Sihayo Gold Project
Definitive Feasibility Study

Tuesday, 23 June 2020: Sihayo Gold Limited (**ASX:SIH**) is pleased to announce the results of its Definitive Feasibility Study and forward work plan for the Sihayo Gold Project located in North Sumatra, Indonesia.

DFS confirms value

- Updated Mineral Resource[1] estimate of 24 million tonnes at 2.0 g/t Au containing 1.5 Moz insitu gold metal.
- Updated Ore Reserves[1] estimate of 12 million tonnes at 2.1 g/t Au containing 840 koz insitu gold metal.
- Projected 8-year mine life producing approximately 635 koz recovered gold, gross sales and EBITDA estimated at over US$1 billion and US$630 million (at US$1,700/oz gold) and an average AISC of US$709/oz.
- An initial ore processing rate of up to 2.0 Mtpa will maintain capital expenditure at a moderate level, while producing an attractive cash flow.
- The base case financial analysis indicates an IRR of 28% at a US$1,700/oz gold price and initial capital investment of US$144 million.

Clear forward work plan

The Project is at an advanced stage of development, allowing it to be quickly brought on stream. Work planned in the next 12 months includes:

- Commence early capital works to complete critical path items, including development of site access roads and detailed TSF design to bring forward construction.
- Completing the project and environmental permit approvals process, which is progressing well.
- Obtaining project finance from leading commercial banks who have supported numerous previous projects of the Company's major shareholders.
- Commence systematic exploration of the highly prospective 66,200ha 7th generation Contract of Work with initial focus on established near mine gold targets.

[1] As defined by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012) produced by the Joint Ore Reserves Committee (JORC).

Key metrics

Metric	Units	Value	
		Base Case	**CRU Outlook[2]**
Gold price	US$/oz	1,700	1,890
Life-of-mine (LOM)	years	8	8
LOM gold produced	koz	635	635
LOM gross revenue	US$m	1,077	1,194
LOM EBITDA	US$m	630	744
Pre-production cost	US$m	144	144
Peak funding	US$m	153	153
After-tax NPV (5%)	US$m	205	266
After-tax IRR	%	28	34
Payback period	months	33	25

Disclaimer

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[2] 2020 CRU Precious Metals Market Outlook, March 2020, CRU International Ltd

Forward-looking statements

The document contains forward-looking information and prospective financial material, which is predictive in nature and may be affected by inaccurate assumptions or by known or unknown risks and uncertainties and may differ materially from results ultimately achieved. Such forward-looking statements, including those with respect to permitting and development timetables, mineral grades, metallurgical recoveries, and potential production reflect the current internal projections, expectations or beliefs of the Company based on information currently available to it. All references to future production, production targets and resource targets and infrastructure access are subject to the completion of all necessary permitting, construction, financing arrangements and infrastructure-related agreements. Where such a reference is made, it should be read subject to the following cautionary statements and in conjunction with further information about the Mineral Resources and the Competent Person's[1] statements.

No guarantee of funding

To achieve the outcomes indicated in the DFS, funding of in the order of US$153 million will likely be required. Investors should note that there is no certainty that the Company will be able to raise that amount of funding when needed. 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 "value realisation" strategies such as a sale of the project.

Projections rely on Inferred Mineral Resources

There is a low level of geological confidence associated with Inferred Mineral Resources[1], and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources. The stated production target is based on the Company's current expectations of future results or events and should not be solely relied upon by investors when making investment decisions. The Company, however, believes there are reasonable grounds for relying on the Inferred Mineral Resources referred to in the DFS because any reliance on Inferred Mineral Resources in achieving the production target is low during the early years of operation, and any Inferred Resources relied on in the early years are interpolated and, as such, are likely to improve to an Indicated classification.

Seek appropriate professional advice

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of this document. All persons should consider seeking appropriate professional advice in reviewing the document and all other information with respect to the Company and evaluating the business, financial performance and operations of the Company. Neither the provision of the document nor any information contained in the document or subsequently communicated to any person in connection with the document is, or should be taken as, constituting the giving of investment advice to any person.

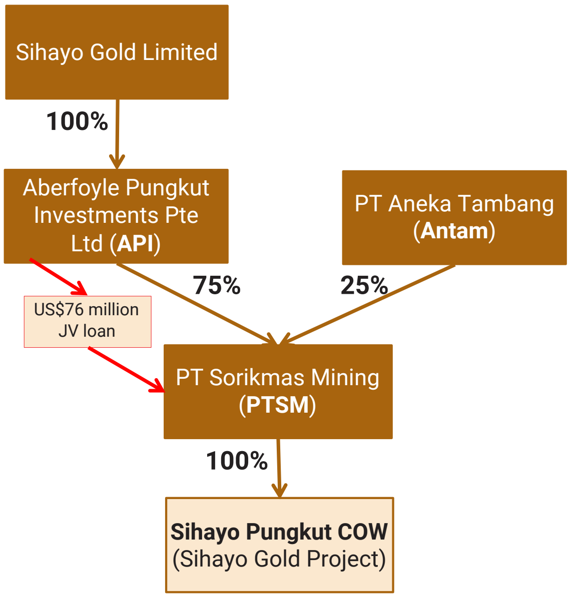
Project description

Ownership

The Sihayo Gold Project (the **Project**) is within the Sihayo-Pungkut 7th Generation Contract of Work (**COW**) held by PT Sorikmas Mining (**PTSM**). PTSM is an Indonesian foreign investment company operated under a joint venture agreement between the Company (75%) and PT Aneka Tambang Tbk (**Antam**) (25%).

The JV agreement with Antam was signed in July 1997 and states that the Company's subsidiary Aberfolye Pungkut Investments Pte Ltd (**API**) will provide, by way of loans to PTSM or the Project, "all expenditure incurred or to be incurred on exploration and mining operations, with such funding obligation to continue until the date of commencement of production."

Under the agreement, all funding provided by API must be repaid from cashflows of PTSM. As at 31 December 2019 the balance of the loan is US$ 76 .million.



Location

The Project is in Mandailing Natal District of North Sumatra Province, Republic of Indonesia. The Sihayo and Sambung gold resources, which are the focus of the DFS, are located in the northern block of the COW. Geographically, the Project is in the forested terrain of the Barisan Mountains, which lie along the NW-SE trending Trans Sumatran Fault Zone (**TSFZ**). Elevations at the Project site range from about 985 m to 1,300 m above sea level.

Martabe, the largest operating gold and silver mine in Sumatra, is 75 km north-west of the COW. Martabe is owned by PT Agincourt Resources and has a current estimated resource base of about 7.8 million ounces (Moz) gold and 64 Moz silver. In 2018 a subsidiary of PT United Tractors Tbk acquired the Martabe gold and silver mine in a transaction valuing the mining operations at around US$ 1.2 billion.

Contract of Work

The COW was issued to PTSM on 19 February 1998. The initial COW covered an area of 201,600 ha. Two partial relinquishments in 1999 and 2000 resulted in a reduction down to the current 66,200 ha, in two blocks: Sihayo (North Block) and Pungkut (South Block). The COW was converted into operation production phase on 7 December 2017, which runs until 6 October 2049. PTSM has rights to two 10-year extensions under prevailing Indonesian mining law. Exploration and development activities up to this time have been mainly focused in the North Block, where the Sihayo and Sambung deposits are located.

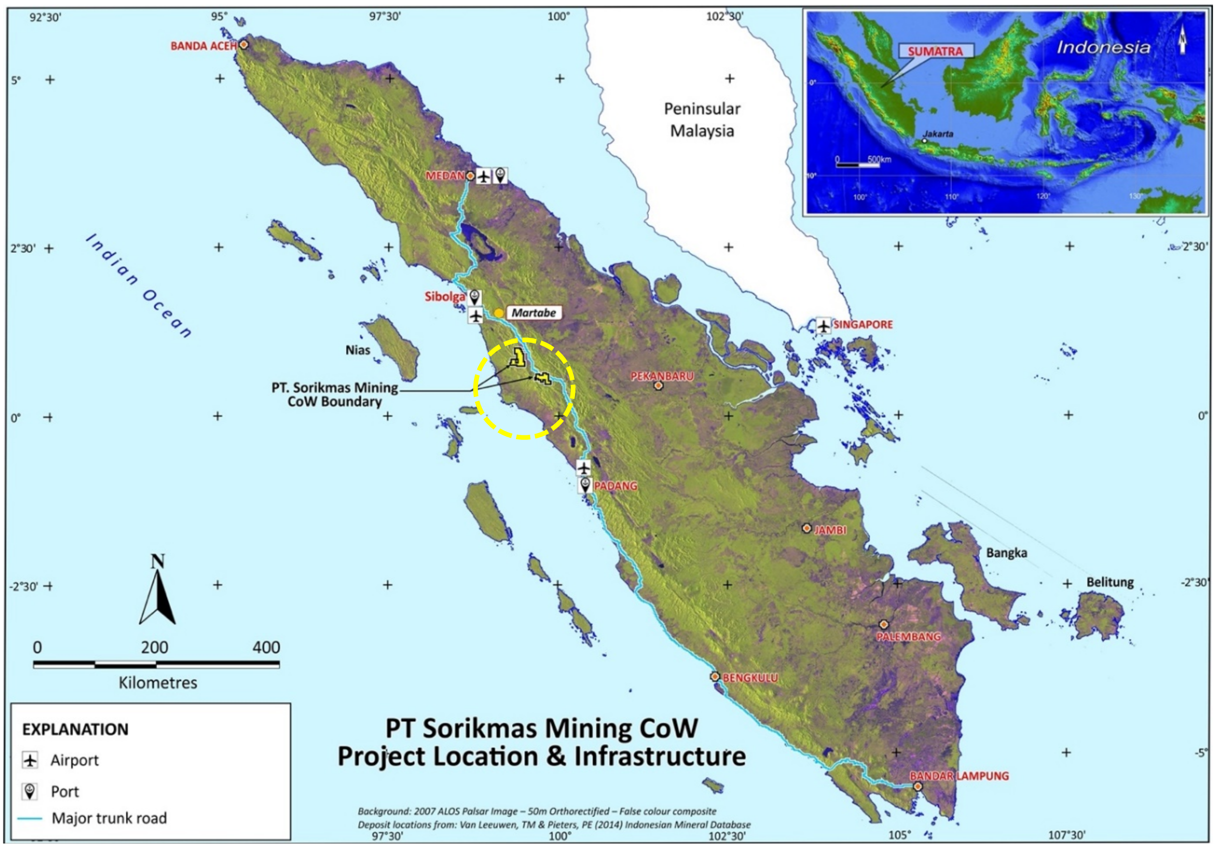


Figure 1 Sihayo Gold Project – COW location map with major mineral occurrences in Sumatra

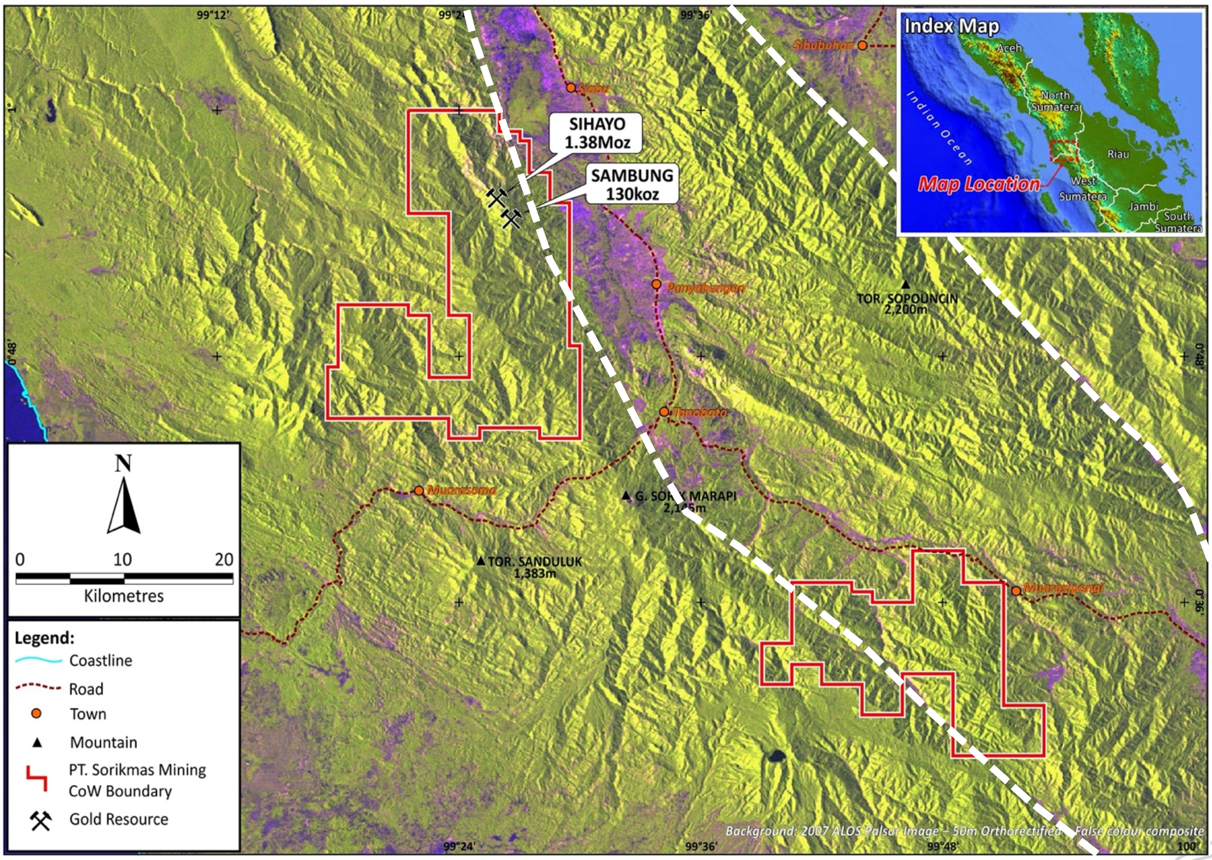


Figure 2 Sihayo Gold Project – COW boundary map with location of Sihayo and Sambung mineral resources

Geology & exploration potential

The Sihayo gold belt, which hosts the Sihayo and Sambung gold resources, is a 15 km long NW-SW trending corridor of Permian calcareous volcano-sedimentary rocks and associated intrusions. These rocks are highly prospective for sediment-hosted gold, epithermal gold-silver veins, and porphyry-related gold and copper mineralisation. The Sihayo gold belt is located on fault strands from the western margin of the dextral transtensional jog in the TSFZ.

The bulk of the gold resources at Sihayo and Sambung is hosted by a NW-SW striking, moderately NE-dipping package of Permian shallow marine fossiliferous limestones. The gold is generally submicron size and, unless weathered (oxidised), it is locked in disseminated fine-grained arsenian pyrite mineralisation in multiple stratabound replacement-style jasperoid lenses and discordant bodies within the karstified, hydrobrecciated and tectonised host rocks. The resources are classified as sediment-hosted gold (**SHG**) deposits.

Exploration programs over three decades have identified numerous sediment-hosted gold, epithermal gold and potential porphyry-style copper-gold mineralisation prospects within the COW. As a result, the company has a large pipeline of potential prospects including several obvious “walk up drill targets” which are yet to be tested.

A discussion of regional and project geology and geotechnical considerations is included in Appendix 1.

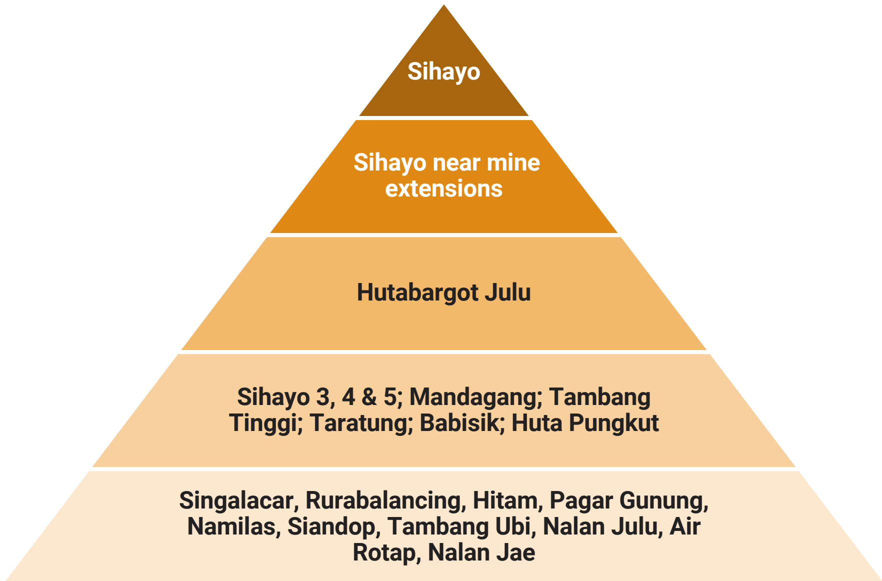


Figure 3 Sihayo Gold Project – COW development pipeline

Mineral Resources

Combined Mineral Resources

The combined Mineral Resource estimates for the Sihayo and Sambung gold deposits are set out in Table 1. The estimates were updated following the consolidation of the results from the 2019 infill drilling program at Sihayo and a comprehensive revision of the geology and mineralisation models for both deposits. The individual resource estimates are discussed in detail in Appendix 2.

Table 1 Sihayo Gold Project - Mineral Resource Estimate

Deposit	Measured			Indicated			Inferred			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Sihayo	4.9	2.3	0.36	11.2	2.0	0.70	5.5	1.8	0.31	21.5	2.0	1.4
Sambung	1.5	1.6	0.01	0.8	1.7	0.04	0.2	1.6	0.01	2.5	1.6	0.13
Total	6.4	2.1	0.44	12.0	2.0	0.75	5.6	1.8	0.32	24.0	2.0	1.5

Figures may not sum due to rounding. Significant figures do not imply an added level of precision. Estimates at Sambung are depleted by local mining.

The Mineral Resource estimates were prepared by Spiers Geological Consultants (**SGC**) and reported in accordance with the 2012 edition of the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the **JORC Code**). The JORC Code Table 1 Report is attached in Appendix 5. A 3D oblique view of the resource is shown in figure 4.

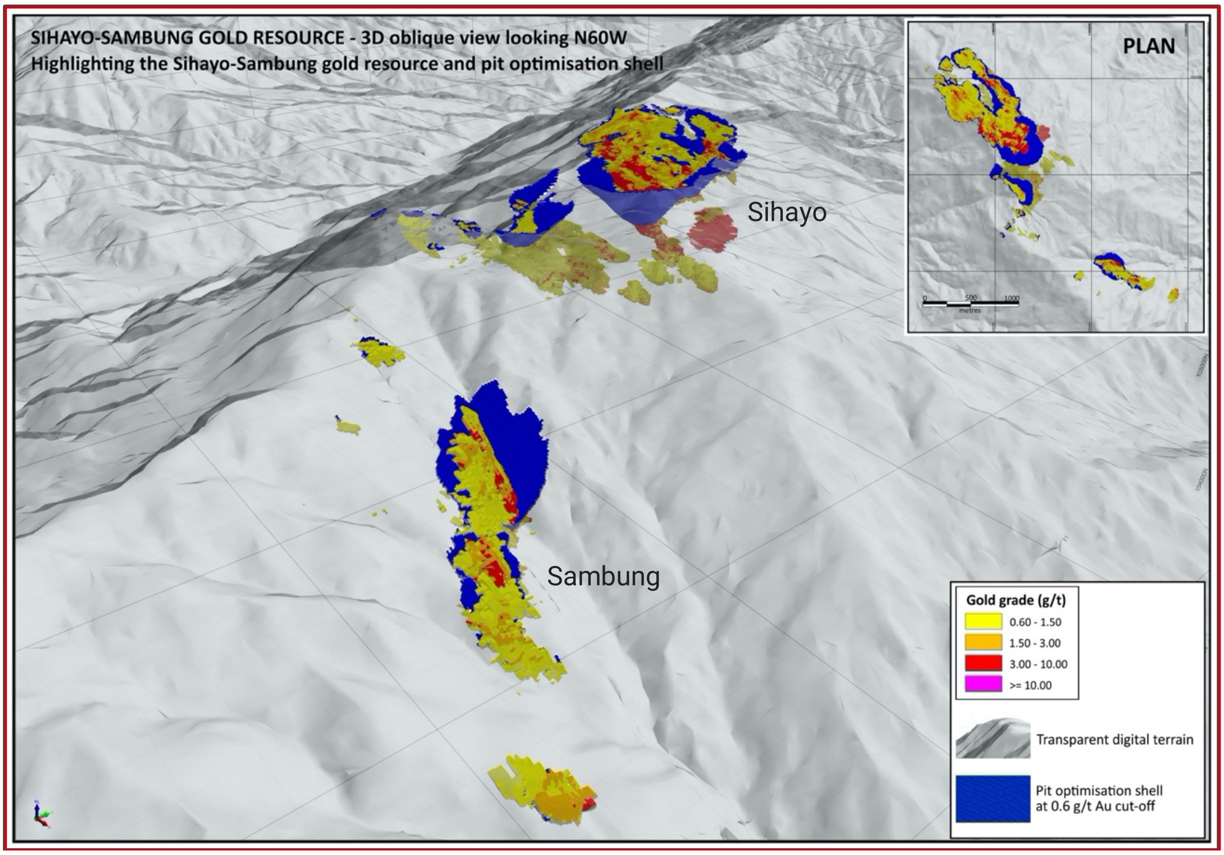


Figure 4 Sihayo Gold Project – 3D oblique view of the Sihayo-Sambung resource and pit optimisation shell

Near-mine exploration

There is potential to discover additional sediment-hosted jasperoid gold resources within a 5 km radius of the Sihayo resource. The prime exploration targets are identified by historical work along two mineralised trends, Sihayo-Hutabargot and Sihayo 3-4-5, which comprise the Sihayo gold belt. The initial focus for near-mine exploration is on the 800-metre long Sihayo-Sambung Link Zone shown in Figure 5. This target contains abundant, large residual jasperoid boulders in regolith and sporadic jasperoid outcrops in limestone.

