anglo-Boer War (1899-1902) when the area was in control of Boer commandos.
- ◆ The peak years were in 1914 and 1915, with over 100,000 oz of gold being produced annually at grades of ~ 12-13 pennyweights/tonne (~18 to 20 g/t) - the field then went into a steady decline until the closure of the Beta Mine in 1969.
- ◆ Field infrastructure included a roaster, and electricity, with Pilgrims Rest being the second town in South Africa (after Kimberly) to be electrified - power was initially provided by small power plants until the Belvedere hydro-electric power station on the Blyde River was completed in 1911 - at the time this was the largest hydro-electric power station in the Southern hemisphere.
- ◆ The roaster initially operated until the 1950's, largely treating refractory ores in the northern areas, when it was closed due to business difficulties being experienced by its owner - it was recommissioned a year later, and operated until the closure of the TGME operations in 1970.
- ◆ Subsequent to 1970 TGME has been owned by a number of public and private companies, including Rand Mines, who acquired TGME in 1968, with Rand Mines operating until 1998, at which time TGME was sold to Simmer And Jack, a private company, which owned TGME until 2010, when it was sold to TGM.
- ◆ Rand Mines, as part of their "Neptune Project," erected the current metallurgical plant (Figure 6) in the 1970's which treated reprocessed old sand and tailings dams as well as various waste rock dumps - gold production is unknown.
- ◆ Other work completed by Rand Mines included the evaluation of the field, with this including the now named "Project Bentley," which was initiated in the 1990's to delineate additional ore to feed the TGME mill.
- ◆ Work included drilling and dewatering of previous underground mines - targets included Theta Hill, the site of significant underground mining until the 1950's followed by limited open cut mining.
- ◆ Simmer and Jack, following the acquisition of TGME in 1998, recommissioned the plant (Figure 6) in 2003 to treat ore from Clewer, Dukes and Morgenzon ("CDM"), however the mines were placed on care and maintenance in 2008.
- ◆ Simmer and Jack also looked at the potential for pre-oxidation of refractory ore, which at that stage was only achieving low recoveries through the conventional CIL plant - options investigated included "G" flotation cells and bacterial oxidation (BIOX® or similar), with test work achieving recoveries of up to 93% for BIOX®.
- ◆ A full feasibility study was completed and approved by the Board, however development did not proceed due to funding restrictions - Simmer and Jack also continued on with exploration work, including drilling.

Figure 5: Pilgrims Rest - Sabie farms, geology and prospects



Source: TGM

Figure 6: TGMA plant



Source: TGM

SUMMARY OF ACTIVITIES BY TGM

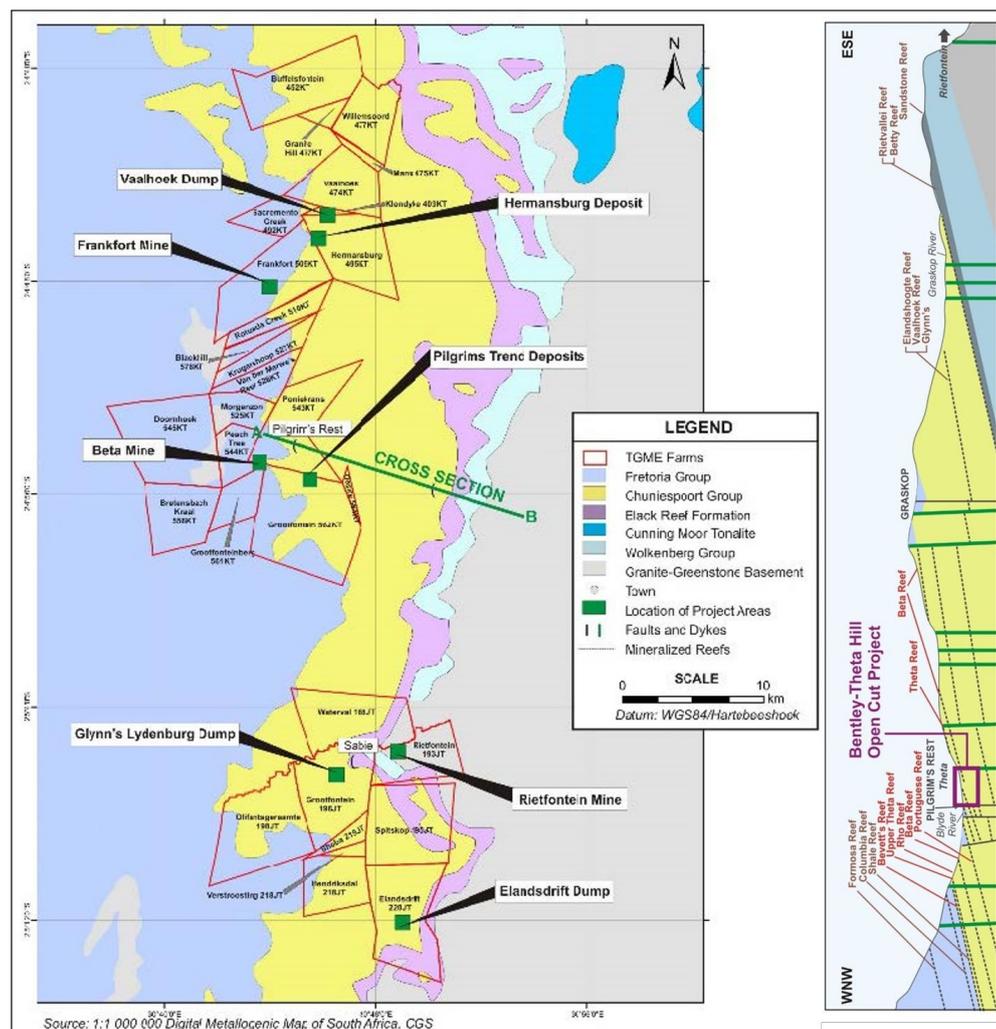
- ◆ TGM, which was then a private company acquired TGME and Sabie Mines through Stonewall SA in 2010, and was subsequently quoted on the ASX via a back door listing through Meridian Resources Limited (ASX: MRJ) as announced to the market on January 23, 2012.

- ◆ The acquisition was all scrip, with the consideration being 398 million shares and 25 million options in MRJ to be paid to Stonewall SA shareholders - Meridian subsequently changed its name to Stonewall Resources, which was subsequently changed to Theta Gold Mines Limited in 2018.
- ◆ Original work by TGM was predicated around a large scale, ~250-300 kozpa operation, looking at mining and treating both hard rock and pre-mined residue ("PMR") - PMR is material mined during historical operations that has not been treated, but packed back into stope voids for later extraction and treatment.
- ◆ There are potentially large resources of PMR, however grades are highly variable and relatively hard to get an accurate mineral resource estimate ("MRE") in accordance with JORC 2012/NI43-101 requirements.
- ◆ TGM also permitted most mines within the portfolio during this time.
- ◆ Shandong launched a US\$141 million all-cash takeover for TGM in 2013, however this was not completed and is the subject of current recovery actions, from which TGM should receive over US\$9 million with judgements in the Company's favour.
- ◆ Some trial mining of the PMR was carried out in 2015, however activities were limited by funding and the need to refurbish the plant.
- ◆ A change of senior personnel in late 2016 saw a change in strategy for the Company, with plans to focus on a hard rock operation - these were initially concentrated on underground operations at Beta and Rietfontein, with the potential to also treat PMR as incremental feed; to that end resources were upgraded and a Scoping Study completed in May 2017.
- ◆ In view of the results of the ongoing data compilation (the first carried out over the entire portfolio, and which is also a part of the revised strategy), activities then were concentrated on the identification and development of near term open cut oxide operations, with this resulting in the May 2019 completion of the FS over the Theta Project, in conjunction with an MRE upgrade and definition of initial Ore Reserves - the Study is detailed later in this report.
- ◆ The oxide potential was reinforced by positive metallurgical results initially from Vaalhoek (where four bottle roll samples returned an average gold recovery of 92%), and then from RC samples from the drilling at Theta and Columbia Hill (as part of the studies the Company has completed 371 RC and diamond core holes for 18,847 m, and completed 200 bottle roll metallurgical tests, with recoveries averaging over 90%) - examples of the results of drilling are shown in Figures 9 and 10.
- ◆ Current activities include permitting and financing - although the Theta Gold Project is located over a granted Mining Right (MR83), the EA was for an underground operation, with this needing to be varied to allow for open cut mining - as mentioned earlier it is expected that this will be finalised in Q1 2020.

GEOLGY AND MINERALISATION

- ◆ Mineralisation at TGME, which is mesothermal in style, is generally hosted in shales and dolomites of the Early Proterozoic Transvaal Supergroup, which unconformably overlies the Archaean Nelspruit batholith (Figure 7).
- ◆ The main stratigraphic units include platform dolomites and thin interbedded carbonaceous shales of the Malami Subgroup, and generally clastic sediments, including shales in the unconformably overlying Pretoria Group - the Malami and Pretoria units are separated by a slight angular unconformity (the Bevetts Unconformity) which contains a conglomerate and hosts the Bevetts Reef (Figures 8 to 10).
- ◆ The sedimentary units, which are part of the same basin that hosts the Witwatersrand gold deposits, dip gently at around 3° to 7° to the west, and have a north-south strike (Figure 7).
- ◆ The sediments are intruded by at least two generations of basic dykes and sills; the first which are interpreted as being pre-Bushveld Group in age are cut by mineralisation and overprinted by alteration, whereas the second, which are interpreted as being syn-Bushveld Complex cut some of the mineralised reefs.
- ◆ Mineralisation is interpreted as being syn-Bushveld in age and related to the emplacement of early post-mafic intrusives, somewhere around 2,050 Ma, and magnetic anomalies indicate the possible presence of intrusives below the mineralised corridor, potential providing the heat engine for the mineralisation.

