Toka Tindung Gold Mine Ore Reserves

The Supporting Pre-Feasibility Study was prepared by PT Archi Indonesia Tbk and SRK Consulting (Australasia) Pty Ltd*







*PT Energi dan Mineral Teknologi Internasional engaged SRK Consulting to prepare this Pre-Feasibility Study on their behalf.

Ore Reserve Estimates

The Ore Reserve estimate for PT Archi Indonesia's (PTAI) Toka Tindung Gold Mine was reported as at 31 December 2020 (Table 1.1) based on a Pre-Feasibility Study (PFS) as a requirement to be compliant with the Joint Ore Reserve Committee (JORC) reporting of Ore Reserves.

In the opinion of the Competent Persons who prepared the Pre-Feasibility Study used to estimate the Toka Tindung Gold Mine Ore Reserves, the Ore Reserves reported for the Toka Tindung Gold Mine are acceptable as a reasonable representation of global grades and tonnages and have been prepared to a sufficient quality standard under the guidelines set out in the JORC Code (2012). From the PFS, Appendix 1 JORC Table 1 Section 4 for Araren Pit is presented below. Similar Tables are available for the Toka, Kopra, Talawaan, Alaskar and Marawuwung deposits and the Ore Reserve estimate supported by the Toka Tindung Gold Mine Prefeasibility Study will be made available on PT Archi Indonesia's website.

The Competent Persons are;

- not aware of any new information or data that materially affects the information included in this report;
- in the case of estimates of the stated Ore Reserves, that all material assumptions and technical parameters underpinning the Ore Reserves continue to apply and have not materially changed;
- that the form and context in which the Competent Person's findings are presented have not been materially modified.

Table 1.1 Toka Tindung Gold Mine Ore Reserves

			Proved				F	robable				Т	otal Ore				-	Waste	Total
				Au	Au	Ag	Ag		Au	Au	Ag	Ag		Au	Au	Ag	Ag		
	Model	Ore	Tonnes	grade	Troy	grade	Troy	Tonnes	grade	Troy	grade	Troy	Tonnes	grade	Troy	grade	Troy	Tonnes	Tonnes
Deposit	Туре	Туре	(Mt)	(ppm)	Koz	(ppm)	Koz	(Mt)	(ppm)	Koz	(ppm)	Koz	(Mt)	(ppm)	Koz	(ppm)	Koz	(Mt)	(Mt
Marawuw	Diluted	HG	2.1	1.34	93	1.71	118	4.1	1.19	156	1.50	196	6.2	1.24	249	1.57	314		
		LG	0.7	0.54	12	0.88	19	4.1	0.53	71	0.99	131	4.8	0.53	83	0.97	151		
		Total	2.8	1.15	105	1.51	137	8.2	0.86	226	1.24	328	11.0	0.93	331	1.31	465	28.1	39.2
Toka	Diluted	HG	6.1	1.22	238	2.53	494	16.9	0.99	537	1.69	918	23.0	1.05	775	1.91	1,411		
		LG	4.9	0.50	78	1.18	184	18.5	0.46	271	1.24	740	23.4	0.47	350	1.23	925		
0		Total	10.9	0.90	316	1.93	678	35.4	0.71	808	1.46	1,658	46.3	0.76	1,124	1.57	2,336	115.7	162.0
Alaskar Dilute	Diluted	HG	::::::::::::::::::::::::::::::::::::::	(*)	19	- 1	×	1.2	3.76	141	13.72	514	1.2	3.76	141	13.72	514		
		LG	858	670	85	- 2		0.3	0.42	4	1.62	17	0.3	0.42	4	1.62	17		
		Total	0-0	(4)	39	-	ν,	1.5	3.02	146	11.03	532	1.5	3.02	146	11.03	532	33.2	34.7
Araren Dilute	Diluted	HG	1.7	2.71	147	4.76	259	12.5	3.00	1,204	5.34	2,142	14.2	2.96	1,351	5.27	2,401		
		LG	1.2	0.37	14	0.80	30	7.0	0.37	83	0.67	152	8.2	0.37	97	0.69	182		
		Total	2.9	1.75	161	3.13	289	19.5	2.05	1,287	3.65	2,294	22.4	2.01	1,448	3.59	2,583	212.9	235.3
Talawaar	Diluted	HG	325	225	(2	18	2	0.9	7.60	215	11.50	325	0.9	7.60	215	11.50	325	*	
		LG	853	685	12	15		0.0	0.50	0	2.14	0	0.0	0.50	0	2.14	0		
		Total	884	127	82	19		0.9	7.56	215	11.45	325	0.9	7.56	215	11.45	325	38.1	39.0
Корга	Diluted	HG	1.1	2.18	79	10.66	388	5.2	2.04	340	5.70	953	6.3	2.06	420	6.59	1,341		
		LG	0.4	0.38	5	2.08	30	2.7	0.38	34	1.54	136	3.2	0.38	39	1.62	165		
9		Total	1.6	1.68	85	8.26	417	7.9	1.46	374	4.26	1,089	9.5	1.50	459	4.92	1,506	124.6	134.1
Stockpile	s Diluted	Total	393	(2 2)	ж	12	-	6.7	0.75	162	1.72	371	6.7	0.75	162	1.72	371	(4)	6.7
Total		HG	11.0	1.57	557	3.54	1,258	40.7	1.98	2,593	3.86	5,049	51.7	1.89	3,150	3.79	6,306		
		LG	7.2	0.48	110	1.14	264	32.8	0.44	463	1.12	1,178	39.9	0.45	573	1.12	1,441		
		Stockpile	828	620	82	2	*	6.7	0.75	162	1.72	371	6.7	0.75	162	1.72	371		
		Total	18.2	1.14	667	2.60	1,521	80.1	1.25	3,218	2.56	6,597	98.3	1.23	3,884	2.57	8,118	552.6	650.9