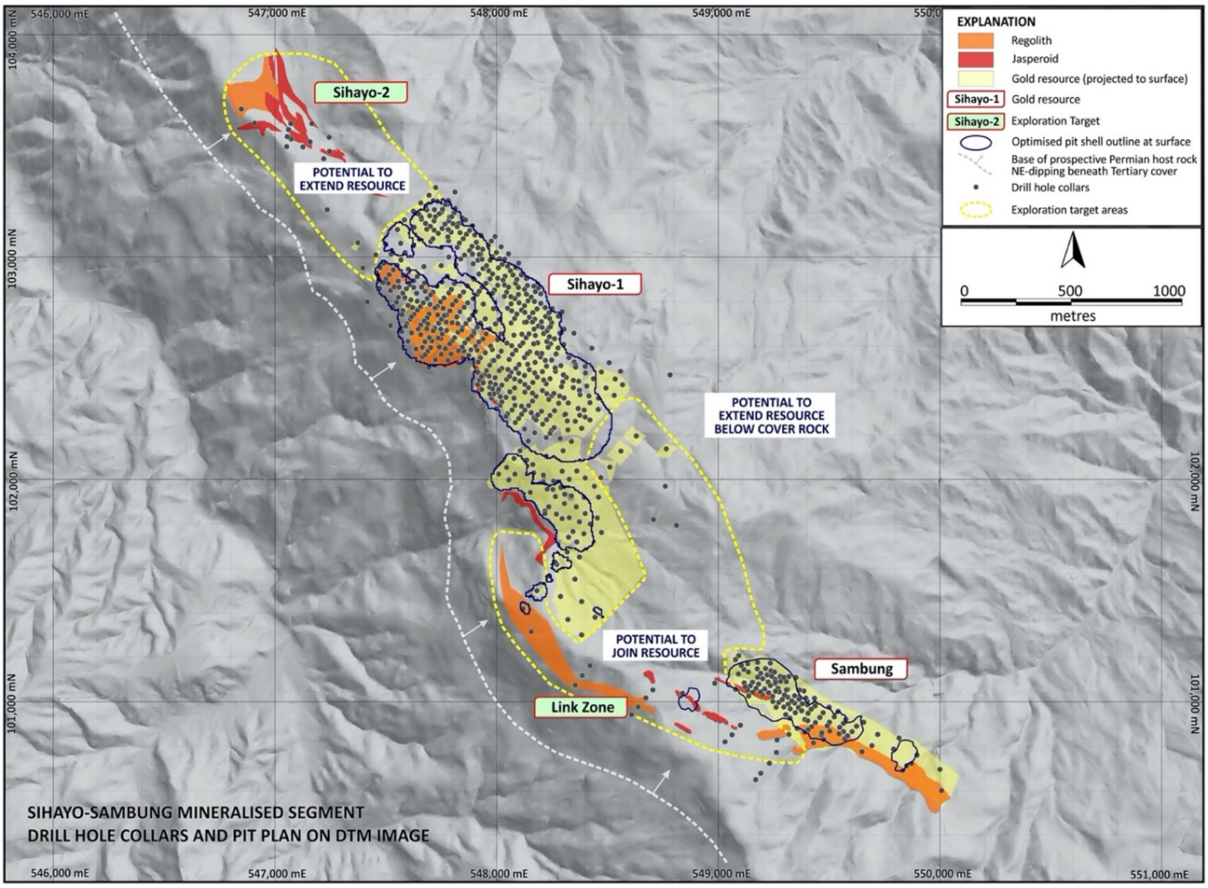


Figure 5 Sihayo Gold Project – Sihayo gold belt near-mine exploration targets

Mining strategy

Combined Ore Reserves

The combined Proven and Probable Ore Reserves for the Sihayo and Sambung gold deposits, which are set out in Table 2, were updated to reflect changes in the Combined Mineral Resources and the mining strategy.

Table 2 Sihayo Gold Project – Ore Reserves

Deposit	Proven			Probable			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Sihayo	4.6	2.2	0.33	6.4	2.1	0.43	11.0	2.1	0.75
Sambung	1.1	1.7	0.06	0.4	1.8	0.03	1.5	1.7	0.08
Total	5.7	2.1	0.39	6.8	2.1	0.45	12.5	2.1	0.84

Figures may not sum due to rounding. Significant figures do not imply an added level of precision.

The estimates are derived from a detailed mine schedule of the Project's Measured and Indicated resources developed by AMC Mining Consultants (Canada) Ltd (**AMC**) for PTSM to the standard expected of a Feasibility Study. The results are reported in accordance with the guidelines in the JORC Code. A gold price assumption of US$1,450/oz gold was used for the estimate. The individual reserve estimates are discussed in detail in Appendix 3.The JORC Code Table 1 Report is attached in Appendix 5.

Ore and waste characteristics

Gold mineralisation is generally a form of jasperoid, occasionally mixed with carbonaceous clay-pyrite. In places the overlying regolith may be mineralised in proximity with jasperoid subcrops. Mineralised jasperoid is a very hard and high strength rock, while it may be locally weakened by reactivated karst caves and oxidation. Pit sections are shown in Appendix 4. The ore classifications at Sihayo represent the degree of oxidation and weathering of the jasperoid rather than different forms of mineralisation.

- **Oxidised:** Mineralised material within the Tertiary sediments will generally be oxidised. This oxidised ore will be substantially free-dig and it is assumed that only 50% of this material will require drill-and-blast. Mining of this material will be straightforward, with good bucket fill factors and moderate rates of wear.
- **Transitional:** Within the transitional zone, the mineralisation will be variable, driven by weakening and oxidation around caves and cavities. Variability will be further increased by the collapse of overlying softer material into sinkholes and cavities. While a portion of this transitional mineralisation will be free-dig, a high proportion will require drill-and-blast. Penetration rates will be highly variable depending on the degree of oxidation of the mineralisation, but generally higher than in the fresh mineralisation.
- **Fresh:** Where rock is fresh, typically in the deeper sections of the deposit within the Permian rocks, it will require drill-and-blast. Provided it is well blasted, diggability will be good.
- The waste material will in general pass through primarily free-digging regolith and, locally, Tertiary sedimentary caprocks composed of sandstone, mudstone and siltstone. This will transition into conglomerates on the Tertiary-Permian contact displaying varying degrees of lithification, oxidation and strength. From a mining perspective, this material will be highly variable. While in parts it will be free-dig, it is expected that much of the waste material will require blasting, especially the deeper limestones and marble. Except where locally weakened, this limestone unit is competent and suitable for construction materials or, when appropriately crushed, for use as road sheeting.

Mine production

The Project's financial evaluation is based on a mining schedule developed by AMC Consultants. The schedule, which is summarised in Figure 6, estimates that 13.7 Mt of ore at an average stripping ratio of 4.4 is produced over the 8-year life-of-mine (**LOM**) for a total material movement of 73.5 Mt.

The AMC schedule includes approximately 1.2 Mt of material not included in the Ore Reserve. As shown in Figure 7, approximately 0.8 Mt (5.6% of the LOM ore production) of the additional plant feed comes from material currently classified as Inferred Resources, and the balance is material from the Sihayo South satellite pit[3] that was excluded as it requires further geotechnical investigation. There is a low level of confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the resource being upgraded to Indicated Mineral Resources or that the production target itself will be realised. However, any reliance on Inferred Mineral Resources in achieving the production target is low during the first two years of operation (3.4% of annual target). Furthermore, any Inferred Resources relied on in the first two years of operation are interpolated (not extrapolated) between drilling sections and, as such, are likely to improve to an Indicated classification.

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[3] There is a small overlap in these estimates as the Sihayo South satellite pit also contains 11% Inferred Resources.

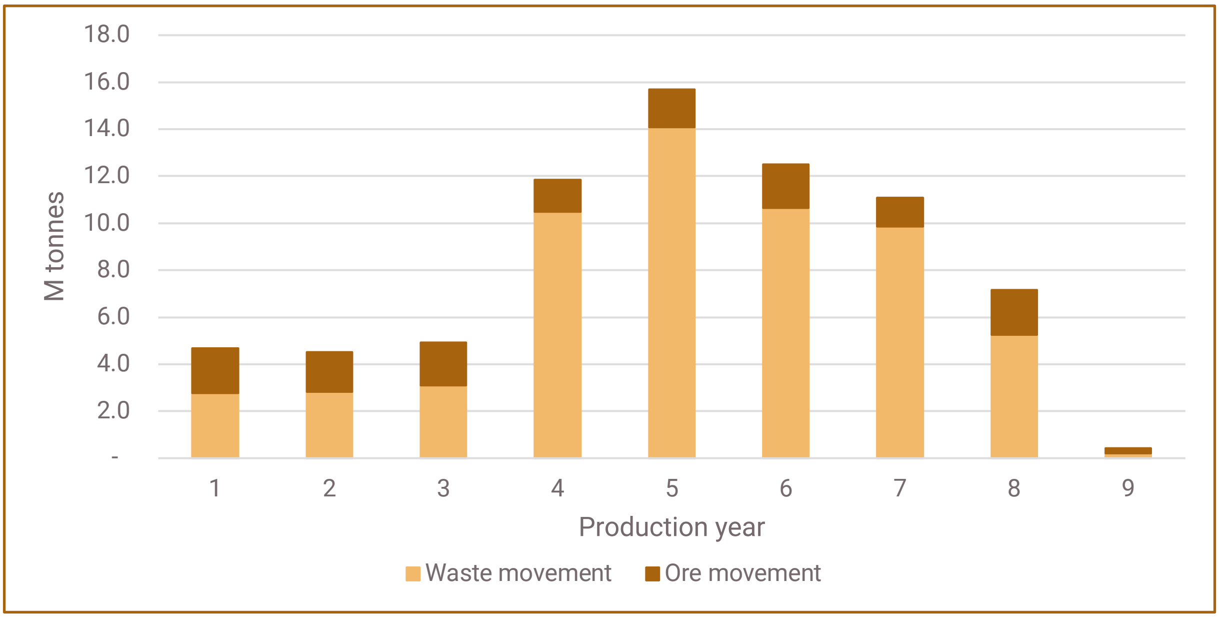

Figure 6 Sihayo Gold Project – ore and waste movement

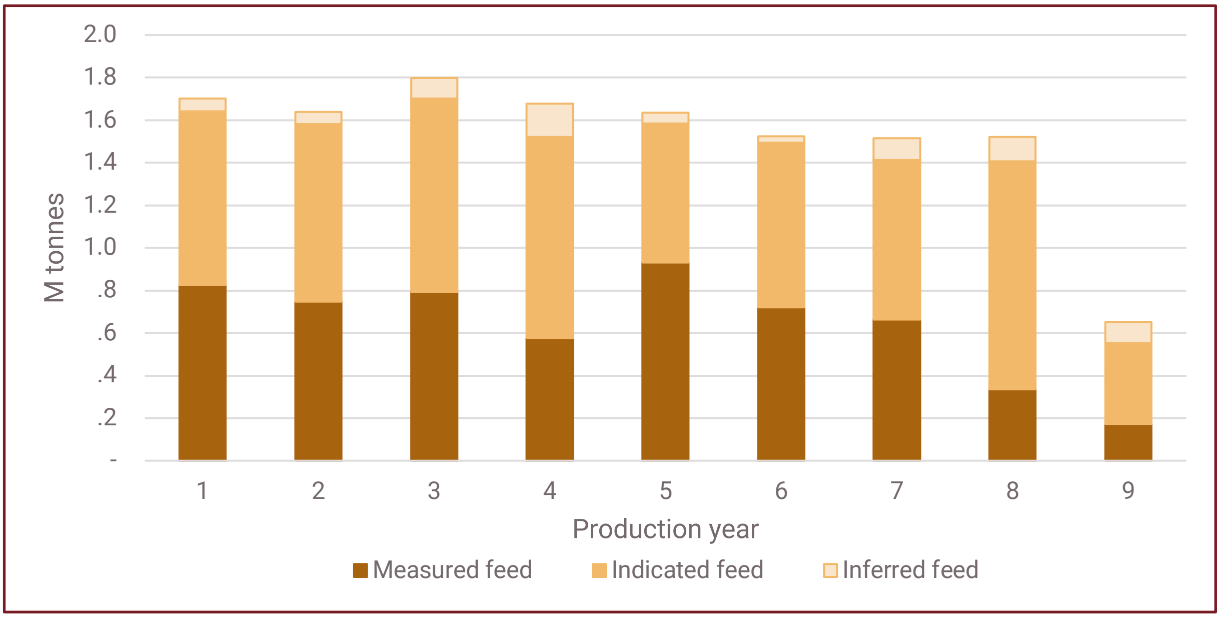

Figure 7 Sihayo Gold Project – mill feed by resource category

Waste disposal

Waste mining will take place in two parts. The owner-operator mining fleet will excavate and dump waste as part of the ongoing ore mining operations. There will be an additional bulk waste removal program, undertaken by a mining contractor from the end of the 3rd year of mining. The bulk program will remove approximately 22.5 Mt of waste that overlies the deeper part of the economic mineralisation in the southern part of the Sihayo pit and the Sihayo satellite deposit. This bulk mining exercise will focus on removing waste at the lowest cost over a 24 to 30 month period. No grade control will be required in the bulk waste removal program.

Mineral processing

Metallurgy

The average gold recovery is estimated at 71% over the LOM. Generally, recoveries within the oxidised mineralisation are relatively uniform and consistently greater than 80%, mostly over 90%. Within the fresh and transitional material, recoveries are highly variable, ranging from less than 10% to over 90%.

Plant feed is also highly variable in strength, from very soft and weak oxidised material to relatively hard and competent fresh material. Crusher bond mill indices vary from 2.7 to 30 kWh/t. These differences impact the throughput of the comminution circuit in the processing plant.

Blending plant feed from the ROM stockpiles ensures that the feed material to the mill is relatively consistent in terms of grade, geochemistry and hardness, which will, in turn ensure the processing plant operates at peak performance.

Recovered gold

Annual feed and recovered grades and gold production are shown in Figure 8 and Figure 9. The LOM average head grade is estimated at 2.04 g/t Au, and the LOM average recovered grade is estimated 1.44 g/t Au. Higher recoveries are expected in the early years, coinciding with lower strip, oxidised, free-dig regolith material. The LOM total gold production is estimated at 635 koz Au. Above average production is expected to be realised in the first two years of mining, coinciding with the lower strip, oxidised, free-dig regolith material.

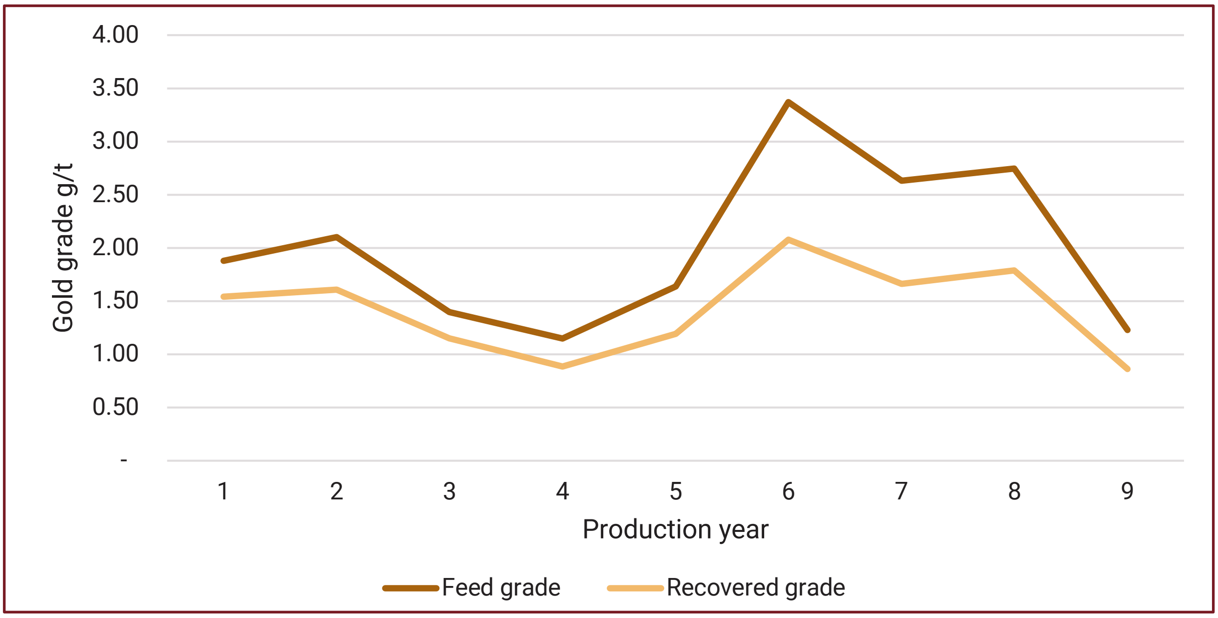

Figure 8 Sihayo Gold Project – annual head grade and recovered grade

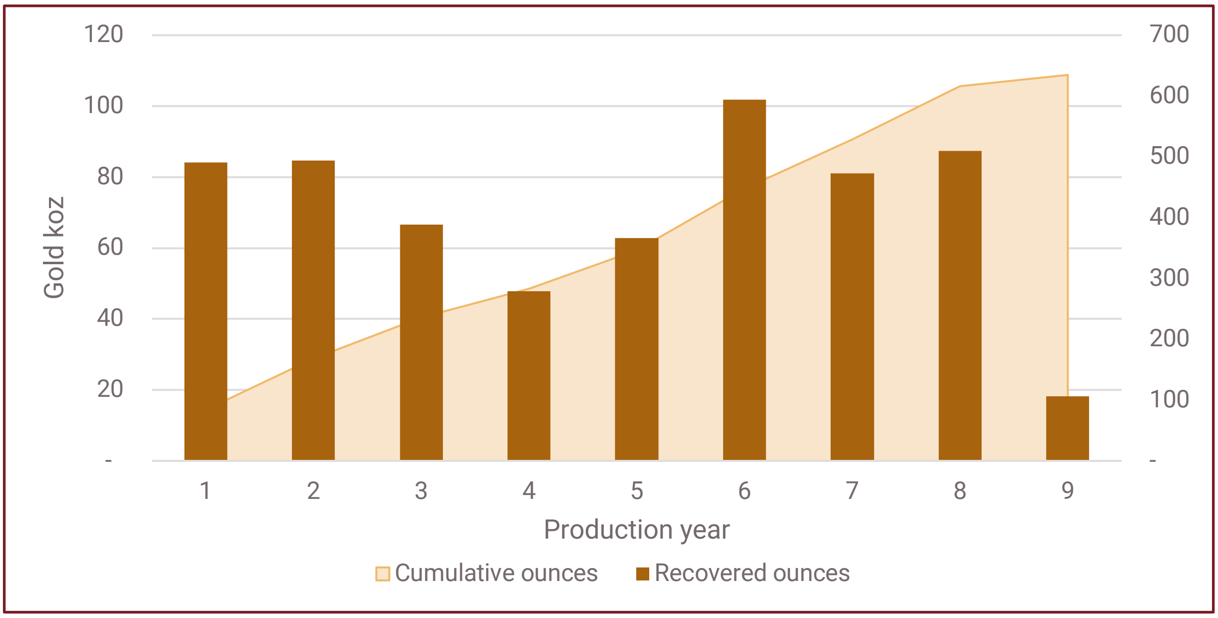

Figure 9 Sihayo Gold Project – annual and cumulative gold production

Processing plant

The processing plant is designed as a simple CIL circuit for a non-refractory ore. Although the plant has been designed around a hard-rock throughput of 1.5 Mtpa, the design allows up to 2 Mtpa of oxide and transitional ore to be treated. The processing plant layout is shown in Figure 10 and incorporates the following circuits:

- Crushing
- Milling
- Classification
- Leaching
- Adsorption
- Elution
- Carbon regeneration
- Electrowinning
- Smelting
- Cyanide destruction
- Mercury/arsenic precipitation
- Tailings thickening
- Tailings disposal
- Water treatment
- Reagent mixing and supply services

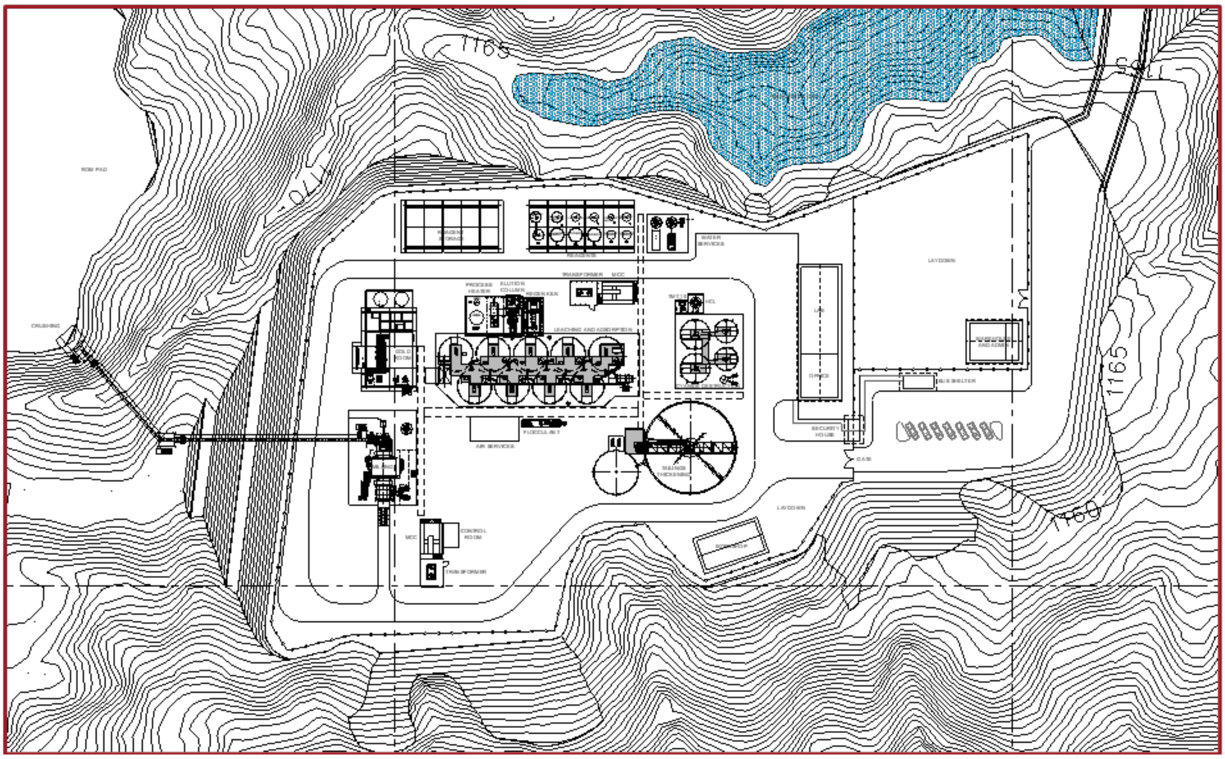

Figure 10 Sihayo Gold Project – processing plant layout

The design includes the detoxification of the tailings prior to the slurry reporting to the tailings storage facility (**TSF**). This will be achieved by using proven technologies including cyanide destruction and precipitation of any leached mercury and arsenic to a stable solid form.

