

THETA GOLD MINES LIMITED

ASX: TGM

THETA GOLD MINES

5.8 Moz Resource

& potential near-term gold production profile

Investor Presentation March 2019
(Hong Kong & Singapore)

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- The Company advises that the Scoping Study results, Production Targets and Forecast Financial Information contained in this announcement are preliminary in nature as the conclusions are based on low-level technical and economic assessments, and are insufficient to support the estimation of Ore Reserves or to provide an assurance of economic development at this stage. There is a low level of geological confidence associated with Inferred Mineral Resources used in this report and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the Production Target itself will be realised. The stated Production Target is based on the Company's current expectations of future results or events and should not be relied upon by investors when making investment decisions. Further evaluation work and appropriate studies are required to establish sufficient confidence that this target will be met. Investors should note that there is no certainty of funding for this project, and that any future funding obtained may be dilutive to the value of shares in TGM, and funding is one of the key risks to project timing.
- Theta Gold Mines believes it has reasonable grounds under ASIC Information Sheet 214 to report the results of the Scoping Study. The mine plan referred to in the quoted NPV contains 15% Indicated Mineral Resources and 85% Inferred.
- The information in this report relating to Mineral Resources and Columbia Hill drilling results is based on information compiled by Mr Uwe Engelmann (BSc (Zoo. & Bot.), BSc Hons (Geol.), Pr.Sci.Nat. No. 400058/08, MGSSA), a director of Minxcon (Pty) Ltd and Mr Phil Bentley (MSc (Geol), MSc (MinEx), Pr.Sci.Nat. No. 400208/05, FGSSA), a consultant to the Company and a member of the South African Council for Natural Scientific Professions . The original reports titled "New Open Cut discovery at Vaalhoek Mine", "Theta Hill Open Cut Grows JORC Resources to 5.8 Moz", "High Grade Shallow Gold at Theta Hill and Satellite Target Columbia Hill" and "High Grade Gold Assays at Columbia Hill" were dated 9 March, 26 September and 29 November 2018 and 4 March 2019 respectively and released to Australian Securities Exchange on those dates. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Australian Securities Exchange announcements; and all material assumptions and technical parameters underpinning the estimates in the Australian Securities Exchange announcements continue to apply and have not materially changed.

Investment Overview: low CAPEX, potential near-term production

- **Gold 5.75 Moz @ 4.57g/t Au discovered with 2 Moz increase (2018).**
- A massive ground holding across the East Transvaal Goldfield.
- Potential to bring multiple mines online, increase the production profile.
- First start up mine at Theta Hill (shallow open-cut mining) with **Feasibility Study and Mining Reserve due Q2 2019**
- Existing Mining Rights and permitted plant; permitting of pit in progress
- **Low CAPEX – Strong Scoping Study economics**
- Expert directors and technical team with South Africa experience
- Local community supportive and part owners

As an ASX-listed junior, Theta Gold Mines has one of the largest JORC 2012 resources, and has the potential to develop into a leading gold company.

Corporate Overview

Capital structure	
Ordinary shares	~357 million
Listed Options (TGMO), 2yr expiration $0.30 exercise (m)	31.4
Unlisted Options and Rights (m)	35.7
Market capitalisation (A$m) (undiluted)	40.0[1]
Cash and share placement commitment [2]	$2.7 M

85% of register owned by Top 20	
Fineway Creation Ltd (Since 2018)	18.80%
Tasman Funds Management (related to Director, Since 2015)	9.18%
Golden Asia Investment Group Ltd (Since 2016)	8.73%
High Gift Investments Ltd (Since 2015)	6.45%
Zenith (H.K) Holding Limited (Since 2019)	6.23%

- **Theta Gold Mines Limited (ASX: TGM)**
- ASX-listed since 2012
- Strong technical board; production & South Africa experience
- Directors and management hold 12.5% of shares
- Funded to completion of Definitive Feasibility Study



[1] Based on share price of $0.11
[2] $2.5m share placement commitment pursuant to November 2018 subscription agreement

New directors & exec: a clear focus on production

Key Personnel	Position	Expertise
Bill Guy (Geologist, Australia)	**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), capital raisings (LFR,JMS, etc), project acquisition (European Zinc) project development (Cockatoo Island Fe), and project discovery Mt Ida (Fe) Jupiter Mines.
Robert Thomson (Mining Engineer, Australia)	**Managing Director**	35+ years Mining Engineer & Director. Development/Operations as CEO/Exec Director/Project Manager in 8 gold and base metal projects progressed through exploration, BFS , approvals, financing, construction and delivery to operations. Successful Project Director/GM – Chatree and Sepon Stage 1, 125,000+ ozpa gold mines.
Finn Behnken (Mining Engineer/Financier, South Africa)	**Non Executive Director**	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). Prior to this Finn was an investment banker with South African based Nedbank and has served as a director of Gemfields plc
Richie Yang (Financier, Australia)	**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 funding and corporate developments.
Chin Haw Lim (Australia)	**Chief Financial Officer**	Chartered Accountant with many years mining industry experience. Has worked in various ASX-listed companies as CFO/Financial Controller and Company Secretary in areas of financing, development and operation.
George Jenkins (Metallurgist, South Africa)	**Chief Executive Officer** (South African subsidiaries)	26 Years Mining Industry Experience. 22 Years Extraction Metallurgist. 19 Years in various hands-on management and executive roles in South Africa and Australia.
Johan Fourie (Engineer, South Africa)	**Environmental & Strategic Planning**	40 years of mining industry experience. Has managed the successful completion of approvals for the Theta Gold Mines redevelopment plans.

Project Overview: a leading gold stock in the making

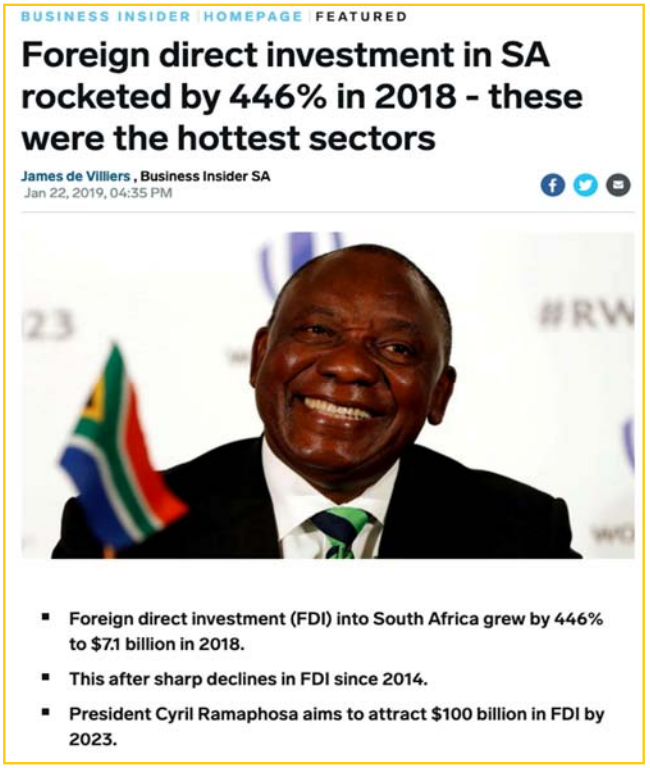
- **A massive 620 km2 of ground holding across the East Transvaal Goldfield**
- Multiple open-cut mines in the making, creating a very unique South African gold company
- Potential to bring multiple mines online and to organically increase the production profile
- JORC 2012 resources already of 5.75 Moz @ 4.57g/t Au with additional zones yet to be drilling-verified
- Land holding hosts 43+ historical mine sites as drilling targets
- High grades and recoveries from shallow gold reefs
- **Discovery costs per ounce of gold sub $US15 (JORC 2012 Indicated ounces)**
- Permitted existing CIL Plant, permitted existing tailings dam and permitted underground mines
- Titles held through various Mining Rights and applications