Note: The Indicated resources converts to Probable Reserves, the Measured resources converts to Proved Reserves. Appropriate modifying factors were applied.

Due to the gold/silver Dore product and single refining cost applied, a gold equivalent grade (AuEq) was developed to drive the mine planning study and define the marginal breakeven cut-off grades for the project.

The marginal breakeven grade is used as the grade which reflects the breakeven point of the total revenue against the sum of the processing costs, selling costs processing recoveries and selling prices. The calculated AuEq grade is used as the 'grade' field to define the marginal breakeven cut-off grades for all deposits and the subsequent Ore Reserve contained within the pit design.

Practitioner Consent

The information in this report that relates to the Modifying Factors supporting the Toka Tindung Gold Mine Ore Reserves is based on and fairly reflects information compiled and conclusions derived by Mr Arthur Pacunana, who is a Competent Person and Member of the AusIMM. Mr Pacunana is a full-time employee of PT Archi Indonesia Tbk based at the Toka Tindung Gold Mine. Mr Pacunana has sufficient experience that is relevant to the mineral asset under consideration, the style of mineralisation and the 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 JORC Code. Mr Pacunana consents to the inclusion in the Toka Tindung Gold Mine Prefeasibility Study to support the Ore Reserve estimate of the matters based on their information in the form and context in which it appears.

The information in this report that relates to the process of optimisation, pit design and production scheduling for the Toka Tindung Gold Mine Ore Reserves is based on and fairly reflects the Modifying Factors as provided by Archi and applied by Mr Carl Murray, who is a Competent Person and Fellow of the AusIMM. Mr Murray is a full-time employee of SRK, based in their Perth office. Mr Murray has sufficient experience that is relevant to the mineral asset under consideration, the style of mineralisation and the 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 JORC Code. Mr Murray consents to the inclusion in the Toka Tindung Gold Mine Prefeasibility Study to support the Ore Reserve estimate of the matters based on the information in the form and context in which it appears.

The Consent Forms of the Competent Persons are attached in Appendix 2.

Pre-Feasibility Study Summary Supporting the Ore Reserves

The Toka Tindung Gold Mine under took a Pre-Feasibility Study (PFS) to derive the Ore Reserve in Table 1.1. The PFS considers all the technical and non-technical aspects of the Toka Tindung Gold Mine to develop the operation into a sustainable operation that ensures it is not only economic viable but all factors have been sufficiently considered to ensure the operation has duly considered and evaluated its regulatory, environmental and social obligations.