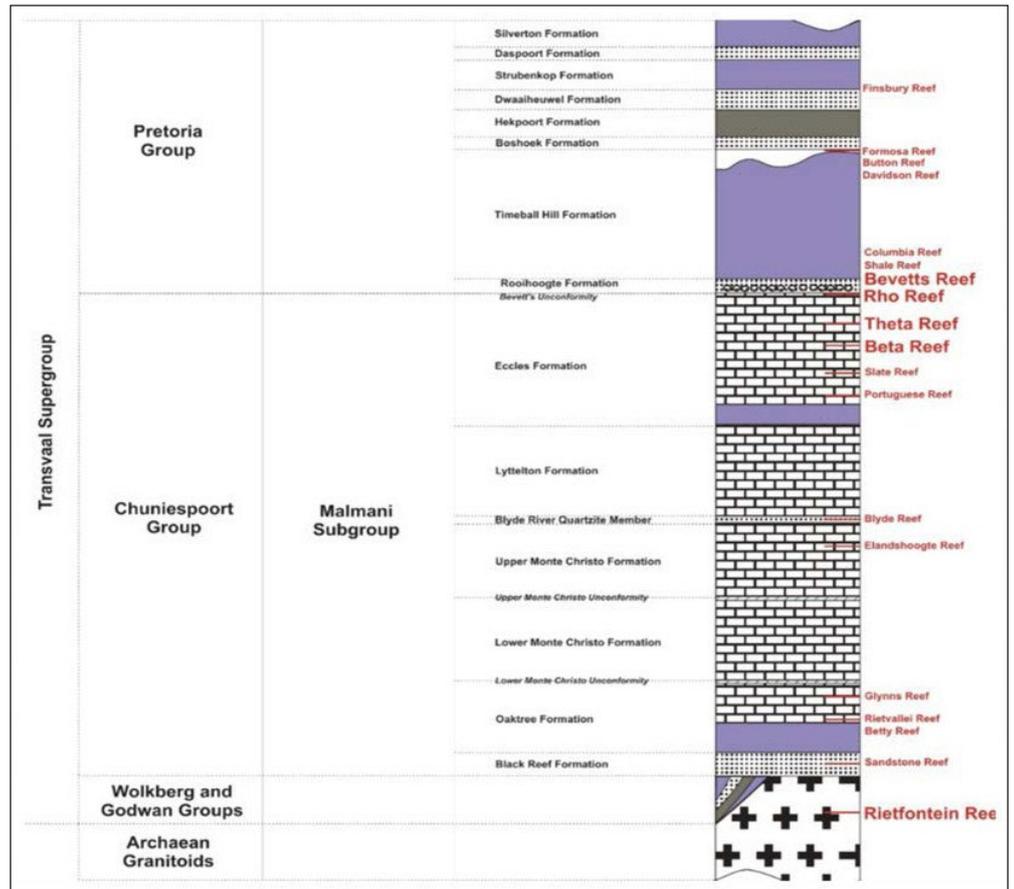
Figure 7: Pilgrims Rest - Sabie plan and cross section A-B (note section has been rotated)



Source: TGM

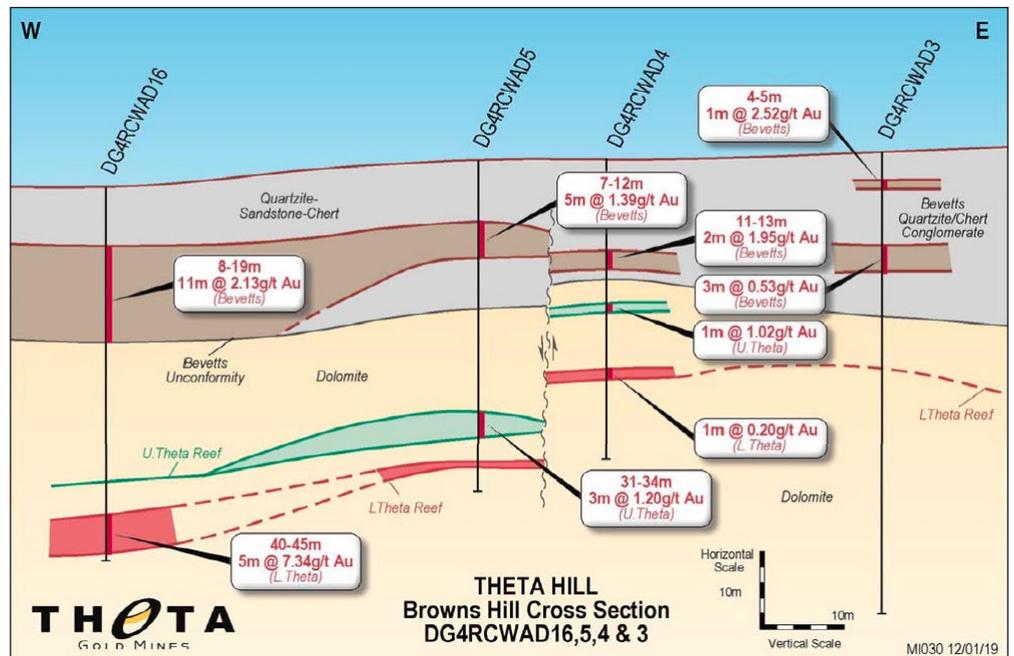
- ◆ Mineralisation generally takes the form of a stacked series of laterally continuous bedding parallel quartz/carbonate/sulphide reefs, with thicknesses varying from reef to reef - at Beta it is generally around 30 cm thick, at Vaalhoek 1 m to 1.4 m thick, with thicker sections identified in the drilling at Theta Hill and Columbia Hill (Figures 9 and 10 show the stacked reefs at Theta Hill and Columbia Hill respectively).
- ◆ Some vertical reefs are also present, notably Rietfontein, which is hosted within the Nelspruit batholith, and it has been noted by previous writers (e.g. Boer et al, Mesothermal-Type Mineralisation at the Sabie - Pilgrims Rest Gold Field, South Africa. Economic Geology, Vol 90, pp 860-876) that mineralisation in the vertical veins transitions into the sub-horizontal bedding plane shear hosted mineralisation.
- ◆ However there is some conjecture that the mineralisation at Rietfontein may be related to the older Archaean granite-greenstone mineralising event, such as is seen at Barberton.
- ◆ It is interpreted that the flat reefs have been emplaced along bedding parallel shears formed during deformation; also, within the Malami Subgroup mineralisation appears to preferentially form along the sheared carbonaceous shale units intercalated within the thicker dolomite units - the shales are more reactive and will preferentially deform in comparison with the more competent and unreactive dolomites.
- ◆ Mineralisation (the Bevet's Reef) is also associated with conglomerates at the Bevet's conglomerate, at the base of the Pretoria Group.

Figure 8: Stratigraphic column



Source: TGM

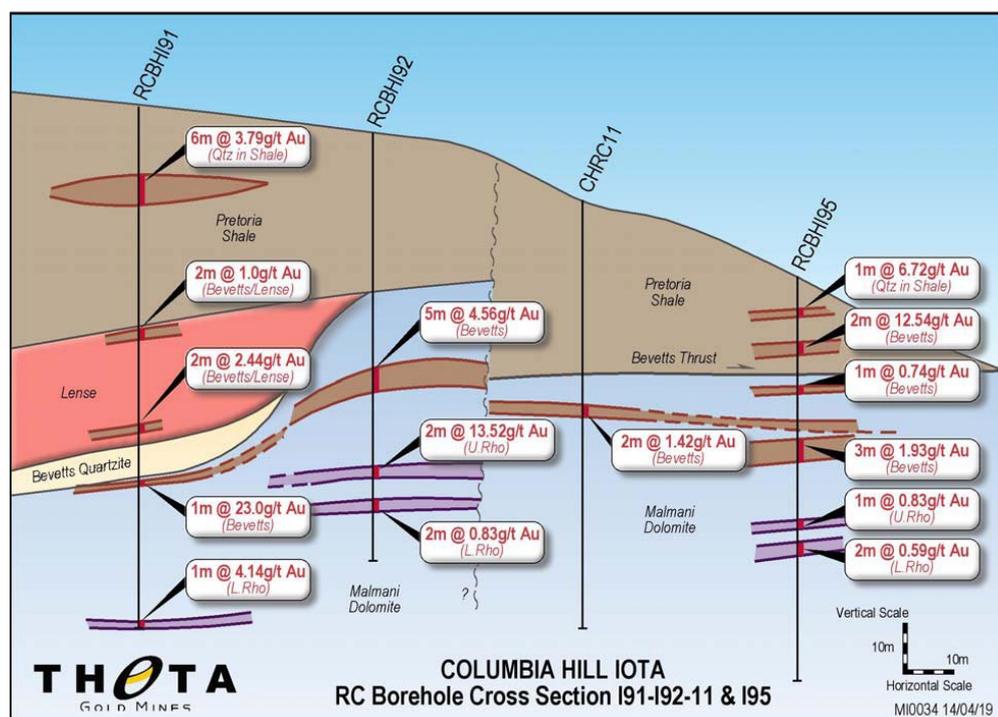
Figure 9: Theta Hill cross section, showing Lower and Theta, and Bevetts reefs



Source: TGM

- ◆ It has also been reported that higher grade shoots are located along the margins of generally north-south to NNE trending mafic dykes; there is also a set of parallel NNE to north trending linears identified from photo interpretation work - these generally northerly trending features may form a secondary control on mineralisation after the bedding parallel shears.

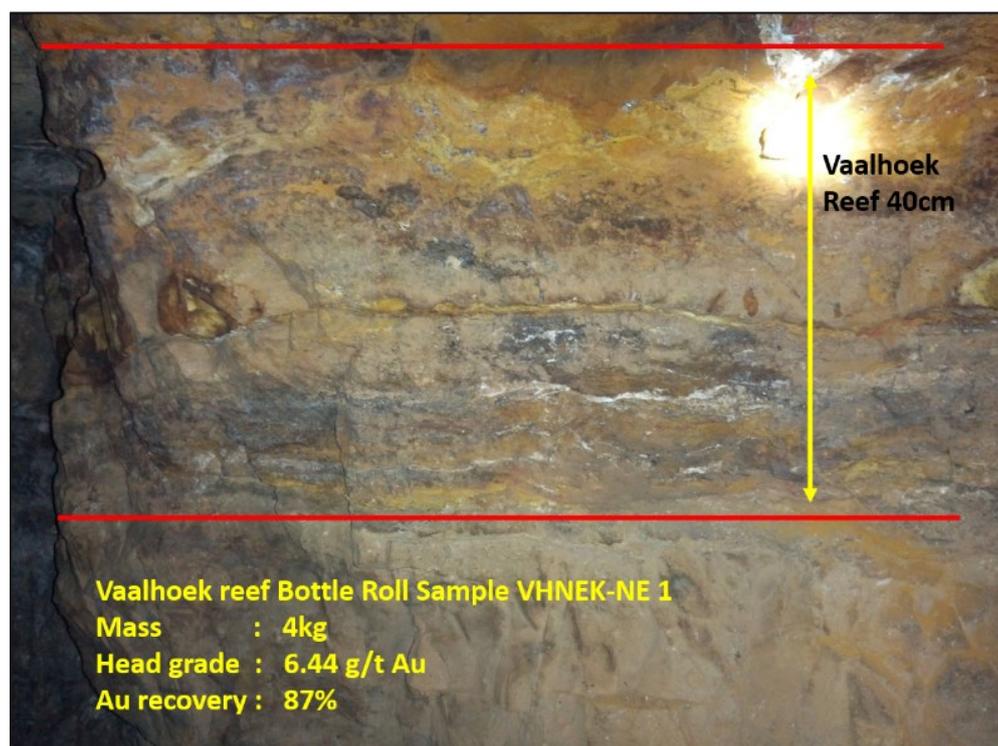
Figure 10: Columbia Hill (Iota) cross section, showing Upper and Lower Rho, and Bevetts Reefs



