

#### **ASX Announcement and Media Release**

Monday, 16 August 2021

# The WBP Scoping Study's Production Model Indicates Potential for Long-Life Project

## **Cautionary Statement**

The Scoping Study referred to in this announcement is a preliminary technical and economic study of the potential viability of developing the Witwatersrand Basin Project ("WBP") as a mine and was carried out to enable the Company to decide whether to proceed to more definitive studies of the WBP. The Scoping Study referred to in this announcement is based on lower-level technical and preliminary economic assessments and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or certainty that the conclusions of the Scoping Study will be realised by West Wits Mining Ltd.

The first stage of WBP's development, Qala Shallows area, has advanced to a Definitive Feasibility Study ("DFS") stage which is due for completion in August 2021. The Qala Shallows area provides approximately 70% of production tonnes in WBP's initial nine-year production period and approximately 46% over WBP's 25-year Life-of-Mine.

The Company has concluded it has reasonable grounds for disclosing a Production Target, given that the Scoping Study assumes that the Inferred material processed during the first nine years of production for the Qala Shallows area accounts for approximately 21%.

Additionally, the Main Reef package and Bird Reef are underpinned by a JORC compliant Mineral Resource of which 15% and 19% is classified as Inferred resources respectively.

There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of further Measured or Indicated Mineral Resources or that the Production Target or preliminary economic assessment will be realised.

The Scoping Study is based on the material assumptions outlined elsewhere in this announcement. These include assumptions about the availability of funding. While the Company considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the potential mine development outcomes indicated in the Scoping Study, funding in the order of A\$75 million will likely be required over the life of the mine. Investors should note that there is no certainty that the Company will be able to raise funding when needed, however the Company has concluded it has a reasonable basis for providing the forward-looking statements included in this announcement and believes that it has a "reasonable basis" to expect it will be able to fund the development of the Project.

It is also possible that such funding may only be available on terms that may be dilutive to, or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other strategies to provide alternative funding options including project finance.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.



#### **HIGHLIGHTS**

- Scoping Study results demonstrate the WBP's potential to be WWI's cornerstone project as the Company aims to become a mid-tier gold producer
  - 80,000oz pa Au 18 Years Average Steady State Production
  - 95,000oz Max Annual Gold Production Year 8
- ➤ The WBP's Scoping Study indicates a 25-year Year Life-of-Mine with an estimated 16M tonnes at a ROM grade of 3.0g/t Au for 1.57Moz of Gold
- ▶ DFS on the first stage of development, Qala Shallows, nearing completion and due later this month
- ➤ Granted Mining Right¹ enables WWI to rapidly advance into development
- Further growth potential as WWI aims to build its substantial JORC compliant Mineral Resource beyond the current 25.91Mt @ 4.26g/t for 3.55Moz Au (2g/t cut-off)<sup>2</sup>

West Wits Mining limited ("West Wits" or "the Company") Managing Director Mr Jac van Heerden said, "We have always known that West Wits had control of a special Mineral Resource in South Africa. This mine yielded robust results historically and, we can confidently say, will again do so well into the future. The team is excited about commencing mine development and the early mining initiative. The results from the Scoping Study reaffirms WWI's key objective of establishing WBP as a full-scale mining operation which targets sustained production at an average of 80,000 ounces per annum for over 18 years and a total life-of-mine ("LOM") in excess of 20 years. The Company has identified an experienced mining contractor as well as a skilled technical services team who will assist with the start-up of the mining operation as West Wits accelerates towards underground production."

## **Executive Summary:**

Results from the Scoping Study ("the Report") by Bara Consulting Pty Ltd ("Bara") confirm the WBP's potential to turn West Wits into a long-term gold producer with average steady state annual production of 80,000oz for 18-years and over 20-year LOM.

The WBP has the potential to build up to a peak production rate of over 95,000 oz per annum and the Report's production target averages 90,000oz from Year 6 – 11 as production reaches steady state from the Qala Shallows, Main Reef package & Bird Reef East areas.

The original Scoping Study production model relied in part on an area comprising an Exploration Target³ on the K9A reef. The K9A Exploration Target has since been converted to a JORC compliant Mineral Resource⁴. Further to this, the K9A and K9B were subject to an infill-drilling program which targeted conversion of Inferred Mineral Resources in the early stage of mining⁵. Bara has recently updated the original Scoping Study to allow for updates to the K9A and K9B JORC compliant Mineral Resource models. The removal of the Exploration Target and reduction of Inferred Mineral Resources in the early stage of mining in the updated production model has enabled the release of the WBP production target.

Key production metrics are detailed in Table 1 below:



**TABLE 1: WBP'S KEY PRODUCTION METRICS** 

WBP – SCOPING STUDY – PRODUCTION DATA	OUTCOME
Life of Mine (Construction to Relinquishment)	25 Years
Total Years of Production	22 Years
Total Production (Ore Tonnes)	16,000,000
Max Production Rate (Ore Tonnes)	850,000tpa
Run of Mine Grade Au (Average)	3.4g/t Au
Recovered Grade Au (Average)	3.0g/t Au
LoM Contained Au	1,730,000oz
Metallurgical Recovery Au (Overall)	90%
Run of Mine ("ROM") Gold Produced	1,560,000oz
Average Annual Gold Production (22yrs) <sup>1</sup>	70,000oz
Average Annual Steady State Gold Production (18yrs) <sup>2</sup>	80,000oz
Max Gold Production (Year 7)	95,000oz

<sup>&</sup>lt;sup>1</sup> Production Years – 22yrs (Yr3 – Yr24)

Image 1 provides a graphical representation of the WBP's production profile and incremental contributions of each development stage identified by the Report.

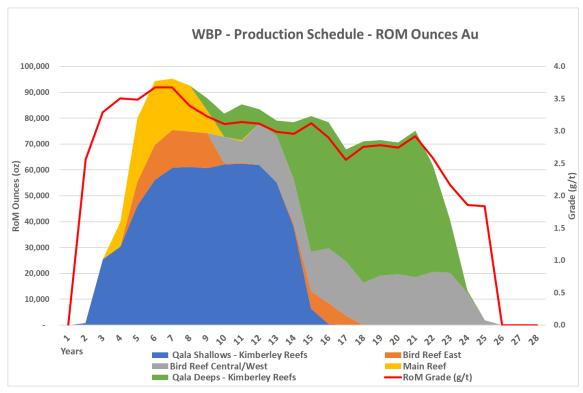


Image 1: The WBP Scoping Study's ROM production schedule in annual ounces of gold by stage over the WBP's 25-year life-of-mine

The Scoping Study identified five distinct reef packages to develop mining operations. The Qala Shallows and Qala Deeps areas, underpinned by the Kimberley Reef Package, still have extensive life left and form the backbone of the WBP. The other areas of operation will supplement additional tonnes through the Qala operations LOM.