The gold deposits that form the Ore Reserve estimate are Araren, Toka, Kopra, Alaskar, Marawuwung in the Eastern Corridor and Talawaan in the Western Corridor in addition stock piled ore of 6.7Mt as of the 31st of December 2020 is also included in the Ore Reserve estimate.

The PFS initially uses the Toka Tindung Gold Mine's Mineral Resource estimates shown in Table 1.2 as the starting point to determine the Ore Reserve estimate.

Table 1.2 Toka Tindung Gold Mine Mineral Resource Estimate

Deposit	Measured				Indicated			Inferred				Total								
	Mt	Au	Ag	Au	Ag	Mt	Au	Ag	Au	Ag	Mt	Au	Ag	Au	Ag	Mt	Au	Ag	Au	Ag
		g/t	g/t	koz	koz		g/t	g/t	koz	koz		g/t	g/t	koz	koz		g/t	g/t	koz	koz
Alaskar	-	-	-	-	-	2.4	2.2	8	172	639	1.1	0.8	3	29	110	3.6	1.7	6	200	748
Araren	3.6	1.5	3	173	313	27.2	1.7	3	1 467	2 572	13.8	0.7	1	303	423	44.6	1.4	2	1 943	3 308
Kopra	1.9	1.5	7	90	453	18.5	1.4	4	807	2 113	1.9	0.9	3	52	198	22.3	1.3	4	950	2 763
Marawuwung	2.6	1.2	2	102	134	6.5	1.0	1	199	280	2.3	0.8	1	62	79	11.3	1.0	1	363	493
Talawaan						1.1	8.1	12	289	430	1.1	5.9	8	203	289	2.2	7.0	10	492	719
Toka	11.6	0.9	2	331	684	34.8	0.8	1	847	1 566	8.6	0.9	1	241	304	55.0	0.8	1	1 418	2 553
Stockpile	-	-	-	-	-	6.7	0.8	2	162	369	-	-	-	-	-	6.7	0.8	2	162	369
Totals	19.7	1.1	2	696	1 583	97.2	1.3	3	3 942	7 969	28.8	1.0	2	890	1 401	145.8	1.2	2	5 528	10 953

An Ore Reserve estimate under the JORC Code is only able to consider Mineral Resources in the Measured and Indicated classification as potential Ore Reserves. Inferred resources do not have sufficient confidence levels to be converted to Ore Reserves without further exploration drilling to increase the drilling density and potentially the mineral resource classification confidence and classification.

Ore Reserve Estimate

The open pit Ore Reserves have been derived from the Indicated and Measured classification in the Mining Models (MM's) utilised for optimisation, pit design and production scheduling. The Mineral Resource Models (MRM's) were converted to MM's to reflect the modifying factors required to support the reporting of an Ore Reserve estimate. As shown in Table 1.1, the open pit Ore Reserves for the Toka Tindung Gold Mine present 98.3 Mt of Proved and Probable Ore Reserve at an average diluted grade of 1.23 g/t gold and 2.57 g/t of silver. This presents approximately 3.8 Moz of gold and 8.1 Moz of silver presented to the process plant over the life of mine (LOM).

Included in the above Ore Reserve is 6.7 Mt of Probable Ore Reserve contained in existing stockpiles at an estimated average gold grade of 0.75 g/t.

For each deposit, all Indicated and Measured classifications (Table 1.2) above the marginal breakeven grade and within the open pit designs converts to Probable and Proved Ore Reserves respectively. Ore loss and dilution has been included in this Ore Reserve estimate.

Due to the gold/silver Dore product and single refining cost applied (US\$4.75/oz Dore), a gold equivalent grade (AuEq) was developed to drive the mine planning study and define the marginal breakeven cut-off grades for the project.

The marginal breakeven grade is used as the grade which reflects the breakeven point of the total revenue against the sum of the processing costs, selling costs processing recoveries and selling prices. The calculated AuEq grade is used as the 'grade' field to define the marginal breakeven cut-off grades for all deposits and the subsequent Ore Reserve contained within the pit design.