Source: TGM

- ◆ These linears are interpreted as controlling a number of features, including the mafic dykes, sub-vertical mineralisation (e.g. Rietfontein) and later faulting, including graben development.
- ◆ At Columbia Hill, where mineralisation is hosted largely in shales (including carbonaceous units) of the Timeball Hill Formation (Figure 10), there has been stronger development of vertical mineralisation in the form of leaders - this may be in response to the thick sequences of reactive shales being cut by vertical feeder structures, else these leaders may reflect tension gashes developed within the shales - similar structures are interpreted at other deposits, including on Theta Hill and at Vaalhoek.
- ◆ However, besides the bedding parallel shears and possibly the mafic dykes, no real conclusions are yet to be drawn on the overall controls on mineralisation, and what controls the location of the separate deposits.
- ◆ Gold is generally hosted in quartz/carbonate/sulphide veins, with pyrite being the dominant sulphide, along with lesser chalcopyrite, sphalerite, arsenopyrite and bismuth sulphosalts - sulphide mineralogy is variable, and depends upon the stratigraphic position of the veins.
- ◆ Sulphide mineralisation at Beta, for example, is more complex than that lower in the sequence, for instance at Glynns-Lydenburg in the Sabie area, with this having important ramifications for metallurgy in any future mining of fresh material.
- ◆ In addition some reefs may contain slivers of wall rocks, including dolomite and carbonaceous shale, which again has ramifications for processing, with the shales potentially "preg-robbing", which requires additional treatment to improve recoveries - the Company will investigate potential treatment methods for this material.
- ◆ Gold occurs both as free milling grains that can be recovered by gravity and conventional cyanidation and that which will require pre-oxidation for extraction.
- ◆ Importantly, test work of oxide mineralisation using cyanide bottle rolls has commonly resulted in recoveries of +95%, with an average of 91.6% being used in the FS - Figure 11 shows oxidised mineralisation at Vaalhoek.

Figure 11: Vaalhoek reef - oxidised



Source: TGM

RESOURCES AND RESERVES

- ◆ The Company has steadily updated Mineral Resources since acquiring the Project, with the latest update being released to the market on May 16, 2019, with a global MRE of 44.8 Mt @ 4.18 g/t for 6.03 Moz contained gold, 26.5% of which are in the Measured and Indicated categories (Table 1) - ongoing work has seen JORC compliant Resources more than double from 2.8 Moz since the end of 2016.
- ◆ The same release also presented an initial open cut Probable Ore Reserve for the Project of 2.31 Mt @ 2.76 g/t Au for 205,010 oz of contained gold (Table 3) - this was estimated as part of the Theta Project FS, discussed later, which has open cut Resources of 10.1 Mt @ 2.7 g/t Au for 880 koz contained gold, with 42% in the Indicated category (Table 2).
- ◆ The global Resources are further detailed in Appendix 1.

Table 1: Global MRE

Table 1: Global MRE					
Mineral Resource Classification	Type of Operation	Tonnage	Gold Grade	Gold Content	
		Mt	g/t	Kg	koz
Measured	Underground	0.09	5.37	489	15.7
Total Measured		0.09	5.37	489	15.7
Indicated	Underground	4.77	6.21	29,661	953.7
	Open Pit	7.16	2.11	15,091	485.2
	Tailings	5.24	0.83	4,373	140.6
Total Indicated		17.18	2.86	49,126	1,579.40
Inferred	Underground	21.45	5.22	111,880	3,597.00
	Open Pit	5.92	4.35	25,730	827.3
	Tailings	0.02	0.57	13	0.4
	Rock Dump	0.12	1.64	199	6.4
Total Inferred		27.52	5.01	137,823	4,431.00
Grand Total		44.79	4.18	187,438	6,026.20

Source: TGM

Table 2: Theta Project MRE

Theta Gold Project MRE									
Mineral Resource Classification	Open Pit Mine	Reef	Reef Grade	Reef Width	Content	Reef Tonnes	Au Content		
			g/t	cm	cm.g/t	Mt	Kg	koz	
Indicated	Theta Hill & Browns Hill	Shale	1.02	200	204	0.44	402	12.9	
	Theta Hill & Browns Hill	Bevetts	1.1	221	244	0.89	886	28.5	
	Theta Hill & Browns Hill	Upper Theta	2.41	100	241	0.72	1,568	50.4	
	Theta Hill & Browns Hill	Lower Theta	3.7	100	370	0.89	2,956	95	
	Theta Hill & Browns Hill	Beta	2.49	100	249	0.38	859	27.6	
	Browns Hill								
	Columbia Hill	Bevetts	2.89	114	330	0.11	303	9.7	
	Columbia Hill	Upper Rho	2.43	393	956	0.81	1,965	63.2	
	Columbia Hill	Lower Rho	2.51	550	1381	0.82	2,047	65.8	
	Columbia Hill	Upper Theta	1.08	114	123	0.16	171	5.5	
Total Indicated			2.14	246	526	5.21	11,157	358.7	
Inferred	Theta Hill & Browns Hill	Shale	1.11	216	240	0.70	666	21.4	
	Theta Hill & Browns Hill	Bevetts	1.07	213	227	0.65	589	19	
	Theta Hill & Browns Hill	Upper Theta	1.86	100	186	1.07	1,692	54.4	
	Theta Hill & Browns Hill	Lower Theta	8.11	100	811	1.64	11,329	364.3	
	Theta Hill & Browns Hill	Beta	2.23	100	223	0.75	1,417	45.6	
	Columbia Hill	Upper Rho	5.13	106	544	0.10	507	16.3	
Total Inferred			3.3	132	434	4.91	16,202	520.9	
Indicated	Total Theta Project		All	2.14	246	526	5.2	11,157	358.7
Inferred	Total Theta Project		All	3.3	132	435	4.9	16,202	520.9
Total Indicated and Inferred			2.7	190	514	10.1	27,359	879.6	

Source: TGM

Table 3: Theta Project Ore Reserves

Theta Project Ore Reserves					
Mineral Resource Category in LoM Plan	Pit	Grade	Reef Tonnes	Au Content	
		g/t	kt	kg	oz
Probable	Browns Hill	3.24	564	1,826	58,699
Probable	Iota (Columbia Hill)	2.54	1,253	3,189	102,513
Probable	Theta Hill	2.76	493	1,362	43,798
Total		2.76	2,310	6,377	205,010

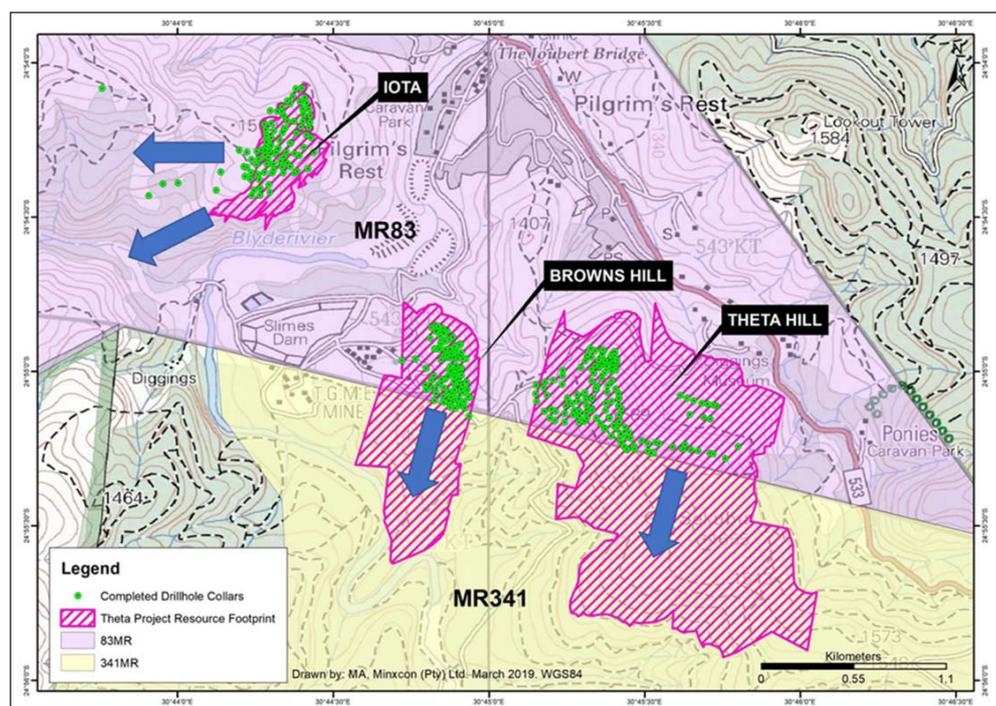
Source: TGM

THETA PROJECT - FEASIBILITY STUDY

Introduction

- ◆ As mentioned earlier the Company has completed a FS on the Theta Project, which covers Theta Hill, Browns Hill and Columbia Hill within MR83 - mineralisation at Theta Hill extends south into MR341 (Figure 12), however given permitting there has been no recent drilling within this tenement - permitting activities are currently underway, with drilling planned to confirm Resources and increase Reserves once permitting is completed.

Figure 12: Plan - Theta Gold Project drilling and MRE footprints



Source: TGM

- ◆ Although Resources have been estimated for MR341, Reserves (Table 3) are limited to those Resources within MR83 - successful permitting of MR341 will provide significant upside - the planned operation is largely based on the current Ore Reserve with the mining inventory also including 7% Inferred Resources - the current Ore Reserve only comprises some 16% of open cut Resources.
- ◆ The study is based on a five year, 500,000 tpa operation - this is restricted by the current available tailings capacity of 2.5 Mt - this however will still require tails thickening, with the cost of this incorporated into the study.
- ◆ It needs to be stressed that this is considered a starter operation, with ongoing work to develop additional mining areas, and thus expand the Project - however, the Theta Project as it stands fully covers the expected capital cost of a 500 ktpa CIL plant (and provides a good return), with future expansions to be funded from cash flow - as mentioned earlier the Company has released a three stage plan, including plant expansions (Figure 15).
- ◆ Although previous studies had looked at refurbishing the existing plant, the decision was made to go with an all new plant to ensure flexibility and capability for future planned expansions.