<sup>&</sup>lt;sup>2</sup> Steady State – excludes ramp up and ramp down production – 18yrs (Yr5 – Yr22)



## Stage 1 - Qala Shallows ("Shallows")

A key factor in the Report's prioritisation of the Shallows for initial development is the Kimberley Reef's ore profile which modelling shows is best suited to provide the optimal steady state production level over WBP's mine life. In turn, production from Shallows would support the development of other distinct target areas during subsequent development phases. In addition, mine design undertaken shows that the Qala Adit provides a feasible access point for early mining development and future mechanised mining operations, as well as access to the Qala Deep and Bird Reef East Mineral Resource bodies.

The production model for the Shallows section alone estimates 5.7MT at a run of mine grade of 3.4g/t for 630,000oz over 13 years of production and steady state of production of approx. 60,000oz pa for 6 years. Production tonnes in the initial 8-years of production comprise of approx. 21% Inferred Minerals Resources which provides a high level of confidence in the viability of this first phase of the WBP.

First production from the Shallows, as per the Scoping Study, is expected in Year 2 and build up to 50,000tpm in early Year 4. This time-line compares favourably with other typical similar underground projects and excludes our planned early mining initiative (see below).

## Stage 2 – Main Reef Package ("MR")

The MR, consisting of the Main Reef and Main Reef Leader bands, is identified for the second stage of development and a priority target due to the high recovered gold grade of 5.3g/t. Historical mining on the reef package has reduced the available tonnages of these Mineral Resources relative to the Qala area, therefore a shorter project life is envisaged albeit with significantly higher grade.

The Report estimates the MR section will provide 630,000t at 5.3g/t Au for 105,000oz of incremental production over years 4-9 combined.

Access to the MR package is planned from the existing No.6 shaft site. The next stage of feasibility for the MR will also assess the potential of continuing development from the Bird Reef East area, only a further 1,000m to the north, as an alternative access point to MR package as a further optimisation.

#### Stage 3 – Bird Reef East ("BRE")

BRE has been identified for the third stage of development with Bara planning access off the Qala Shallows decline, the mine layout provides access to the BRE via development from the Qala shaft. Once the Qala Shallows operation reaches a depth of approx. 150m and nears steady state production, a drive will be established to the BRE with a development distance of approx. 1,000m.

#### Stage 4 - Bird Reef Central ("BRC")

BRC is accessible via the existing Circular Shaft, development would be of the Qala infrastructure which is situated approx. 3km to the east. Combined with the lower recovered grade profile relative to the WBP's other areas of development, the BRC is scheduled for development after the MR and BRC and is also subject to further feasibility.

## Stage 5 – Qala Deeps ("Deeps")

Simply put, the Deeps area is a depth extension of the Qala Shallows from 500 - 1,500m below surface where the reef dip steepens from  $40^{\circ}$  at surface to  $70^{\circ}$  at depth (Figure 1). The water table floods historical mine works at approx. 200m below surface. A geotechnical report supporting the Scoping Study found that leaving a water pillar with a width to height ratio of 15 to 1 enables access to unmined areas at depth which is applicable to the Deeps targeted Mineral Resources. Production from the Deeps is scheduled to ramp up to steady state production from Year 15 as the Shallows nears depletion. The Deeps section will share infrastructure access with the Shallows and will be



subject to a dedicated DFS to confirm rock support and ventilation requirements to achieve the WBP's production schedule from year 15.

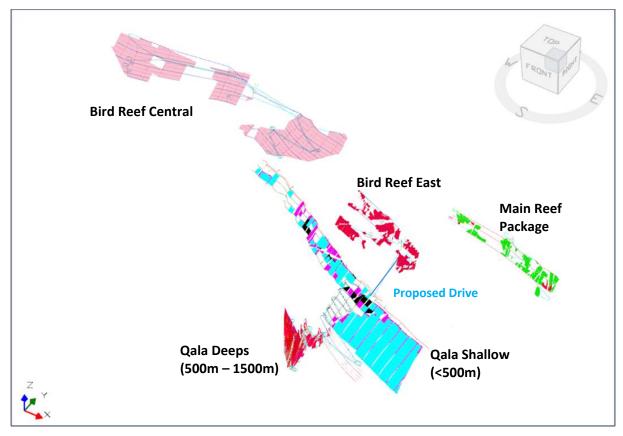


Figure 1: Schematic of the WBP Scoping Study conceptual mine layout shows the proposed connecting drive between the Qala Shallow to the Bird Reef East package, as discussed in Stage 3.

The Scoping Study by Bara Consulting is underpinned by the WBP's global 3.55Moz Au JORC Resource<sup>2</sup> which covers the WBP's mining right footprint. A mining inventory was estimated for each mineral resource body based on the available resources, practical mining limits and the application of the modifying factors. This resulted in the mining inventory tabled below.

TABLE 2: WBP - Summary Mining Inventory (inclusive of MCF) - by Reef

WBP Reef	Ore Tonnage	ROM Production	ROM Grade (MCF 90%)
	(MT)	(Oz)	(g/t)
K9A	4.5	425,000	2.9
К9В	5.8	685,000	3.7
Kimberley Reefs	10.3	1,110,000	3.3
Bird Reef Central	4.1	256,000	1.9
Bird Reef East	0.9	85,000	2.9
Main Reef	0.6	100,000	5.4
Main Reef Leader	0.1	5,000	3.4
MR/MRL	0.6	105,000	5.3
TOTAL	16.0	1,556,000	3.0

NOTE: Number differences may occur due to rounding errors.



#### **Mining Method**

The Scoping Study utilises a narrow reef breast mining method in the upper sections of the conceptual mine plan which was the same mining method being used when the historical mine ceased in the early 2000's. This method is still being used extensively in South African gold mining today. Therefore, the Report is based on a tried and tested mining method in the Witwatersrand Basin with a readily available, highly skilled workforce and supply network. The DFS is investigating additional mechanised mining techniques which are expected to provide significant efficiency improvements where the reef dip is greater than 50°.

## **Processing & Metallurgy**

Bara's view, which is shared by the Company, is that there is sufficient capacity and quality of processing in the region to enter a toll treating arrangement with one of the local process plant operators as opposed to allocating CAPEX for the construction and operation of a process facility. The Report does not foresee any issues with processing of the ore as it has been successfully processed during the mine's historical operation and the neighbouring mines are currently mining the same reef packages which achieve metallurgical recoveries greater than 90%.

## **Financial Modelling**

At the time of the original report, a financial evaluation of the project was undertaken using a discounted cashflow analysis. The evaluation was undertaken using the mine plan generated, the infrastructure design to support the mining plan and the costing of these activities.