Site layout and infrastructure

Site layout

Site access from the West Sumatran Highway to the mine and process plant is shown in Figure 11. The site layout is influenced by the surrounding topography. The 10 km long Site Access Road (**SAR**) starts at the front gate, climbing 1,000 m to the mine site Mine Access Road (**MAR**). SAR traffic is limited to light vehicles and rigid trucks, as such is an all-weather 8 m wide road with maximum 12% grade. The mine camp is designed to accommodate 300 people. The TSF has a life of mine capacity of 16 Mt.

Power

The Project's estimated power consumption is approximately 10 MW. Discussions with PT Perusahaan Listrik Negara (**PLN**) have concluded that 20 MVa is available from PLN GI Padang Sidempuan overhead line, which runs along the Trans Sumatran highway. PLN will come off this line, supplying and burying two cable feeders to the front gate facility. PLN power supply is cost effective and derived from a geothermal power source, and reliable enough such that a full diesel generator backup across the site is not required.

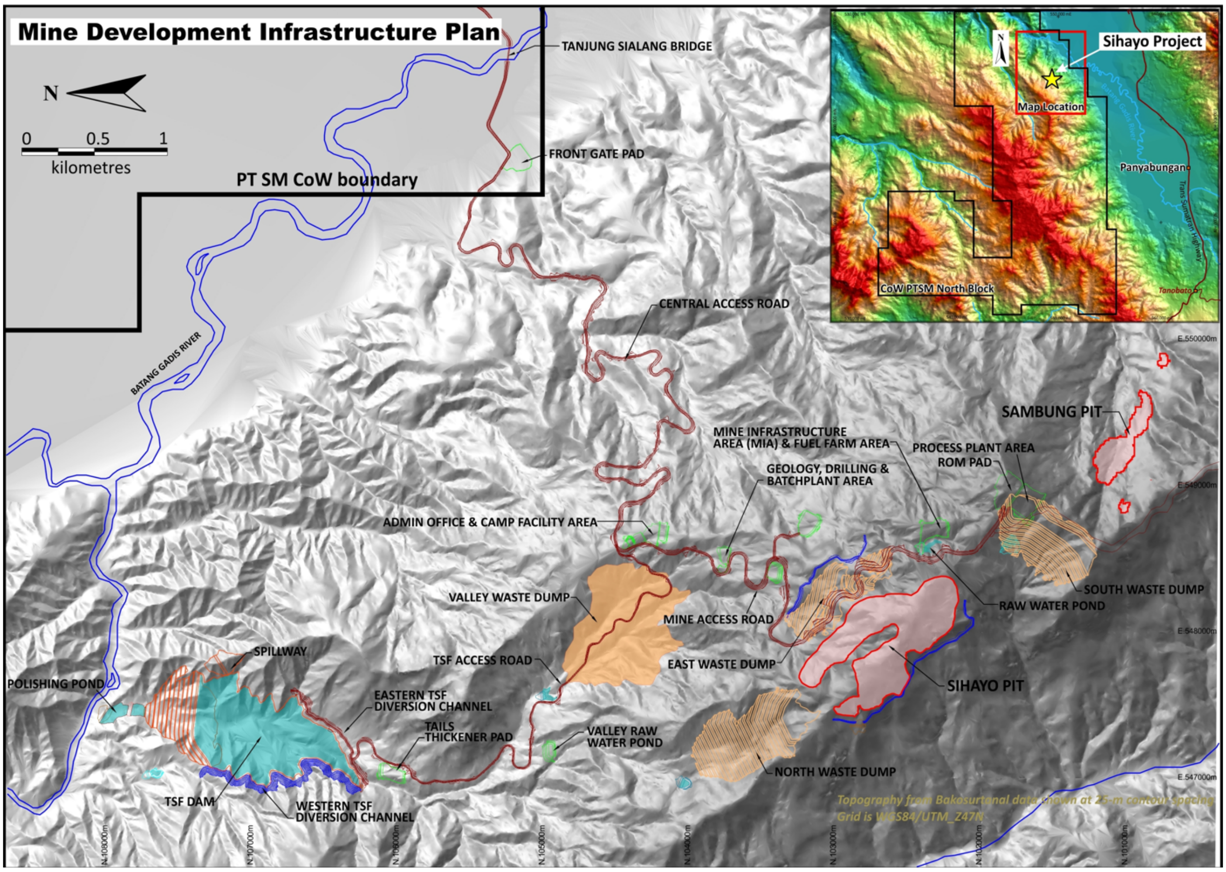

Figure 11 Sihayo Gold Project – site layout and infrastructure

Ports

The closest major port to the project is Sibolga, approximately 145 km north of the site along the West Sumatran Highway. Padang, which has much larger seaport and loading facilities, is approximately 355 km south of the site along the West Sumatran Highway. A third option, Dumai, is approximately 400 km east of the site along the East Sumatran Highway.

Although closest to site, the Sibolga port is small and on the western side of Sumatra, which suffers from poor sea conditions and is not accessible by landing craft tank (**LCT**). Sibolga does, however, have a domestic airport, and as such will be the main point of access for fly-in-fly-out (**FIFO**) personnel to site. Dumai, which is the preferred port of entry for shipments, has a sheltered port, which is large enough for all sizes of LCTs and vessels, and is well utilised by both oil and gas and palm oil companies.

Capital and operating costs

Material assumptions

The Project's material assumptions on which the financial forecast is derived are set out in Table 3.

Table 3 Sihayo Gold Project – material assumptions

Parameter	Assumption
Effective date	1 May 2020
Exchange rate	USD 1.00 = IDR 15,000
Indonesia gold royalty rate	3.75%
Mobile equipment finance deposit	25%
Income tax rate	25%

The overall macroeconomic background of the gold market is positive. Many of the world's major economies are facing or are officially in a recession. Major central banks have reduced interest rates to zero and reintroduced quantitative easing. Deficit spending and national debts are expected to continue to increase. The social and economic pressures created by COVID-19 have also increased interest in gold as a safe haven asset. Two pricing scenarios were considered in the Project financial analysis (Table 4): the Base Case assumes a real, flat 1,700 US$/oz gold price and the Market Case (real, flat US$1,890/oz long term gold price) is based on the gold price forecast in the 2020 CRU Precious Metals Market Outlook for gold.

Table 4 Sihayo Gold Project – Pricing scenarios

Scenario		2020	2021	2022	2023	2024	2026	2027	2028
Base Case	US$/oz	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700
CRU Outlook[4]	US$/oz	1,640	1,735	1,810	1,850	1,890	1,890	1,890	1,890

Capital costs

The overall direct, indirect capital (freight, mobilisation, insurance, permits and overheads) and sustaining capital costs for the pre-production period and mine life (including the allocation of sustaining capital to specific areas within the project) are set out in Table 5. A detailed breakdown of the direct construction costs for the pre-production period and mine life are set out in Table 6.

[4] 2020 CRU Precious Metals Market Outlook, March 2020, CRU International Ltd

Table 5 Sihayo Gold Project – capital costs

	Pre-production (US$m)	Life of mine (US$m)
Direct capital	102	143
Indirect capital	31	31
Contingency	11	17
Total initial capital	144	191
Sustaining capital	–	19
Total project capital	144	210

Table 6 Sihayo Gold Project – direct capital cost breakdown

	Pre-production (US$m)	Life of mine (US$m)
Process plant	32.6	32.6
Tailings storage facility	19.0	54.8
Power supply	6.6	6.6
Access roads	7.4	7.4
Mobile equipment	1.4	5.7
Mine development	4.7	4.7
Pre-strip	1.5	1.5
Other works	16.6	17.5
EPCM	12.3	12.3
Total Direct Capital	102.1	143.1

Physicals and operating costs

The designed plant capacity gives an average gold production rate of approximately 80,000 ounces per year. The operating costs include all mining, processing and general and administration costs required for the operation of the Project. Costs associated with the implementation of the Project are considered part of the capital costs set out in Table 6. The ongoing construction of the TSF is also considered a capital cost and is also set out in Table 6.

The LOM physicals and operating costs are summarised in Table 7. Capital, mining and processing costs are either built up from first principles or sourced from local and international vendors and consultants as summarised in Table 8.

Table 7 Sihayo Gold Project – LOM physicals and operating costs

Metric	Units	Life of mine
Physicals		
Ore milled (average)	Mt	13.7
Ore head grade (average)	g/t	2.04
Recovered grade (average)	g/t	1.44
Recovery (average)	%	71
Gold production	koz	635
Waste mined	Mt	59.8
Stripping ratio		4.4
Costs		
Mining cost	US$/t ore and waste	2.12
Mining cost	US$/t ore	10.40
Cash operating cost	US$/t ore	29.44
Cash operating cost	US$/oz	632
AISC[5]	US$/oz	709

Mining costs are inclusive of mine planning, survey, grade control, drilling, assaying, blasting, loading and hauling, mining equipment maintenance and waste dump rehabilitation expenses. The mine schedule considers different material types and mining depths. A variety of ore types and waste rock types are identified, categorized as oxide, transitional and fresh, each with different physical attributes that affect equipment productivities and hence equipment operating hour estimates and mine operating costs. The mining costs were benchmarked against those found in similar Indonesian mines.

Processing costs are derived from metallurgical testwork for the consumption rate of reagents, other consumables such as grinding media, and power demand, together with the use of industry standards for labour and maintenance. As with mining, a variety of ore types are identified, categorized as oxide, transitional and fresh ore, each with different physical attributes affecting plant throughput and subsequent operating cost. Processing costs for the scheduling period reflect the proportions of each ore type processed during that period. Processing operating costs include cyanide detoxification, tailings disposal into the TSF, and the cost of treating water discharged from the TSF into the environment.

Exploration is not included in any of the cost categories as it is considered a future business investment, to be funded from surplus cash flow.

[5] LOM average all-in sustaining cost (AISC)

Table 8 Sihayo Gold Project – sources of cost information

Supplier	Scope of work
Merdeka Mining Services (**MMS**)	Earthworks, roadworks, civil works and buildings designed to International Finance Corporation (**IFC**) level
AMC Mining Consultants (**AMC**)	Mine operating and development costs in consultation with MMS for the purpose of pit optimisation and detailed scheduling for the Ore Reserves calculation
Primero Engineering	Process plant feasibility-study-level design, referencing the 2018 Sihayo gold project feasibility study
Knight Piesold (**KP**)	TSF feasibility-study-level design, based on geotechnical information
Ground Risk Management (**GRM**)	Geotechnical investigations and reporting

Financial analysis

The primary method adopted for the financial evaluation was a discounted cash flow in US dollars. The Project's financial performance for the Base Case and Market Case is set out in Table 9. The cumulative free cash forecast for both gold price cases is shown in Figure 12.

To obtain further confidence in the project's financial returns and value, a sensitivity analysis was conducted by varying key input values and recalculating NPVs. The key input values tested were gold price, metallurgical recoveries, capital costs and operating costs. The results show that the project is most sensitive to changes in the gold price (Figure 13) and metallurgical recovery, and substantially less sensitive to capital and operating costs.

Table 9 Sihayo Gold Project – financial analysis

Metric	Units	Value	
		Base Case	**CRU Outlook**
Gold price	US$/oz	1,700	1,890
Life-of-mine (LOM)	years	8	8
LOM gold produced	koz	635	635
LOM gross revenue	US$m	1,077	1,194
EBITDA	US$m	630	744
Pre-production cost	US$m	144	144
Peak funding	US$m	153	153
After-tax NPV (5%)	US$m	205	266
After-tax NPV (8%)	US$m	152	202
After-tax IRR	%	28	34
Payback period	months	33	25

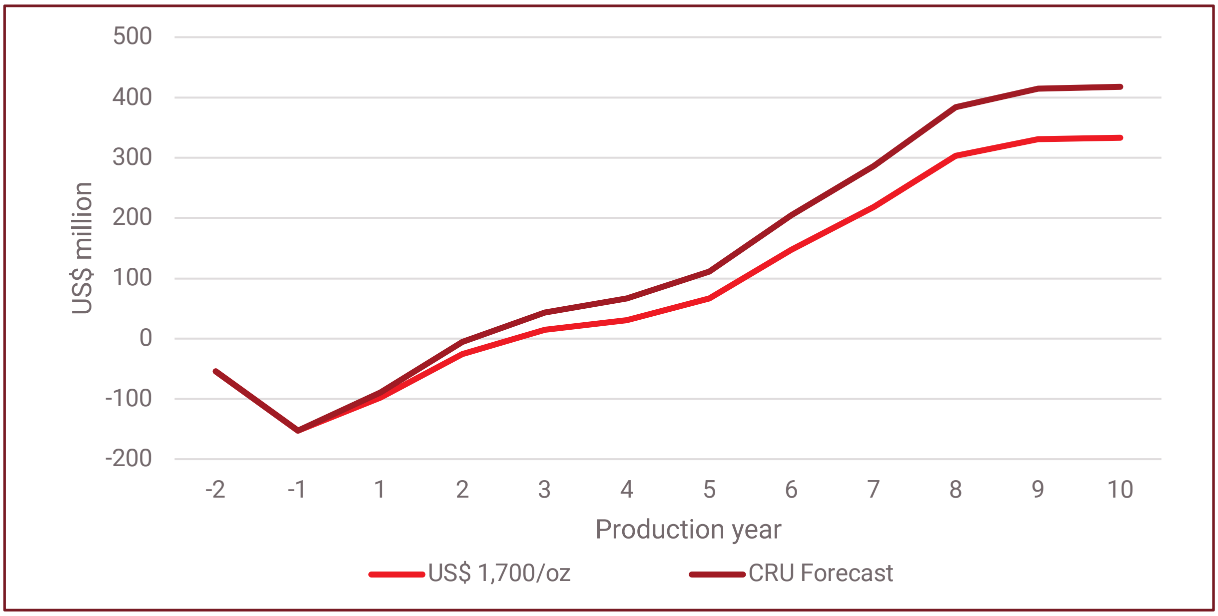

Figure 12 Sihayo Gold Project – cumulative free cash flow after tax

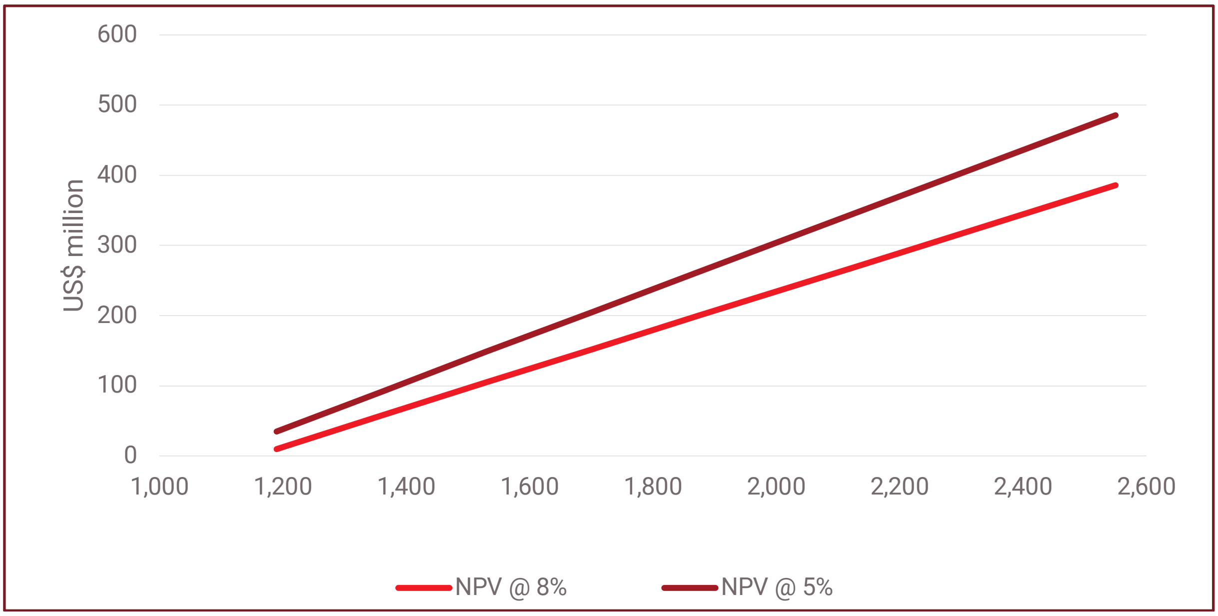

Figure 13 Sihayo Gold Project – sensitivity to gold price

Sustainability and risks

Mining sector investments must be environmentally sound and socially responsible. The Company is committed to contributing to the social and economic development of the broader community in which the Project will operate. It is also committed to engage with and respond to stakeholders through open consultation processes. The Company also understands that community engagement is an important element in the planning and decision-making processes of the Indonesian mining industry.

The COW has a large and highly prospective exploration pipeline of which the Sihayo and Sambung developments are the most advanced. A comprehensive risk assessment has been completed for the project, which takes into account that:

- The Project is at an advanced stage allowing it to be quickly brought on stream.
- The Mineral Resources are relatively shallow, ensuring low mining costs in the early years of production.
- The Project is close to all essential infrastructure, reducing the upfront capital requirement.
- There are no environmental "showstoppers" and environmental and external relations management plans will be developed to ensure the project meets its environmental and social obligations.
- The market outlook for gold is positive.
- An initial ore processing rate of 2.0 Mtpa will maintain capital expenditure at a moderate level, while producing an attractive cash flow over the 8-year mine life.
- At the proposed processing rate, the base case financial analysis indicates the Project has an IRR of 28–34% with a payback period of 25–33 months on an initial capital investment of US$144 million.

Opportunities and forward work plan

Project detailed design and optimisation

Subject to raising the necessary equity, the Company will move directly to pre-construction capital works including construction of access roads and bridges and detailed TSF design. These pre-construction works are expected to shorten the overall construction time. Finalisation of all permits required for the Project is also a priority.

Preparation and optimisation work will continue to focus on the following opportunities.

Mining opportunities

- Optimisation of waste dump designs. The northern waste dump footprint can be extended to take greater advantage of the natural buttressing of the surrounding topography. Additional lifts could be added to the dump, integrated with in-pit dumping in the northern section of the Sihayo pit.
- Production of a detailed waste excavation schedule by rock type. A detailed schedule of waste by rock type may be used to determine if suitable material is available in the earlier stages of the mine life to create engineered waste dump footings. This would allow steeper overall slope angles and may allow waste to be dumped closer to the pits and removing the longest hauls.

Processing opportunities

- Opportunities to optimise commercial leach conditions and reagent consumptions will continue to be assessed.
- A program of mineralogy, direct cyanidation, flotation and heavy liquid separation will be investigated for the fresh material. The aim is to collect most of the gold into a small weight of sulfide concentrate suitable for further treatment at Sihayo or by third parties.

Infrastructure opportunities

- The PLN MOU for power supply will be advanced to a commercial agreement with defined milestones. A contingency plan will be developed for any delays to the PLN power supply.
- Detailed engineering will commence ahead of the TSF permitting process and to investigate opportunities to reduce the contingency for the construction of the TSF.
- Detailed engineering will commence ahead of the bridge permitting process and to investigate opportunities to reduce the contingency for the construction of the TSF.

Construction, operating and environmental permits

On completion of the Definitive Feasibility Study, the Company is required to submit an amended feasibility study to the Indonesian Minister of Mineral and Energy Resources ahead of amending the existing environmental and production permits listed in Table 10.

Table 10 Sihayo Gold Project – major approvals

Approval	Scope
ROIFS	A Republic of Indonesia Feasibility Study (ROIFS) was approved by the Indonesian Government in 2016. Subsequent changes to the Project design will require resubmission to the Indonesian Government.
AMDAL	An AMDAL (environmental impact assessment) of PTSM was approved by the Indonesian Government in 2015. Subsequent changes to the Project design will require an addendum and resubmission to the Ministry of Environment and Forestry. The AMDAL application process cannot start until the ROIFS has been submitted.
IPPKH	The IPPKH (forestry boundary) permit must be adjusted for a variation in the proposed site. The current IPPKH permit covers 485 ha of the COW area, which contains the mine, plant facilities, office, camp facilities and other Project infrastructure.

The Project will require a number of other permits as it progresses through construction and into the operating stages. These include:

- Bore construction
- Water extraction
- Cultural heritage permits
- Transport licences
- Native vegetation and wildlife protection
- Public land use
- Landowner consents
- Compensation agreements
- TSF approval
- Explosives

Pre-construction activities

- An Operational Readiness Plan (**ORP**) that addresses all elements of the staged handover of the Project from the construction team to the operations team will be developed.
- Award construction and infrastructure contracts to allow early mobilisation to commence temporary camp establishment and early works construction.
- Procure long-lead fixed plant items based on engineering outputs.

Indicative development timetable

The indicative project development timetable, subject to funding, is set out in Figure 14.

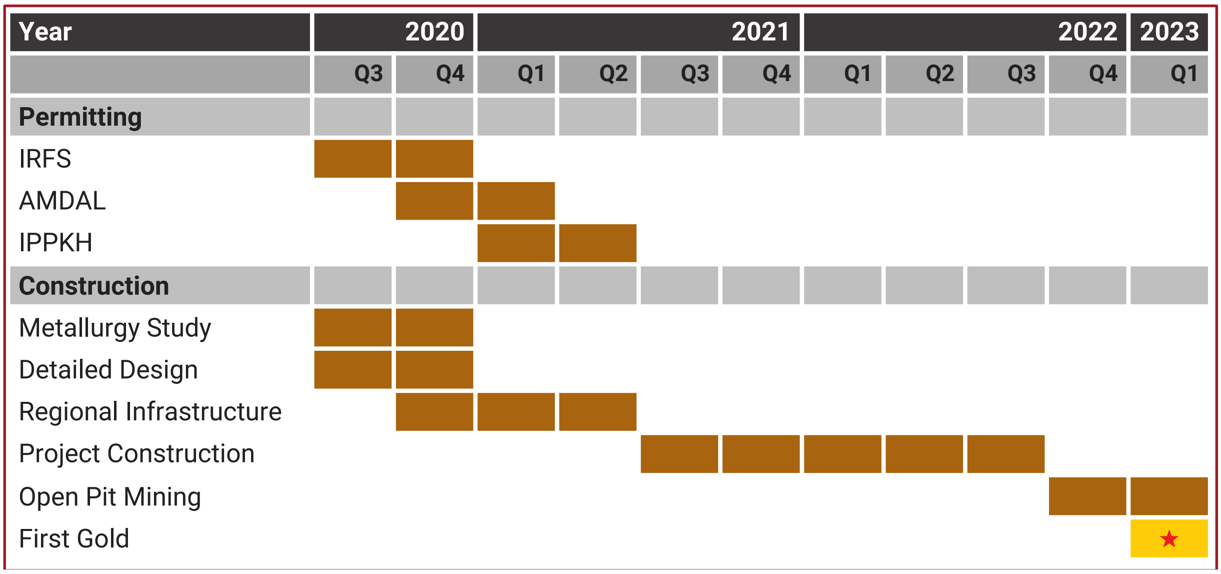

Figure 14 Sihayo Gold Project – indicative timetable

About Sihayo Gold Limited

Sihayo Gold Limited (**ASX:SIH**) owns a 75% interest in PT Sorikmas Mining which in turn holds the Sihayo-Pungkut 7th Generation Contract of Work (**COW**). The remaining 25% interest is held by joint venture partner PT Aneka Tambang Tbk. The Sihayo Gold Project is the most advanced project within the COW with the completion of its Definitive Feasibility Study. The project has Combined Mineral Resources of 24.0 Mt at 2.0 g/t for 1,506 koz of contained gold. The COW area is deemed to be highly prospective for gold and base metals mineralisation and is advancing multiple prospects targeting sediment-hosted gold, epithermal-vein gold, gold-copper skarn, porphyry related copper-gold and lead-zinc skarn-style mineralisation across the COW area.