Table 4: Theta Project production and outcomes

Theta Project production and outcomes		
Key Economic Results (real terms)	Unit	Value
Gold recovered (Life of Mine)	oz	200,905
Processing Rate (design rate)	Tons per year	500,000
All in Sustaining Costs ("AISC")	USD per oz	764
All in Costs ("AIC")	USD per oz	933
Cash costs (C1)	USD per oz	717
Peak Funding Requirement	USD Millions	29.2
Total Capital	USD Millions	34.3
Payback Period from production	Years	1.2
Life of Mine (LoM)	Years	5
Construction Period	Months	9
Revenue over LoM	USD Millions	252.6
EBITDA over LoM	USD Millions	99.6
EBITDA Margin	%	39
Project Free Cash flow	USD Millions	65.7
Post-Tax NPV (5.0%)	USD Millions	49.6

Theta Project production and outcomes		
Key Economic Results (real terms)	Unit	Value
Post Tax IRR	%	65.1
Production Summary		
Monthly Mining Production Rate (Average)	tonnes/mnth	42,215
Monthly Plant Feed Production Rate (Max)	tonnes/mnth	42,028
Total Ore Tonnes Mined	kt	2,520
Waste Tonnes Mined	kt	33,677
Total Tonnes Mined	kt	36,198
Strip Ratio	Tonnes w: tonnes ore	13.4
Total Ore Reserve Tonnes Mined	kt	2,310
Total Ore Reserve Content	oz	205,010
Total Inferred Mineral Resources Mined	kt	211
Total Inferred Mineral Resources Content	oz	14,414
Average Mined Grade	g/t	2.71
Total Oz in Mine Plan	oz	219,425
Gold Recovered	oz	200,905
Average ounces recovered per month	oz	3,348
Average ounces recovered per annum	oz	40,176
Grade Delivered to Plant	g/t	2.71
Recovered grade	g/t	2.48
Yield/Recovery	%	91.60%
Life of Mine	Months	57
Life of Project (Processing)	Months	60

Source: TGM

- ◆ Table 5 presents the macro-economic and price forecasts used in the study, which we feel again are reasonable, and reflect conditions at the time that the DFS was completed.
- ◆ The gold price used is similar to a six year average price of US\$1,253/oz that represents a period of relative consolidation following falls from the 2011 peak of over US\$1,800/oz; prices over the last four months however have increased to over US\$1,500/oz on global uncertainty and the ongoing US-China trade dispute.
- ◆ Whether this is sustainable or not will depend upon global conditions, however it does provide upside in the value of the Project - if a gold price of US\$1,500/oz is sustained over the life of the project revenue increases by around 20% to US\$300 million, with the EBITDA increasing 50% to US\$150 million and free cash flow close to doubling to US\$106 million.
- ◆ The USD/ZAR exchange rate used it that similar to the average over the past four years, which reflects a period of relative consolidation over that period following steady depreciation from 2011.

Table 5: Theta Gold Project macro-economic and price forecasts

Theta Gold Project macro-economic and price forecasts							
Item	Unit	2019	2020	2021	2022	2023	Long-Term
		0	1	2	3	4	
SA Inflation Rate	%	5.20%	5.00%	5.40%	5.40%	5.40%	5.40%
Exchange rate	ZAR/USD	14.25	14.16	14.56	14.33	13.75	13.79
Gold	USD/oz	1,277	1,291	1,272	1,244	1,250	1,265

Source: TGM

- ◆ A major strength of the Project is the relatively low capital cost (Table 6), with an estimated peak capital requirement of US\$29.2 million which should allow for relatively easy financing - key factors regarding the low capex include having transport, power and other operational infrastructure/facilities in place.
- ◆ We note however that this will not reflect the peak funding requirement, with working capital and financing costs/fees amongst others also needing to be financed - our view is that working capital requirements should be at least equivalent to three months full production operating costs, which for the Theta Project equates to around US\$7.5 million.
- ◆ That said, our view is that the capital cost estimate is reasonable for a 500 ktpa operation.

Table 6: Theta Gold Project Capex

Theta Gold Project Capex	
Description	Total Capex US\$m
Mining Capital	
Total Direct Mining Capital	5.99
Mining Capital Contingency	0.9
Total Mining Capital	6.89
Plant Capital	
Total Plant	21.62
Tailings Storage Facility	2.11
Total Direct Plant Capital	23.73
Plant Capital Contingency	1.81
Total Plant Capital	25.53
Other Capital	
Total Other Non-Direct Capital	1.65
Other Capital Contingency	0.19
Total Other Capital	1.84
Total Capital	
Total Capital (excl. Contingencies)	31.37
Total Capital Contingencies	2.9
Total Capital	34.26

Source: TGM

- ◆ Estimated operating costs are presented in Table 7 - one key element is the relatively low mining cost of US\$1.60/tonne moved (calculated on a strip ratio of 13.4:1) - we consider that the estimated costs to be reasonable.
- ◆ The low unit mining cost is due to the mineralisation and overburden largely being free dig, with some dozer ripping required.

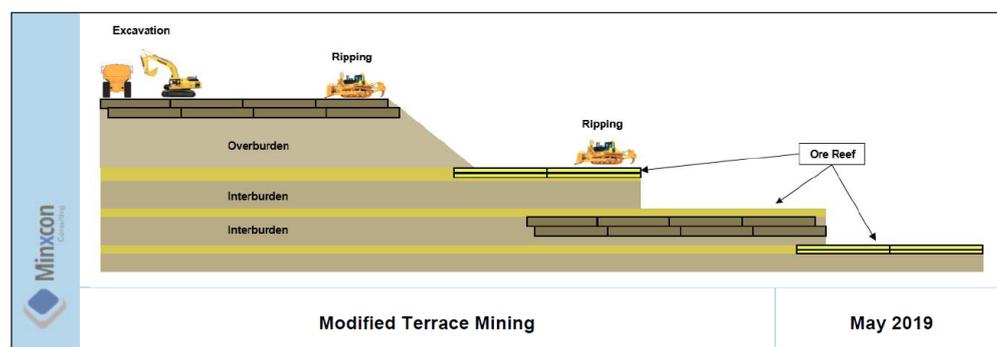
Table 7: Theta Gold Project Opex

Theta Gold Project Opex			
Area	Fixed	Variable	Total
	USD'000 per month	USD/t RoM	USD/t RoM
Plant (Labour, Reagents, Maintenance, Assays, Refinery, Power)	143.49	17.6	21.04
Tailings (Deposition)	48.31		1.16
Mining (Waste, Ore, Diesel)	99.53	20.59	22.98
Other (Site overheads, Tech Services, Refining, Other Support Services, Audit etc., Social and Environmental)	358.32	0.85	9.45
Total	649.65	39.04	54.63

Source: TGM

Mining

- ◆ It is planned to mine the open pits by modified terrace mining (Figure 13), which will include partial in-pit waste backfilling to reduce the environmental footprint - backfilling however will not occur at Brown's Hill as it is planned to use the pit void as a future tailings storage facility.

Figure 13: Modified terrace mining schematic

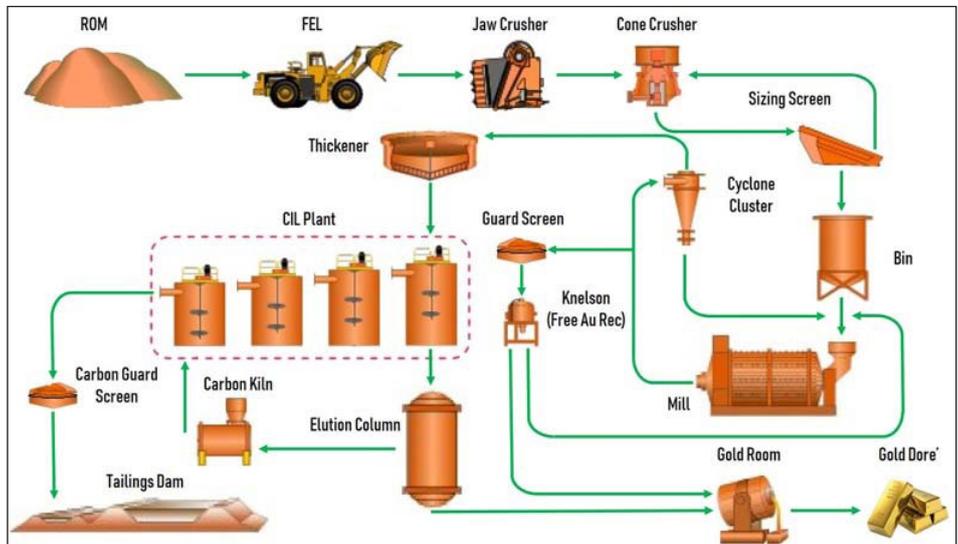
Source: TGM

- ◆ It is planned to mine using excavators, dozers and trucks, with some ripping required - it is expected that no drill and blast will be required, which is important given the proximity to the town of Pilgrim’s Rest - this also lowers costs and increases safety amongst others.
- ◆ The mining method suits the flat lying mineralisation being located on a mountain side.