Near term gold production potential with multiple open-cut mines to bring online

Market Overview: emergence of an established mining jurisdiction

- South Africa has produced more gold than any other country
- Around 2B ounces have been produced from South African goldfields
- The mining industry employs over 500,000 people and contributes around 10% of GDP
- New pro-mining leader elected in South Africa as head of the ANC
- TGME was incorporated in 1895, the oldest gold company in South Africa
- Theta Gold Mines directors and team have delivered producing assets in emerging markets including in South Africa and Asia

A low cost mining destination compared to most developed countries in Australia, Canada, USA, South America and Europe



BUSINESS INSIDER | HOMEPAGE | FEATURED

Foreign direct investment in SA rocketed by 446% in 2018 - these were the hottest sectors

James de Villiers , Business Insider SA
Jan 22, 2019, 04:35 PM

- Foreign direct investment (FDI) into South Africa grew by 446% to $7.1 billion in 2018.
- This after sharp declines in FDI since 2014.
- President Cyril Ramaphosa aims to attract $100 billion in FDI by 2023.

Numerous examples of recent South African mining success



- **Bushveld Minerals Vanadium/Iron producer (LSE.BMN, £425m MC)**
- Vanadium producer (2.5ktpa growing to >4ktpa)
- Share price rose >3300% from £1.45 to £48 within two years by Aug'18
- H1 2018 revenue of US$85m (H1 2018 EBITDA US$44m)



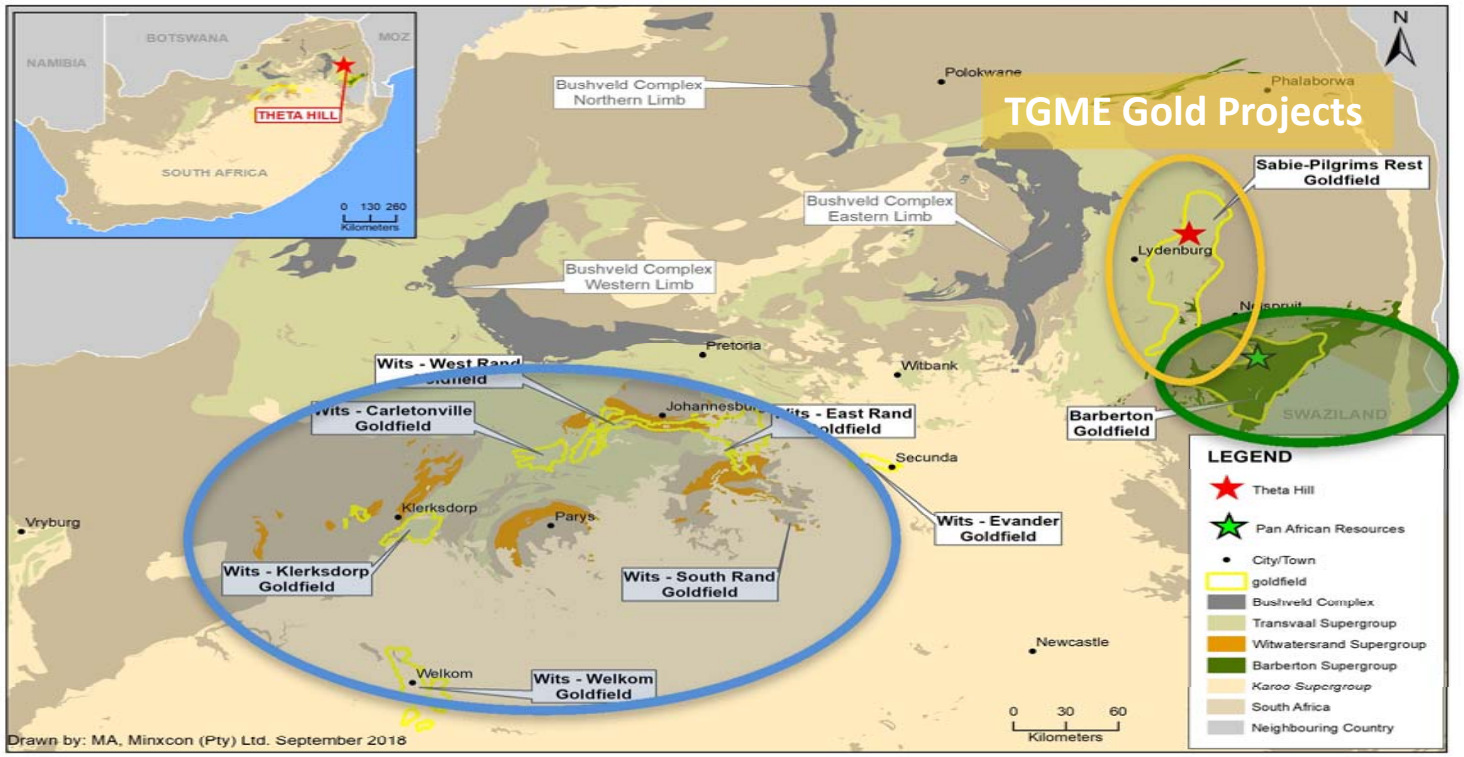
- **Pan African gold producer (LSE.PAF, £200m MC)**
- Production up to 170kozpa from 3-4 mines in Barberton Goldfield (south of TGME)
- New open-cut planned at Royal Sheba (8.75Mt @ 2g/t Au for 370koz)



Exploration & development

A massive holding covering a major gold field

This prolific gold field has produced around 7Moz in the past.