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Appendix 1: Project geology

Regional geology

The COW is located at the western end of the 7,000 km long Sunda-Banda magmatic arc. Sumatra lies on the south-western margin of the Sundaland promontory at the edge of the Eurasian plate. The promontory basement is composed of accreted and fault-transposed continental plate and magmatic arc terranes that were derived from Gondwana during the Late Palaeozoic and Mesozoic.

The COW straddles the collisional boundary between the Palaeozoic West Sumatra and Mesozoic Woyla terranes. The Sihayo and Sambung gold resources occur within a NW-SE oriented sliver of the West Sumatra terrane that is bounded by the Woyla terrane to the south-west and the Medial Sumatra Tectonic Line and Sibumasu terrane to the north-east.

The West Sumatra Block is composed of Late Palaeozoic intermediate-felsic volcano-sedimentary rocks and associated shallow marine carbonate-volcaniclastic rocks (Sihayo-Sambung host rocks). Sedimentary rift basins developed on deformed, uplifted and partly eroded basement rocks of the West Sumatra Block were filled by fluvio-deltaic and lacustrine sedimentary rocks (Sihayo caprocks) during the Paleogene period (early Tertiary).

The Sihayo gold belt, which hosts the Sihayo and Sambung gold resources, is a 15 km long NW-SW trending corridor of Permian calcareous volcano-sedimentary rocks and associated intrusions. These rocks are highly prospective for sediment-hosted gold, epithermal gold-silver veins, and porphyry-related gold and copper mineralisation. The Sihayo gold belt is located on fault strands from the western margin of the dextral transtensional jog in the TSFZ.

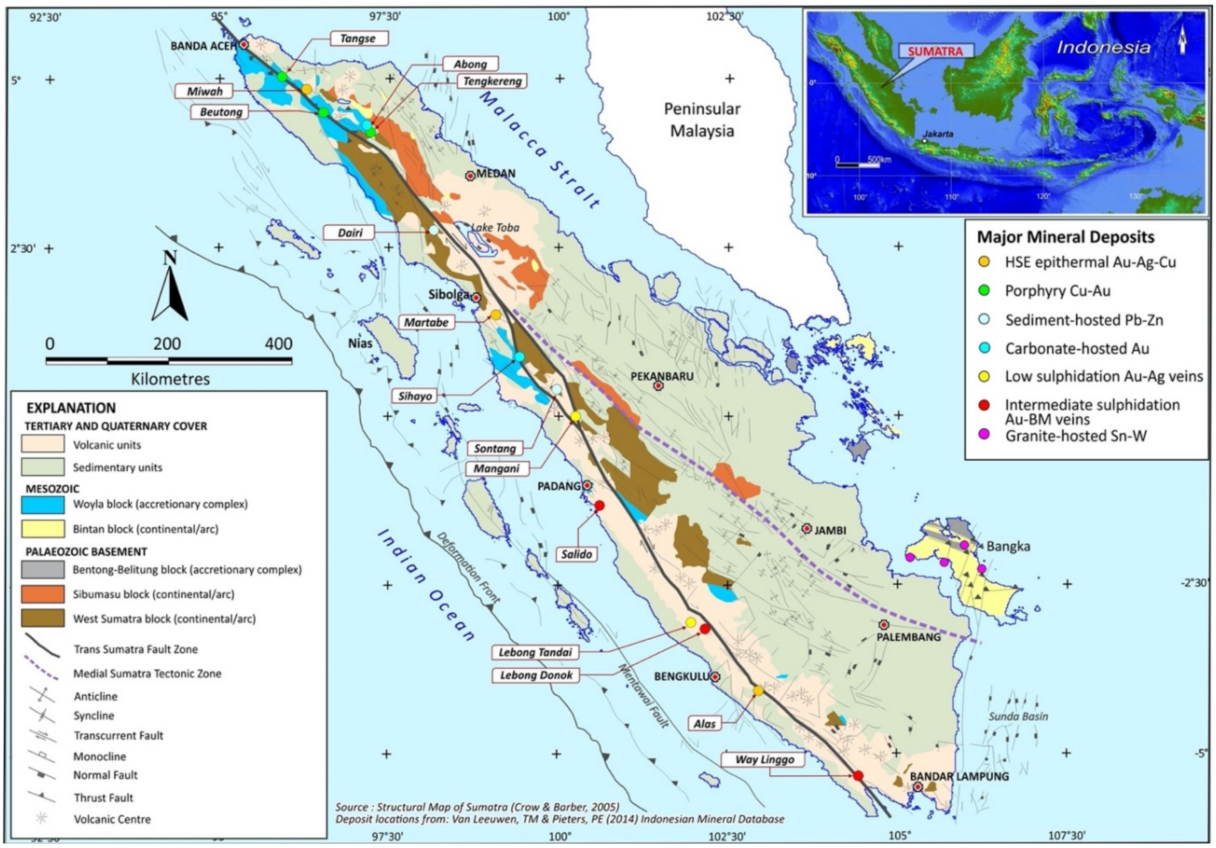


Figure 15 Sihayo Gold Project – Sumatra regional tectonic map showing the TSFZ

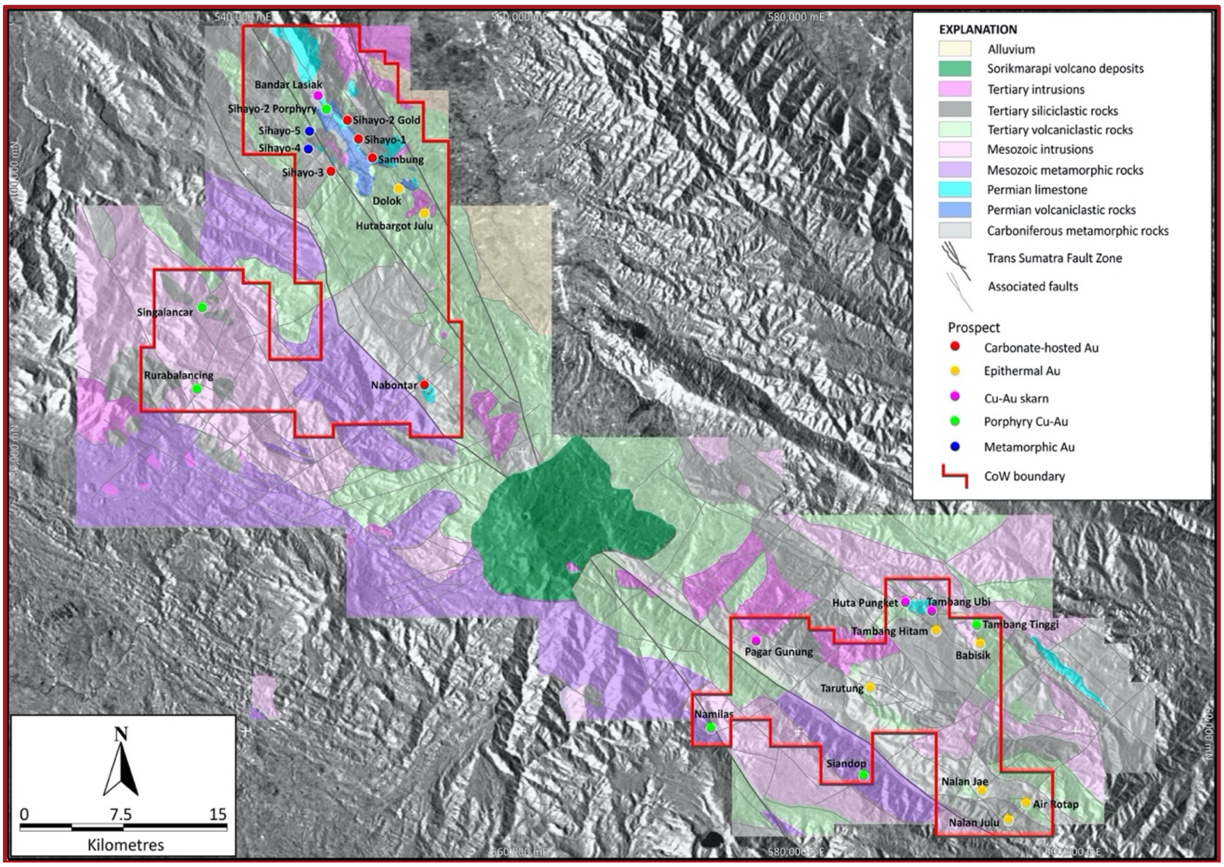


Figure 16 Sihayo Gold Project – COW general geology

Deposit geology

The stratigraphic and structural architecture of Sihayo and Sambung gold resources is complex due to the interaction of inter-fingering carbonate and volcano-sedimentary rock types, multiple overprinting alteration and mineralisation events, structural complexity associated with the evolution of the TSFZ, and a complex karstification, erosional and regolith history.

The bulk of the gold resources at Sihayo and Sambung is hosted by a NW-SW striking, moderately NE-dipping package of Permian shallow marine fossiliferous limestones. The gold is generally submicron size and, unless weathered (oxidised), it is locked in disseminated fine-grained arsenian pyrite mineralisation in multiple stratabound replacement-style jasperoid lenses and discordant bodies within the karstified, hydrobrecciated and tectonised host rocks. The resources are classified as sediment-hosted gold (**SHG**) deposits.

The mineralised Permian limestones and volcaniclastic rocks are disconformably overlain by Tertiary siliciclastic sandstones and carbonaceous mudstones. Uplift and erosion have removed most of the caprock at Sambung, but about 70% of Sihayo is covered by Tertiary caprock, which is up to 150 m thick or more on the eastern side of the resource. Diorite intrudes the Permian rock package in dykes, sills and laccolith, and some of these intrusions extend across the disconformity into the Tertiary caprocks.

Karstification features are well-developed within the Permian limestones. The karst cavities commonly contain cave-fill sediments showing a large range of facies and sedimentary structures including finely laminated oxidised and carbonaceous muddy-silty sediments with dropstones, graded bedded sandy-gritty sediments, poorly-sorted matrix-supported polymictic breccias and fragment-supported monomictic shingle breccias. The cave-fill sediments are unconsolidated or show varying degrees of lithification caused by hydrothermal alteration and mineralisation. Breccia clasts and dropstones, including mixed carbonate and siliciclastic rock types, also show varying degrees of alteration and intra-clast veining.

An unconsolidated bouldery clay regolith (eluvial-colluvial overburden) overlies parts of the Sihayo and Sambung gold resources. This is locally mineralised with variably oxidised jasperoid boulders and detrital gold in the gritty clay matrix. The latter has been extensively worked by artisanal miners to about 5 m average depth over the Sambung resource area. The thickness of the regolith varies dramatically where influenced by the occurrence of sinkholes and other irregularities on the underlying karstified bedrock.

Geotechnical considerations

The degree of weathering and oxidation state of the mineralised zones is highly variable and irregularly distributed both laterally and vertically within the Sihayo and Sambung gold resources. Complete or near-complete oxidation (>70% supergene clay-limonite) is best developed in regolith mineralisation and jasperoid mineralisation exposed or sub-cropping beneath regolith on the western side of Sihayo and eastern side of Sambung. Transitional or partial oxidation (30–70% supergene clay-limonite) and fresh (<30% supergene clay-limonite) jasperoid mineralisation comprise the bulk of both gold resources.

Weathering and oxidation are irregularly distributed along fractures and faults cutting all rock types, including the Tertiary-Permian disconformity, jasperoid lenses, karstified rock units, lithological contacts, and other sulfidic alteration zones that show varying degrees of enhanced porosity and permeability.

A bouldery clay regolith unit covers large parts of both subcropping gold resources. The basal discontinuity between the regolith unit and underlying bedrock can generally be taken as the base of oxidation. Below this is a transitional zone of variable oxidation and weathering, followed by fresh material at depth. Carbonate rocks below this discontinuity can exhibit various degrees of karstification. Zones of weakened and oxidised rocks occur at all depths, including in fresh rock around fracture zones and cavities within the Permian host rocks and Tertiary caprocks.

The regolith unit comprises highly weathered and oxidised materials, occurring mostly as clays, with remnant shards of the original rock and some floaters or boulders of hard rock. These floaters may represent harder sections of the underlying Permian sediments that resisted weathering and oxidisation and were present as boulders on the surface of the Permian sediments (at the discontinuity) that were subsequently encapsulated and buried by the later Tertiary deposits. Because of the method in which the deposit formed, characterisation of rock by weathering and oxidisation is somewhat arbitrary. Some highly weathered rocks can exhibit greater strength than rocks classified as fresh. These highly weathered, strong rocks will also appear as floaters during mining and will require some form of rock-breaking or secondary blasting prior to load and haul operations.

While the transitional rocks are generally more competent than the oxidised, they can still be relatively soft. There are also zones of intense fracturing, around which the rocks have oxidised and weathered.

A feature of the project that has a strong geotechnical impact on its design and development is the occurrence of karst ground developed mainly on the upper surface and within the Permian limestone. The karst ground is characterised by an abundance of cavities, solution channels, floaters and cave-fill showing varying degrees of consolidation and hardness. This is especially the case in the fossiliferous limestone-marble. Karst is a topography formed from the dissolution of soluble rocks such as limestones. At Sihayo, the dissolution of the limestone was exacerbated by carbonic acid formation in the overlying carbonaceous sediments. Sulfuric acid would also be generated from the oxidation of pyrites within the mineralised materials, but the level of sulfides is generally low.

Karsts are characterized by underground drainage systems with sinkholes and cavities. Springs and disappearing streams are common. Karstification at Sihayo is seen around the discontinuity between the overlying Tertiary sediments and the underlying Permian host rocks. However, cavities and fracture zones within the Permian limestones may extend to depth in these rocks, and exist throughout the limestone, not just immediately below the discontinuity. These cavities, though deep, are typically quite narrow.

Karstification will lead to an irregular interface between the overlying sediments and the limestones, resulting in a highly variable mixture of rock types (including economic mineralisation) where the overlying Tertiary sediments have subsided and collapsed into cavities.

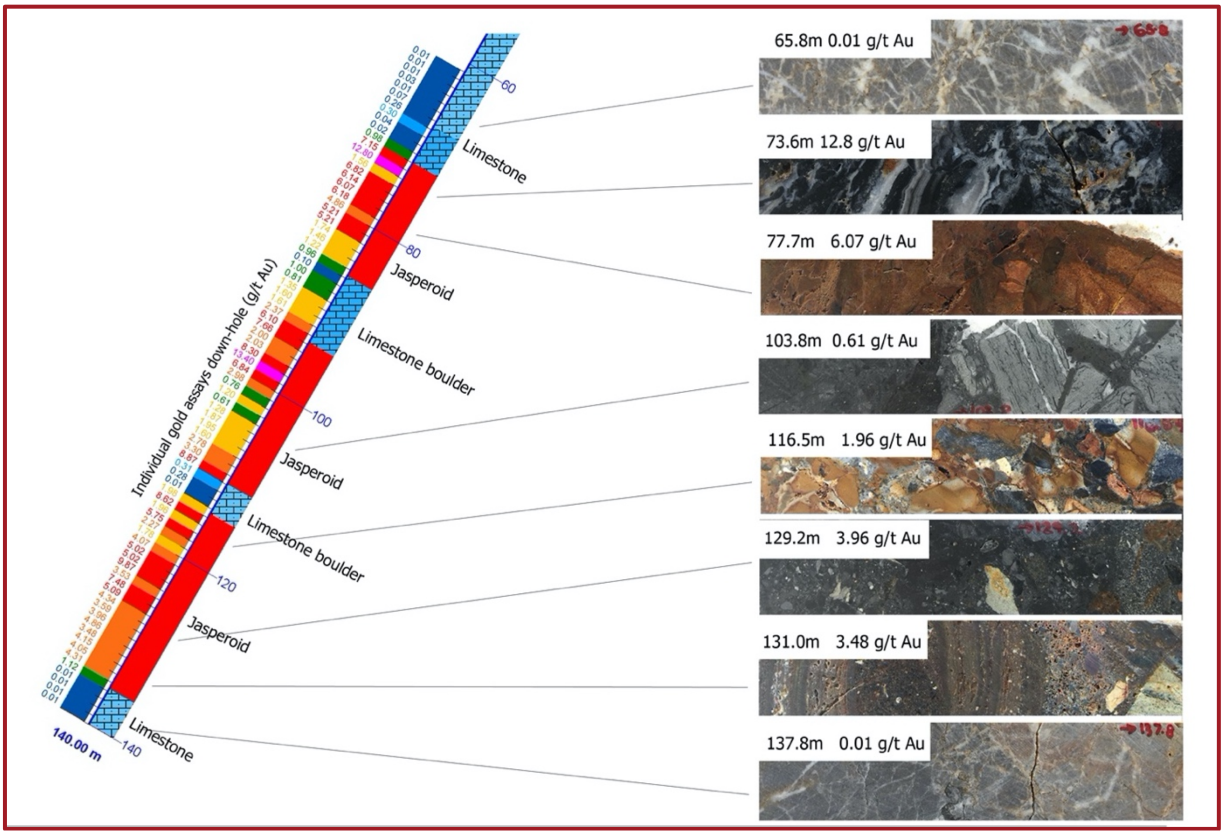


Figure 17 Sihayo Gold Project – SHIDD609 core logging and representative deposit stratigraphy

Appendix 2: Updated Mineral Resources

The Mineral Resource Estimates have been prepared by Spiers Geological Consultants (**SGC**) and reported in accordance with the guidelines in the 2012 edition of the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the **JORC Code**). JORC Code, 2012 Edition - Table 1 Report is attached in Appendix 5.

The Combined Mineral Resource Estimates for the Sihayo and Sambung gold deposits set out in Table 11 have been updated following the consolidation of the results from the 2019 infill drilling program at Sihayo and a comprehensive revision of the geology and mineralisation models for both deposits.

Table 11 Sihayo Gold Project - Mineral Resource Estimate

Deposit	Measured			Indicated			Inferred			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Sihayo	4.9	2.3	0.36	11.2	2.0	0.70	5.5	1.8	0.31	21.5	2.0	1.4
Sambung	1.5	1.6	0.08	0.80	1.7	0.04	02	1.6	0.01	2.5	1.6	0.13
Total	6.4	2.1	0.44	12.0	2.0	0.75	5.6	1.8	0.32	24.0	2.0	1.5

Figures may not sum due to rounding and significant figures do not imply and added level of precision. Oxide<=1.50gm/cc, transition>=1.51<=2.50gm/cc and Fresh>=2.51gm/cc. Numbers are local mine depleted at Sambung.

Sihayo Gold Deposit – Mineral Resource Estimate

The Mineral Resource Estimate for the Sihayo gold deposit has been updated following the consolidation of results from the 2019 infill drilling program and a comprehensive revision of the geology and mineralisation model. The current Mineral Resource is estimated at 21.5 Mt at 2.0 g/t for 1.4 Moz of contained gold at a 0.6 g/t cut-off grade as set out in Table 12.

Table 12 Sihayo Deposit - Mineral Resource Estimate reported at 0.6 g/t Au cut-off grade.

Type	Measured			Indicated			Inferred			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Oxide	1.6	1.8	0.09	1.8	1.5	0.09	0.5	1.5	0.02	4.0	1.6	0.21
Transition	2.4	2.4	0.19	5.0	1.8	0.29	1.8	1.6	0.09	9.2	1.9	0.57
Fresh	0.9	2.8	0.08	4.3	2.3	0.32	3.2	2.0	0.20	8.4	2.2	0.60
Total	4.924	2.3	0.36	11.2	2.0	0.70	5.5	1.8	0.31	21.5	2.0	1.4

Figures may not sum due to rounding and significant figures do not imply an added level of precision. Oxide<=1.50gm/cc, transition>=1.51<=2.50gm/cc and Fresh>=2.51gm/cc.

The following notes are relevant to the Sihayo Mineral Resource estimate:

- Estimated into blocks with dimensions of 12.5 m (east) by 12.5 m (north) by 2.5 m (elevation).
- Drilling density is generally of a detailed nature with infill drilling on a predominantly 50 m NW-SE line spacing, 25 m SW-NE hole spacing grid pattern over the near surface mineralisation with infill on some key sections down to 25 m NW-SE line spacing.
- Oxidation has been modelled as an attribute based on oxidation intensity defined as oxide, transitional and fresh mineralisation.

- The models have been estimated by Ordinary Kriging using industry standard software.

Sambung Deposit - Mineral Resource Estimate

The Mineral Resource Estimate for the Sambung gold deposit has been updated following application of the new geological model. The current Mineral Resource is estimated at 2.5 Mt at 1.6 g/t for 0.13 Moz of contained gold at a 0.6 g/t cut-off as set out in Table 13.

Table 13 Sambung Deposit - Mineral Resource Estimate reported at 0.6g/t Au cut-off grade.

Type	Measured			Indicated			Inferred			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Oxide	0.5	1.6	0.02	0.3	1.5	0.02	0.1	1.4	0.0	0.9	1.5	0.04
Transition	1.0	1.6	0.05	0.5	1.8	0.03	0.1	1.8	0.0	1.6	1.7	0.08
Fresh	0.0	1.3	0.00	0.0	1.8	0.00	0.0	2.2	-	0.1	1.5	0.00
Total	1.5	1.6	0.08	0.8	1.7	0.04	0.2	1.6	0.01	2.5	1.6	0.13

Figures may not sum due to rounding and significant figures do not imply and added level of precision. Oxide<=1.50gm/cc, transition>=1.51<=2.50gm/cc and Fresh>=2.51gm/cc. Numbers are local mine depleted.