Treatment

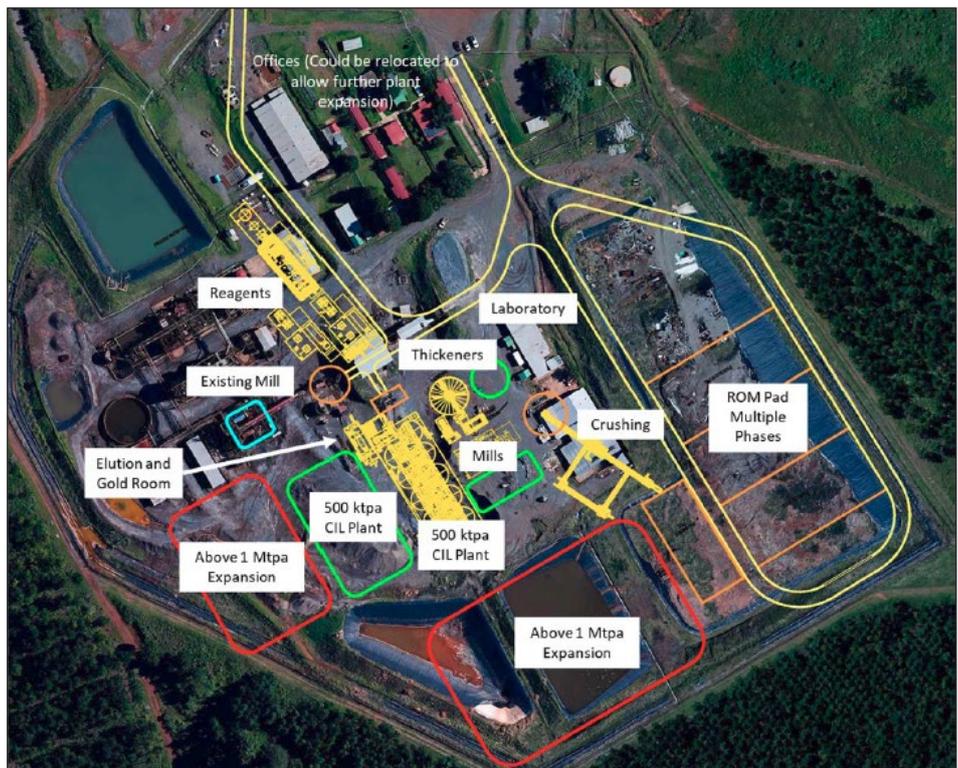
- ◆ Treatment will be through standard CIL processing, as shown schematically in Figure 14 - this processing method has been well supported by the excellent results of the bottle roll metallurgical test work completed to date.
- ◆ Although there is an existing plant on site, this will be largely replaced by new plant, with the plant and site layout designed to allow for the planned expansion (Figure 15).
- ◆ One key piece of infrastructure that will be initially used is the existing tailings storage facility - this has the capacity to take ~2.5 Mt of thickened tailings, sufficient for the five year starter project.
- ◆ The Company is exploring options for future tailings disposal, including using the Brown’s Hill mine void.

Figure 14: Treatment schematic (note - does not show tailings thickener)



Source: TGM

Figure 15: Planned plant layout - yellow - 500 ktpa plant, green - 1 mtpa expansion, red - > 1 mtpa expansion

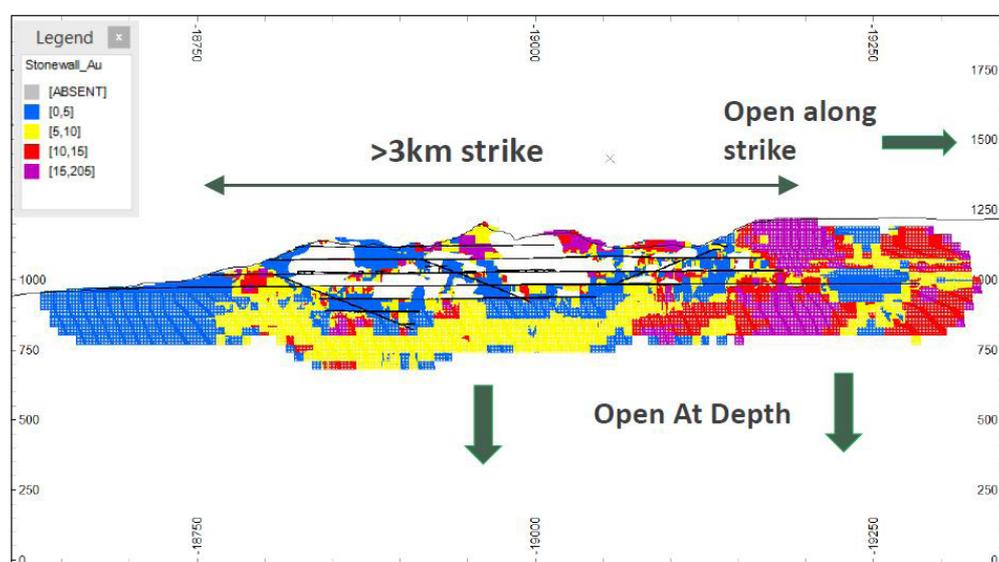


Source: TGM

Rietfontein

- ◆ Rietfontein is a sub-vertical vein within the Nelspruit batholith, with resources calculated over a strike length of ~3,000 m and down to a depth of ~500 m below surface (Figure 17) - mineralisation is open along strike to the south and at depth, where a number of target zones have been identified.
- ◆ The reef is hosted in a structure that has been identified for a strike length of at least 16 km, thus highlighting the upside potential.
- ◆ The reef, which has an average thickness in the order of 75 cm, was mined from 1912 to 1945, however production is unknown; we note the resource grade of 8.42 g/t is based on an assumed mineable width pre-dilution of ~90 cm.
- ◆ Significant underground development is still in place, with this including a number of adits; of these the south adit on Level 3 underwent refurbishment in 2014, and is still in good condition.

Figure 17: Rietfontein long section



Source: TGM

Vaalhoek

- ◆ As mentioned previously Vaalhoek includes the first open cut MRE at the Project, and was one of the targets generated from Project Bentley.
- ◆ Vaalhoek is located some 20 km north of the plant site, and is readily accessible via a well maintained gravel road along the Blyde River valley.
- ◆ Like the majority of the other deposits, Vaalhoek is a shear-hosted mesothermal gold system, developed in two sub-parallel, shallowly west dipping shears (Vaalhoek and Thelma Leader, with the latter some 11 m to 15 m below the former); in addition there are interpreted "leaders", (the "Thelma Leaders") which may be controlled by dilation "ramps" linking the two shears.
- ◆ Reef thicknesses vary from 1 cm to 5 cm thick stringers to up to 340 cm, with the Vaalhoek Reef averaging 33 cm thick and Thelma Leader 97 cm; the mineralisation has been modelled over a strike length of 1,300 m, and ranges in depth from near surface (NE end) to 300 m.
- ◆ This highlights an apparent strong generally northerly control on the mineralisation.
- ◆ A Scoping Study into the potential for open-pit development is planned, followed by drilling to upgrade the resource from Inferred to Indicated, and establish Reserves for ultimate inclusion into the mining plans.

PLANNED ACTIVITIES

- ◆ Activities are largely concentrated on permitting of the Theta Project, which then lead on to financing and development.
- ◆ Technically, work will be concentrated on expanding the open cut Reserves, including:
 - Additional drilling at Theta Hill and Columbia hill to upgrade Inferred Resources, which can then be converted to Reserves,

- Additional drilling to expand mineralisation at Columbia Hill - the Iota ore body is open to the west; and,
 - Drilling at Vaalhoek to upgrade Inferred Resources to Indicated, for conversion to Reserves.
- ◆ In the medium term the Company will look at work (including drilling) to prove up Reserves at the planned Rietfontein underground operation.

CAPITAL STRUCTURE

- ◆ TGM currently has 410 million fully paid ordinary shares on issue.
- ◆ Options on issue include 31.43 million listed options with a strike price of A\$0.30 and an expiry date of October 31, 2020, 11.28 million unlisted options with various exercise prices and expiry dates, and 24.79 million performance options.
- ◆ The Top 20 currently hold ~77% of the shares, with the top holder being Fineway Creation, with 16.73% of the issued capital.
- ◆ Directors hold, directly and indirectly, some 11.6% of shares.

FINANCIAL POSITION

- ◆ As of June 30, 2019, TGM had cash of US\$0.488 million, unsecured loans of US\$4.972 million and vendor finance borrowings of US\$0.267 million - subsequent to the end of the quarter the Company raised A\$8 million through a subscription agreement at A\$0.15/share.
- ◆ In the twelve months to June 30, 2019, the Company received US\$6.810 million from share placements at prices of between A\$0.09 and A\$0.11/share (taking into account the 10 for 1 share consolidation on December 4, 2018).
- ◆ Over the twelve months to June 30, 2019 TGM spent US\$3.043 million on exploration and US\$2.983 million on staff and administration costs.
- ◆ Although the administration figure is high, this includes the cost of both Australian and South African overheads including a plant in a ready state with resultant security, staff and maintenance costs.
- ◆ Over the same period the Company received US\$0.324 million from borrowings, and repaid borrowings of US\$0.775 million.
- ◆ The Company has been steadily paying down debt to improve the balance sheet.
- ◆ Remaining debt includes an unsecured loan and outstanding interest totalling US\$4.972 million with Australian Private Capital Investment Group (International) Ltd ("APCIG"), a company associated with director Mr Simon Liu.
- ◆ The award relates to an aborted Share Sale Agreement between Shandong, TGM and other parties in 2014, with Shandong ordered to pay TGM US\$12.6 million plus other amounts relating to interest and costs, with a current accrued value of US\$18.87 million.
- ◆ 45% of this amount and some costs will be payable to a consortium with whom Stonewall entered into an agreement to fund the litigation against Shandong.
- ◆ The Company has a contingent liability of US\$1.129 million associated with a current dispute with the Association of Mineworkers and Construction Union ("ACMU"), relating to alleged unfair dismissals.

PEERS

- ◆ Table 8 lists a number of ASX-listed gold explorers and developers - we note that the majority of these are Australian based, however there are only limited ASX-listed non-producing gold companies with Resources operating in Africa - the African companies included in the list have relatively large Resource bases.
- ◆ These have been sorted on the EV per ounce of gold, with EV being the undiluted market capitalisation less cash plus debt.
- ◆ This does not take into account the value of projects that do not have published resources, and hence the metric should be considered as indicative only, and may overstate the value of assets with resources.
- ◆ We have also included total/averages at the end of the table.

- ◆ This highlights the low EV/ounce value for TGM (despite the high grades) - this is significantly below the Resource weighted average of A\$50.84/ounce.
- ◆ We would expect an uplift in value of TGM with meaningful progress to development, particularly with successful permitting.