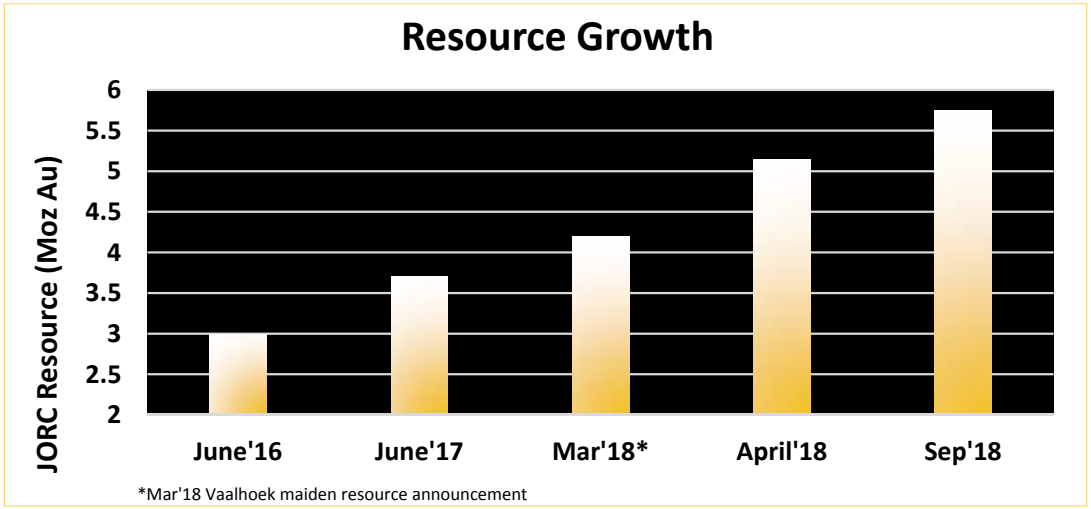
- 1886 – Current. **Witwatersrand** (surrounds Johannesburg, currently mining up to 4km underground)
- 1881 – Current. **Barberton Goldfield** (450km East of Johannesburg, Greenstone belt, currently mining up to 2km underground, recently announced discovery of opencut resources to be the new focus, LSE: PAF, Market Cap: £200m+)

★ 1873 – WWII, 1980s, 90s… **TGME Goldfields** (owned by TGM's subsidiaries, from/near surface flat reef systems)

JORC Resource of 5.8Moz, up 57% in 2018

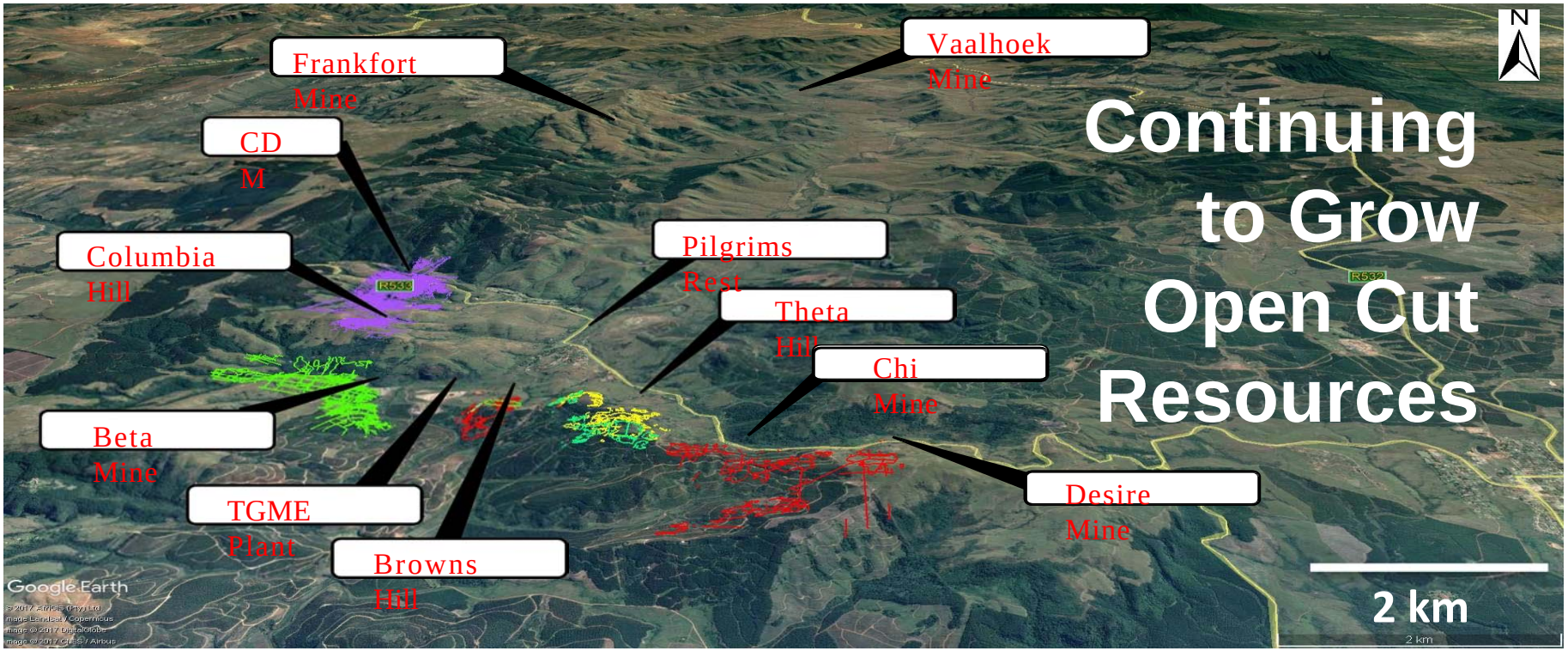
- The company successfully delivered resource growth of 57% **(+2.0Moz)** during programs undertaken in 2018
- Effective cost of US$15/oz to prove up Indicated Resources
- Open-cut Resources of 7.44Mt @ 4.5g/t Au (1Moz)[1] (Theta Hill & Vaalhoek)
- Underground Resources of 26.3Mt @ 5.6g/t Au (4.6Moz) [1]
- Further open-cut and underground potential identified
- 2019 will deliver the company's first mining reserve /targeting decision to mine

Data-to-Drill Validation Model



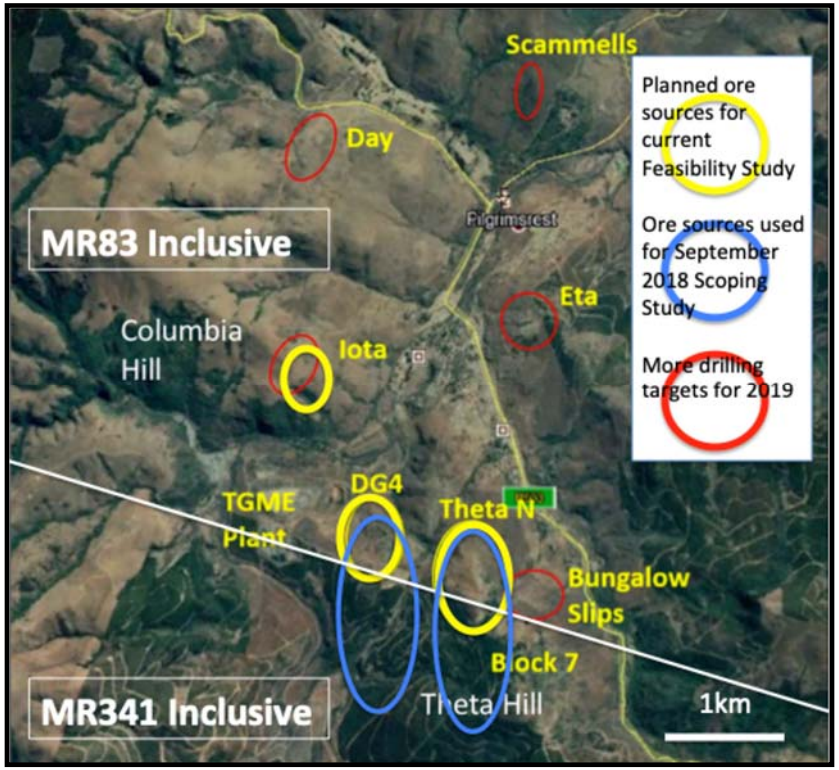
[1] Refer to ASX release dated 26/9/18, other resources of 5.4Mt @ 0.9g/t Au for 147Koz in tailings/rock dumps.