A gold price of USD1,500 per oz was used with an exchange rate of ZAR16.5 to USD.

The project financial analysis was undertaken through a phased scenario approach, such that the financial feasibility of investment in each of the target areas may discreetly be evaluated. All the scenarios considered showed robust positive financial results.

The Scoping Study's existing financial model was carried out on the original production model which, as previously stated, was underpinned by the Mineral Resource block model which included a significant proportion of production based on an Exploration Target, including the early stages of mining<sup>3</sup>. Therefore, the financial results from the Report did not meet regulatory requirements for release as a public report.

The Scoping Study's production model has since been updated by Bara to include the K9A Exploration Target area which has subsequently been converted into a JORC compliant Mineral Resource<sup>3</sup> as well as results from the Kimberley East infill-drilling program<sup>4</sup> which targeted conversion of Inferred Mineral Resources in the early stage of mining. The updated production target's production metrics have been improved by the changes to Mineral Resource block model, providing further confidence in the viability of the WBP to progress to production, and release the Report's production target.

Financial modelling on the updated production target is expected to be finalised in September, after the completion of the Qala Shallows DFS. The forecast financial information on the WBP's Scoping Study will be released when available.

## **NEXT STEPS AND EARLY MINING INITIATIVE**

Following the Report's recommendation, the Qala Shallows project was selected as the project to progress forward into a DFS which was commissioned in Q3 2020. The Qala Shallows DFS is scheduled for completion by the end of August 2021.

WWI is soon to embark on the execution of the Qala Shallows section, being the initial phase of the WBP's development. The team will commence with the rehabilitation and re-commissioning of the existing box cut at the Qala shaft. The decline will be widened in certain areas to accommodate



trucks underground which will be used for Mineral Resource and waste transport. This will give access to the old workings, as well as the starting position of the new decline.

During the re-commissioning phase, a technical services team will access the old working to conduct geological and rock engineering survey's, also identifying potential old workings that can be restarted as an early mining initiative. This early mining initiative has not been included in the production profile, so it will be additional to the Report's production target if achieved. The early mining initiative will provide the project team a pilot program with the mine contractor, gaining valuable information on the underground workings, contractor operations and processing and has the potential to generate early revenues.

While the early mining initiative is in progress, the project team will commence with the development of the underground infrastructure and construction of surface infrastructure.

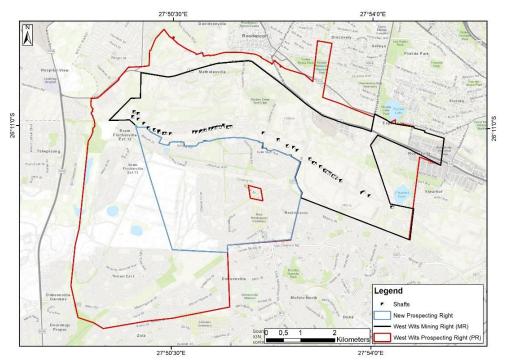
During the scheduled development of the Qala shaft, the engineering team will further review the access and production schedules of the MR and the BRE mining areas. These mining areas will each be subject to further DFS which are due to commence in Q4 2021 & Q1 2022 respectively and will underpin final investment decision to commence stage 2 and 3 of the Scoping Study's development schedule.



## **Independent Scoping Study - Detailed Summary**

#### License

West Wits mining right (GP 30/5/1/2/2/10073 MR) (Figure 2: black boundary), recently granted by the Department of Mineral Resources and Energy¹ ("DMRE"), replaces the Company's previous Prospecting Right (GP 30/5/1/1/2/183 (10035) PR) (Figure 2: red boundary) over the Witwatersrand Basin Project. Through consultation with the DMRE, other stakeholders and mining specialists the Company reduced the MR footprint to expedite the granting of the MR and remove areas which were deemed to not meet economic requirements.



**Figure 2**: The Witwatersrand Basin Project's granted mining right boundary (black line) replaces the previous prospecting right boundary (red line). The company has applied for a new prospecting right (blue line) to re-introduce areas of long-term interest.

The overall proposed project includes the refurbishment of three existing infrastructure complexes to access existing underground workings. The WBP forms part of the Central Rand Goldfields approximately 15 km to the west of Johannesburg, located between Witpoortjie and Soweto, along the Main Reef Road.

## **Geology and Resources**

The WBP consists of two historical and now closed mining areas, namely Durban Roodepoort Deep Mine (DRD) and Rand Leases Mine. Durban Roodepoort Deep Limited (DRDL) operated these mines until their premature closure in the early 2000s.

In this area of the Witwatersrand Basin, several gold bearing reefs were mined over a strike length of 46km producing 7,679,666kg of gold at an average grade of 8.21g/t (Handley, 2004). Between 1888 and 2000, mines across West Wits right produced 1,270,870kg of gold (40 857 467 ounces), at an average grade of 4.92g/t (Handley, 2004).

A number of gold bearing reefs are present on the property including:

- o North Reef
- Main Reef



- Main Reef Leader
- South Reef
- Johnstone and Livingstone Reefs
- o Bird Reef
- Kimberley Reef (K9A and K9B)

West Wits has developed a 3.55Moz Au JORC (2012)<sup>2</sup> compliant Mineral Resource base by sourcing and verifying historical datasets, diamond drilling, developing trenches across surface outcrops and capturing additional surface and underground assays and geological data from mining plans.

The Table below summarises the current JORC compliant Mineral Resource for the property.

## WBP JORC Mineral Resource Estimate – by Reef (2g/t cut-off)<sup>6</sup>

Measured		l	ı	Indicated		Inferred			Total			
WBP Reef	Tonnes (M)	Grade	Ounces	Tonnes (M)	Grade	Ounces	Tonnes (M)	Grade	Ounces	Tonnes (M)	Grade	Ounces
Bird	0.46	3.45	50,800	3.28	3.10	327,600	0.93	3.05	91,100	4.67	3.13	469,400
K9B KRC	0.00	2.98	300	0.10	3.87	11,900	0.18	4.22	24,100	0.28	4.08	36,300
K9B KRE	1.93	4.37	271,700	6.21	4.14	827,700	2.35	5.51	416,600	10.50	4.49	1,516,100
K9A KRE	2.10	4.54	306,300	1.82	4.20	245,300	4.20	5.14	694,300	8.11	4.77	1,245,800
BPR Marquis (MSA)							0.07	2.74	6,600	0.07	2.74	6,600
KR Sol Plaatje				0.00	10.34	1,600	0.24	3.37	25,700	0.24	3.39	27,300
Main Reef Leader	0.05	4.28	7,200	0.07	3.51	8,000	0.09	3.64	11,000	0.22	3.75	26,200
Main	0.33	3.68	38,500	1.22	3.77	147,700	0.25	3.64	28,700	1.79	3.74	214,900
South	0.04	6.94	8,700							0.04	6.94	8,700
Total	4.91	4.33	683,400	12.70	3.84	1,569,700	8.31	4.86	1,298,100	25.91	4.26	3,551,200

Notes: Global MRE set at a 2.0g/t Au cut-off. Reported in accordance with the JORC Code of 2012. Number differences may occur due to rounding errors.