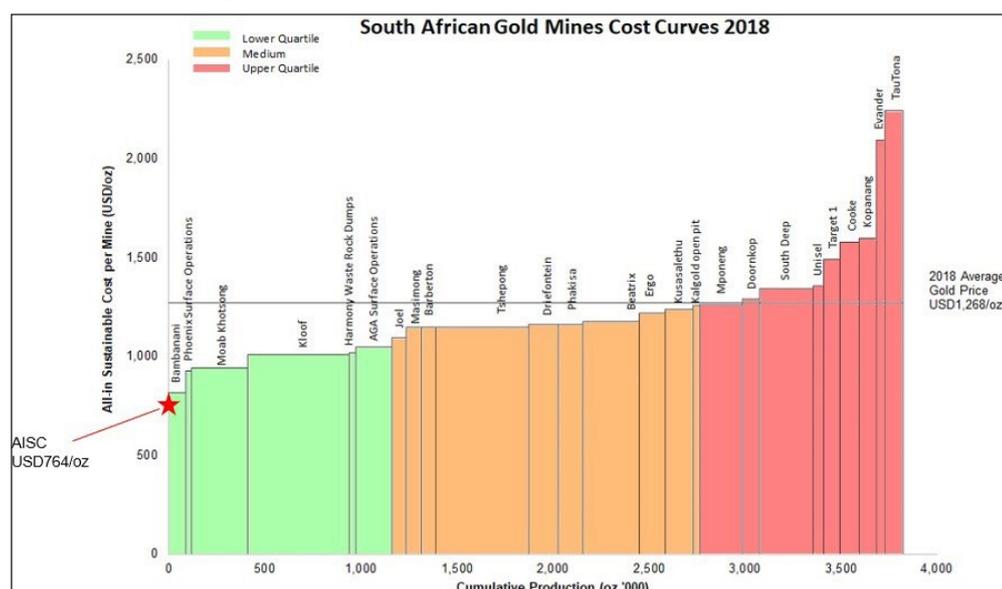
Table 8: TGM peers - gold

TGM peers - gold								
Company	Location	EV Undiluted (A\$m)	Global Resource (Mt)	Global Au Grade (g/t)	Company Equity Share	Contained Au Moz Coy Share	EV oz Au equity share	Project Stage
Belleve Gold	WA, Australia	\$296.7	5.0	11.10	100%	1.78	\$166.28	Evaluation
West African	Burkina Faso	\$435.5	55.1	1.73	100%	3.06	\$142.26	Construction
Echo Resources	WA, Australia	\$210.7	28.5	1.93	100%	1.77	\$118.94	Development Studies
Egan Street	WA, Australia	\$34.1	1.5	9.22	100%	0.46	\$74.71	DFS completed
Kingwest	WA, Australia	\$13.3	2.7	2.23	100%	0.20	\$68.10	Evaluation
Musgrave	WA, Australia	\$28.6	4.8	2.84	100%	0.44	\$64.77	Evaluation
Breaker Resources	WA, Australia	\$59.2	24.6	1.35	100%	1.07	\$55.32	Evaluation
Bardoc Gold	WA, Australia	\$133.4	40.7	2.05	100%	2.68	\$49.68	Development Studies
Genesis Minerals	WA, Australia	\$36.6	7.1	3.30	100%	0.75	\$48.51	Development Studies
Ora Banda	WA, Australia	\$83.2	21.1	2.67	100%	1.81	\$46.04	Re-start
Saturn Metals	WA, Australia	\$26.5	20.7	1.02	100%	0.68	\$39.24	Exploration
Calidus	WA, Australia	\$47.9	21.2	1.82	100%	1.24	\$38.59	Development Studies
Cardinal	Ghana	\$196.5	193.0	1.13	100%	6.98	\$28.14	Development Studies
Kin Mining	WA, Australia	\$18.6	18.3	1.43	100%	0.84	\$22.06	Development/ Review
Alto Metals	WA, Australia	\$5.9	5.4	1.65	100%	0.29	\$20.74	Exploration
Kairos	WA, Australia	\$9.6	14.4	1.39	100%	0.64	\$14.88	Evaluation
Middle Island	WA, Australia	\$7.8	12.1	1.38	100%	0.54	\$14.55	Development Studies
Tyranna	SA, Australia	\$3.7	9.5	1.15	78%	0.27	\$13.51	Exploration
Theta Gold Mines	South Africa	\$55.6	44.8	4.19	74%	4.46	\$12.47	Development Studies
Rimfire	NSW, Australia	\$2.7	6.3	1.12	100%	0.23	\$11.90	Resource
Austar	VIC, Australia	\$9.6	4.8	5.96	100%	0.93	\$10.38	Development, Morning Star Walhalla Belt
West Wits	South Africa	\$6.3	34.2	3.37	74%	2.74	\$2.29	Permitting
Total/ Average		\$1,722.1				33.9	\$50.84	

Source: IRESS, Company Reports, IIR analysis

- ◆ Figure 18 presents the 2018 AISCs of South African gold mining operations compared with that estimated for Pilgrims Rest - Sabie in the 2019 FS - this highlights the estimated low cost of the Project, and the potential to still be very competitive even if costs increase.
- ◆ Note that costs of operations have been provided by TGM - we have not verified this information.

Figure 18: South African gold mining cost curve



Source: TGM

VALUATION

- ◆ We have carried out an indicative valuation for TGM, with the TGME gold project valued using a “resource multiple” method, and validation through the per ounce value of recent transactions - the summary valuation is shown in Table 9.

Table 9: TGM indicative valuation - A\$

TGM indicative valuation - A\$							
Item	Lower Value	Upper Value	Mid Value	Lower / share	Upper / share	Mid / Share	Notes
TGME	\$90.0 m	\$278.6 m	\$184.3 m	\$0.162	\$0.503	\$0.332	
Cash	\$8.0 m	\$8.0 m	\$8.0 m	\$0.020	\$0.020	\$0.020	Estimated
Debt	-\$4.3 m	-\$4.3 m	-\$4.3 m	-\$0.011	-\$0.011	-\$0.011	June 30, 2019
Total	\$93.7 m	\$282.3 m	\$188.0 m	\$0.171	\$0.512	\$0.341	

Source: IIR analysis

- ◆ Table 10 presents the “resource multiple” valuation method - we are generally averse to using this as a prime method, and ideally this should only be used to validate other valuation methods, however given that the only DCF valuations done to date are for starter projects, they will not capture the potential value of the full project.
- ◆ We have used a conservative gold price of A\$1,650/oz - this is a two year average of stable prices prior to the rapid increase in price from November 2018.

Table 10: TGME Gold Project valuation - A\$

TGME Gold Project valuation - A\$							
Category	Ounces	Price AUD	Low Multiple	High Multiple	Low Value	High Value	Mid Value
Inferred	4,431,000	\$1,650	0.5%	2%	\$36,555,750	\$146,223,000	\$91,389,375
Indicated	1,579,400	\$1,650	2%	5%	\$52,120,200	\$130,300,500	\$91,210,350
Measured	15,700	\$1,650	5%	8%	\$1,295,250	\$2,072,400	\$1,683,825
Total	6,026,100				\$89,971,200	\$278,595,900	\$184,283,550
Value/Ounce					\$14.93	\$46.23	\$30.58
Company Ounces	4,459,314				\$66,578,688	\$206,160,966	\$136,369,827
Value per Share	410 m on issue				\$0.162	\$0.503	\$0.332

Source: IIR analysis

- ◆ The range of figures however does broadly agree with the average per ounce transaction values for gold projects over the past three years - these are US\$16/ounce (A\$24/ounce) for projects under care and maintenance and US\$36/ounce (A\$54/ounce for development projects (source: minesonline.com, September 3, 2019).

- ◆ It also needs to be noted that asset transaction prices per ounce will generally be less than the EV/ounce for a similar project within a company.
- ◆ Just as a comparison, the Theta Project FS returned an NPV of ~A\$350/Reserve ounce.

BOARD AND MANAGEMENT

THETA GOLD MINES - AUSTRALIA

- ◆ **Mr Bill Guy - Chairman:** Mr Guy is a professional mining executive and geologist with over 25 years' experience in exploration and resource development in Asia, Australia and Europe, most recently as the Managing Director of Longford Resources Limited (ASX: LFR). In previous executive and geology roles he has been involved in all aspects of the mining industry inclusive of capital raisings (JMS \$60 m, etc), project acquisition (European Zinc) project development (Cockatoo Island Fe), project discovery (Mt Ida (Fe), and large scale JV (Newcrest JV (Au)), in both the corporate and technical roles.

As MD of Longford Resources, he progressed the Keel zinc project in Ireland to its first JORC Resource within just a few months. Keel's first JORC Resource was (6.9 million tonnes at 6.4% zinc +Lead). He previously served as Exploration Manager of Jupiter Mines Limited (Posco/Pallinghurst)

At Jupiter Mines he developed exploration protocols and a team that grew resource inventories to significant levels being the Central Yilgarn Iron Project (CYIP) Mt Ida Magnetite project was part of CYIP. Mt Ida was progressed from zero to an Inferred Resource 530M tonnes @31.94% Fe with a conceptual target of 1.85 Billion tons.

As a geologist in his early years he acted as consultant for a number junior explorers, predominately in Western Australia and South East Asia with a focus on exploration. Nugold Hill Mines, Salamander Gold Mines, Eon Metals etc. This work lead to gold exploration throughout the greenstone belts of WA (e.g. Mt Olympus (JV Newcrest), Mt Monger, Matilda Mines, Bundarra Gold Project (Purchased) etc. Nickel Laterite (Romblon Philippines) and the Mabuhay Epithermal Gold Project Philippines (drill discovery hole into Motherlode Porphyry System 530m).

- ◆ **.Mr Rob Thomson – Managing Director:** Rob Thomson, who was appointed as Managing Director in November 2016, has previously had key roles in taking 8 exploration projects through to mining operations. These include Finder's Wetar 28,000 tpa copper cathode project in Indonesia, Kingsgate's 125,000+ ozpa Chatree open-cut gold mine in Thailand, Oxiana's 125,000+ ozpa Sepon open-cut CIL gold mine in Laos, and Climax Mining's Didipio 150,000+ oz (gold equivalent) gold/copper project in the Philippines.

Rob holds a Bachelor of Engineering from the University of Queensland and a Master in Business Administration from the University of Wollongong. He is a Fellow of the Australasian Institute of Mining and Metallurgy. Rob started his career in underground gold mining in Southern Africa more than a few decades ago and went on to successful roles as CEO; executive director and director (ASX, AIM and TSX.V) and field roles building and establishing mines as general manager and project director, with local and international mining companies.

- ◆ **Mr Finn Behnken - Non-Executive Director:** Finn Behnken was appointed a director of the company in December 2018.

Finn is a mining engineer and has South African mining operational experience as the CEO of Tshipi é Ntle Manganese Mining (Pty) Limited (during the construction and initial production phase of the major Tshipi Borwa Manganese Mine). Tshipi is currently 49% owned by ASX listed Jupiter Mines Ltd, a AUD240m IPO on the ASX in 2018. Prior to this Finn was an investment banker with South African based Nedbank and has served as non-executive director of various mining companies including, most recently, as a director of the then AIM listed Gemfields plc. Currently Finn is the South African representative of Auramet International, a US based precious metals merchant and mine financier. Finn is a resident of South Africa.