1.1 Mining methodology and models

Conventional open pit mining methods are applied at the Toka Tindung Gold Mine to extract gold-silver ore from multiple open pits. Currently selective mining methods are employed utilising conventional hydraulic excavators and 45t articulated haulage trucks. Archi Indonesia plan to increase the truck capacity to 100t (nominal) rigid off- haul trucks. The Komatsu 785 being an example of this truck size. This configuration is common in the Indonesian mining industry and is considered a low-risk solution. A portion of the 45t articulated trucks are planned to remain on site to address narrow mining areas on the side of hills.

Both selective and bulk mining methods are to be implemented depending on the geology of the vein systems within each of the deposits. Mining activities typically consist of drilling, blasting, excavation, loading and haulage of ore and waste, grade control and dewatering of the open pits.

For the two, more bulk, deposits of Marawuwung and Toka, a regularisation approach was determined appropriate to reflect ore loss and dilution. The regularisation process creates a selective mining unit (SMU) block size (Table 1.3). These SMU sizes were selected to reflect the likely ore loss and dilution, while presenting the smallest realistic mining block to support the mining methodology, equipment size and the complexity of the orebody. The MM's for the four remaining deposits of Araren, Alaskar, Kopra and Talawaan were left as sub-celled block models as the

proposed selective mining method, mining from the hanging wall to the footwall, was not appropriately represented by regularisation to a SMU block size. Instead a 'skinning' logic was assessed to determine the magnitude of likely ore loss and dilution, then applied manually within the Whittle optimisation software and the production schedule.

Table 1.3: Selected Mining Model block size

Deposit	SMU size
Araren	Sub-celled MRM used
Alaskar	Sub-celled MRM used
Kopra	Sub-celled MRM used
Marawuwung	5.0mE x 6.25mN x 2.5mRL
Talawaan	Sub-celled MRM used
Toka	5.0mE x 6.25mN x 2.5mRL

The ore loss and dilution results from regularising the Marawuwung and Toka MRMs to SMU block models and the direct application of ore loss and dilution in Whittle for the remaining deposits are summarised in Table 1.4. The cut-off grades for reporting were calculated based on input parameters as provided. The ore loss and dilution results were further constrained by only reporting Measured and Indicated mineral resources.

All tonnages reported throughout this report reflect dry metric tonnes (dmt), unless specifically stated otherwise. Only the Indicated and Measured Mineral Resource defined in the MM's are available to support the definition of ore. All other materials are classed as waste.

Table 1.4: Ore loss and dilution outputs

Deposit	AuEq cut-off grade (g/dmt)	Geometry limit	Ore loss (%)	Dilution (%)
Araren	0.233	n/a	4.85	8.40
Alaskar	0.279	n/a	4.85	8.40
Kopra	0.246	n/a	4.85	8.40
Marawuwung	0.293	PIT2340 = 1 (field in MRM)	2.99	4.64
Talawaan	0.359	n/a	4.85	8.40
Toka	0.249	PIT2340 = 1 (field in MRM)	4.64	11.98

The MM's were reblocked after importing into the Whittle software to reflect the desired minimum mining width (MMW) at the base of the pits (Table 1.5).

Table 1.5: Selected Whittle Reblock size

Deposit	SMU size
Araren	20mE x 12.5mN x 2.5mRL
Alaskar	20mE x 12.5mN x 2.5mRL
Kopra	20mE x 12.5mN x 2.5mRL
Marawuwung	20mE x 18.75mN x 2.5mRL
Talawaan	20mE x 12.5mN x 2.5mRL
Toka	20mE x 18.75mN x 2.5mRL

Input parameters used for the Whittle open pit optimisation process, pit design and production scheduling have been coded into the MM,s as required. These include:

- geotechnical zones,
- rock type classifications for optimisation, scheduling and reporting,
- open pit mining costs,
- Selling prices for both gold and silver, and
- Selling costs including royalties and refining cost.

1.2 Open pit optimisation

Open pit optimisation presents a range of nested pit shells representing increasing metal price or Revenue Factor (RF) to guide the selection of the pit shell that best suits the owner's business objectives. While a RF = 1.0 is the theoretical 'optimum' pit shell on which to base pit designs, the owner (PTAI) has selected pit shells with RF=1.2 to meet project physical objectives and risk considerations.