Multiple Immediate-Term Open-Cut Drilling Targets



First Open Cut – Feasibility Study[1] due Q2 2019

- A focus on delineating sufficient initial reserves to underpin the financing and construction of the **Theta Open Cut Project in H2 2019**
- The Feasibility Study will define **a high margin startup development, with short capital payback period**
- **Maiden mining reserves** at both Theta Hill and Columbia Hill expected to be delivered shortly to coincide with the Feasibility Study
    - *Also considering expanding drilling programs to increase the mining reserve to support a larger production profile as more mines are brought on line.*
- **Metallurgical testing is in progress** as part of the Feasibility Study
- Visits from potential contractors (**Mining contractors & Engineering Firms**) underway at site
- **Additional permitting process underway**, including incorporation of Columbia Hill into statutory open-cut mine approvals within MR83



The Feasibility Study will demonstrate that WA open pit techniques can be used on this large historical goldfield in the East Transvaal.

[1] Refer to ASX Announcement dated 4 March 2019

Reduced Capital Plant Refurbishment



- Scoping Study from September 2018 provided preliminary cost estimate of US$11m[1] for refurbishment and upgrade to a 480Ktpa plant (last operated in 2015)
- New crushing and Milling circuits, additional CIL circuit tanks, refurbishment of elution and gold room
- Expected to be an order of magnitude lower than cost of a new plant
- Detailed design costings to be completed as part of Feasibility Study

Low CAPEX contribute to the strong Scoping Study economics

[1] Refer to ASX Announcement dated 15 October 2018

2019 – A Transformative Year

Current Focus

- Deliver Feasibility (Theta Hill)
- Reserve drilling, detailed engineering, pit optimisations
- Identifying long lead items
- Initiated financing discussions
- Applying the Theta Hill "Data-to-drill Validation Model" to other open-cut resource targets
- Permitting of open-cut mines
- Initiating social and labour programs locally

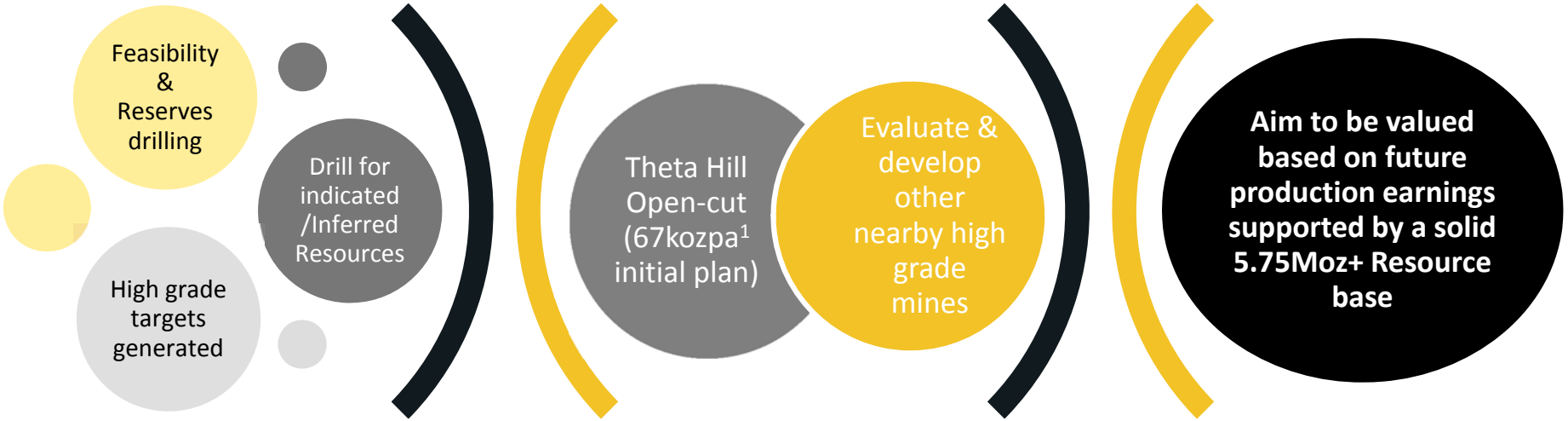
Development strategies

- Build shallow open cut resources
- To convert part of the large 5.75Moz resource into JORC 2012 Mining Reserve
- Complete Feasibility Study with initial mining Reserve
- Leverage off its low capex requirements (Permitted Gold Plant and tailings)
- Demonstrate a path to immediate-term gold production

Growing Value

- Make new shallow discoveries via systematic exploration
- Build Mining Reserve ounces to be valued more highly by Market
- Add technical board with a history of exploration and project development success
- Continue to grow the existing 5.8Moz JORC 2012 Resource and increase Reserves
- ASX Junior Explorer with one of the largest JORC 2012 resources

Building Value in 2019-2020



Data mining & drilling to prove up RESOURCES → **Multiple mine DEVELOPMENTS** → **Going for the XXX MULTIPLES**

[1] Refer to ASX Announcement dated 15 October 2018

APPENDIX 1



Resources JORC 2012

Mineral Resources for the Stonewall Underground Operations as at September 2018

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	cmgt	Mt	Mt	Kg	koz
Measured	Frankfort	Bevett's	7.13	5.37	73	103	520	0.069	0.091	489	15.7
Total Measured			**7.13**	**5.37**	**73**	**103**	**520**	**0.069**	**0.091**	**489**	**15.7**
Indicated	Frankfort	Bevett's	7.86	5.13	58	96	452	0.243	0.373	1 912	61.5
	CDM	Rho	13.19	3.80	23	90	307	0.258	0.895	3 401	109.4
	Beta	Beta	21.66	6.58	23	90	499	0.716	2.357	15 506	498.5
	Rietfontein	Rietfontein	14.57	8.20	52	92	755	0.517	0.919	7 534	242.2
	Vaalhoek	Vaalhoek	13.90	6.34	36	90	499	0.064	0.140	887	28.5
	Olifantsgeraamte	Olifantsgeraamte	16.97	4.62	25	90	416	0.026	0.091	422	13.6
Total Indicated			**16.26**	**6.21**	**36**	**91**	**591**	**1.824**	**4.774**	**29 661**	**953.7**
Total Measured & Indicated			**15.93**	**6.20**	**38**	**91**	**600**	**1.893**	**4.865**	**30 150**	**969.4**