- ◆ **Mr Richie Yang – Non-Executive Director:** Richie Yang is an experienced company director, working primarily in the mining resources sector. He has more than 10 years of corporate finance experience working with public and private companies, assisting them with capital raising and corporate structures.

Richie previously held executive positions for various public companies developing iron ore and gold assets where he successfully managed in-house teams and external contractors in completing scoping and feasibility studies for various Australian mining projects.

Richie holds a Bachelor degree from the University of New South Wales majoring in business economics and finance. He was a non-executive director of ASX-listed gold company Bligh Resources prior to their acquisition by Zeta Resources in 2017.

- ◆ **Mr Simon Liu – Non-Executive Director:** Simon Liu is a founding partner and president of Hanhong Private Equity Investment Company.

Simon graduated from the School of Journalism and Communication at Renmin University in China. He has more than 20 years of experience in the marketing and consulting industry. He is also highly acknowledged for his skills in petroleum and mining investment projects, having more than 8 years of management experience.

- ◆ **Mr Brett Tang - Non-Executive Director:** Brett holds a Bachelor of Law degree from the University of Soochow, China and an Executive MBA from the University of Nanjing. He is a qualified lawyer in China and is also registered as a Fund Manager with the Asset Management Association of China (AMAC).

Brett is a professional investor and fund manager, experienced in and been successful in mining and mining investments. From 2007-2013, he was Executive Director at Yunnan Gold Mountain Ltd, a joint venture company with a Chinese mining state-owned enterprise. The company grew to a 20,000oz per annum gold producer from horizontal adit-entry type mines. Between 2013 and 2015 he was a Director of Ao-zhong Mining Pty Ltd, an investment and operating arm of East China Non-Ferrous Exploration Corporation, a Chinese mining and exploration corporation with a history of mining investments in Australia. Brett is now a director at Tasman Funds Management, TGM's largest shareholder. He is also a director and founding partner of China Nanjing Venture Capital Ltd, a China-based VC Fund.

- ◆ **Mr Chin Haw Lim - CFO/Company Secretary:** Chin Haw Lim is a chartered accountant who has worked with various ASX-listed companies as CFO/financial controller and company secretary.

These include Finders Resources' financing, development and operation of its Wetar copper project in Indonesia, and Straits Resources' development and operation of its Girilambone Copper Mine in NSW and its Nifty Copper Mine in WA.

Chin Haw also worked with Straits' Sebuk coal mine in Indonesia and with Triako Resources' Mineral Hill gold/copper mine in NSW.

TGME - SOUTH AFRICA

- ◆ **Mr Bill Guy - Chairman:** Please refer to bio above.
- ◆ **Mr Rob Thomson - Managing Director - Project Delivery:** Please refer to bio above.
- ◆ **Mr George Jenkins - Chief Executive Officer:** George Jenkins is a qualified extraction metallurgist with 25 years of mining industry experience in South Africa and Australia. Throughout his career he has held various executive, operational, management and business development roles with the most recent executive role as COO for public company Aard Metals Ltd. He has extensive experience in managing operational mine sites ranging from precious metals to coal with companies such as JCI, Vale Australia and AMCOAL. Has also held operational managerial titles with several junior mining organisations.

His appointment as CEO provides the company with expertise in feasibility studies, project development, plant construction, commissioning and production. In addition, his operational and business experience in South Africa and Australia will provide TGM with insights into the business dynamics of these two countries so that we can integrate them into the future of the company.

- ◆ **Mr Terrence Mokale - Director, Government and Community Relations:** Terrence is an admitted Attorney of the High Court of South Africa, holds B Juris and LLB degrees and specialises in Socio-Economic development and Municipal governance.

Terrence has been working in the mining environment as a Social Facilitation Consultant and has to date assisted numerous mining companies to develop solid community relationships and to secure support and licenses for their mining operations.

Recently Terrence's clients include Glencor and Gold One, in both cases he successfully engaged community stakeholders and representatives to work constructively with the mining operators, creating a win-win platform for all parties involved.

In his government career, he spent time in Local Governments' including as Administrator of Thaba Chweu Local Municipality.

- ◆ **Ms Hanlie Grobler - Director and Chief Financial Officer:** Hanlie holds a BCom Accounting Degree and a MBA from DeMontfort University in the UK, and holds a BA (SA) designation. She worked in various corporate environments as Financial Director and Chief Financial Officer and was Executive Director and General Manager of various Boards and Executive Management Committees. She previously worked as Finance Director at Kart Foods SA, the global food company. She has more than 35 years of experience in all aspects of strategic financial management, financial planning, control and analysis and mine planning and budgetary control.
- ◆ **Ms Natasha Thomas-Kasangana - Executive Director: Corporate Services and Company Secretary:** Natasha was appointed to the TGME board in August 2019 and is an admitted attorney and notary public with 9 years' experience in the mining industry, particularly corporate and commercial drafting and advisory, regulatory compliance, governance, transformation and key stakeholder relations. Natasha has significant start up experience, having served as the Tshipi Borwa Manganese Mine's Legal Counsel and Company Secretary and later Corporate Services Executive from 2012 to 2018. She was also part of the team that delivered the relisting of Jupiter Mines Limited to the ASX. Natasha holds a Bachelor of Laws Degree from the University of KwaZulu-Natal and certificates in both Mining and Prospecting Law from Wits University and Human Resources Management from the University of Cape Town.
- ◆ **Mr Johan Fourie - Environmental Manager:** Johan Fourie holds a Master of Science degree in Mechanical Engineering, which he obtained in 1992 at the University of Witwatersrand. He has also obtained tertiary qualifications in occupational hygiene, mine environment engineering infrastructure, environmental law, environmental auditing and environment management from institutes such as the Chamber of Mines and Universities of Reno Nevada, Witwatersrand, North West and Cape Town.

Johan has over 37 years of experience in environmental engineering and compliance, and previously held the position of group environment engineering consultant at JCI Incorporated. Following that, Johan established, owned and managed his own environment engineering consultancy company, Johan Fourie and Associates, which consulted to Transvaal Gold Mining Estates Ltd.

Johan is a director of WMC Pty Ltd, director of JFA Environmental Engineering Consultants and is a member of the Kwasazi House of Experts.

BACKGROUND - SOUTH AFRICA

INTRODUCTION

- ◆ The 25 years since the transition from Apartheid to Majority Government has seen uncertainty and some tumultuous times in South African politics, which has deterred some foreign investment, including mining projects.
- ◆ This was particularly so over the close to 9 years to early 2018 under the leadership of Jacob Zuma, with his Presidency marred by allegations of corruption, nepotism and “State Capture” involving the Gupta family.
- ◆ There was widespread optimism following the elevation of Cyril Ramaphosa to the Presidency on February 15, 2018 - he is well respected, and amongst other things was instrumental in the drafting of the Constitution following the end of apartheid and is a supporter of a strong mining industry.
- ◆ The appointment of Gwede Mantashe as Minister of Mines has gave a boost in confidence to the industry - he replaced Mosebenzi Zwane, who was thought by some to be a puppet of the Guptas.
- ◆ One of the aims of the President is to attract US\$100 billion in Foreign Direct Investment by 2023 - in 2018 this grew by 446% to US\$7.1 billion - developing the mining industry is a key part of this strategy.
- ◆ A factor that may deter investors is the potential for forced land expropriation - a limited land expropriation programme is on the cards, largely aimed at land that is not being used else held for speculation, which would not affect TGM if enacted.
- ◆ There are still a number of serious socio-economic and infrastructure issues facing the country, including crime, corruption, inflation and, importantly for the mining sector problems with a run-down electricity generation and distribution network - these issues however are not unique to South Africa amongst other African jurisdictions that ASX-listed companies are operating in.
- ◆ However, the country has a rigorous legal framework, including a Constitution, Bill of Rights and court system.

MINING INDUSTRY

- ◆ South Africa is undeniably the industrial powerhouse of Sub-Saharan Africa, and a major global miner, with mining contributing 7.6% to GDP and 25% of exports.
- ◆ The country is a major global producer of PGE’s, gold, coal, manganese and diamonds, being the world’s single largest producer of PGE’s (40%) and chrome (56%), and the 8th largest producer of gold, (4% of global production) – historically it has been the largest global producer, providing as much as 30% of global production in 1993, and historically producing over two billion ounces, more than any other country.
- ◆ Given the mining industry, skills and services are abundantly available at a reasonable cost, and there is no need for expensive FIFO expat expertise as is the case in a number of African countries.
- ◆ There has been media attention on mining, partly due to the decline in production from the gold and platinum operations – this has largely been due to increasing costs in the very deep mines. Also at times militant strike action by the National Union of Mineworkers (“NUM”) and the Associated Mineworkers and Construction Union (“AMCU”) has gained media attention – strike action has largely targeted the major miners and long established operations with legacy issues.
- ◆ The perception of creeping nationalism has challenged the mining industry, however the Mineral and Petroleum Resources Development Act (2002) and associated regulations (including the HDSA ownership requirements) now seem to be working, with the mechanics of the Act and royalty rates similar to those in a number of countries worldwide; it needs to be noted however that processing times for applications under the act can be slow.
- ◆ South Africa is a highly prospective country, however due to issues as mentioned above it has missed out on the recent global exploration boom, and thus there are many high quality areas that can benefit from the application of modern exploration techniques.
- ◆ The country also has relatively low unit labour costs and a readily available skilled workforce; this, allied with largely well-developed infrastructure means that it is a relatively cheap place to carry out exploration and mining activities compared to a number of third world and other African countries.

- ◆ In the 2018 Fraser Institute Survey of Mining Companies the country rated at 43/83 in the Investment Attractiveness Index (the 2nd ranked country in Africa), just one behind New South Wales (42/83) and well ahead of Victoria (54/83) and Tasmania (55/83).
- ◆ South Africa's ranking is ahead of Mali in Africa (50/83, a popular destination for gold focussed companies), Alberta in Canada (51/83) and not far behind Colorado in the USA (35/83).
- ◆ The last few years have seen steady improvements in the country's rating, with the rank being 74/104 in 2016, reflecting changing attitudes, largely driven by the change in the President and Mines Minister, and there strong support for the mining industry.
- ◆ The key change has been in the Policy Perception Index, with the ranking improving from 84/104 in 2016 to 56/83 in 2018.