SRK used the Geovia Whittle software package for the optimisation process. In addition to the open pit geotechnical parameters provided for each deposit, the other key inputs into the open pit optimisations are provided in Table 1.6.

Table 1.6: Summary of open pit optimisation parameters

Item	Sub item	Araren	Alaskar	Kopra	Marawuwung	Talawaan	Toka
Surface mining cost	Oxide	5.02	3.48	4.24	3.14	4.24	3.95
(US\$/dmt mined)	Transitional	5.60	4.07	4.83	3.77	4.82	4.59
	Fresh	5.82	4.28	5.01	4.00	5.03	4.81
Vertical mining cost adjustment (US\$/dmt mined/10 m increment)		0.06	0.10	0.07	0.08	0.06	0.04
Whittle processing cost (US\$/dmt ore mined) ₂		14.26	17.05	15.00	17.88	21.92	15.24
Additional mining cost (US\$/dmt ore mined)		-0.08	2.13	0.08	2.38	0.000	-0.26
Process recovery	gold	90%	90%	90%	90%	90%	90%
	silver	72%	72%	72%	72%	72%	72%

Item	Sub item	Araren	Alaskar	Kopra	Marawuwung	Talawaan	Toka
Gold price (US\$/troy oz)		1,900	1,900	1,900	1,900	1,900	1,900
Silver price (US\$/troy oz)		26	26	26	26	26	26
Selling cost (% royalty)	gold	5%	5%	5%	5%	5%	5%
	silver	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
Resultant marginal breakeven cut-off grade (g/dmt AuEq)		0.233	0.279	0.246	0.293	0.359	0.249

Notes:

• The Whittle processing cost includes allowances for general and administration (G&A), ore processing, grade control, ore rehandle and surface haulage costs.

The results of the open pit optimisations for each deposit at the selected RF pit shells are summarised in 1.7.

Table 1.7: Summary of open pit optimisation results

Item	Araren	Alaskar	Kopra	Marawuwung	Talawaan	Toka
RF=1.2 pit shell selected at gold price of A\$1,900/troy oz						
Marginal breakeven cut-off grade (g/dmt AuEq)	0.233	0.279	0.246	0.293	0.359	0.249
Potential ore feed (M dmt)	24.1	1.61	9.96	11.4	0.88	49.39
Waste (M dmt)	193.9	29.0	119.2	26.7	37.1	120.7
Total material mined (M dmt)	218.0	30.6	129.1	38.1	38.0	170.1
Stripping ratio (t waste/t ore)	8.0	18.0	12.0	2.3	42.2	2.4
Diluted MM gold grade (g/dmt Au)	1.85	2.84	1.40	.0.91	7.48	0.72
Contained gold (k troy oz)	1,436	147	448.	336	212	1,150
Diluted MM silver grade (g/dmt Ag)	3.28	10.42	4.65	1.29	11.29	1.54
Contained silver (k troy oz)	2,549	540	1,490	472	320	2,450

Sensitivity analysis was undertaken for the project by varying the optimisation input parameters individually and assessing the resultant change in ore quantity and cashflow outputs from Whittle. Table 1.8 below highlights the comparison parameters used in the sensitivity analysis.

Table 1.8: Sensitivity comparison parameters

Sensitivity	Description
Mining cost (MCAF)	Mining cost adjusted by factors of +5%, -5%, +10% and -10%
Processing cost (PCAF)	Processing cost adjusted by factors of +5%, -5%, +10% and -10%
Overall slope angle (OSA)	OSA adjusted by factors of +2.5%, -2.5%, +5%, and -5%
Ore loss	Ore loss increased by factors of +2.5°, -2.5°, +5° and -5°
Dilution	Dilution increased by +2.5%, -2.5%, +5% and -5%
Gold selling price	Gold selling price adjusted by factors of +5%, -5%, +10% and - 10%

Sensitivity	Description
Metal process recovery	Gold process recovery adjusted by factors of +2.5%, -2.5%, +5% and -5%

For the project in general the sensitivity analysis concludes that the project cashflow is most sensitive to the OSA of the pit walls, gold price and process plant recovery, and least sensitive to the processing cost and dilution (Figure 1.1).