Resource Classification	UG Mine	Reef	Reef Grade	Stope Grade	Reef Width	Stope width	Content	Reef Tonnes	Stope Tonnes	Au Content	
			g/t	g/t	cm	cm	cmgt	Mt	Mt	Kg	koz
Inferred	Frankfort	Bevett's	7.41	4.27	48	93	356	0.343	0.596	2 543	81.8
	CDM	Rho	10.06	3.02	24	90	244	0.544	1.811	5 472	175.9
	Beta	Beta	16.51	5.43	25	90	414	1.107	3.367	18 285	587.9
	Rietfontein	Rietfontein	14.06	8.52	57	94	803	1.190	1.962	16 721	537.6
	Olifantsgeraamte	Olifantsgeraamte	18.33	4.68	23	90	422	0.059	0.248	1 162	37.3
	Vaalhoek	Vaalhoek	16.28	4.77	22	90	361	0.873	2.980	14 209	456.8
	Vaalhoek	Thelma Leaders	12.18	9.47	96	123	1166	0.023	0.030	284	9.1
	Glynns Lydenburg	Glynns	15.87	5.19	25	90	397	3.218	9.833	51 078	1 642.2
	Ponieskrantz*	Portuguese	13.26	3.99	22	90	287	0.064	0.213	849	27.3
	Frankfort Theta*	Theta	7.22	3.24	34	90	244	0.099	0.220	714	23.0
	Nestor*	Sandstone	5.54	2.92	41	90	225	0.101	0.193	562	18.1
Total InFerred			**14.68**	**5.22**	**31**	**91**	**458**	**7.622**	**21.452**	**111 880**	**3 597.0**

Resources JORC 2012

Mineral Resources for the Stonewall Open Pit Operations as at September 2018

Resource Classification	Open Pit Mine	Reef	Reef Grade	Reef Width	Content	Reef Tonnes	Au Content	
			g/t	cm	cmgt	Mt	Kg	koz
Indicated	Hermansburg	Elluvial	1.79	0	0	0.505	905	29.1
	DG1	Elluvial	1.37	0	0	0.159	217	7.0
	DG2	Elluvial	0.76	0	0	1.174	892	28.7
	Theta & Browns Hill*	Upper Theta	1.13	100	113	0.185	210	6.7
	Theta & Browns Hill*	Lower Theta	4.26	100	426	0.587	2500	80.4
	Theta & Browns Hill*	Beta						
	Vaalhoek	Vaalhoek	17.25	33	574	0.111	1 920	61.7
Total Indicated			**2.44**	**30**	**73**	**2.722**	**6 644**	**213.6**

Resource Classification	Open Pit Mine	Reef	Reef Grade	Reef Width	Content	Reef Tonnes	Au Content	
			g/t	cm	cmgt	Mt	Kg	koz
Inferred	Hermansburg	Elluvial	0.88	0	0	0.110	97	3.1
	DG1	Elluvial	2.95	0	0	0.293	864	27.8
	DG5	Elluvial	0.76	0	0	0.101	77	2.5
	Vaalhoek	Vaalhoek	20.32	43	880	0.213	4 319	138.9
	Vaalhoek	Thelma Leaders	14.25	97	1 388	0.293	4 172	134.1
	Theta & Browns Hill*	Upper Theta	1.85	100	185	0.776	1440	46.3
	Theta & Browns Hill*	Lower Theta	7.17	100	717	1.632	11 734	377.3
	Theta & Browns Hill*	Beta	2.13	102	217	1.302	2 770	89.1
Total Inferred			**5.40**	**87**	**470**	**4.719**	**25 472**	**818.9**

Resources JORC 2012

Mineral Resources for the Stonewall Tailings Dams as at September 2018

Resource Classification	Surface Operation	Reef	Tonnage	Gold Grade	Gold Content	
			Mt	g/t	Kg	koz
Indicated	Glynn's Lydenburg	Tailings	1.211	0.80	972	31.3
	Blyde 1	Tailings	0.590	0.73	434	14.0
	Blyde 2	Tailings	0.280	0.83	234	7.5
	Blyde 3	Tailings	0.316	0.87	275	8.8
	Blyde 4	Tailings	0.164	0.72	119	3.8
	Blyde 5	Tailings	0.022	0.61	14	0.4
	TGME Plant	Tailings	2.661	0.87	2 325	74.8
Total Indicated			**5.244**	**0.83**	**4 373**	**140.6**

Resource Classification	Surface Operation	Reef	Tonnage	Gold Grade	Gold Content	
			Mt	g/t	Kg	koz
Inferred	Blyde 3a	Tailings	0.023	0.57	13	0.4
Total Inferred			**0.023**	**0.57**	**13**	**0.4**

Mineral Resources for the Stonewall Rock Dumps as at September 2018

Mineral Resource Category	Surface Operation	Reef	Tonnage	Gold Grade	Gold Content	
			Mt	g/t	Kg	koz
Inferred	Vaalhoek	Rock Dump	0.121	1.64	199	6.4
Total Inferred			**0.121**	**1.64**	**199**	**6.4**

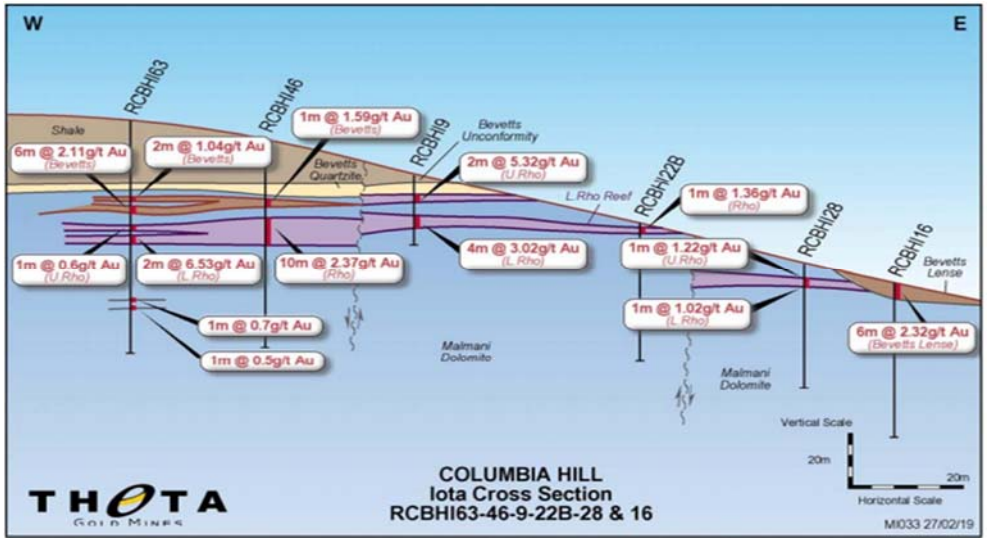
Notes:

1. Underground cutoff is 160cm.g/t, open pit cutoff is 0.5 g/t and the tailings cutoff is 0.35 g/t;
2. The gold price used for the cutoff calculations is USD 1,500 / oz;
3. Geological losses applied are, 10% for inferred and 5% for Indicated and Measured;
4. Declared Mineral Resources fall within the various permit areas;
5. Historical mine voids have been depleted from the Mineral Resource;
6. The inferred Mineral Resources have a high degree of uncertainty and it should not be assumed that all or a portion thereof will be converted to Mineral Reserves.