#### Geotechnical

Raw geotechnical data collection was not included in the scope for this investigation. The geotechnical information used was obtained from a site visit, literature reviews, industry practices and design guidelines.

A basic summary of the geotechnical domains and rock mass quality per reef package is tabulated in the Table below. Values for rock strength (UCS), density (p) and rock mass quality indicators (Q' and RMR) were collected from the Bara database and statistically analysed to determine indicative values for design.

	Benchmarked Geotechnical Description and Properties							
Domain	Reef package	Lithology	UCS (MPa)	ρ (kg/m³)	Q'	RMR		
HW		Quartzite	95	2640	13	67		
Reef		Conglomerate K9A	134	2646	10	64		
Middling	Kimberley	Quartzite	95	2640	13	67		
Reef		Conglomerate K9B	134	2646	10	64		
FW		Shale	58	2335	5	50		
HW		Quartzite	95	2640	13	67		
Reef	Bird	Conglomerate	134	2646	10	64		
FW		Quartzite	95	2640	13	67		
HW		Quartzite & conglomerate	160	2576	10	65		
Reef	Main & Main leader	Quartzite & conglomerate	160	2576	10	65		
FW	leadel	Quartzite	95	2640	13	67		
Sources: Bara Consulting Databases: Geotechnical progress report (2007), Indicative slope engineering (2009), Benchmarking (2016)								



Based on the data in the Table above geotechnical recommendations have been made for the various excavation types in regard to:

- Excavation dimensions
- Excavation support
- o Pillar requirements including water barrier pillars

#### **Mining and Primary Access**

The reefs identified for mining at the Wits Basin Project are:

- Kimberley Reefs, which are constituted by the K9A and the K9B reefs
- o Main Reef and Main Reef Leader.
- o Bird Reef

Reef dips in the area vary from 30 degrees to sub-vertical and it is therefore necessary to employ multiple mining methods. Two mining methods will be employed at the Witwatersrand Basin Project being:

- Conventional Breast Mining for the shallow dipping areas (<50 degrees)</li>
- Mechanised Longhole Stoping for steeper dips (>50 degrees)

Access to the mining areas will be by a trackless decline system with all level development being within the reef horizon. Three discrete sites which have all been historically mined were identified for the establishment of mining operations as follows:

- Qala Shaft and Qala Adit. This site will give access to the Kimberley Reef horizon on the eastern side of the prospecting right as well as the eastern portions of the Bird Reef
- No.6 Incline Shaft. This site will give access to the Main Reef and Main Reef Leader on the eastern side of the property.
- Circular Shaft. This site will give access to the Bird Reef in the central and western parts of the property.

The underground mining targets are planned to be accessed from surface, via a decline shaft system to reach the relatively shallow mining levels. The access is trackless with a second means of egress using existing old infrastructure as follows:

- Qala Shallows and Qala Deeps:
  - ✓ Primary Access: Qala Adit and Qala Decline (existing)
  - ✓ Second Egress: Qala Incline Shaft (existing)
- Bird Reef East
  - ✓ Primary Access: Qala Adit and decline to Bird Reef mining area (partially existing)
  - ✓ Second Egress: Equipped raise to surface in mining area (new)
- Main Reef
  - ✓ Primary Access: Decline from surface (new)
  - ✓ Second Egress: No.6 Incline Shaft (existing)
- Bird Reef West and Central
  - ✓ Primary Access: Decline from surface (new)
  - ✓ Second Egress: Circular Shaft (existing)

The decline accesses that will be developed will be trackless infrastructure and all men, materials and rock will be transported in and out of the mine using diesel powered rubber tyre vehicles.



Modifying factors were applied to the mineral resources to convert the insitu resource tonnages and grades to run of mine tonnages and grades, modifying factors applied are shown in the Table below:

Mining Modifying Factors						
Modifying Factor	Value					
	Bird, Main, MRL	К9А	К9В			
Minimum mining width	1.00 m	1.35	1.37			
Planned dilution (Gullies)	11 cm	8 cm	8 cm			
Unplanned dilution	20 cm	20 cm	20 cm			
Mine call factor	90%	90%	90%			

A cut-off grade calculation was undertaken to determine the payable portions of the deposit, the following run of mine cut off grades were determined:

- o Shallow mining (surface to 500mbs): 2.0 g/t
- o Intermediate depth mining (500mbs to 1,000mbs): 2.4g/t
- Deep Mining (below 1,000m): 2.7g/t

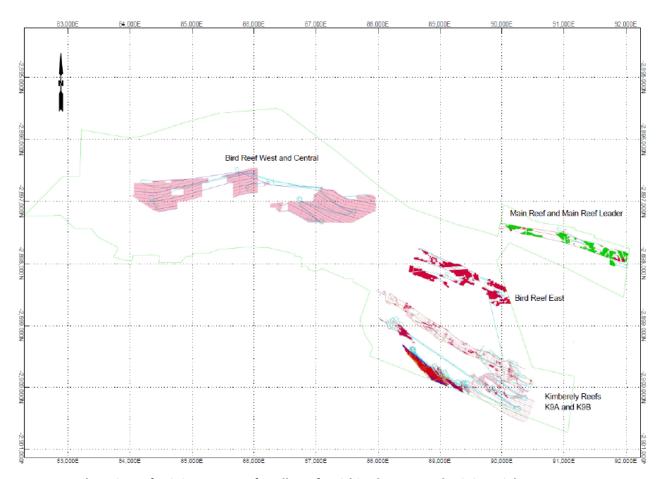
Based on the modifying factors and the cut off grades applied a mining inventory for the various reefs at the target sites was estimate.