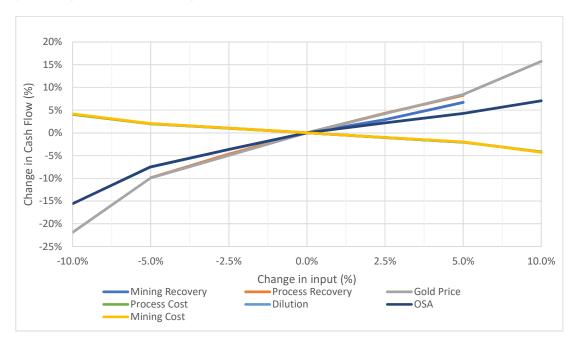


Figure 1.1: Project cashflow sensitivity

For the project in general the sensitivity analysis concludes that the project ore tonnes is most sensitive to the mining recovery (ore loss) and the processing cost, and least sensitive to the mining cost and dilution (Figure 1.2).

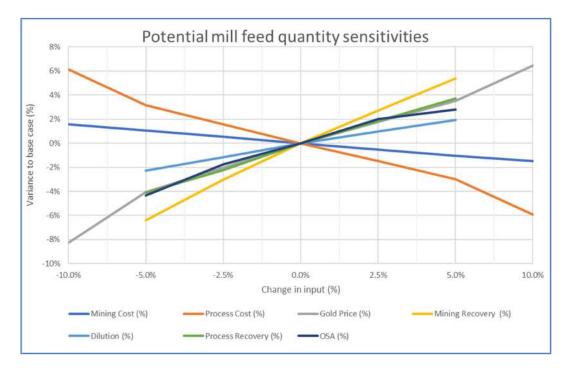


Figure 1.2: Project ore tonnes sensitivity

1.3 Open pit designs

The pit shells produced by the open pit optimisation process were converted into operable designs by adding arrangements of mining benches, berms, roads and ramp systems. Open pit designs were constrained to conform with the geotechnical parameters. All designs were checked by PTAI to ensure not only technical compliance but also compliance with the intent of the parameters supplied.

The 'ore' tonnes conformance of the open pit designs compared to the selected RF=1.2 optimisation shells is considered very good for all deposits, with 'ore' tonnes ranging from 1.4% less to 3.2% more compared to the pit shells. The waste tonnes conformance is considered good, when taking into consideration the very good ore tonnes conformance, ranging from 8% more to 7.1% less tonnes compared to the pit shells.

Existing and planned waste dump capacity is both on external and in-pit storage facilities. Waste dump (WD) designs were developed by PTAI and reported to contain sufficient capacity to facilitate storage of waste materials anticipated to be mined from each of the deposits.

1.4 Mine production plan

The production schedule was guided by a set of project drivers and constraints, which included:

- Maintaining an average gold head grade of approximately 2.00 g/t Au for as many periods as possible.
- Achieve the process plant capacity of 4.1 Mtpa of mill feed in the first year (2021), then 4.5 Mtpa of mill feed every year after that, for the LOM.
- The Talawaan deposit can commence mining once all the HG from the other 5 deposits has been fed to the mill.

- Mill feed from Talawaan is to be blended with existing LG stockpiles, targeting a feed head grade of 2.00 g/t Au.
- The southern side of the Toka open pit is prioritised to mine to its final limits, ahead of developing the northern zone. This is to allow future tailings deposition into the southern portion of the Toka open pit.
- For years 2021 to 2022, open pit mining at Araren cannot extend beyond the limits of a river diversion being developed.
- Vertical annual advance rates up to 150m on interim pit walls and 130 m on final pit walls are not to be exceeded.

With a strong focus on presenting a schedule which maintained an average gold head grade of greater than 2.00 g/t Au for as many periods as possible, the annual profile of total material movement (TMM) has be left unconstrained, within reason. SRK understands that the nature of the agreements between the mining contractor on site and PTAI allows equipment and personnel to be mobilised/ demobilised at short notice to respond to peaks and troughs in the LOM material movement profile.

The annual LOM open cut production schedule for the Project is presented in Figure 1.3 and Figure 1.4. Ore feed targets are achieved over the LOM with low grade stockpiled ore fed from 2032 (period 12) for the remaining LOM. In 2032 the high grade Talawaan deposit is mined and blended with the lower grade stockpiled material. There is opportunity to bring forward (to 2030 – Period 10) the mining of Talawaan to maintain a higher feed grade.