Growing open-cut resources: Columbia Hill

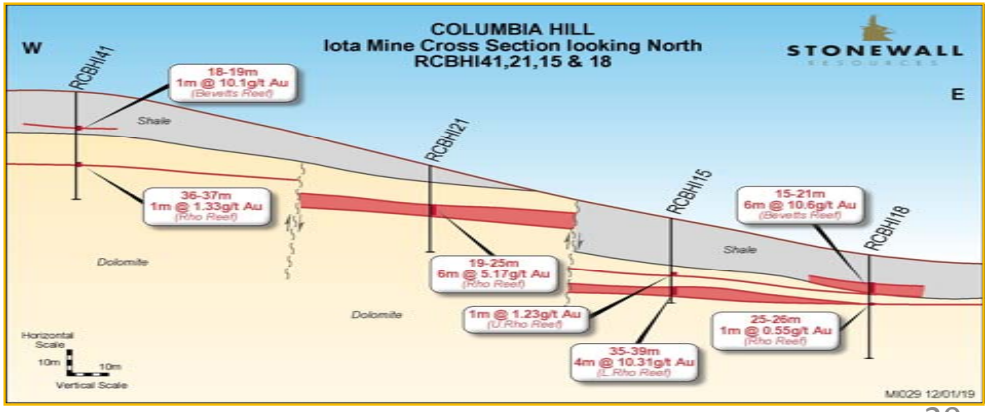
March 2019 Drill Results

BHID	From	To	Width	Au g/t	Au Comments	Au Content	Back calc in situ
	m	m	m			Cm.g/t	Reef g/t over 25cm
RCBHI48	43.00	64.00	**21.00**	1.36	Bevetts/Rho	2,846	5.42
RCBHI48 incl	48.00	50.00	2.00	1.85	U Rho	370	7.40
RCBHI48 incl	49.00	50.00	1.00	2.67	U Rho	267	**10.68**
RCBHI48 incl	57.00	60.00	**3.00**	**5.05**	L Rho	1,516	**20.21**
RCBHI48 incl	57.00	58.00	1.00	**10.40**	L Rho	1,040	**41.60**
RCBHI61	82.00	83.00	1.00	1.61	Rho	161	6.44
RCBHI62	39.00	43.00	**4.00**	1.88	Bevetts	751	7.51
RCBHI63	35.00	37.00	2.00	1.09	Bevetts	217	4.34
RCBHI63	38.00	44.00	**6.00**	2.11	Bevetts	1,264	8.42
RCBHI63	51.00	53.00	2.00	**6.53**	L Rho	1,306	**26.12**
RCBHI63 incl	51.00	52.00	1.00	**10.40**	L Rho	1,040	**41.60**
RCBHI64	14.00	15.00	1.00	**3.23**	Bevetts	323	**12.92**
RCBHI64	28.00	29.00	1.00	1.36	U rho	136	5.44
RCBHI64	33.00	36.00	**3.00**	**4.82**	L Rho	1,446	**19.28**
RCBHI64 incl	34.00	35.00	1.00	**12.60**	L Rho	1,260	**50.40**
RCBHI64	45.00	46.00	1.00	**3.82**	U Theta	382	**15.28**



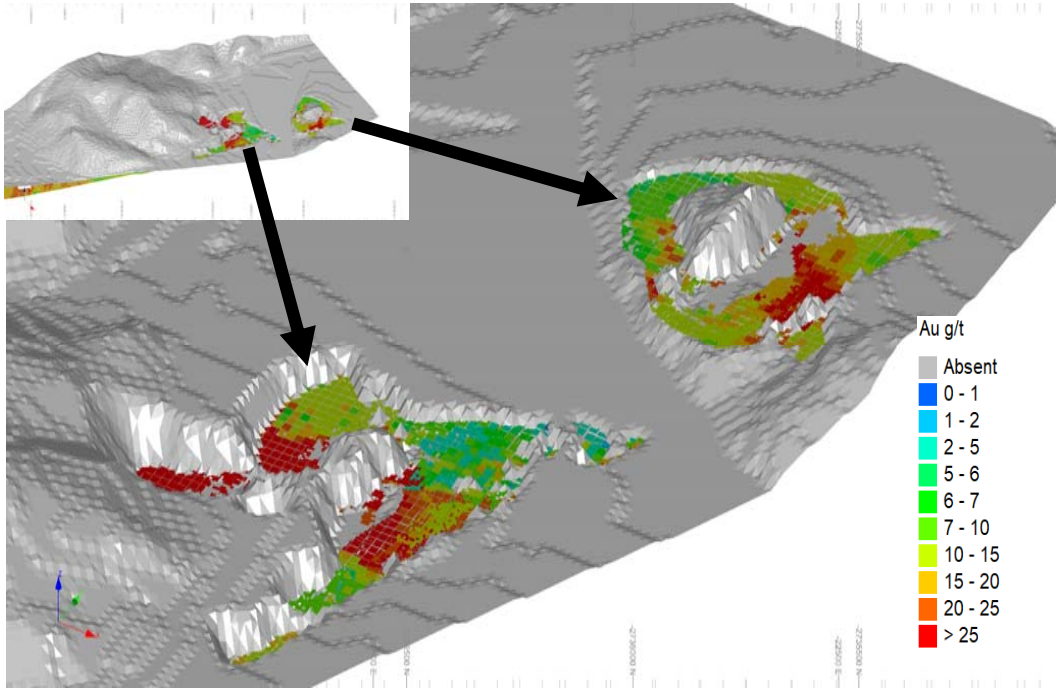
November 2018 Drill Results

BHID	From	To	Width	Au g/t	Au Comments	Au Content	Back calc in situ
Iota	m	m	m			Cm.g/t	Reef g/t over 25cm
RCBI12B	43.00	59.00	16.00	**3.27**	Bevetts	5,233	13.08
Incl	48.00	58.00	10.00	**4.46**	Bevetts	4,462	17.85
RCBI12B	76.00	77.00	1.00	**8.76**	Rho	876	35.04
RCBHI14	-	1.00	1.00	1.09	Quartz in Shale	109	4.36
RCBHI14	16.00	17.00	1.00	**2.20**	U Rho?	220	8.80
RCBHI14	28.00	31.00	3.00	**5.93**	Rho	1,778	23.71
RCBHI15	29.00	30.00	1.00	1.23	U Rho	123	4.92
RCBHI15	35.00	39.00	4.00	**12.53**	Rho	5,012	50.12
RCBHI16	-	6.00	6.00	**2.32**	Bevetts/Rho	1,393	9.29
RCBHI17	5.00	10.00	5.00	1.45	Bevetts	724	5.79
RCBHI21	19.00	25.00	6.00	**5.17**	Rho	3,102	20.68
RCBHI22	-	1.00	1.00	1.57	Quartz in Shale	157	6.28
RCBHI26	46.00	48.00	2.00	**4.89**	Shale / Bevetts	978	19.56
RCBHI26	62.00	68.00	6.00	1.79	Rho	1,073	7.15
incl	63.00	65.00	2.00	**3.89**	Rho	777	15.54