This mining inventory estimation is shown in the Table below:

	Summary of Mining Inventory (Inclusive of MCF)							•				
		WBP Total		Depth <500m		500m< Depth <1000m			Depth> 1000m			
REEF	RoM Ore	Gold (Oz)	Au Grade	RoM Ore	Gold (Oz)	Au Grade	RoM Ore	Gold (Oz)	Au Grade	RoM Ore	Gold (Oz)	Au Grade
KEE	(MT)	MCF	(g/t)	(MT)	MCF	(g/t)	(MT)	MCF	(g/t)	(MT)	MCF	(g/t)
K9A	4.49	425,000	2.9	2.23	207,000	2.9	0.92	75,000	2.5	1.34	143,000	3.3
K9B	5.84	685,000	3.7	3.47	421,000	3.8	0.92	114,000	3.9	1.45	150,000	3.2
BRC	4.14	256,000	1.9	4.14	256,000	1.9	-			-		
BRE	0.92	85,000	2.9	0.92	85,000	2.9	-			-		
MR	0.58	100,000	5.4	0.58	100,000	5.4	-			-		
MRL	0.05	5,000	3.4	0.05	5,000	3.4	-			-		·
All Reefs	16.02	1,556,000	3.0	11.39	1,074,000	2.9	1.84	189,000	3.2	2.79	293,000	3.3

Based on the mining methods and the access concepts discussed above as well as the cut off grades and modifying factors, mine layouts were developed for each of the mining targets using the DeswikCAD mine design software. The figure below shows the mine layouts for each of the three identified targets.



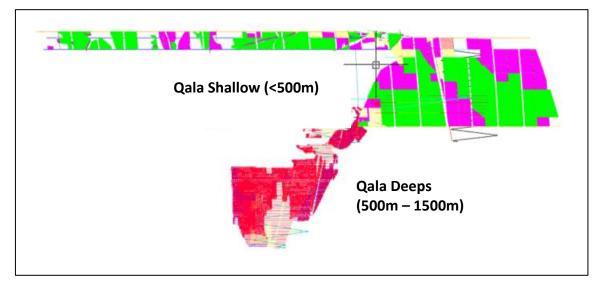


Plan View of Mining Layouts for all Reefs within the Granted Mining Right Area

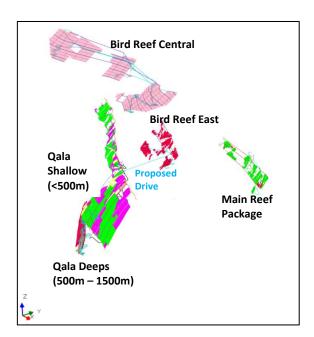
The mine layouts were then scheduled using the DeswikCAD Scheduling software to produce a development and mining schedule. The discrete sites were scheduled separately and then combined into an overall schedule; the mining targets were developed in the following sequence:

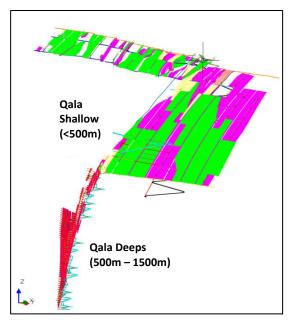
- o Kimberly Reef from the Qala Adit and Qala Shaft site
- o Main Reef and Main Reef Leader from No.6 Shaft site
- o Bird Reef East from the Qala Adit and Qala Shaft site
- Bird Reef West and Central from the Circular Shaft site.





Deswick 3D image, front view Kimberley K9 Reef (Qala Shallows & Qala Deeps). The layout shows that the Qala Deeps will follow on from the Qala shallows and will share the main infrastructure.

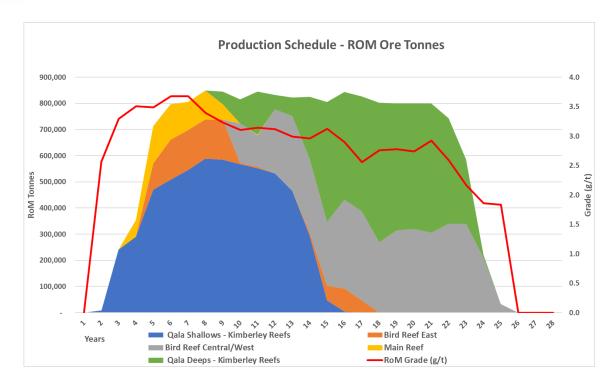


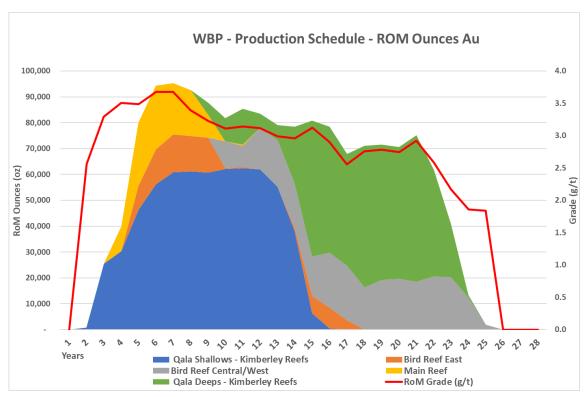


Deswick 3D image, (right) front view Kimberley East (Qala Shallows & Qala Deeps) shows the various mining targets looking from east to west. The dip of the orebody is clearly visible, especially how it steepens up with depth. This lends itself to investigate more mechanised mining methods. (Left) Schematic of WBP Scoping Study conceptual mine layout.

The mining schedule is shown in graphical format in the Figure below.







## **Production Schedule**

Table below presents the Scoping Study Production Schedule from Years 0-9, showing the relative portion of material used in the schedule which is derived from Inferred Resources in the Qala Shallows which comprises of 70% to total WBP Production for that period. Inferred material processed during the first nine years of Qala Shallows production accounts for approximately 21%, refer to table below:



	WBP					
Year	WBP Production Tonnes	ROM Grade				
1						
2	9,000	2.6				
3	240,000	3.3				
4	354,000	3.5				
5	714,000	3.5				
6	797,000	3.7				
7	805,000	3.7				
8	849,000	3.4				
9	845,000	3.2				
Total	4,613,000	3.5				

C	QALA SHALLOWS					
Qala Shallows Production Tonnes	ROM Grade	Relative Portion of Inferred Minerals as a % of QS Production				
9,000	2.6	0%				
240,000	3.3	10%				
290,000	3.3	10%				
470,000	3.1	18%				
509,000	3.4	16%				
546,000	3.5	14%				
589,000	3.2	26%				
585,000	3.2	43%				
3,238,000	3.3	21%				

The relative portion of Inferred Mineral Resources in the Main Reef and Bird Reef stages of the production schedule is minimal with 15% and 19% of the mineral resource model underpinning the respective concept level production schedules. Refer to table below:

WBP's JORC MRE underpinning the WBP Production Schedule - by Reef Total MRE Tonnes and relevant portion of Inferred Mineral Resources

Reef	Total MF	RE	Proportion of Inferred MRE				
Reel	Tonnes Grade		Tonnes	Grade	Portion		
Bird Reef	4,700,000	3.13	900,000	3.05	19%		
K9B KRE	10,500,000	4.49	2,400,000	5.51	23%		
K9A KRE	8,100,000	4.77	4,200,000	5.14	52%		
Qala Shallows / Deeps	18,600,000	4.61	6,600,000		35%		
Main Reef Leader	200,000	3.75	100,000	3.64	50%		
Main	1,800,000	3.74	200,000	3.64	11%		
Main Reef	2,000,000	3.74	300,000	3.64	15%		
TOTAL	25,300,000	4.27	7,800,000	4.94	31%		

Notes: Global MRE set at a 2.0g/t Au cut-off. Reported in accordance with the JORC Code of 2012. Number differences may occur due to rounding errors.