The following notes are relevant to the Sambung Mineral Resource estimate:

- Reported at a cut-off grade of 0.6 g/t for gold.
- Estimated into blocks with dimensions of 12.5 m (east) by 12.5 m (north) by 2.5 m (elevation).
- Drilling density over Sambung is predominantly on a 20 m NW-SE line spacing, 25 m SW-NE hole spacing grid pattern over the near surface mineralisation.
- Oxidation has been modelled as an attribute based on an oxidation intensity defined as oxide, transitional and fresh mineralisation.
- The models have been estimated by Ordinary Kriging using industry standard software.

Mineral Resource estimate comparisons

Sihayo deposit comparisons

There have been three previous Mineral Resource Estimates on the Sihayo deposit, dating from 2011 to 2018. These are summarised and compared with the current estimate at a common 0.6 g/t gold cut-off grade in Table 14.

Table 14 Sihayo Deposit – historic mineral resource estimates

Consulting Group	Tonnes (Mt)	Au g/t	Ounces (Moz)
2012 – Runge	17.5	2.5	1.4
2013 - H&SC	19.3	2.3	1.4
2018 - Sorikmas	23.4	2.1	1.6
2020 - SGC	21.5	2.0	1.4

In general, the tonnage has tended to increase and the grade has tended to decrease (with the exception of the 2018 Sorikmas estimates) with each estimate consistent with the evolving nature of the models and approach to the development of the project as a whole:

- The 2019 infill drilling has allowed for a significant revision of the geological model. This revised model has, in general, resulted in a more confident definition of the shape and continuity of the mineralised regolith and jasperoid domains. However, it has also restricted continuity in the less common irregularly shaped, mineralised karst cave-fill domains which did not feature in the geological modelling of previous resource estimates.

- The domain approach in the updated geological model was to more accurately define ore grade material during the interpretation phase, which resulted in reducing the overall volume of ore domains from 2018 to 2020. This has also been reflected in differences in the data handling domains from 2018 to 2020.

- The 2013 H&SC domain strategy was driven by project optimisation and mining economic decisions which led to a very selective mining scenario resulting in potential ore being reported above 1.2 g/t Au. For comparison purposes only (in lieu of reporting of the H&SC resource at a 0.6 g/t Au) H&SC's grade tonnage curve has been referred to as an indication of the 2013 resource at a 0.6 g/t Au grade. This method is not necessarily valid for comparison.

- The Runge 2012 domaining and subsequent resource were based on a high-grade selective mining scenario and was reported at a 1.2 g/t Au cut-off grade in-line. For comparison purposes only (in lieu of reporting of the Runge resource at a 0.6 g/t Au) Runge's grade tonnage curve has been referred to as an indication of the 2012 resource at a 0.6 g/t Au grade. This method is not necessarily valid for comparison.

Sambung deposit comparisons

There was one Mineral Resource Estimates for the Sambung gold deposit dating to 2013. This estimate is summarised and compared with the current estimate at a common 0.6 g/t gold cut-off grade in Table 15.

Table 15 Sambung Deposit – historic mineral resource estimates

Consulting Group	Tonnes (Mt)	Au g/t	Ounces (Moz)
2013 - H&SC	3.3	1.4	0.15
2020 - SGC	2.5	1.6	0.13

The following points have influenced the development of the Mineral Resource estimates over time:

- The 2020 SGC estimate has seen a decrease in tonnage and an increase in grade for an overall decline in total contained-gold of about 20 koz, or 13%. Local mine depletion accounts for part of the reduction in the total contained-gold ounces and this is estimated to be about 12 koz based on an average depth of 5-metres by local mining over the entire Sambung resource area .

- The SGC 2020 estimate was based on the 2019 updated geological model that incorporated inferred knowledge from the nearby and closely geologically-related Sihayo deposit, particularly in reference to continuity which has had in impact of slightly reducing tonnage.

- The 2013 H&SC domain strategy was driven by project optimisation and mining economic decisions which led to a very selective mining scenario resulting in potential ore being reported above 1.2 g/t Au. For comparison purposes only (in lieu of reporting of the H&SC resource at a 0.6 g/t Au) H&SC's grade tonnage curve has been referred to as an indication of the 2013 resource at a 0.6 g/t Au grade. This method is not necessarily valid for comparison.

Appendix 3: Updated Ore Reserves

The calculations in Tables 16, 17 and 18 are derived from a detailed mine schedule developed by AMC Mining Consultants (Canada) Ltd (**AMC**) for PTSM to the standard expected of a Feasibility Study. This detailed mine schedule is the foundation of the Ore Reserve statement that has been incorporated in to the Sihayo Gold Project – Definitive Feasibility Study released in June 2020.

The Mineral Resource Estimates was prepared by SGC and a high level review was then undertaken by AMC. The block models were regularised prior to running Lerchs-Graussman algorithm in Whittle. Following this exercise, pit, waste dump and general mine site infrastructure designs were created in Datamine. Strategic mine plans were conducted using Minemax Scheduler in quarterly increments to provide guidance to the tactical schedule. An equipment based, life-of-mine plan was then run in monthly increments in Deswik.

The combined Proven and Probable Ore Reserves for the Sihayo and Sambung gold deposits set out in Table 16 have been updated to reflect changes the Combined Mineral Resources and the Company's mining strategy. The results are reported in accordance with the guidelines in the JORC Code. The JORC Code Table 1 Report is attached in Appendix 5.

Table 16 Sihayo Gold Project – Ore Reserves

Deposit	Proven			Probable			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Sihayo	4.6	2.2	0.33	6.4	2.1	0.43	11.0	2.1	0.75
Sambung	1.1	1.7	0.06	0.4	1.8	0.03	1.5	1.7	0.08
Total	5.7	2.1	0.39	6.8	2.1	0.45	12.5	2.1	0.84

Sihayo Deposit Ore Reserves

The Ore Reserve calculated for the Sihayo gold deposit has been updated following the consolidation of the results from the 2019 infill drilling program and updated geological modelling. The current Ore Reserve is calculated at 11.0 Mt at 2.1 g/t and a total of 753 koz of contained gold as set out in Table 17.

Table 17 Sihayo Deposit – Ore Reserves

Type	Proven			Probable			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Oxide	1.6	1.6	0.09	1.8	1.3	0.08	3.5	1.5	0.16
Transitional	2.1	2.4	0.17	2.7	2.1	0.18	4.8	2.2	0.35
Fresh	0.9	2.6	0.07	1.9	2.8	0.17	2.7	2.7	0.24
Total	4.6	2.2	0.33	6.4	2.1	0.43	11.0	2.1	0.75

Figures may not sum due to rounding and significant figures do not imply and added level of precision.

The following notes are relevant to the Ore Reserves for the Sihayo gold deposit:

- The following price and cost assumptions have been used in the Sihayo optimisations:
  - 1,450 US$/oz gold price

  - Mining cost of 2.41 US$/t of ore and waste
  - Processing cost of 19.08 US$/t of ore

- Average metallurgical recovery sits at 71%. This varies depending on material type. The strategic schedule returned recoveries within open pit designs of the following:

  - Oxide recovery 85%
  - Transitional recovery 72%
  - Fresh recovery 59%

- Mining costs are based on information derived from similar operations in Indonesia. This will be a traditional drill-and-blast/load-and-haul operation. Mining will occur on 4 m benches, flitched in 2 m to increase selectivity and reduce dilution. Where it will differ is in the use of a larger bulk waste mining fleet in the middle third of the mine life. This will introduce additional capability to both selectively mine the ore with smaller equipment and bulk out the waste, reducing overall operating costs.

- The strategic schedule has used a 5 m x 5 m x 2 m Selective Mining Unity (**SMU**).

- Pit designs have been based on geotechnical advice detailed in previous studies undertaken by Ground Risk Management and GHD.

Sambung Deposit Ore Reserves

The maiden Ore Reserve calculated for the Sambung gold deposit has been updated following the updated geological modelling. The current Ore Reserve is calculated at 1.5 Mt at 1.7 g/t and a total of 84 koz of contained gold as set out in Table 18.

Table 18 Sambung Deposit – Ore Reserves

Type	Proven			Probable			Total		
	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)	Tonnes (Mt)	Gold (g/t)	Gold (Moz)
Oxide	0.4	1.6	0.02	0.2	1.5	0.01	0.5	1.5	0.03
Transitional	0.7	1.8	0.04	0.3	2.0	0.02	1.0	1.8	0.06
Fresh	0.0	1.5	0.00	0.0	2.0	0.00	0.0	1.5	0.00
Total	1.1	1.7	0.06	0.4	1.8	0.03	1.5	1.7	0.08

Figures may not sum due to rounding and significant figures do not imply and added level of precision.

The following notes are relevant to the Ore Reserves for the Sambung gold deposit:

- The following price and cost assumptions have been used in the Sambung optimisations:

  - 1,450 US$/oz gold price.
  - Mining cost of 2.30 US$/t of ore and waste.
  - Processing cost of 19.52 US$/t of ore.

- Average metallurgical recovery sits at 72%. This varies depending on material type. The strategic schedule returned recoveries within open pit designs of the following:

  - Oxide recovery 76%
  - Transitional recovery 70%
  - Fresh recovery 55%

- Mining costs are based on information derived from similar operations in Indonesia. This will be a traditional drill-and-blast/load-and-haul operation. Mining will occur on 4m benches, flitched in 2m to increase selectivity and reduce dilution. Where it will differ is in the use of a larger bulk waste mining fleet in the middle third of the mine life. This will introduce additional capability to both selectively mine the ore with smaller equipment and bulk out the waste, reducing overall operating costs.
- The strategic schedule has used a 5 m x 5 m x 2 m SMU.
- Pit designs have been based on geotechnical advice detailed in previous studies undertaken by Ground Risk Management and GHD for the adjacent Sihayo mine.

Ore Reserve comparisons

There has been one previous Ore Reserve for the Sihayo gold deposit, dating to 2018. This is summarised and compared with the current estimate in Table 19.

Table 19 Sihayo Deposit – historic ore reserves

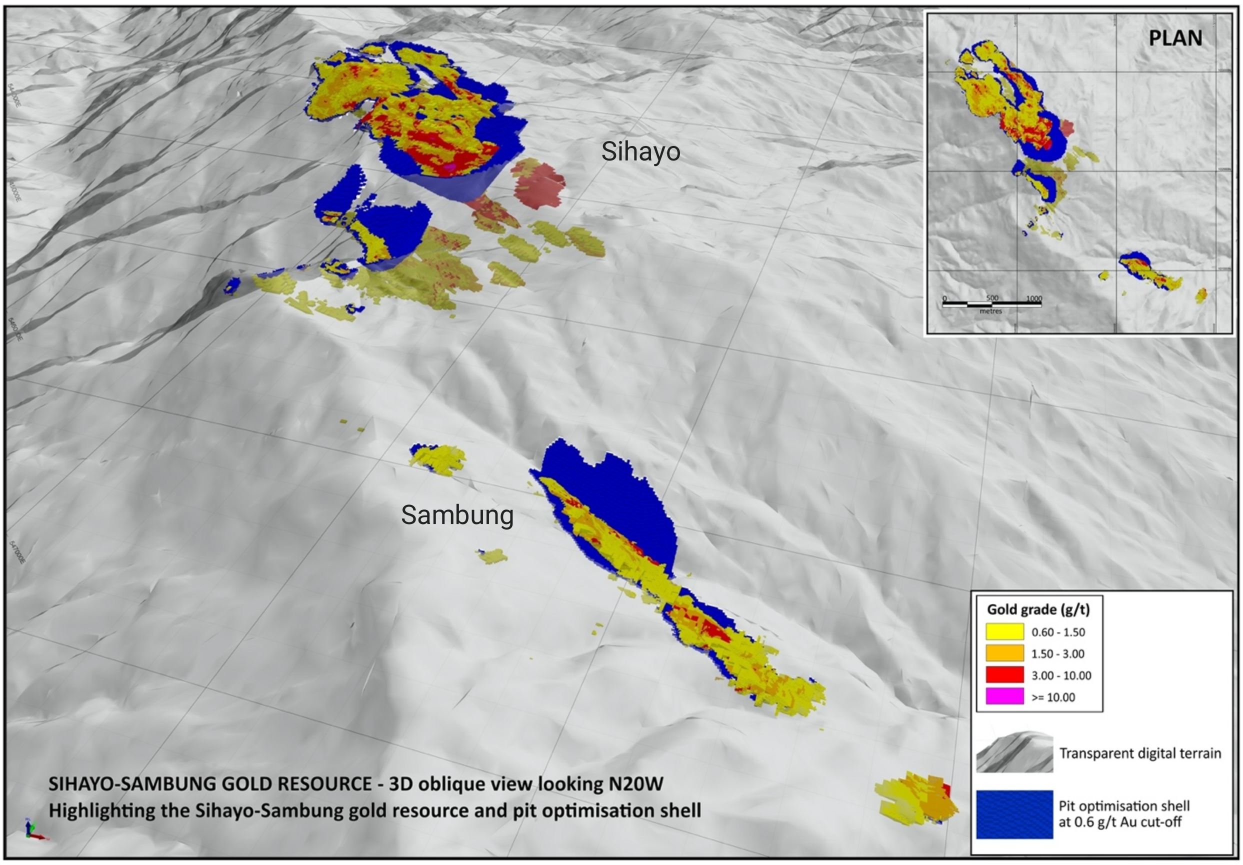
Consulting Group	Tonnes (Mt)	Au g/t	Ounces (koz)
Entech Pty Ltd 2018	11.4	2.1	761
AMC 2020	12.0	2.1	753

Table 20 compares the key assumptions supporting the 2018 and 2020 Ore Reserves:

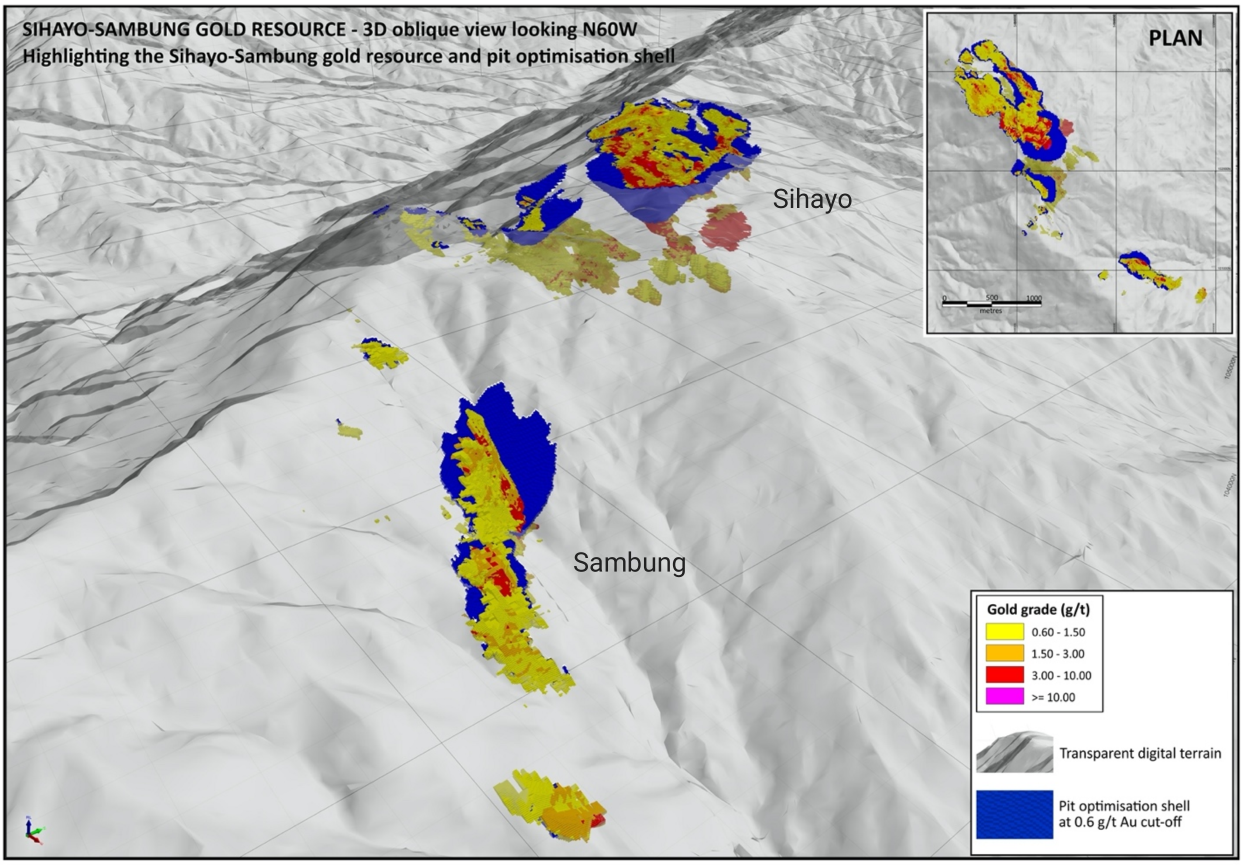
Table 20 Sihayo Deposit - key ore reserve assumptions

Assumption	2018 Ore Reserve	2020 Ore Reserve
Gold price	1,300 US$/oz	1,450 US$/oz
Mining method	Conventional open cut mining	Selective mining + bulk waste stripping
SMU	5x5x5 m	5x5x2 m
Mining dilution	10%	15%
Mining recovery	95%	93%
Excavators	50 t	40 t
Haul trucks	38 t	40 t
Overall pit slope	52.5°	50° with 40° in upper oxide
Bench height	15.0 m	12.0m
Batter angle	65°	70 ° with 57 ° in upper oxide
Berm width	5.0 m	5.7 m

Appendix 4: Additional figures

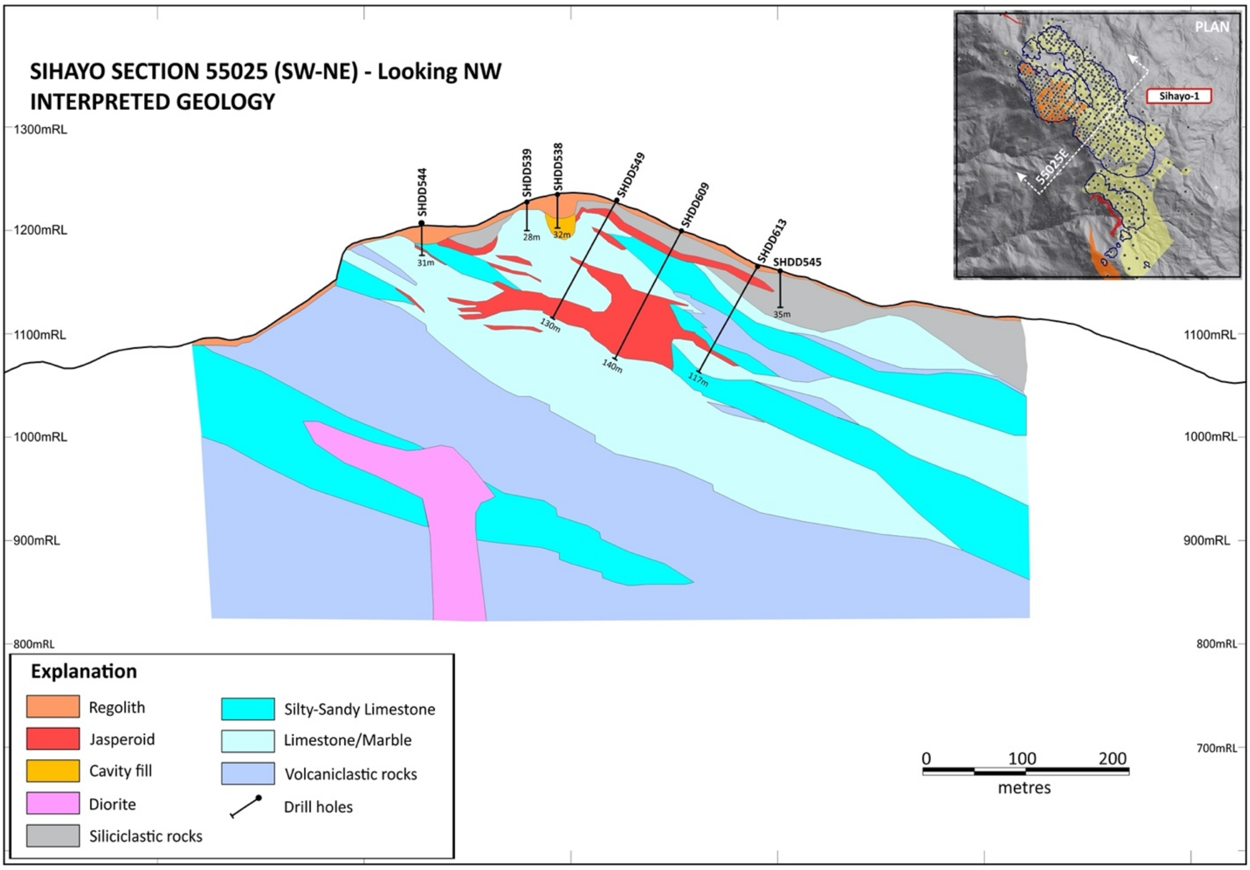


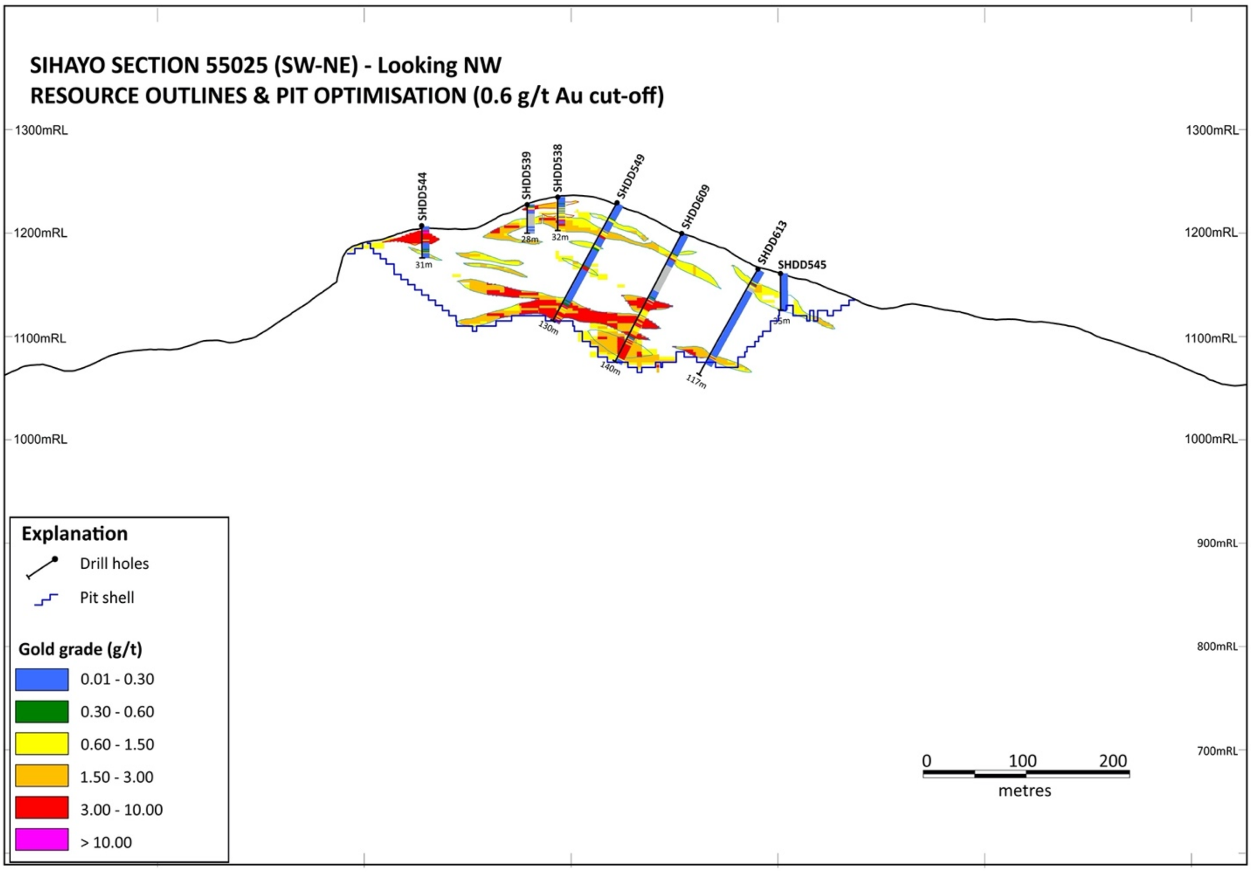
SIHAYO-SAMBUNG GOLD RESOURCE - 3D oblique view looking N20W
Highlighting the Sihayo-Sambung gold resource and pit optimisation shell



