

SIHAYO GOLD PROJECT August 2018
 Reserve statement
 JORC Code, 2012 Edition – Table 1 report template Section 4

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.	PT Sorikmas Mining has a JORC 2012 compliant Mineral Resource. The mineral resource is inclusive of Gold (Au) only.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral resources are reported inclusive of Ore Reserve. The Measured and Indicated portion of the Mineral Resource is included within the ore reserve.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	A site visit has not been conducted by the competent person (Craig Mann). The Competent Person is satisfied that the descriptions of the planned infrastructure and locality provided by Sorikmas along with the surveyed 3D topography are sufficient information to carry out the mine design and classify the Ore Reserves.
	If no site visits have been undertaken indicate why this is the case.	The Sihayo site is in a remote area of Sumatra. No significant infrastructure is located at the site and no site visit was arranged.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	A Pre-Feasibility level of study was completed by Entech.
	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.	An update to the January 2014 PFS was completed in July 2018 and forms the basis of this Ore Reserves report.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	variable cut-off grade was calculated and attributed to the block model for the purposes of the Ore Reserves estimate. This variable cut-off grade utilized mining and processing costs to attribute fully costed and incremental ore. Calculations were based on an assumed gold price of US\$1,300/oz.
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 optimisation or by preliminary or detailed design).	Ore Reserves have been calculated by generating detailed mining shapes for the proposed open pit. Open pit mine optimisation and detail design has been carried out on the Mineral Resource which forms the basis of the Ore Reserve. Open pit unplanned dilution has been mathematically modelled. Mathematical factors used were 10% mining dilution and 95% mining recovery.
	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 selected mining methods for the Sihayo deposit are of a bench mining open pit method. The proposed open pit is to be mined using conventional open pit mining methods (drill, blast, load and haul) by a mining contractor utilising 50 t class excavators and 38 t trucks. Due to the severity of the terrain some terrace mining will be required.

	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.	Pit wall angles are based on recommendations provided by Ground Risk Management (GRM). The analysis undertaken by GRM has been completed to a PFS level of detail.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Mineral Resource model supplied by Sorikmas was used for open pit optimisations (sih_ok_final_nov_2017.csv).
	The mining dilution factors used.	Physicals are reported within the generated open pit mine designs for the open pit Ore Reserve. Mathematical dilution factor used was 10% based on industry standards for the proposed fleet size and geological spatial characteristics.
	The mining recovery factors used.	Mathematical Recovery factor used was 95% based on industry standards for the proposed fleet size and geological spatial characteristics.
	Any minimum mining widths used.	No minimum mining widths were used.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	Any contained Inferred material included within the mine design has been treated as waste for the purposes of this Ore Reserve estimate. The Ore Reserve is technically and economically viable without the inclusion of Inferred Mineral Resource material.
	The infrastructure requirements of the selected mining methods.	Infrastructure required for the proposed Sihayo Open Pit operations have been accounted for and included in all work leading to the generation of the Ore Reserve estimate. Planned infrastructure includes: <ul style="list-style-type: none"> • Processing facility • Offices, workshops and associated facilities; • Access / Haul Road; • Waste Dump • TSF; and • RoM Pad
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The processing facility comprises a standard CIL circuit with a ReCYN process. Ore will be hauled directly from the pit floor to the processing facility. It is expected that between 1.5 Mtpa and 2.0 Mtpa throughput will be achieved through the facility.
	Whether the metallurgical process is well-tested technology or novel in nature.	Well tested for surface ore but issues exist with the range of recoveries, being as low at 10% through to greater 95%.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	A number of studies and test work have been undertaken, spanning from 2005 through to 2014, including determining potential treatment routes for project development, testing samples based on depth ranges rather than weathering characteristics and further testwork carried out on 19 composite samples as recently as September 2013. While the overall metallurgical recoveries average 70%, recoveries for the 24 domains are detailed in the Production Target report.