There is a low level of geological confidence associated with inferred mineral resources 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.



#### Ventilation

The mine will be ventilated using the primary infrastructure as intake airways with return air being directed either through the mined out voids or through ventilation raises to surface. Ventilation design velocities per excavation type have been adopted as per the Table below.

Ventilation Design Velocities					
Downcast shafts – Men, Material and Rock [equipped]	10 – 12 m/s				
Upcast shafts [unequipped]	18 – 22 m/s				
Intake airways [personnel] including declines	8 m/s				
Return airways [personnel and equipment]	8 m/s				
Dedicated return airways	10 m/s				
Workshops	0.4 m/s				
Raise Bored Holes [upcast and downcast]	15 – 25 m/s				
Minimum production stope panel velocity	0.25 m/s				
Minimum development quantity	0.25 m <sup>3</sup> /s/m <sup>2</sup>				

Minimum air requirements based on size of excavation have been allowed for and standard international ratios have been used to determine the air requirements based on the kilowatts of diesel power deployed at each of the discrete mining sites. Ventilating air requirements for the different mining areas are as follows:

Qala Shallows: 200 m3/s
Qala Deeps: 240 m3/s
Bird Reef East: 120 m3/s
Main Reef: 120 m3/s

Bird Reef West and Central: 150 m3/s

## **Bulk Utilities**

It is planned that all target mining areas for the Wits Basin Project to not have a municipal bulk water supply. The current underground mine water balance, developed for each site, indicates that the target areas will most likely be water positive with ground water inflows exceeding the usage requirements of the mine. It is intended that the quantum of water required for the mining operation will be obtained from this excess water as delivered by underground mining activities. The water will be treated to achieve the required qualities.

The three sites identified for the establishment of surface infrastructure to access the mining areas each require bulk power supply. From a timing perspective it is understood that it will be unlikely that the project will be able to obtain grid connection from Johannesburg's City Power within the first four years. Diesel generation plants have been specified to cater for the power demands during this period, following which allowance has been made for the grid connections.

#### Mine Services Infrastructure

Mine services supplies have been designed for each of the three discrete sites where mining will take place. These services include:

- Service water
- o Potable water
- o Return (dirty) water including settling and pumping
- Compressed air



## Electrical power supply

The reticulation for these services connects the surface bulk supplies to the underground working places as required to support the mining plan.

#### Mine Support Infrastructure

All appropriate mine support infrastructure has been allowed for including:

- Access roads
- Security and fencing
- Offices
- Change house
- Laundry
- o Lamp room
- Sewage handling
- Mine stores
- workshops
- Laydown areas
- Ore pads
- Waste rock dumps
- Pollution control dams

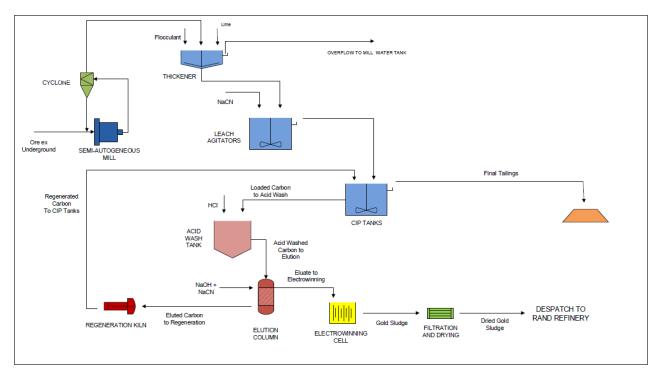
The main surface area will be based at the Qala site with the No.6 Shaft site having limited surface infrastructure only. The Circular Shaft will also have significant surface infrastructure.

## **Ore Processing**

Gold ores from the Witwatersrand Basin have similar metallurgical properties and as such most gold plants in this area have similar process flow sheets. As such the production from the WBP is planned to be processed on a toll treatment basis in one of the nearby plants.

It has been assumed for the purposes of this study that a process plant, which is between 10km and 15km from the mining sites, will be used for the toll treatment of the WBP material, although no agreement is currently in place. Ore will be road hauled from each discrete mining site to the selected plant and delivered to a separate stockpile. Appropriate gold accounting procedures will be put in place to ensure proper measurement of the mass, grade and recoveries achieved in order to support appropriate allocation of the gold produced by the plant. A typical Witwatersrand Gold Reef process plant flow sheet is shown in the Figure below.





**Typical Plant Process Flow Diagram** 

## Manpower

Manpower compliments have been generated for the various mining sites; the Table below summarises the manpower requirements.

Total Manpower Complement					
Function	Number				
Management and supervision	7				
General and administration	49				
Production					
Supervision 16					
Development	316				
Stoping	644				
Load and haul	81				
Technical Services	31				
Engineering and maintenance	73				
Allowance for leave and absenteeism 146					
Total employment complement (TEC)	1,362				

## **Environmental, Social and Permitting**

Significant work has been undertaken on the environmental, social and permitting for the WBP as follows:

- Authorisation of the Environmental Impact Assessment and management plan has been approved by the DMRE
- o Social and labour plan has been completed and approved by the DMRE
- o The Water Use Licence application has been submitted



## **Project Scheduling and Implementation**

It is currently proposed that the Qala Shallows (Kimberley Reef East) is developed first followed by the Main Reef target. The Bird Reef East target will be developed from the Qala workings on completion of mining at the Main Reef and the Bird Reef Central will be the last of the targets to be developed.

First production is scheduled in Year 2 year after project initiation at the Qala Shallows site, this is possible due to the existing decline adit and the extensive underground development. The Qala site will therefore only require clearing and rehabilitation of underground workings before proposed production mining can commence.

#### **Financial Evaluation**

At the time of the original report, a financial evaluation of the project was undertaken using a discounted cashflow analysis. The evaluation was undertaken using the mine plan generated, the infrastructure design to support the mining plan and the costing of these activities.

A gold price of USD1,500 per oz was used with an exchange rate of ZAR16.5 to USD.