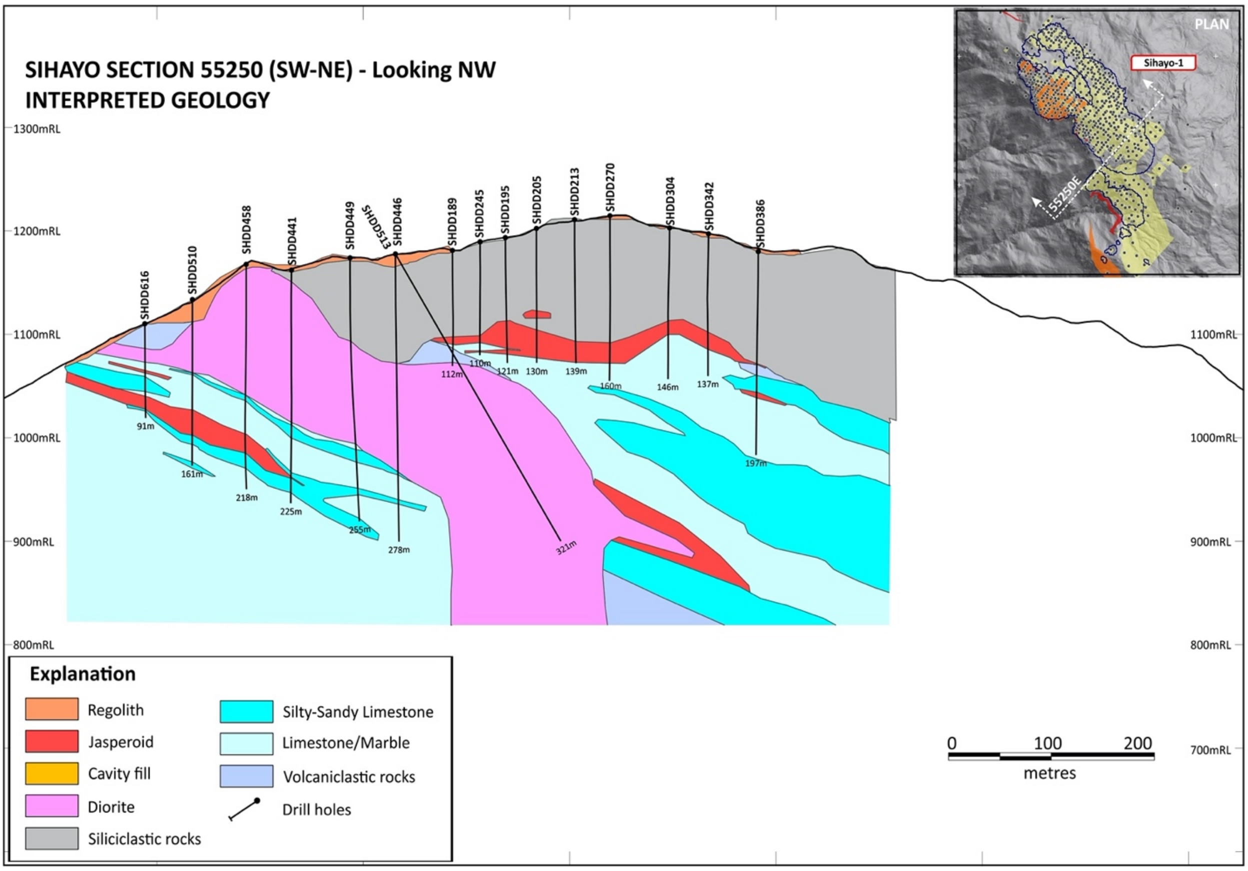
SIHAYO-SAMBUNG GOLD RESOURCE - 3D oblique view looking N60W
Highlighting the Sihayo-Sambung gold resource and pit optimisation shell

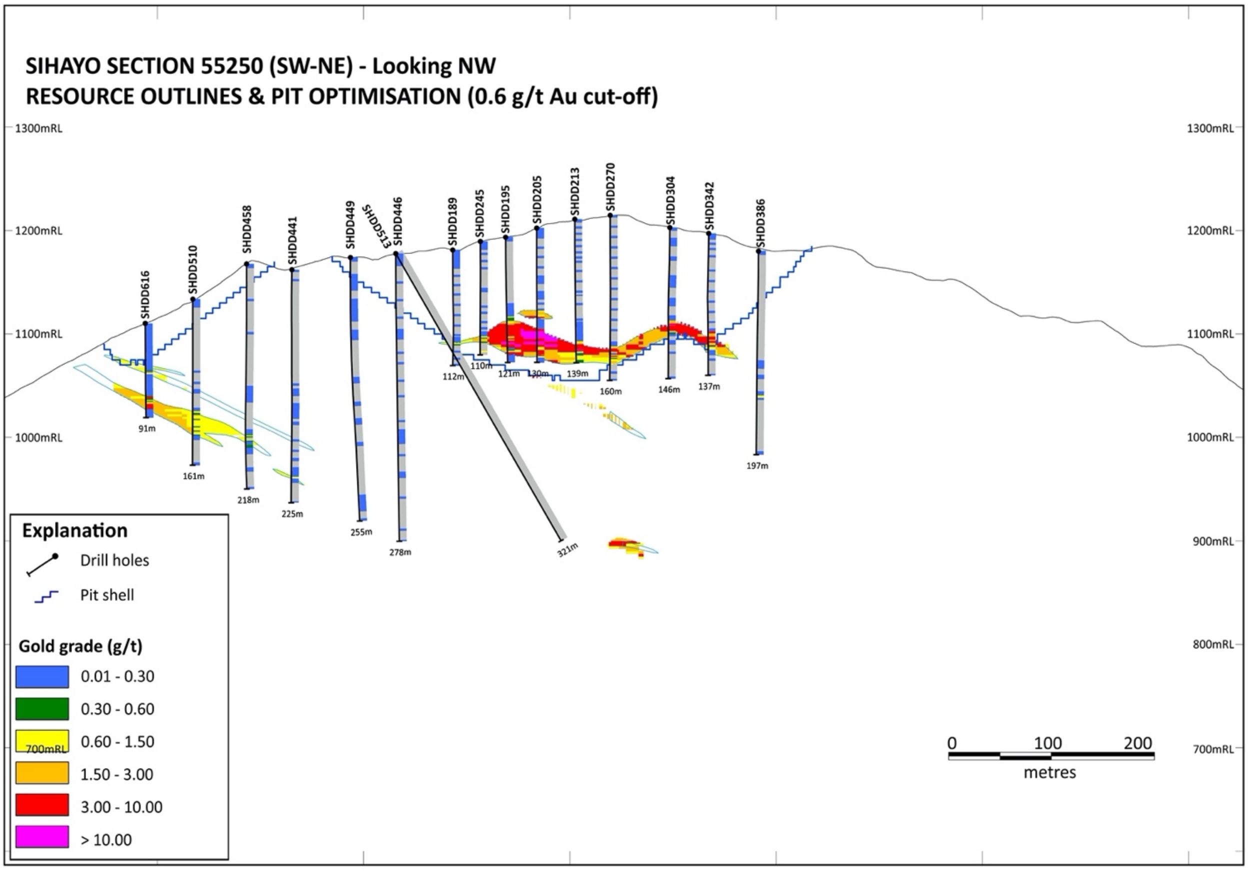
Sihayo section 55025 (SW-NE)



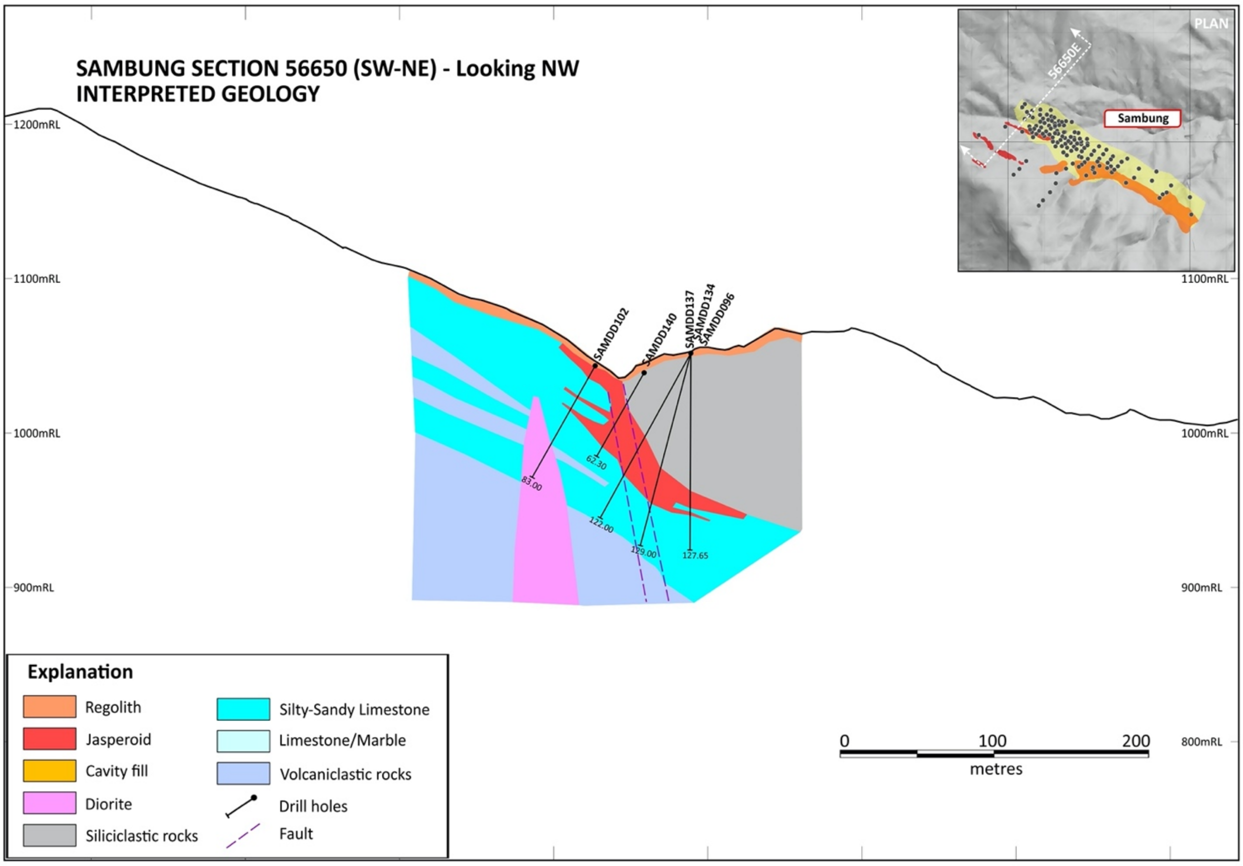


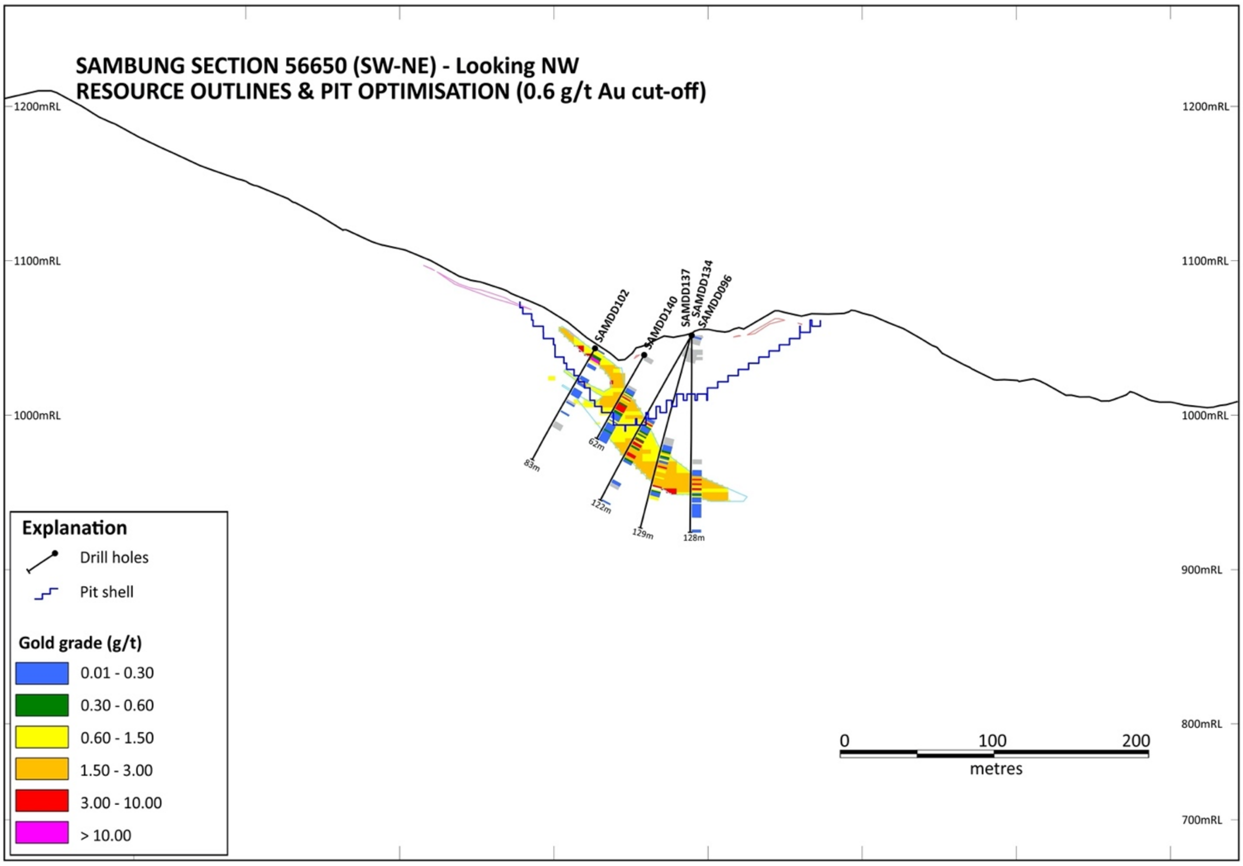
Sihayo section 55250 (SW-NE)



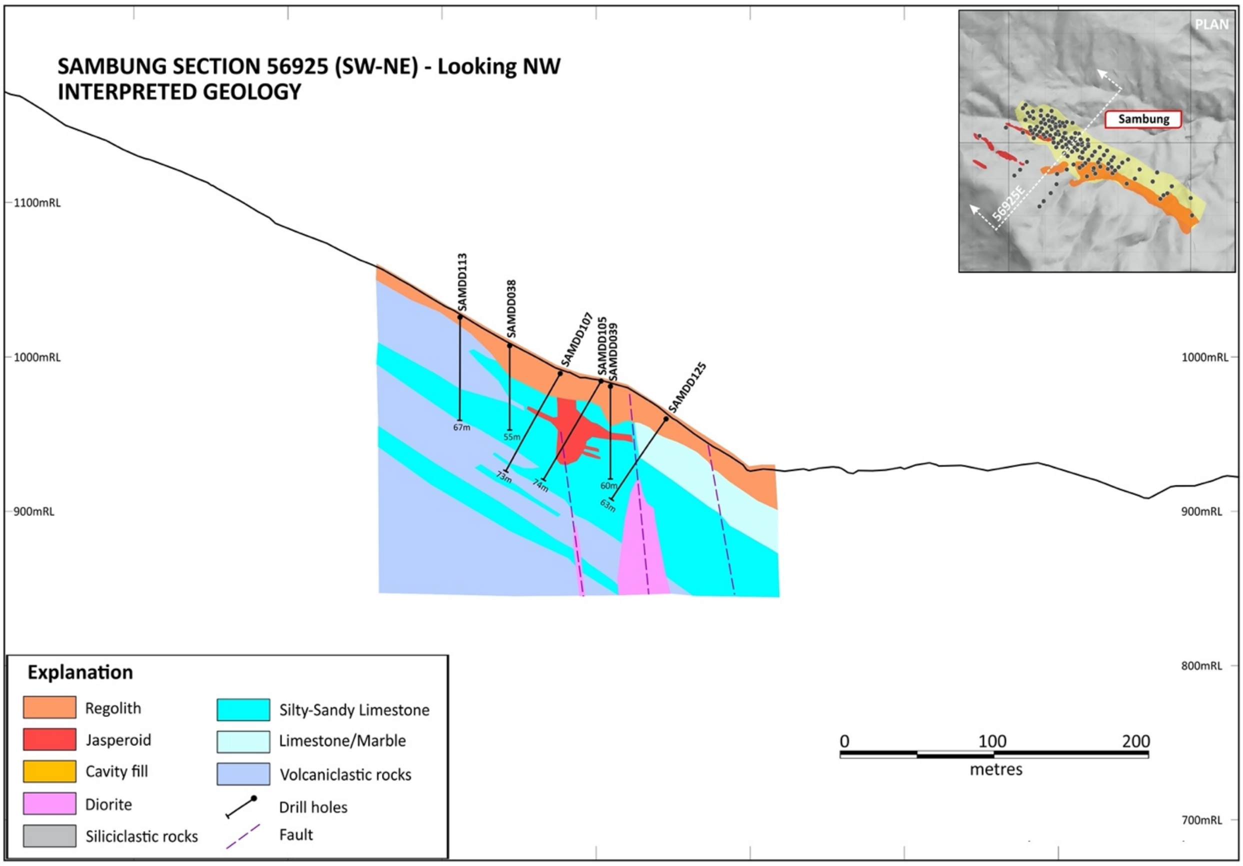


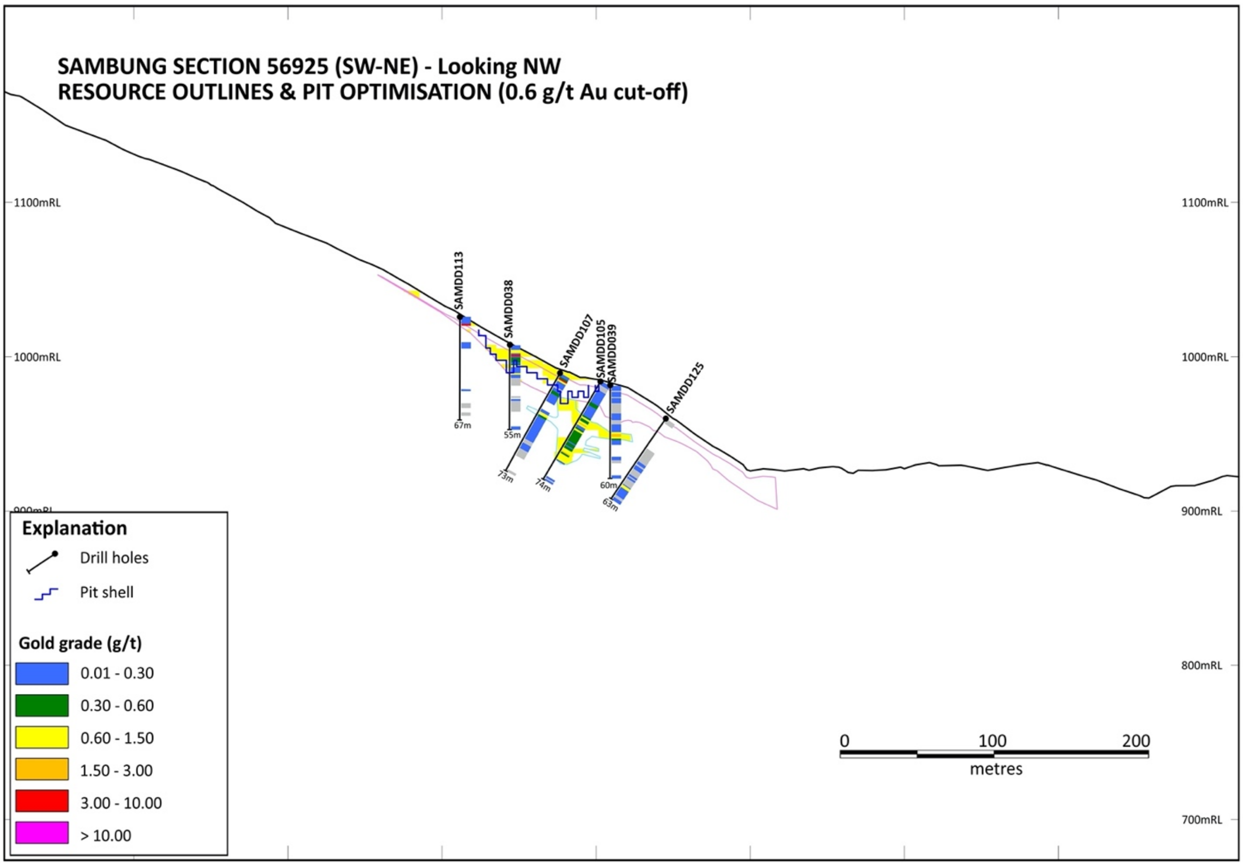
Sambung section 56650 (SW-NE)





Sambung section 56925 (SW-NE)





Appendix 5: JORC Code, 2012 Edition - Table 1 Report

Section 1: Sampling Techniques and Data

Criteria in this section apply to all succeeding sections.