Refer to ASX releases dated 29 November 2018 and 4 March 2019

More open-cut potential: Vaalhoek



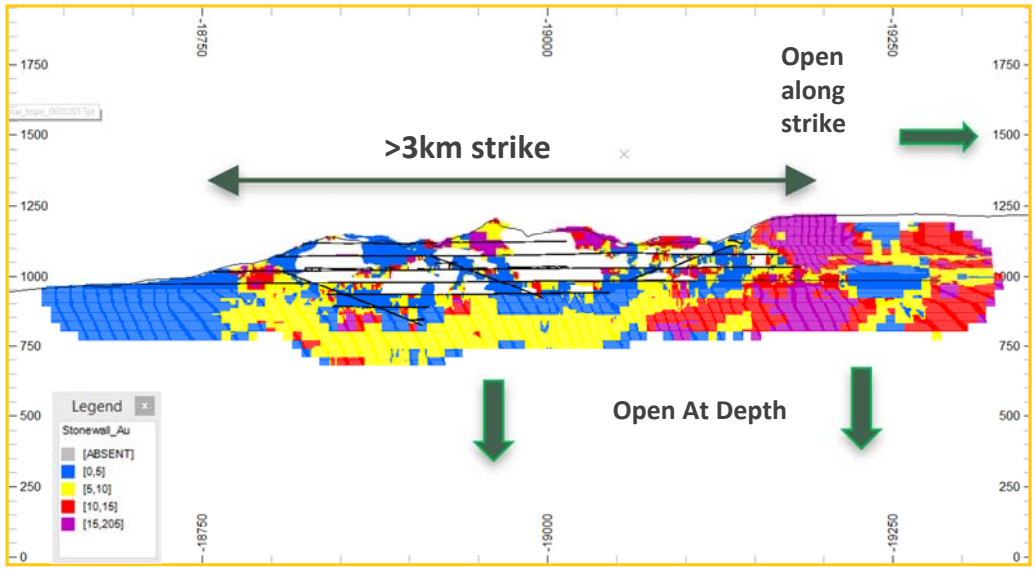
The Vaalhoek open-pits, may provide very high grade ore which can be treated at the TGME CIL plant, subject to further metallurgical testwork and confirmatory drilling to prove up Indicated Resources and then reserves.

- Potential second high grade open-cut mine
- Resource of 0.62Mt @ 16.9g/t (335koz), 82% inferred[1]
- Drilling planned for 2019 to upgrade to primarily Indicated Resources and plan for Reserves (JORC, 2012).
- Located within 20km of TGME processing plant
- Part of the Group's open-cut strategy of up to 100kozpa production

A continued focus on Growing Open-Cut Resources

[1] **Refer to ASX Announcement on 9 March 2018.**

Underground potential: Rietfontein Mine



Shallow Underground Development pipeline

- JORC Resource of 2.88Mt @ 8.42g/t Au for 780Koz (31% Indicated, 69% Inferred)
- Mine not accessed since WWII due to water ingress over 70 years
- Focus of drilling will be on higher grade part of resource (>10g/t Au) to establish reserves

Mineral Resources for Rietfontein Underground as at April 2018

Resource Classification	Reef Grade	Stope Grade	Reef Width	Stope width	Content	Reef Tonnes	Stope Tonnes	Au Content	
	g/t	g/t	cm	cm	cmgt	Mt	Mt	Kg	koz
Total Indicated	14.57	8.20	52	92	755	0.52	0.92	7,534	242.2
Total Inferred	14.06	8.52	57	94	803	1.19	1.96	16,721	537.6
Total	**14.21**	**8.42**	**56**	**94**	**600**	**1.71**	**2.88**	**24,255**	**779.8**



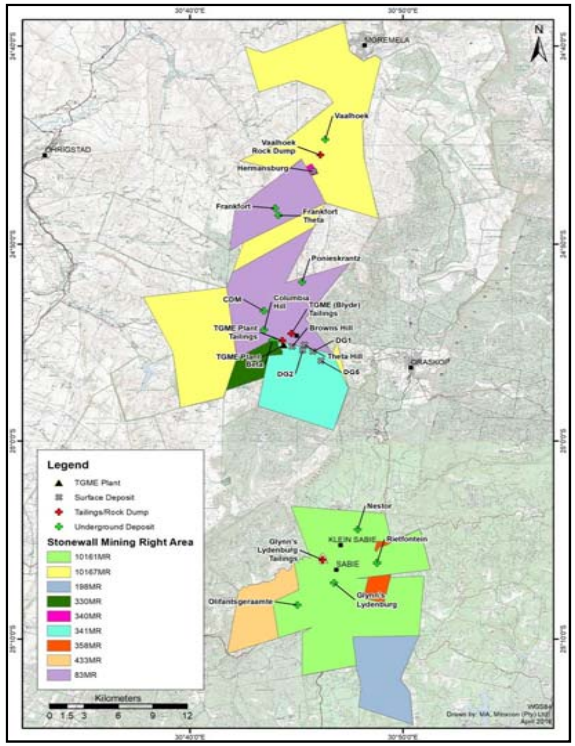
Other Underground Opportunities to Grow Resource

- Numerous additional underground opportunities identified
- Criteria of high grade (>5g/t) and low capital requirements
- Second-priority behind Theta Hill, Vaalhoek open cuts and Rietfontein underground
- Providing medium to long term expansion opportunity

Mineral Resources for Select Underground Opportunities

Resource Classification	UG Mine	Reef	Mining Grade	Mine Tonnes	Au Content	
			Au g/t	Mt	Kg	koz
Total Resource (M, I & I)	Frankfort	Bevett's	4.82	1.1	4,944	159
	Beta	Beta	6.10	5.7	33,791	1,086
	Vaalhoek	Vaalhoek	5.05	3.1	15,379	494
	Glynns Lydenburg	Upper Theta	5.37	9.8	51,078	1,642
Total Measured, Indicated and Inferred			**5.50**	**19.8**	**105,192**	**3,382**