The project financial analysis was undertaken through a phased scenario approach, such that the financial feasibility of investment in each of the target areas may discreetly be evaluated. The scenarios include;

- Scenario 1 Whereby only the Kimberley Reef East Shallows (Conventional) area is mined
- Scenario 2 Whereby the Kimberley Reef East Shallows area is mined in addition to the Main Reef area
- Scenario 3 Includes all mining areas from Scenario 2 with the addition of the Bird Reef East area
- Scenario 4 Includes all mining areas from Scenario 3 with the addition of the Bird Reef Central area, ie. All mining areas aside from Kimberley Reef East Deeps (Mechanised)
- Scenario 5 Includes all mining areas from Scenario 3 with the addition of the from Kimberley Reef East Deeps (Mechanised) area, ie. All mining areas aside from Bird Reef Central
- Scenario 6 Including all mining areas.

All the scenarios considered showed positive financial results.

The Scoping Study financial evaluation was carried out on the original Mineral Resource block model, completed in July 2020, which included a significant proportion of production based on an Exploration Target for the K9A reef, particularly in the early stages of mining<sup>3</sup>. Therefore, the Report's Financial Modelling did not meet regulatory requirements for a public report.

The Scoping Study's Production Model has since been updated by Bara for the K9A reef Exploration Target area which has subsequently been converted into a JORC compliant Mineral Resource<sup>4</sup> as well as the results from the Kimberley East infill-drilling program.

The updated production target has improved which provides further confidence that the WBP's is viable on what were already deemed positive financial results in the original scoping study report.

Financial modelling on the updated production target is yet to be completed. The financial modelling on the new mine schedule is expected to be updated after the completion of the Qala Shallows DFS, forecast financial information will be released when available.

## Sensitivities

A sensitivity analysis was undertaken on Scenario 3 to determine the project sensitivity to variations in various factors. The analysis determined that the project is most sensitive to changes in revenue



for both NPV and IRR. A change in revenue could be affected by a variation in any, or a combination, of these factors:

- In-situ grade
- Plant recovery
- Product price

## **Summary and Conclusions**

A scoping study technical and economic assessment has been undertaken for the Wits Basin Project, which considered all the technical aspects of the target mining areas including:

- o Geology and mineral resources
- Geotechnical
- Mining design
- Ventilation
- Metallurgical process and gold recovery
- o Mine infrastructure and utilities
- o Manpower
- Costing and evaluation of the project

Six financial evaluation scenarios were performed considering various target reef combinations, all the scenarios considered showed positive financial results.

The scoping study has demonstrated that the Wits Basin Project has significant potential and that advancement to more detailed levels of study is warranted.



## **Independent Scoping Study - Material Assumptions**

AREA	COMMENT
Study Status	The scoping study accuracy is estimated at +/- 30%
Ore Reserves and Mineral Reserves underpinning the Study	There is no Ore Reserve at this date.  The Mineral Resource estimate that underpins the Study was released to the ASX on 23 <sup>rd</sup> July 2021. This Mineral Resource block model was developed to support the mining studies undertaken as part of the Scoping Study. It was prepared by a competent person in accordance with the JORC Code 2012.  The Resource Statement is based on a combination of measured, indicated and inferred Mineral Resources. Inferred Resources comprise of approximately 31% of the Mineral Resource Estimate that underpins the study.  The Qala Shallows area provides approximately 70% of production tonnes in WBP's initial nine-year production period and approximately 46% over WBP's 25-year Life-of-Mine. Inferred material processed during the first nine years of production for the Qala Shallows area accounts for approximately 21%.  The Main Reef package and Bird Reef are underpinned by a JORC compliant Mineral Resource of which 15% and 19% is classified as Inferred resources respectively.  There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the conversion of Inferred Mineral Resources to Indicated or Measured Mineral Resources or that the
Mining factors or assumptions	The scoping study considered both conventional breast mining in flat dipping areas of the ore body. In steep dipping areas, the mining method will change to a mechanised long-hole open stoping mining method.  Productivity factors were based on historical data benchmarked against operations with similar geology, mining method and designs, as well as Bara's consulting internal benchmarks  Geotechnical designs were based on historical data from typical rock strengths etc. and previous mining experience, seeing that the area has been extensively mined in the past.  Concept level geotech designs were used with typical panel lengths from benchmarked operations.  Conceptual panel layouts with mining width of 1m for Bird Reef, Main Reef and Main Reef Leader. With 11cm planned dilution and 20cm unplanned dilution. K9A has a mining width of 1.35m, 8cm planned- and 20cm unplanned dilution. K9B has mining width of 1.37m, 8cm planned- and 20cm unplanned dilution. Mine Call Factor of 90%. Cut-off grade of 2g/t from 0-500m, 2.4g/t from 500m-1000m and 2.7g/t >1,000m



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Metallurgical factors or assumptions	Recovery estimates were based on extensive process history of the orebodies in the area, from the database of similar test work from the consultants, and where the Company's open pit operation (2017 – 2019) on the same Mineral Resource body achieved recovery results of 92%-94% from the Bottle Roll test work. Therefore, the recovery assumptions for the scoping study was estimated at 90%.
Environmental	The company has obtained its environmental approval from the DMRE in July 2020. The Integrated Water Use License Application has been completed, and submitted, awaiting approval.
Infrastructure	General lay-outs with concept level requirements.  Existing shafts exist in the area, and will be utilised as far possibly to gain entry into the underground work. Bara Consulting, the consulting engineering company has utilised their experience and database of extensive projects history to determine the underground and surface infrastructure required to support and sustain the mine production.
Capital costs	The capital cost estimates have been developed using past experience, the engineering company's benchmark database and budget quotes from OEM's.  All the costs were based on new equipment and infrastructure.  The scoping study accuracy is estimated at +/- 30%.  A 15% contingency has been applied in the Financial Modelling.
Operating costs	The operating costs can be split into two major cost centres, the mining cost and the process cost.  The mining operating cost were based on similar sized projects Bara Consulting was involved with at the time. The ZAR per ton rate included all the support, explosives, materials, handling and labour.  The processing cost was based on actual processing cost from the toll treating arrangement during the open pit operation. This included the loading, transport to the plant, offloading and feeding the plant. Further costs, such as sampling costs were also included in the toll treating rate.
Revenue factors	Revenue analysis used US\$1,500/oz gold
Schedule and Project timing	The Company is currently in progress of completing a DFS for the Qala Shallows. The other mining targets will utilise the same mining method and the same access and transport methodology. The company will undertake further geological work to support the feasibility studies planned for the other mining targets. The MR and MRL study is scheduled to start in Q4 2021 and the BRE study is scheduled to start in Q1 2022.