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Core samples were taken over one to two (1-2) metre-intervals down-hole and grouped into predicted mineralised, marginal and waste materials. Cut drill core samples were collected at one to two (1-2) metre intervals. Core size sampled was PQ3, HQ3 & less commonly NQ3, core recovery was recorded for every run. Average recovery was >95% in the mineralised and adjacent margin and waste zones. Where possible all core was orientated and cut along the orientation mark retaining down hole arrows. With core rotated in the down hole position (ori line towards the front), the top half of the core was consistently sampled. Core samples were sealed with numbered security tags and transported direct from site to PT Intertek Utama Services ("Intertek") sample preparation facility in Medan. North Sumatra. Here the samples were processed to produce 1.5-kg pulp-split sub-samples that were individually packaged and sent to Intertek (Jakarta) for assaying Industry standard QAQC protocols included the insertion of OREAS Standards, Blanks, and duplicate quarter core samples at a rate of 1 (of each) every 20-30 metres sampling or every 10-15 samples (~10%). Analyses of laboratory replicate assays and duplicate assays show a high degree of correlation. QAQC results suggest sample assays are accurate.

Criteria	JORC Code explanation	Commentary
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	The drilling method was wire-line triple-tube diamond drilling at PQ3, HQ3 & NQ3 core sizes using four man-portable diamond drill rigs contracted from PT Indodrill Indonesia. Drill core was orientated using a Coretell ORIshot down-hole orientation tool.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Core recoveries and losses were directly measured from the inner tube splits after every drill run recorded at the drill site by trained core handling technicians. Core was marked-up in relation to core blocks making allowance for any sections of lost core. The drill intervals and core recoveries were recorded on Daily Shift Drilling Reports. The data was checked and validated at the Field Camp/Site Office and the data entered into an Excel database and imported into Micromine. The drilling contractor maintained appropriate mud mixtures and a high standard of operational procedure to maximise core recoveries. The drill rigs were checked daily by site geologist to ensure that maximised core recoveries were achieved and high safety and operating standards were maintained by the drilling contractor. In some instances, short lengths of core were lost in highly fractured/broken ground and in unconsolidated gritty clay filled cavities. The grade of lost core was considered to be the same as core recovered from the same interval in which it occurred. There is no evidence of a grade bias due to variations in core recovery. Occasionally, no core was recovered in caves within karstified limestone surrounding the mineralised zones. These cavities were not included within any sample intervals.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	All drill core was geologically and geotechnically logged. Logging fields included (but not limited to) lithology, alteration, mineralisation, structure, RQD, RMR, and defects. Standard nomenclature is used for logging and codes or abbreviations are input directly into computerised logging sheets. Sihayo uses Geobank mobile by Micromine as the front-end data entry tool. The majority of geological and geotechnical logging is qualitative in nature except measured fields for structure (α and β), RQD and fracture frequency.

Criteria	JORC Code explanation	Commentary
	The total length and percentage of the relevant intersections logged.	A total of 7,337.5-m in 74 holes was drilled in the 2019 infill drilling program; 100% of the core was logged. All drill core was digitally photographed in the core trays, in both wet and dry condition, before and after the core splitting and sampling. The core photographic record is kept on file in the Company's project database. All mineralized zones were sampled over consecutive one-metre intervals. Marginal waste rock zones within 5-10 metres of the mineralised zone contacts were also sampled over one- to two-metre intervals. Logging is of a suitable standard to allow for detailed geological and resource modelling.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.	Core was cut manually using a petrol-powered core saws and diamond-impregnated core saw blades. Continuous half-core composites were collected over one (1)- to two (2)-metre sample intervals marked up in core boxes by the site geologists. Half core samples were methodically marked-up, labelled, cut and prepared at the company's core shed on site under geological supervision. One (1)-metre sample intervals were taken through the jasperoid and clay-sulphide alteration zones hosting the known gold mineralisation and in marginal waste rocks within 5-metres of the mineralised zone boundaries. Two (2)-metre sample intervals were selectively taken in some surrounding waste rock zones. Sub sampling consisting of quarter core duplicates was carried out at a rate of about 1 in every 30 samples (~4%). Duplicate assays show a high level of repeatability. Historical petrographic and mineralogical analyses show that gold mineralisation is very fine-grained (micron-size) and associated with arsenian pyrite and other sulphides (marcasite and stibnite) in the unoxidized zones and limonite/clays in the oxide zones. Sample size (1-m half core) and partial sample preparation protocols are considered appropriate for this style of mineralisation.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in	PT Intertek Utama Services (Jakarta/Medan) is the primary sample preparation and assaying laboratory and PT Geoservices (Bandung) conducted independent umpire gold checks. Both laboratories operate to international standards and procedures and participate in Geostatistical Round Robin interlaboratory test surveys.

Criteria	JORC Code explanation	Commentary
	determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Core samples were weighed and dried at 60 degrees Celsius. The entire sample was crushed to P95 (95%) passing minus-2mm, then a 1.5kg split and pulverized to P95 (95%) passing minus-75 microns. Core samples were analysed for gold by 50g fire assay with AAS finish (FA51/AAS), gold & silver by 200-g accelerated cyanide (LeachWELL) with AAS finish (LW200/AA) and Au-tail analysis by FA (TR200/AA), 35 Multielement by four-acid digest and ICP determination (4AH2/OE201), mercury by Cold Vapour AAS determination (HG1/CV), and total sulphur and carbon analyses including and insoluble (CSA03, CSA104, C71/CSA). The nature of the large core size (PQ3/HQ3/NQ3), the total and partial preparation procedures (total crush to P95 -2mm, 1.5kg split pulverized to P95 -75 micron),and the multiple analytical methods used to assay for gold (FA, CN) and its associated elements (silver, sulphur, carbon & multielements) are considered appropriate for evaluating this replacement-style of gold mineralisation. Four-acid total dissolution is used for assaying silver and 34 other elements by ICP. Industry standard QAQC protocols included the insertion of OREAS Standards, Blanks, and duplicate quarter core samples that are inserted at a rate of 1 (of each) every 20-30 metres or every 10-15 samples (~10%). Analyses of laboratory replicate assays and duplicate assays show a high degree of correlation. Analyses of Standards show all assay batches to be within acceptable tolerances.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	Significant intersections have been verified by alternative senior company personnel and an independent resource consultant. Approximately 5% of the pulps, representing a range of expected grades, were submitted to an umpire assay laboratory (PT Geoservices, Bandung) to check for repeatability and precision of the fire assay and cyanide leach bottle-roll gold results. Analysis of the data supports that PT Intertek Utama Services performs at an acceptable level. The drill holes being reported are in-fill diamond drill core resource holes and have not been twinned. Primary assay data is received from the laboratory in soft-copy digital format and hard-copy final certificates. Digital data is stored on a secure SQL server on site with a back-up copy off site. Hard-copy certificates are stored on site in a secure room and in Jakarta Office. No adjustments or calibrations were to any assay data used.

Criteria	JORC Code explanation	Commentary
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	Drill hole collars were initially surveyed with a differential GPS and have been resurveyed by Total Station. The Grid System used is WGS84/ UTM Zone 47 North. The topographic surface is surveyed by LIDAR and supplemented by Total Station and dGPS surveys.
Data spacing and distribution	Data spacing for reporting of Exploration Results. Whether sample compositing has been applied.	The current diamond drilling program is infilling the Sihayo gold resource on 25-m spaced parallel drill sections. No sample compositing is applied to the samples.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	The drilling grid established over the Sihayo prospect was designed in plan and section to intersect the gold deposit as-close-as-possible to perpendicular (at highest angle) to dominant mineralised trends to provide near-true width intercepts. Structural and geological analyses indicate that the host stratigraphic package and associated controlling structures related to the Trans-Sumatran fault Zone are NW-striking. The host stratigraphy and mineralised zones show an apparent shallow to moderate dip to the northeast. There is a sufficient density of data obtained from historic and current drill holes to support that there is no significant sampling bias reflected by the down-hole intercepts reported.
Sample security	The measures taken to ensure sample security.	A detailed Chain-of-Custody protocol was established to ensure the safe and secure transportation of samples from the remote project site to PT Intertek Utama Services sample preparation laboratory in Medan, North Sumatra. All core samples were separately double-bagged; consisting of an inner plastic bag with an individual sample ID ticket stub (cable-tied) and an outer calico bag marked with the sample ID in permanent marker pen (cable tied). The samples were packed into double-lined poly weave sacks which are individually sealed with cable-ties and a unique numbered security tag. The poly weave sacks were weighed and registered (hard copy and computer) at Sihayo Site Camp.

Criteria	JORC Code explanation	Commentary
		The poly weave sacks were man-portered by local labour accompanied by the Company's security personnel from the Project Camp Site to the nearest village (about 8-km distance) and met by the Company's logistics personnel and box truck. The poly weave sacks were weighed and checked and then directly loaded into the truck, which is locked and further sealed with a numbered security tag for transport and delivery to PT Intertek Utama Services in Medan, North Sumatra. On delivery to PT Intertek Utama Services in Medan, the laboratory manager confirms that the truck and poly weave sack security seals are intact, weighs the polyweave sacks, and immediately reports to the Project Manager for permission to proceed with the sample preparation. PT Intertek Utama Services ensures the safe and secure transportation of pulp samples prepared at its sample prep facility in Medan, which are dispatched by them to its assaying laboratory in Jakarta, via DHL air courier. The pulp samples were packaged and securely wrapped in standard-sized Intertek-signatured boxes that are sealed with Intertek packaging tape. The pulp samples were accompanied by Intertek dispatch/security forms to ensure the acknowledgement of receipt and integrity of the samples (i.e. sample registration was completed and confirmed at both ends).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No formal and public audits or reviews have been undertaken on sampling protocols and results in the current drilling program. A sampling chain of custody and process audit was completed by SGC (an independent external consultant) during the December 2019 quarter.

Section 2 Reporting of Exploration Results

Criteria listed in the preceding section also apply to this section.

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	An exploration license under a seventh generation Contract of Work (COW) was granted in February 1998 to PT Sorikmas Mining which was funded under agreement by Aberfoyle Pungkut Investments Pte Ltd (75%) and PT Aneka Tambang (25%). The initial COW covered an area of 201,600 hectares; however, through subsequent relinquishment the COW currently covers an area of 66,200 hectares. Sihayo Gold Limited (formerly Oropa Limited) acquired all of the shares of Aberfoyle Pungkut Investments Pte Ltd in April 2004 and is currently managing the project in a joint venture 75% Sihayo Limited : 25% PT Aneka Tambang (Antam). Current funding of the project is by way of loans to Sorikmas and under the terms of the Loan Agreement, Antam is required to repay its share of loans to Sihayo or other lenders to Sorikmas from 80% of its attributable share of available cash flow from production, until Antam's 25% share of the loans are repaid in full. Geographically, the Sihayo – Sambung resources are located on the upper portion to the top of a north-west striking mountain range controlled by the Trans Sumatran Fault Zone. Elevations of surface expressions of the resources are from 985m to 1230m above sea level. Villages are located on the eastern side of the mountain range at an elevation of about 250m with the closest village being Humbang which is 3.5km from the Sambung resource. The villages are situated on the Batang Gadis river flood plain which is almost totally covered in rice paddies and gardens. Access to the resource area is by steep walking trails (about 3 hours walking) from the surrounding villages through village gardens. The closest major town is Panyabungan which has a population of about 50,000 people. Panyabungan is accessed from the major cities of Medan or Padang by various combinations of transport (flights/ road). The Sihayo resource is located within the Hutabargot and Naga Juang sub-districts of the Mandailing Natal district. The Siabu sub-district is also crossed when accessing the resource area from the north. The forestry status of the resource and eastern access area is "Protected Forest". The Pungkut COW contains caveats that allow the company to conduct open cut mining in protected forest.

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Exploration commenced in the project area in 1995 when the Pungkut Project area was held under domestic investment Kuasa Pertambangan (KP) titles held by Antam. Exploration was originally conducted by PT Aberfoyle Indonesia, under the management of Aberfoyle Resources Limited. From May 1997 until the signing of the COW on 19 February 1998, title comprised a pre-COW Survey permit (SIPP). Regional exploration throughout the Mandailing Natal District by Aberfoyle Resources Ltd between 1995 and 1998 led to the discovery of the Sihayo and Sambung prospects. Detailed surface exploration work over the Sihayo and Sambung was undertaken by Aberfoyle Resources between late 1997 and 1999. This work involved geological mapping, grid soil sampling, detailed rock chip and trench geochemical sampling, ground geophysical surveys (Magnetic & IP Resistivity). Initial drilling at Sihayo and Sambung commenced in 1999. After a cessation of drilling between 2000 and 2002, work re-commenced in 2003 and steadily increased over the years until 2009, when there was a deliberate increase in drilling activity on the project until 2013 A total of 59,455 metres of diamond drilling in 547 holes was previously drilled on the Sihayo gold resource. A total of 12,475 metres of diamond drilling in 165 holes was previously drilled on the Sambung gold resource. **Historic resource estimates for Sihayo gold deposit:** Runge Limited Indicated and Inferred resource of 15.2 Mt at 2.8 g/t Au (1,368,200 oz) at 1.2 g/t Au cut-off in oxide/transitional/fresh ore types. Released by Sihayo (ASX:SIH) on 12 June 2012. H & S Consultants P/L Measured, Indicated and Inferred resource of 15.3 Mt at 2.7 g/t Au (1,322,000 oz) at 1.2 g/t Au cut-off in oxide/transitional/fresh ore types. Released by Sihayo (ASX:SIH) on 17 June 2013. PT Sorikmas Mining Measured, Indicated and Inferred resource of 23.399 Mt at 2.11 g/t Au (1,585,000 oz) at 0.6 g/t Au cut-off in oxide/transitional/fresh ore types. Released by Sihayo (ASX:SIH) on 23 August 2018.

Criteria	JORC Code explanation	Commentary
		Historic resource estimates for Sambung gold deposit: H & S Consultants P/L Indicated and Inferred resource of 1.58 Mt at 2.0 g/t Au (102,025 oz) at 1.2 g/t Au cut-off in oxide/transitional/fresh ore types. Released by Sihayo (ASX:SIH) on 17 June 2013. Illegal (artisanal) gold mining activity has been operating at the top of the Sambung gold deposit since 2012. This has been small-scale highly selective hand-tool mining from reworked regolith, fracture-oxidised jasperoid and oxidised cavity-fill sediments in limestone. Gold is won by amalgamation in tromol barrels that are operated in villages located outside the COW area. The Company believes that mostly the top 5-meters or less of the Sambung orebody has been depleted by local mining and this is excluded from the Sambung resource reported herewith.
Geology	Deposit type, geological setting and style of mineralisation.	The Sihayo and Sambung gold deposits are situated on the north western end of the 11.5km long Sihayo - Hutabargot mineralised trend and directly adjacent to a major dilational pull apart basin (~100km long, ~12km wide and ~1km deep) that is controlled by the Trans Sumatran Fault Zone (TSFZ). The TSFZ and associated deep seated dilatational structures that control the pull-apart basin are interpreted to be the macro mineralisation controls of the Sihayo – Sambung gold resources. Sihayo and Sambung gold are partly residual (regolith hosted – eluvium/colluvium) and largely primary mineralisation. Sihayo and Sambung resources are located about 800m apart but are interpreted to occur at about the same stratigraphic position and on the same controlling regional fault structures. Primary gold mineralisation is hosted in stacked stratabound lenses of hydrothermally altered ('jasperoid' or sulphidic microcrystalline silicification and argillic/clay-sulphide alteration), microbrecciated silty-sandy ("dirty") limestone and calcareous carbonaceous mudstone-siltstone, and in pods of similarly altered cavity-fill sediments within karstified fossiliferous limestone/marble. These rocks occur at the top of a Permian mixed carbonate-clastic volcano-sedimentary rock unit that has been openly folded and strongly faulted. The Permian rock unit is unconformably overlain by a package of Tertiary fluvio-lacustrine carbonaceous siliciclastic sedimentary "cap" rocks (sandstone, siltstone, mudstone, lignite, conglomerate, and agglomerate) that are sometimes mineralised at the basal unconformity with the underlying Permian rock unit.

Criteria	JORC Code explanation	Commentary
		Diorite intrusions as dykes, sills and laccolith are locally spatially associated with mineralised jasperoid lenses. A steeply dipping discordant jasperoid body (feeder structure?) is apparent within the Sambung deposit. Similar large mineralised discordant jasperoid bodies (feeder structures) have not yet been identified at Sihayo. Sihayo and Sambung are stratabound carbonate-hosted gold deposits or more broadly categorised as Sedimentary Rock Hosted Disseminated Gold Deposit type (SRHGD). North-west to northerly striking vertical faults controlled by TSFZ dextral movement and associated northeast to easterly striking cross-faults were probably conduits for mineralising hydrothermal fluids from depth. Where vertical structures have met favourable sub horizontal to moderately northeast-dipping lithological contacts, and likely the meteoric fluid interface, hydrothermal fluids have migrated laterally depositing gold mineralisation. Favourable lithological contacts for the development of gold-bearing jasperoid at Sihayo and Sambung are rheologically different stratigraphic units, most notably: i) on the unconformity/contact between Permian calcareous rocks and Tertiary carbonaceous argillaceous rocks, ii) between silty-sandy ("dirty") limestone and fossiliferous limestone/marble or volcaniclastic rocks within the Permian stratigraphy; iii) within Permian calcareous rocks near diorite intrusion contacts. The subordinate regolith-hosted (eluvium/colluvium) mineralisation occurs on the present land surface and is associated with Quaternary residual weathering and erosion of the primary mineralisation.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth	Refer to the Quarterly activities report dated 30 April 2020.

Criteria	JORC Code explanation	Commentary
	hole length.	
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated.	Length-weighted average gold intercepts are reported at a 0.5 g/t gold cut-off with up to 2-m of consecutive internal dilution allowed; some of the longer reported intercepts may include several 2-m intervals of internal dilution but no single internal waste interval exceeds 2m. No high-cuts were applied. High-grade intervals internal to broader zones of mineralisation are reported at a 10 g/t gold cut-off as included intervals. Minerals equivalent values are not used.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Refer to the Quarterly activities report dated 30 April 2020. The drilling grid established over the Sihayo prospect was designed in plan and section to intersect the gold mineralisation at the highest possible angle (or lowest angle of incidence). Structural and geological analyses indicate that the host stratigraphic package and associated controlling structures related to the Trans-Sumatran fault Zone are NW-SE striking. The host stratigraphy and mineralised zones show an apparent shallow to moderate dip to the northeast. There is a sufficient density of data obtained from historic and current drill holes to support that there is no significant sampling bias reflected by the down-hole intercepts reported.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Refer to the Quarterly activities report dated 30 April 2020.

Criteria	JORC Code explanation	Commentary
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Refer to the Quarterly activities report dated 30 April 2020.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	The location of historic drill holes collars and past exploration results as previously reported to the ASX by Sihayo Gold Limited and summarised in the Quarterly activities report dated 30 April 2020.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Various mine planning work is in progress. A near-mine exploration is being planned for implementation in the next quarter.

Section 3 Estimation & Reporting of Mineral Resources

Criteria listed in section 1, and where relevant in section 2, also apply to this section.

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used.	Primary data was collected by PT SM on laptop computers in Excel or Micromine tables using drop down codes Field data and original assay certificates compiled and validated by database administrators. Drilling data provided in Micromine tables for collar, survey, and lithology and assay data. Micromine software validation procedures checks for missing intervals and drill holes. Checking inclinations, azimuths, deviations and sample intervals within a given tolerance.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case.	Site visits were conducted by SGC staff during the period June 2019 through to December 2019. A total in excess of 11 days have been spent on site by SGC personnel.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology.	The Sihayo gold deposit is situated on the north western end of the 11.5km long Sihayo - Hutabargot mineralised trend and directly adjacent to a major dilational pull apart basin (~100km long, ~12km wide and ~1km deep) that is controlled by the Trans Sumatran Fault Zone (TSFZ). The TSFZ and associated deep seated dilatational structures that control the pull-apart basin are interpreted to be the macro mineralisation controls of the Sihayo and Sambung gold resource. Geological Interpretation has a high degree of confidence. Interpretation based on PT SM diamond drilling validated geological logging and assays. The construction of the mineralisation model incorporated a number of inputs including but not limited to structure, oxidation, alteration and geology. SGC do not believe that the effect of alternative interpretations will have a material impact on the overall Mineral Resource Estimates. The geological interpretation is considered robust & alternative interpretations are considered not to have a material effect on the Mineral Resource. No alternate

Criteria	JORC Code explanation	Commentary
		interpretations are proposed as geological confidence in the model is moderate to high. As additional geological data is collected from additional drilling, the geological interpretation will be continually updated. The factors affecting continuity both of grade and geology are most likely to be associated with structural controls and local complexity (e.g. cavity and cave fill style mineral occurrences), the knowledge of which is limited with the current spacing of information. The broad approach to the mineralisation modelling is an attempt to model an unbiased interpretation.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	Refer to sections 9 and 12 of the SGC report for details.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Ordinary Kriging technique was employed using GS3 software based on low coefficient of variation between samples in the mineralised domain. Grade interpolation and search ellipses were based on variography and geometry modelling outcomes. Modelling was conducted in three passes with block sizes being 12.5 m E by 12.5 m N by 2.5 m RL; discretisation was 5x5x2 for both Sihayo and Sambung. In the first pass data and octant criteria used were, Minimum Data=12, maximum Data=32, Minimum Octants=4. Search radii was 30 mE by 40 mN by 8 mRL. An expansion factor of 1 was applied so in the second pass saw the same data and octants criteria with an expanded search to 60mE by 80mN by 16mRL. The third pass saw Minimum Data=6, maximum Data=32, Minimum Octants=2. Search radii was 60mE by 80mN by 16mRL. Top cutting was applied to domains and elements which displayed a very strongly skewed nature as summarise in the report reference, e.g. Sambung Regolith domain, cut 172g/t to 1.1g/t Au. This was the only top cut applied.