Shallow Underground Development pipeline

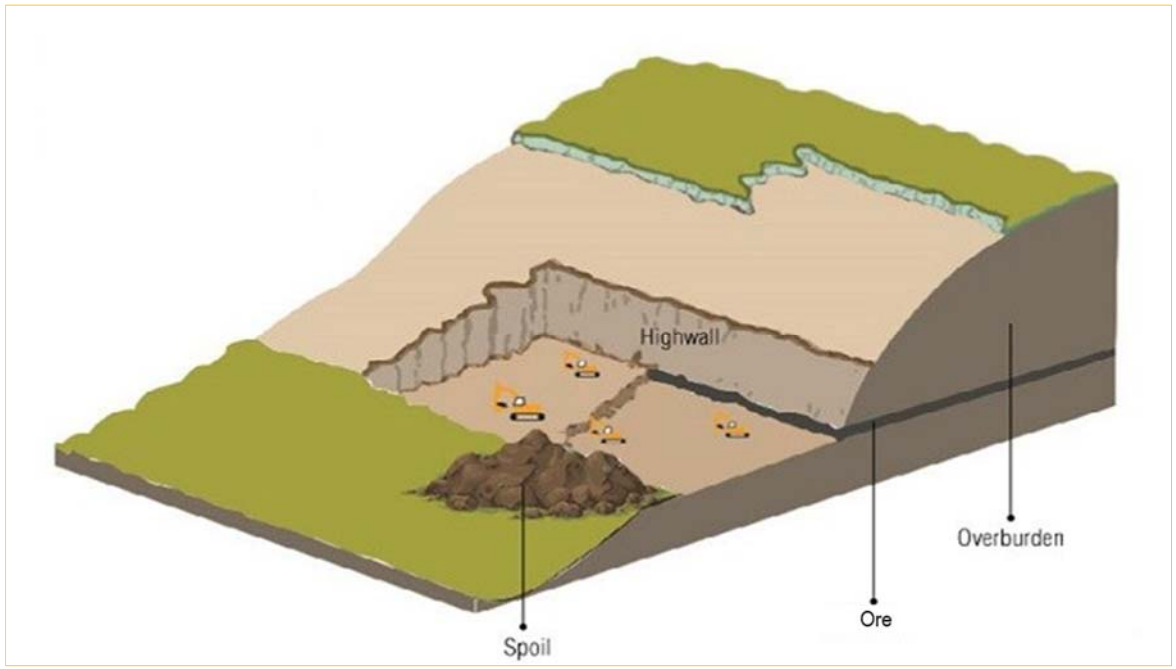


APPENDIX 2



Mining techniques

Concept Mine Planning at Theta Hill Opencut



Example of the style of open-cast, bench-mining planned at Theta Hill. The method involves progressive strip mining, in-pit waste emplacement and rehabilitation as the mining is completed (diagram courtesy Minxcon)

- Low cost stripping of overburden
- Minimal drill and blast predicted due to very broken ground → cost effective & lesser environmental impact
- In-pit emplacement of waste during 'bench-style' contour mining
- Relatively flat-lying gold reef amenable to surface-miners
- Backfill perpendicular to mining with concurrent rehabilitation
- Short haulage distances and minimal blasting

Surface Miners at Theta Hill Opencut



Example of surface miner at work (courtesy Minxcon/Wirtgen).

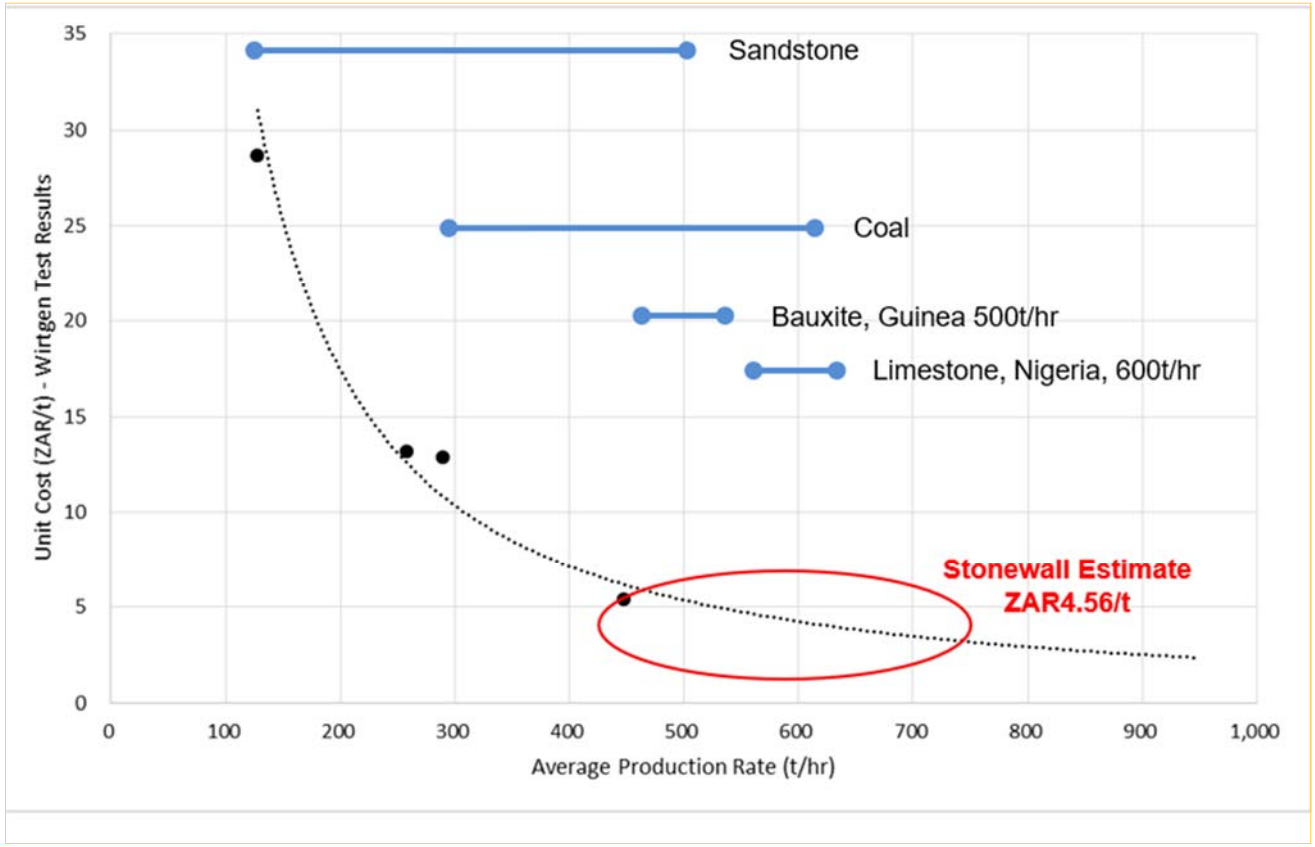


- **Simple Mining** high productivity up to 4,300 t/hr (Low Operating Cost)
- **Selective Mining** - Reduced dilution, maximised ore recovery, reduced gold losses
- **Less energy costs -** eliminate primary crushing and drill and blast operations
- **Less handling:** Reduced material handling, direct load to trucks, transport ore short distance to plant

Soft Rock Mining at Theta Hill Opencut

- **Flexibility:** Greater selectivity, improved productivity and reduced dilution. Can work in steep terrain with variable contours





Comparison of costs from different rock-types (courtesy Wirtgen/Minxcon).



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