	Any assumptions or allowances made for deleterious elements.	There has been no allowance for deleterious elements as none have been identified in the testwork.
	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.	There were two main leach test programs conducted – the agitated leach and bottle rolls tests on 19 composites from Sihayo and Sambung, and the Leachwell (CN09) test work conducted on individual samples. Each method has its own strengths and weaknesses and interpretation focuses on the method which provides the most accurate representation of the complexity of the orebody.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Not applicable, gold only.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation 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.	Pak Augy Wilangkara, Study Manager for Sorikmas reports baseline studies completed by Golder in 2009 and 2010 as well as additional baseline data collected in 2012 by Golder. Assessment and ranking methodologies are contained within Section 5 of the report. Impacts on environment and surrounding habitats have been discussed and detailed findings provided.
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 Ore Reserve mine plan will require installation of infrastructure including processing facility, electrical power (supply, transmission, and distribution), water and compressed air supply, offices, ablutions, workshops, and surface magazines. Allowance has been made for supply and installation of this infrastructure. Suitable flat terrain exists for installation of all required infrastructure and the Competent Person sees no reason this infrastructure could not be installed at the site. Access to the site is via existing roads as well as the installation of a new site access road. Waste material will be contained in surface waste dumps and the construction of the TSF. A run-of-mine (ROM) pad will be required. Labour will be sourced from the local area on a residential basis.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital and operating costs have been supplied by Sorikmas, based on past operational data from similar
	The methodology used to estimate operating costs.	A capital and operating cost model has been developed in Excel and has been used to complete a life of mine cash flow estimate.
	Allowances made for the content of deleterious elements.	Nil allowance, none expected.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.	Single commodity pricing for gold only, using a long-term gold price of US\$1,300 per ounce as per Sorikmas corporate guidance.
	The source of exchange rates used in the study.	Sorikmas report in US dollars only. Therefore, no exchange rate is used or required

	Derivation of transportation charges.	All transportation charges have been supplied by Sorikmas, based on past operational data from similar operations. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing costs are based on data supplied by Sorikmas, based on real costs from the Mirah gold project in Central Kalimantan which is a similar scale operation with a similar processing circuit. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate.
	The allowances made for royalties payable, both Government and private.	Indonesian government royalty of 3.75% has been used in the estimation of the Ore Reserves.
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.	Revenue has been based on the commodity price and exchange data provided by Sorikmas. Single commodity pricing for gold only, using a long-term gold price of US\$1,300 per ounce, 3.75% Indonesian government royalty.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Using a long-term gold price of US\$1,300 per ounce.
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.	Under Indonesian regulations, all dore products will be refined by Logam Mulia (Antam) and sold to an agreed party.
	A customer and competitor analysis along with the identification of likely market windows for the product.	N/A
	Price and volume forecasts and the basis for these forecasts.	N/A
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
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.	<p>The Ore Reserve estimate is based on a financial model for that has been prepared at a "pre-feasibility study" level of accuracy economic modelling, constructed by Sorikmas. All inputs from mining operations, processing, transportation and sustaining capital have been scheduled and evaluated to generate a full life of mine cost model.</p> <ul style="list-style-type: none"> • Economic inputs have been sourced from Sorikmas. • A discount rate of 8% has been applied. • The NPV of the project is positive at the assumed commodity prices.

	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	No sensitivities other than gold price were conducted for cost model NPV calculations. Sensitivity analysis indicates that the Ore Reserves are still economically viable with negative commodity price movements of over 15%.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Agreements are in place and are current with all key stakeholders.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves.	None.
	Any identified material naturally occurring risks.	A formal process to assess and mitigate naturally occurring risks will be undertaken prior to execution. Currently, all naturally occurring risks are assumed to have adequate prospects for control and mitigation.
	The status of material legal agreements and marketing arrangements.	None known.
	The status of governmental agreements and approvals critical to the viability of the project, 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	All regulatory approvals have been submitted and all permitted. All required studies such as flora and fauna surveys, stygofauna study, hydrogeological investigations, surface water assessment, pit lake modelling and assessment, geotechnical assessments and modelling, mine-waste characterisation study have been completed.
	third party on which extraction of the reserve is contingent.	Based on the information provided to him, the Competent Person sees no reason all required approvals will not be successfully granted within a reasonable timeframe.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The Probable Ore Reserve is based on that portion of the Indicated Mineral Resource within the mine designs that may be economically extracted and includes an allowance for dilution and ore loss. The Proved Ore Reserve is based on that portion of the Measured Mineral Resource within the mine designs that may be economically extracted and includes an allowance for dilution and ore loss.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results appropriately reflect the Competent Persons view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resource contributes to the Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The Ore Reserves reporting processes has been subjected to an internal review by Entech's senior technical personnel in July 2018.

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 design, schedule and financial model on which the Ore Reserve is based has been completed to a "pre-feasibility study" standard, with a corresponding level of confidence.
	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.	All modifying factors have been applied to design mining shapes on a global scale.
	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.	<p>Modifying factors have been applied on a global scale and future analysis of minable shapes may affect the Ore Reserve estimate.</p> <p>Considerations in favour of a lower confidence in the Ore Reserve include:</p> <ul style="list-style-type: none"> • Future commodity price forecasts carry an inherent level of risk • There is a degree of uncertainty associated with geological estimates. The Ore Reserve classifications reflect the levels of geological confidence in the estimates. • There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study.
	It is recognised 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.	Pre-mining, no production data to compare to yet