Criteria	JORC Code explanation	Commentary
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Secondary attributes including but not limited to Oxidation, Density, Metallurgical Recovery and SCIS were also modelled on three passes (as above) which included the same data and octant criteria as above. No dilution was expressly added to the SGC model however domain was largely driven by alteration and oxidation which did tend to incorporate a degree of lower grade material. No assumptions were made by SGC regarding the recovery of by-products Only gold was modelled as an element. Blocks in the model were defined based on the likely mining bench heights and the domaining took into account the SMU proposed at the outset of 2 m E by 2 m N by 2.5 m RL. The interpretation or domain model was largely driven by the lithology / geology, oxidation state, and structural intervention and mineralised trends observed over the various project areas including primarily regolith and jasperoid domains. Grade was used as a secondary domain driver for the definition of boundaries. The model was validated in Micromine using section and plan comparisons back to original informing data as well as with the use of swath plots to assess local grade variability between the model and informing data.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Mineralised domain interpreted on grade ≥ 0.3 g/t Au with reference to local variability. Assumed to be reasonable cut off for small scale shallow open pit proposition given probability plot curve inflexions and grade population distributions. Resources estimated at a range of cut-offs and reported at a 0.6g/t Au cut-off grade for public reporting.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for	This item is beyond the scope of work for SGC as such this item details were not addressed by SGC but will remain the responsibility of the Client and Client's representatives.

Criteria	JORC Code explanation	Commentary
	eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	Consideration was given by SGC to SMU factors, blocks in the model were defined based on the likely mining bench heights and the domaining took into account the SMU proposed at the outset of 2 m E by 2 m N by 2.5 m RL.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	No metallurgical factors or assumptions used to restrict or modify the resource estimation were employed by SGC proceeding or during the construction of the model. Metallurgical recovery modelled as an attribute of the model were based on data combined and supplied by the Client.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfield project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be	No environmental factors or assumptions were used to restrict or modify the resource estimation.

Criteria	JORC Code explanation	Commentary
	reported with an explanation of the environmental assumptions made.	
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Bulk density was estimated into block models based on a matrix of oxidation and lithology defined from a dataset of bulk density readings as supplied by the Client. In all 182 bulk density measurements were taken from core at 10 cm interval over selected core deemed appropriate by the PT SM site representatives during the 2019 infill drilling program. The remainder of the SG database is historical in nature.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit.	The resource classification was based on drilling density (and the availability of data to present to the search neighbourhood, geological modelling, oxidation and, density and recovery data. The classification criteria are deemed appropriate by SGC.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Other than those noted in this report, to the best of SGC knowledge, no additional public and formalised audits or reviews have been undertaken to date concerning the Mineral Resource Estimates for Sihayo and Sambung.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Outlines of resource classifications were reviewed against drill-hole data density and assays results and each block in the model has a resource classification which indicates the relative (block to block) confidence level. Mineral resource estimate technique was deemed appropriate by an internal peer review by SGC as were the estimates themselves. Total mineral resource estimate based on global estimate. No production data was available at the time the estimates were undertaken. The block model was produced to represent global estimates, however the model honours the local grade distributions appropriately given the drilling data provided and the domaining strategy employed. The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code.

Section 4 Estimation & Reporting of Ore Reserves

Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The 2020 Sihayo Gold Project Ore Reserve estimate is current as of 1 June 2020. The Sihayo Gold Project is located in North Sumatra, Indonesia. The Ore Reserve is based on the Mineral Resources estimated for the Sihayo and Sambung gold deposits by Spiers Geological Consultants. The Sihayo Gold Project Mineral Resources have been estimated using a 0.6g/t Au cut-off grade. The Mineral Resources is estimated at 21.5 Mt at 2.0 g/t gold containing 1.37 Moz of gold. The Sihayo Mineral Resource is based on the 3D resource block model "SIH_BLANK_OKMOD_ALL_PDOMS_100320_SUBBLOCK_COMBINED_FINAL_INTRUSION_CLEANED170320.csv" dated March 2020. Using a cut-off grade of 0.6g/t Au this resource model contains 24 Mt at 2.0 g/t Au. The Sambung Mineral Resource is based on the SAM_BLANKMOD_120420_PDOMALL_PASS7.csv block model dated April 2020. Using a cut-off grade of 0.6g/t Au this resource model contains 2.48 Mt at 1.6g/t Au. The two Resource models were developed using a geostatistical assessment of predominantly diamond drillhole sample results. The Ore Reserve was estimated from the Mineral Resources by developing the diluted mining block models LG_SAM.dm and LG_SIH_3.dm, dated April 2020, and undertaking pit optimization to determine blocks that are economically viable to mine and process. Pit designs were then prepared using the pit optimization shells as a guide. The Sihayo Gold Project Mineral Resources are reported inclusive of those Mineral Resources modified to produce Ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case.	The Competent Person has not visited the Sihayo Gold Project site due to restrictions on travel imposed in 2020 following the COVID 19 pandemic. The Competent Person responsible for the Sihayo Gold Project Ore Reserves, Mr Lebleu, plans a site visit as soon as travel restrictions are lifted.

Criteria	JORC Code explanation	Commentary
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	This Ore Reserve estimate is based on the Mineral Resources estimate prepared by SCG as at 30 April 2020. It is the Competent Person's opinion that the standard of work is generally at the level of a feasibility study. The project is believed to potentially present positive cash flow. The processing flow sheet is simple and conventional. Cost and productivity inputs are derived from actual performance data obtained by PT Merdeka Mining Services (MMS) at PT Merdeka Copper Gold's Wetar and Tuju Bukit mining operations in Indonesia. Detailed capital and operating costs were estimated for the project. A geotechnical study was completed. Metallurgical test work was undertaken on core recovered from the project. Additional work is required in a number of areas before the project can be approved and developed; this work will be completed as part of detailed engineering studies. The life-of-mine plan is technically achievable based on the modifying factors used in estimating the Ore Reserve. The Ore Reserve is economically mineable, based on the life-of-mine plan, expected revenues and associated costs.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	A Net Smelter Revenue (NSR) cut off was calculated using; ▪ A gold price of US$1,450/oz. ▪ Processing cost of US$10.95 per tonne of Oxide and US$13.61 per tonne of Transition and Fresh ore processed. ▪ Administration costs of US$5.8 million per year. ▪ Royalty of 3.75% of recovered gold value. ▪ Realization cost of US$0.23/g of gold (refining, transport charges). ▪ Gold metallurgical recovery averaging 85% for Oxide, 71% for Transition and 59% for Fresh material. Tonne weighted metallurgical recovery for the operation averages 71% (inclusive of both Sihayo and Sambung deposits). ▪ Grade control cost of US$0.5/t.

Criteria	JORC Code explanation	Commentary
		▪ Mining overhead costs of US$1.22/t ($0.14/t Mine Management, 0.21/t Mine Maintenance, $0.69/t Ancillary Equipment cost, $0.18/t Loading Equipment cost). ▪ TSF raising cost of US$2.82/t ore. ▪ Drill and blast costs of US$0.25/BCM Oxide material, US$1/BCM Transition material, US$1/BCM Fresh material. ▪ Rehabilitation cost of US$0.14/t ore. ▪ Water treatment discharge cost of US$0.2/t ore. ▪ Differential ore mining cost of approximately 0.63$/t ore.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimization or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimization (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used.	The Ore Reserve is based on: Mining method ▪ Conventional open pit mining using 40 t class shovels and 40 t class articulated dump trucks. ▪ Drill and blast will be required in transition and primary material only. Oxide ore is assumed to be 50% free dig. Oxide waste is assumed to be 30% free dig. 4m benches will be mined in 2m flitches to increase selectivity. ▪ The mine's development is planned in several stages to enable lower stripping requirements at the start of the mine life and backfilling of mined-out pits. ▪ A network of pioneering roads will be built to access the two deposits and the necessary mining infrastructure; allowance in the mining costs and the number of mining equipment has been made to account for this task. ▪ The Competent Person considers the mining method to be appropriate for the deposit. Geotechnical parameters Geotechnical guidance was provided by PT Ground Risk Management and Solusi Tambang Indonesia. Their pit design recommendations are;

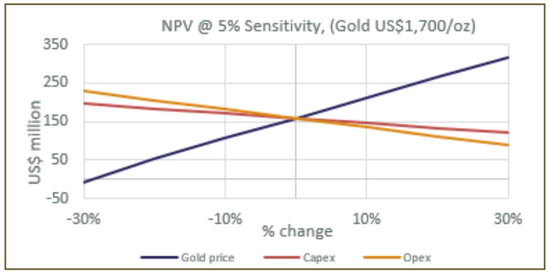
Criteria	JORC Code explanation	Commentary
	The manner in which Inferred Mineral Resources are utilized in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods.	■ Overall slope angle of 40 degrees for all Oxide material within 30m of the original topography.12m high batters at 54 degrees with 5.7m berms were used to achieve this overall slope. ■ Overall slope angle of 50 degrees for all other areas. 12m high batters at 70 degrees with 5.7m berms were used to achieve this overall slope. Mining recovery and dilution ■ Mining dilution was allowed for by regularizing the 3D resource block model to a selective mining unit (SMU) block size of 5 m (along strike), 5 m wide (across strike) and 2 m high. The minimum SMU block size was applied to ore and to blocks of internal waste dilution. ■ Diluent material is assigned the grade of the underlying resource model block after assigning the NSR cut-off grade. The regularization of the sub blocked resource models resulted in an ore loss of 6.8% and dilution of 15%. ■ Grade control will be undertaken using trenching in the Oxide zone and using blast hole sampling for transition and fresh material. The costs and logistics of using reverse circulation for grade control will be assessed as part of further detailed studies. Pit design ■ Optimum pit volume determined using GEOVIA Whittle^{TM} computer software based on the mining models LG_SIH_3.dm for Sihayo and LG_SAM.dm for Sambung. ■ The revenue factor 1 shells were selected for the Sihayo and Sambung deposits in order to maximize the mine life. ■ Inferred Mineral Resources were considered as waste for pit optimization and economic evaluations. ■ Pit staging limits between revenue factor 0.34 and revenue factor 1 were targeted to minimize stripping ratio and enable backfilling of mined-out pits with waste material.

Criteria	JORC Code explanation	Commentary
		▪ Pit designs developed in Datamine computer software using the pit optimization shells as a guide and based on the Measured and Indicated Mineral Resources only. ▪ Allowance of access ramps (8m single lane and 15.7 m dual lane) and minimum mining widths of 15 m is included in the pit designs along with the use of top loaded goodbye cuts. Infrastructure ▪ Infrastructure included in the mine plan includes dewatering facilities, heavy vehicle workshop, explosive storage, administration facilities and supporting communication and computing facilities. Ore Reserve life of mine schedule ▪ A production schedule was developed using the Deswick scheduling software based on the guidance provided by a strategic life of mine plan conducted with the Minemax Scheduler software. ▪ The life of mine is approximately 8 years plus six months of pre-production. ▪ The plant throughput rate is variable; as such the life of mine schedule was constrained by available plant hours of 8,000 hrs per year. Throughput rate for Transition and Fresh ore was assumed at 188tph and 250 tph for oxide material. This translates to a mill feed varying from 1.3 Mt to 2 Mt per year depending on the blend of material fed to the processing plant.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralization. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the	The plant concept relies on well-established and successful processing techniques and consists of the following major processing circuits: ▪ Crushing (jaw crusher) ▪ Milling and Classification (SAG mill and hydrocyclones) ▪ Leaching and Adsorption ▪ Acid washing, Elution and Carbon regeneration

Criteria	JORC Code explanation	Commentary
	corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements. The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. For minerals that are defined by a specification, has the Ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	▪ Electrowinning and Smelting ▪ Cyanide Destruction ▪ Tailings Disposal and Destruction The metallurgical process is well understood and appropriate for the deposit. The process flowsheet and metallurgical assumptions are based on metallurgical testwork completed in a number of programs. Metallurgical domaining was applied to the resource model by material type resulting in variable recoveries for oxide, transition and fresh. The gold recovery is estimated for each ore block using the head grade and ore type. The resulting average recovery for the Ore Reserve is approximately 71%. No allowance was made in the economic evaluation for deleterious elements. The tailings are proposed to be stored in a valley-fill dam.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterization and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Environmental and social baseline data were collected between 2010 and 2019 providing a seasonal assessment of key environmental and social components. The principal sources of the environmental and social baseline data presented are: Golder, 2010. Sihayo Gold Project Environmental and Social Baseline Study. Report#: 098713030-001-R-Rev1; Schlumberger Water Services, 2012. Sihayo Project Proposed Mine Water Management System. Report#: 50108/R4; Golder, 2013. Sihayo – Pungkut Gold Project Environmental and Social Impact Assessment. Report#: 128713024-006-R-Rev2; PT EOS Consultants, 2015. Sihayo – Pungkut Gold Project AMDAL; and PT Sorikmas Mining, 2019. RKL-RPL Quarterly Report I 2019. Approximately 95% of the pit material samples were found to be non-acid forming or to have strong acid neutralising properties. A waste water treatment plant for the Tailings Storage Facility (TSF) supernatant has been included in the project. A letter of recommendation from the Indonesian Dam Safety Committee is required for the TSF embankment construction.

Criteria	JORC Code explanation	Commentary
		Permitting requires detailed technical design specifications, drawings, stability analysis, water balance, and monitoring and management plans.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	The project is located in a mountainous area of Sumatra populated by several villages and a major highway running through an adjacent valley. Access to the site will be established through the construction of a road from the adjacent valley to the mine site, covering roughly 1000m vertically. Power will be sourced from the local grid managed by Perusahaan Listrik Negara (PLN power). An overhead powerline will be run along the access road to connect the site to the grid. Water will be supplied through the construction of a raw water dam. There will also be a water treatment plant for potable water. Process water will be returned from tailings decanting, stored in process water tanks and then re used in the process plant. Most mine services and infrastructure (administration offices, workshop, magazine, fuel storage) will be located near the pit at the top of the main access road. The workforce will be predominantly local and therefore will access the site by using a bus service that picks them up from the valley and transports them up the main access road to site. There will be limited accommodation facilities at this operation.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Mining and capital processing costs were estimated by PT Sorikmas Mining (PTSM), Primero Group and Merdeka Mining Services (MMS) including quotations from key equipment suppliers. A preliminary plant layout was prepared with major mechanical equipment sizing that provided sufficient detail to permit an assessment of the engineering quantities for the majority of the facilities for concrete, steelwork, and mechanical items. The layouts enabled preliminary estimates of quantities to be made for all areas and for interconnecting items. Benchmarking with quantities for similar facilities from previous projects provided an acceptable level of confidence required for a feasibility study level estimate. Unit rates for labour and materials were based on information from operating Indonesian mines.

Criteria	JORC Code explanation	Commentary
	The allowances made for royalties payable, both Government and private.	Budget pricing for equipment was obtained for major mechanical items and equipment unique to this project. Supply costs for all other equipment items were taken from the MMS database and in consultation with consultants and key suppliers. Offices, workshops and other process support buildings were included as listed. The site accommodation buildings and related service buildings are included. Mine services buildings and fuel storage are included in the process and surface infrastructure capital costs. Mining equipment fleet requirements were estimated based on productivity models and costs were based on quotes from equipment suppliers. Processing operating costs were based on direct consumable and operating costs from the nearby Wetar and Tuju Bukit mining operations in Indonesia and adjusted to reflect the complexity and scale of the proposed plant. Mining operating costs were developed from first principles using cost drivers and from data obtained by MMS from the Wetar and Tuju Bukit mining operations in Indonesia. Costs converted to US$ for pit optimization based on an exchange rate of Rp15,000 to US$1. Gold bullion is readily refined and no penalties are assumed. Government royalties are included at a rate of 3.75% of gold. Property taxes and other government payments are included in the General and Administration cost estimated. There are no deleterious elements identified in this study.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Head grade is estimated using geostatistical techniques in 3D modelling of exploration and resource definition drilling results, with allowance for ore loss and mining dilution. An assumed gold price of US$1,450/oz, which is in the range of gold prices observed in the past two years. This assumption is supported by prices being used by other major producers for similar purposes. Realization cost of US$0.24/g of gold recovered (refining and transport charges). No penalties for deleterious elements were applied.

Criteria	JORC Code explanation	Commentary
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Gold is a regularly traded commodity on the open market and is subject to forces of supply and demand. No product sales contracts are required and analysis of customers and competitors is not required. Price forecasts are based on recent historical prices, the outlook of Sihayo Gold Limited and financial market intelligence. Volume forecasts are limited by processing capacity, head grade, and metallurgical recovery.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs. 	Currency exchange rate of Rp15,000 to US$1. Discount rate of 5% per annum real used for long-term analysis. Gold price and Indonesian currency exchange rate chosen to reflect recent prices and rates. Ore inventories are based on pit designs used to generate undiscounted cash flows. PTSM estimated the NPV of the project, which is positive, indicating robust economic viability based on the assumptions used in the analysis. Inflation and escalation are not considered, and all evaluations are conducted in "real" currency. Value added taxes (VAT) are included on 100% of capital and 75% operating costs with an 18 and 12-month delay between payment of VAT and the receipt of VAT refunds respectively. There is no VAT payable on gold sales. The NPV is most sensitive to gold price and metallurgical recovery, which are the revenue drivers. Reduction of price or gold recovery by 10% reduces NPV by approximately 30%. Increasing the price or gold recovery by 10% increases NPV by approximately 30%. Increasing or decreasing the capital expenditure or operating costs by 10% decreases and increases the NPV by approximately 13% respectively.

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Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Key potential social impacts associated with the project have been identified as a part of the AMDAL (environmental and social impact study) process and associated stakeholder consultations. Social management plans are designed to enhance positive social impacts and where not possible, mitigate negative impacts described in the Sihayo Gold Project Feasibility Study. The principal potential social impacts to the affected communities associated with the project are: ▪ Impacts on socio-economy. ▪ Impacts on demography. ▪ Impacts on infrastructure and services. ▪ Impacts on public health. ▪ Impacts on cultural heritage. These potential social impacts are primarily associated with increased economic activity associated with the project and associated in-migration from other areas of the Regency, Province and Indonesia. Illegal miners are operating in the area especially around the Sambung deposit. Their activity has a direct economic impact on the project; as such the top 5m of the deposit has been assumed to be already mined out.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project,	The Sihayo Gold Project is located within the Sihayo Pungkut JV. 7th generation COW was issued to PT Sorikmas Mining (PTSM) on 19 February 1998. The COW was converted into operation production phase on 7 December 2017, which runs until 6 October 2049. At the end of this phase, PTSM has the right to two 10-year extensions under prevailing Indonesian mining law. A Republic of Indonesia Feasibility Study (ROIFS) was approved by the Indonesian Government in 2016. Subsequent changes to the project design will require resubmission to

Criteria	JORC Code explanation	Commentary
	such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	the Indonesian Government. Approval of the amended ROIFS is expected to take around 6 months. An AMDAL of PTSM was approved by the Indonesian Government in 2015. Subsequent changes to the project design will require an addendum and resubmission to the Ministry of Environment and Forestry. The forestry boundary (IPPKH) permit was renewed in 2019 and covers 485 ha of the COW area, which contains the mine, plant facilities, office, camp facilities and other project infrastructure. The IPPKH will need to be adjusted for variations in the ROIFS. The process is expected to take around 4 months after approval of the ROIFS. A letter of recommendation from the Indonesian Dam Safety Committee is required for the TSF embankment construction. Permitting requires detailed technical design specifications, drawings, stability analysis, water balance, and monitoring and management plans. Seismic activity is prevalent in the area and its potential effects have been taken into consideration when design mining infrastructure. The Sihayo Gold Project, as presented in the Ore Reserve report, is economically viable. Further studies may identify options that provide improved outcomes.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Ore Reserves that have been derived from Measured Mineral. Resources (if any).	Proven Ore Reserve estimate is based on the Mineral Resource classified as Measured, while the Probable Ore Reserve estimate is based on the Mineral Resource classified as Indicated. No Probable Ore Reserves were derived from Measured Resource. Inferred Mineral Resource is regarded as waste for pit optimization, life of mine scheduling and Ore Reserve estimation purposes. Inferred Mineral Resources within the pit designs amount to approximately 0.7 Mt using the same NSR cut-off grades as indicated above. The Sihayo Gold Project Ore Reserve report and Ore Reserve estimate appropriately reflect the Competent Person's views.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	AMC conducted a high-level review of the Mineral Resources estimate prior to estimating Ore Reserve. This review did not highlight any fatal flaws. The Competent Person is not aware of any audits or reviews being conducted on the 2020 Ore Reserve estimate.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognized that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	In the Competent Person's view, the confidence level for the modifying factors is deemed reasonable for the Sihayo Gold Project based on the levels of study completed. The main two exceptions are: ▪ The position of the processing plant which will require further geotechnical investigation to ensure stable foundations. Costs of a potential relocation could impact initial capital expenditure and mining costs adversely. ▪ The geotechnical characteristics of the waste dump foundations and construction sequence; additional geotechnical drilling and detailed scheduling of waste placement within the dumps is required to ensure stability will not be compromised. The contributors to the studies PTSM, MMS, Primero Group and AMC have significant relevant experience dealing with design, costing, and operating mining projects in this region.

Competent Person Statements

Exploration Results

The information in this report which relates to Exploration Results is based on, and fairly represents, information and supporting documentation compiled by Mr Bradley Wake (BSc Hons. (Applied Geology)), who is a contract employee of the Company. Mr Wake does not hold any shares in the company, either directly or indirectly.

Mr Wake is a member of the Australian Institute of Geoscientists (AIG ID: 3339) and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves".

Mr Wake consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

Mineral Resources

The information in this report which relates to Mineral Resources is based on, and fairly represents, information and supporting documentation compiled by Mr Robert Spiers (BSc Hons.) for Spiers Geological Consultants (SGC, Pty. Ltd.). Mr Spiers is the principal Consultant and Director of SGC and does not hold any shares in the company, either directly or indirectly.

Mr Spiers is a member of the Australian Institute of Geoscientists (AIG ID: 3027) and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves".

Mr Spiers consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

Ore Reserves

The information in this report which relates to Ore Reserves is based on, and fairly represents, information and supporting documentation compiled by Mr Philippe Lebleu (P.Eng) for AMC Mining Consultants (Canada) Ltd. Mr Lebleu is a principal Mining Engineer and does not hold any shares in the company, either directly or indirectly.

Mr Lebleu is a member of the Australasian Institute of Mining and Metallurgy (AUSIMM ID: 229555) and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves".

Mr Lebleu consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.