Market assessment	Gold bullion is freely traded on the London Metal Exchange (LME) with recent trends showing significant increases in price.
Economic parameters	A discount rate of 10% has been used for financial modelling. This number is considered as a suitable discount rate for the funding of gold projects in South Africa.  The scoping study accuracy is estimated at +/- 30%.
	The scoping study was tested on key financial parameters, such as Gold Price, OPEX, CAPEX and plant Recovery.
Exchange rates	Exchange rates used in the Financial Modelling are:
	The scoping study applied an exchange rate of R16.5/US\$.
Community and Social Responsibility	The Company submitted a Social and Labour Plan ("SLP") to the DMRE as part of the Mining Right application. The SLP was approved by the DMRE with the granting of the Mining Right. Under the Company's Social and Labour Plan, significant employment and services opportunities will be provided to local communities, in addition to training and Local Economic Development (LED) projects to upskill the local workforce for employment on the mine.
Permitting	The mining right (GP 30/5/1/2/2/10073 MR) for the area has been granted by the DMRE on 16 July 2021.  The Integrated Water Use License Application has been completed, and submitted, awaiting approval.
Other	Other risks to the Project relate to gold prices, social licence, and other similar risks of resource projects.
Audit and Reviews	The Scoping Study was reviewed internally by Company personnel.



Approved for release by the Company's Managing Director,

Jac van Heerden Managing Director West Wits Mining Limited

#### For further information contact:

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#### ABOUT WEST WITS MINING LIMITED

West Wits Mining Limited (ASX: WWI) is focused on the exploration, development and production of high value precious and base metals for the benefit of shareholders, communities and environments in which it operates. Witwatersrand Basin Project, located in the proven gold region of Central Rand Goldfield of South Africa boasts a 3.55Moz gold project at 4.26g/t². The Witwatersrand Basin is a largely underground geological formation which surfaces in the Witwatersrand. It holds the world's largest known gold reserves and has produced over 1.5 billion ounces (over 40,000 metric tons), which represents about 22% of all the gold accounted for above the surface<sup>7</sup>. In Western Australia, WWI is exploring for gold and copper at the Mt Cecilia Project in a district that supports several world-class projects such as Woodie Woodie manganese mine, Nifty copper and Telfer gold/copper/silver mines.

- 1 WWI ASX Release 20/07/2021 "Mining Right Granted at Witwatersrand Basin Project"
- The original report was "Restated JORC Resource of 3.55Moz Au for Mining Right" which was issued with consent of competent persons Mr Hermanus Berhardus Swart, it was released to the ASX on 23 July 2021 and can be found on the Company's website (https://westwitsmining.com/). The company is not aware of any new information or data that materially effects the information included in the relevant market announcement. The form & context in which the Competent Persons' findings are presented have not been materially modified.
- 3 WWI ASX Release 30/07/2020 "Positive Scoping Study to Advance Development"
- 4 The original report was "WWI JORC Resource grows by 700koz to 4.37Moz at 3.88g/t Au" which was issued with consent of competent persons Mr Hermanus Berhardus Swart, it was released to the ASX on 21 October 2020 and can be found on the Company's website (https://westwitsmining.com/). The company is not aware of any new information or data that materially effects the information included in the relevant market announcement. The form & context in which the Competent Persons' findings are presented have not been materially modified.
- The original report was "Infill-drill Program Grows JORC Resource at WBP to 4.47Moz" which was issued with consent of competent persons Mr Hermanus Berhardus Swart, it was released to the ASX on 05 July 2021 and can be found on the Company's website (https://westwitsmining.com/). The company is not aware of any new information or data that materially effects the information included in the relevant market announcement. The form & context in which the Competent Persons' findings are presented have not been materially modified.
- The original report was "WWI Corporate Presentation" which was issued with consent of competent persons Mr Hermanus Berhardus Swart, it was released to the ASX on 30 July 2021 and can be found on the Company's website (https://westwitsmining.com/). The company is not aware of any new information or data that materially effects the information included in the relevant market announcement. The form & context in which the Competent Persons' findings are presented have not been materially modified.
- 7 Norman, N.; Whitfield, G. (2006) Geological Journeys. pp. 38–49, 60–61. Cape Town: Struik Publishers



#### **Competent Person**

The information in this ASX release that relates to the Company's Mineral Resource is extracted from and was originally reported in the Company's ASX announcement "Restated JORC Resource of 3.55Moz Au for Mining Right" was released to ASX on 23 July 2021 and can be found on the Company's website (https://westwitsmining.com/) or at www2.asx.com.au, the competent person being Mr Hermanus Berhardus Swart. The Company confirms that it is not aware of any new information or data that materially effects the information included in the relevant market announcement and that all material assumptions and technical parameter underpinning the estimate in that announcement continue to apply and have not materially changed. The Company confirms that the form & context in which the Competent Persons' findings in relation to the Mineral Resource estimate are presented have not been materially modified from the original market announcement.

#### **Forward Looking Statements**

This Announcement includes "forward-looking statements" as that term within the meaning of securities laws of applicable jurisdictions. Forward-looking statements involve known and unknown risks, uncertainties and other factors that are in some cases beyond West Wits Mining Limited's control. These forward-looking statements include, but are not limited to, all statements other than statements of historical facts contained in this presentation, including, without limitation, those regarding West Wits Mining Limited's future expectations. Readers can identify forward-looking statements by terminology such as "aim," "anticipate," "assume," "believe," "continue," "could," "estimate," "expect," "forecast," "intend," "may," "plan," "potential," "predict," "project," "risk," "should," "will" or "would" and other similar expressions. Risks, uncertainties and other factors may cause West Wits Mining Limited's actual results, performance, production or achievements to differ materially from those expressed or implied by the forward-looking statements (and from past results, performance or achievements). These factors include, but are not limited to, the failure to complete and commission the mine facilities and related infrastructure in the time frame and within estimated costs currently planned; variations in global demand and price for gold and silver; fluctuations in exchange rates between the U.S. Dollar, South African Rand and the Australian Dollar; the failure of West Wits Mining Limited's suppliers, service providers and partners to fulfil their obligations under construction, supply and other agreements; unforeseen geological, physical or meteorological conditions, natural disasters or cyclones; changes in the regulatory environment, industrial disputes, labour shortages, political and other factors; the inability to obtain additional financing, if required, on commercially suitable terms; and global and regional economic conditions. Readers are cautioned not to place undue reliance on forward-looking statements. The information concerning possible production in this announcement is not intended to be a forecast. They are internally generated goals set by the board of directors of West Wits Mining Limited. The ability of the Company to achieve any targets will be largely determined by the Company's ability to secure adequate funding, implement mining plans, resolve logistical issues associated with mining and enter into any necessary off take arrangements with reputable third parties. Although West Wits Mining Limited believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statement.