THE MRDPA AND ASSOCIATED ACTS

- ◆ The adoption of the MRPDA brought in the New Order Rights, where ownership of minerals is vested in the State and not with the landholder as was the case under the Old Order Rights – transitional arrangements were put in place at the time of change.
- ◆ Prospecting Rights are generally granted for an initial period of five years, and can be renewed for a further three year term, at the end of which they need to be relinquished or converted to a Mining Right.
- ◆ Should a feasible operation be delivered Mining Rights can then be applied for, which are granted for an initial term of up to 30 years, and renewable for additional 30 year terms; retention leases can also be granted for a single three year term only.
- ◆ As for the Old Order Rights, the boundaries of New Order Rights generally follow the boundaries of surface rights, with the rights described as per the names of the surface rights – this is different to the graticular system as used in Australia and many other jurisdictions.
- ◆ As part of the provisions of the MPRDA, a Mining Charter was signed on October 12, 2002 between the Government, mining representatives and civil society, which defined additional conditions under which rights could be granted.
- ◆ One key provision regards the ownership of mining assets by HDSA's, with 15% ownership mandated by May 1, 2009, and 26% by May 1, 2014, as is the situation now. This ownership is commonly through the participation of BEE's. Other charter provisions relate to community development, human resources development and equitable employment.
- ◆ The Mineral and Petroleum Royalty Act embodies a formula based royalty regime, which takes into account revenue and EBIT, and thus accounts for capital expenditure through taking into recognising depreciation and amortisation, with two royalty formulae.
 - For refined minerals: $0.5\% + [\text{EBIT}/(\text{gross sales in respect of refined mineral resources} \times 12.5)]$
 - For unrefined minerals: $0.5\% + [\text{EBIT}/(\text{gross sales in respect of unrefined mineral resources} \times 9)]$
- ◆ The maximum royalty rate is 5% for refined minerals and 7% for unrefined, broadly in line with a number of jurisdictions, including Australia, and could be considered a fair system.

ENVIRONMENTAL LEGISLATION

- ◆ Environmental requirements relating to resource developments are broadly similar to those in other mining jurisdictions, and responsibility for implementation of the
- ◆ National Environmental Management Act ("NEMA") is vested in the relevant provincial administrations.
- ◆ Other acts and authorities affecting resources include the National Water Act and the National Heritage Resources Act amongst others.

MINING CHARTER III

- ◆ One issue that made the news in recent years (and made potential investors nervous) was the proposed new Mining Charter, unilaterally introduced by the Minister for Mines in June 2017, without any notice to or input from other industry stakeholders, including the South African Chamber of Mines.
- ◆ However, initially given the opposition by the industry and the onset of legal action by the Chamber of Mines (which represents 90% of miners in South Africa and is headed by Mr Mxolisi Mgojo, and includes a number black mining company executives), implementation

of the charter was suspended in July 2017; the proposed charter was also opposed by other members of the ANC.

- ◆ Also, following the change in Presidency the legal actions were placed on hold, with a more equitable charter being negotiated and now in place
- ◆ One issue at the time was that the BEE ownership rules of current rights were contentious - in some cases former BEE parties had sold shares to non-compliant groups, thus decreasing the BEE ownership to below the stipulated 26% level - when the BEE requirements were originally set up in the 2000s, companies believed that the compliance through the issuing of shares was a one off requirement, and did not need to be maintained should BEE partners sell to non-compliant parties.
- ◆ Re-compliance now for those companies that have had BEE partners sell shares to non-compliant parties would require additional shares being issued to new BEE-compliant parties, diluting existing shareholders.
- ◆ However, following the negotiation, the Charter was amended, with the following key points:
 - **Existing rights:** existing mining right holders that achieved a minimum of 26 per cent BEE shareholding will be recognised as compliant for the duration of the mining right. This is so irrespective of their current BEE shareholding. To remain compliant the Guidelines provide that such holders must submit annual reports on their current BEE shareholding, meaningful economic participation and their shareholders' rights.
 - **Renewals and transfers of existing rights:** existing mining right holders' historical BEE transactions will not be recognised for the purposes of the renewal and transfer of existing mining rights and the applicant for renewal or the transferee, as the case may be, will likely be required to comply with the BEE ownership requirements applicable to new mining rights.
 - **New rights:** applicants for new mining rights must have a minimum of 30 per cent BEE shareholding comprising: a minimum of 5% non-transferable carried interest to each of Qualifying Employees and Host Communities, and a 20 per cent effective ownership to BEE entrepreneurs (5% of which must preferably be owned by women). The "carried interest" is essentially a free carried interest but arguably permits notional vendor financing without any form of security.
 - **Pending applications:** will be processed under the 2010 Charter. Applicants must accordingly have a minimum of 26% BEE shareholding. However, after the mining right is granted, the holder of that right must increase its BEE shareholding to 30% within five years and possibly also meet the BEE shareholding requirements applicable to new mining rights.
- ◆ The charter also includes a number of conditions relating to black staffing levels and stipulates minimum amounts of goods and services to be sourced from South Africa - this last point potentially breaks World Trade Organisation (of which South Africa is a member) rules, in restricting trade, however there are exemptions for junior explorers.
- ◆ As mentioned earlier any impacts from the major facets for TGM will be relatively minor - there will be no requirement to increase the BEE ownership from 26%, and there are also caveats on the BEE partners selling their shares.
- ◆ The Company is already largely using South African consultants, and site staff are all South African nationals.

APPENDIX 1 - TGM GOLD PROJECT MRE - OPEN CUT AND UNDERGROUND

Open Cut Resources								
Mineral Resource Classification	Open Pit Mine	Reef	Reef Grade	Reef Width	Content	Reef Tonnes	Au Content	
			g/t	cm	cm.g/t	Mt	Kg	koz
Indicated	Hermansburg	Elluvial	1.79	0	0	0.51	905	29.1
	DG1	Elluvial	1.37	0	0	0.16	217	7
	DG2	Elluvial	0.76	0	0	1.17	892	28.7
	Vaalhoek	Vaalhoek	17.25	33	574	0.11	1920	61.7
	Theta & Browns Hill	Shale	1.02	200	204	0.44	402	12.9
	Theta & Browns Hill	Bevetts	1.1	221	244	0.89	886	28.5
	Theta & Browns Hill	Upper Theta	2.41	100	241	0.72	1568	50.4
	Theta & Browns Hill	Lower Theta	3.7	100	370	0.89	2956	95
	Theta & Browns Hill	Beta	2.49	100	249	0.38	859	27.6
	Columbia Hill	Bevetts	2.89	114	330	0.11	303	9.7
	Columbia Hill	Upper Rho	2.43	393	956	0.81	1965	63.2
	Columbia Hill	Lower Rho	2.51	550	1381	0.82	2047	65.8
	Columbia Hill	Upper Theta	1.08	114	123	0.16	171	5.5
Total Indicated			2.11	179	378	7.16	15,091	485.2
Inferred	Hermansburg	Elluvial	0.88	0	0	0.11	97	3.1
	DG1	Elluvial	2.95	0	0	0.29	864	27.8
	DG5	Elluvial	0.76	0	0	0.10	77	2.5
	Vaalhoek	Vaalhoek	20.32	43	880	0.21	4,319	138.9
	Vaalhoek	Thelma Leaders	14.25	97	1,388	0.29	4,172	134.1
	Theta & Browns Hill	Shale	1.11	216	240	0.70	666	21.4
	Theta & Browns Hill	Bevetts	1.07	213	227	0.65	589	19
	Theta & Browns Hill	Upper Theta	1.86	100	186	1.07	1692	54.4
	Theta & Browns Hill	Lower Theta	8.11	100	811	1.64	11329	364.3
	Theta & Browns Hill	Beta	2.23	100	223	0.75	1417	45.6
Columbia Hill	Upper Rho	5.13	106	544	0.10	507	16.3	
Total Inferred			4.35	115	502	5.92	25,730	827.3

Source: TGM

Underground Resources											
Mineral Resource Classification	Mine	Reef	Reef Grade	Stope Grade	Reef Width	Stope width	Content	Reef Tonnes	Stope Tonnes	Au Content	
			g/t	g/t	cm	cm	cm.g/t	Mt	Mt	Kg	koz
Measured	Frankfort	Bevetts	7.13	5.37	73	103	520	0.07	0.09	489	15.7
Total Measured			7.13	5.37	73	103	520	0.07	0.09	489	15.7
Indicated	Frankfort	Bevetts	7.86	5.13	58	96	452	0.24	0.37	1,912	61.5
	CDM	Rho	13.19	3.8	23	90	307	0.26	0.90	3,401	109.4
	Beta	Beta	21.66	6.58	23	90	499	0.72	2.36	15,506	498.5
	Rietfontein	Rietfontein	14.57	8.2	52	92	755	0.52	0.92	7,534	242.2
	Vaalhoek	Vaalhoek	13.9	6.34	36	90	499	0.06	0.14	887	28.5
	Olifantsgeraamte	Olifantsgeraamte	16.97	4.62	25	90	416	0.03	0.09	422	13.6
Total Indicated			16.26	6.21	36	91	591	1.82	4.77	29,661	953.7
Total Measured & Indicated			15.93	6.2	38	91	600	1.89	4.87	30,150	969.4
Inferred	Frankfort	Bevetts	7.41	4.27	48	93	356	0.34	0.60	2,543	81.8
	CDM	Rho	10.06	3.02	24	90	244	0.54	1.81	5,472	175.9
	Beta	Beta	16.51	5.43	25	90	414	1.11	3.37	18,285	587.9
	Rietfontein	Rietfontein	14.06	8.52	57	94	803	1.19	1.96	16,721	537.6
	Olifantsgeraamte	Olifantsgeraamte	18.33	4.68	23	90	422	0.06	0.25	1,162	37.3
	Vaalhoek	Vaalhoek	16.28	4.77	22	90	361	0.87	2.98	14,209	456.8
	Vaalhoek	Thelma Leaders	12.18	9.47	96	123	1166	0.02	0.03	284	9.1
	Glynns Lydenburg	Glynns	15.87	5.19	25	90	397	3.22	9.83	51,078	1,642.20
	Ponieskrantz	Portuguese	13.26	3.99	22	90	287	0.06	0.21	849	27.3
	Frankfort	Theta	7.22	3.24	34	90	244	0.10	0.22	714	23
Nestor	Sandstone	5.54	2.92	41	90	225	0.10	0.19	562	18.1	
Total Inferred			14.68	5.22	31	91	458	7.62	21.45	111,880	3,597.00

Source: TGM

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