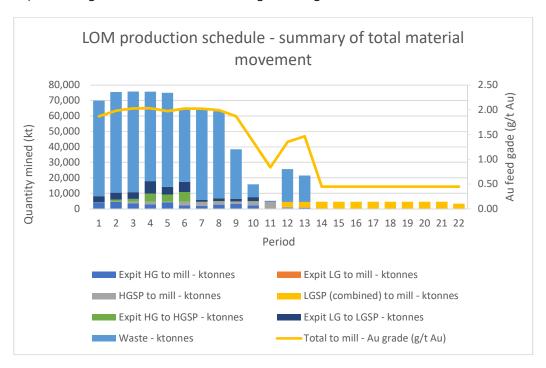


Figure 1.3: Annual production schedule

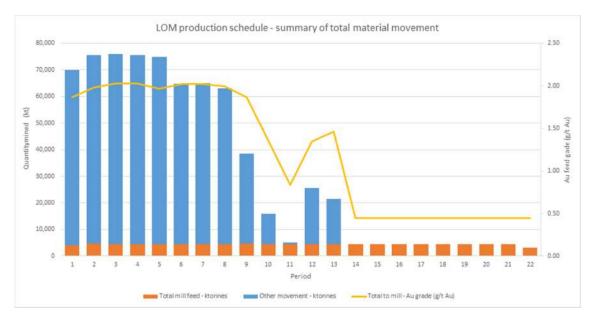


Figure 1.4: Annual production schedule – tonnes and grades

At the core of the Pre-Feasibility is PTAI's Gold Processing Plant which is a conventional Carbon In Leach and Figure 1.5 highlights the flowsheet.

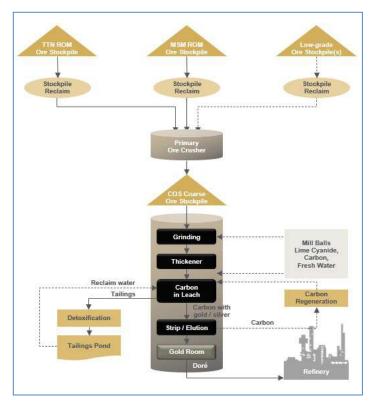


Figure 1.5 Toka Tindung Gold Mine Processing Plant Flow Sheet

Upon commencement of the PFS, sufficient operating and metallurgy test work has been completed to determine the ore processing parameters and gold and silver recoveries for the PFS and the Ore Reserve estimate.

The capital costs that are included in the PFS total \$364.7M for the period 2021 to 2041. They include \$30M to expand the existing Gold Processing Plant to 4.5 to 4.6 Mt per annum by 2022. Land acquisition, road relocation and village relocation costs of \$56.8M, Talawaan Pit development of \$12.0M, ongoing mine development and sustaining capital of \$162M, tailings storage facility upgrades of 78.7M and mine closure costs of \$25M.

The majority of activities at the Toka Tindung Gold Mine are done by contractors except for the Gold Processing Plant where PTAI operates the facility. PTAI is going through a transition and moving to a larger fleet of equipment using 260t and 120t excavators loading 100t rigid body trucks. Previously the fleet was 90t and 70t excavators loading 45t to 60t articulated dump trucks. The transition to move to the larger fleet is driven by a goal of reducing mining costs with the larger and more cost efficient fleet. A load and haul contract was signed Geopersada Mulia Abadi in October 2020 with new contract mining rates, these costs were used to develop the load and haul costs in the PFS. For drill and blast a tender is currently in progress specifying large drills to suit the mining fleet. A pre-bid submission by PT Hawha was used to develop the drill and blast costs used in the PFS.

Costs for dewatering, dayworks activities, grade control, mining overheads, non-mining overheads, site costs, corporate costs, refining and transport costs were based on historical costs in some cases the historical was factored up to reflect higher volumes of activity. In the case of site costs these were reduced in 2031 when Eastern Corridor mining stops and further reduced when Talawaan Pit is exhausted in 2033 and from 2034 only rehandle of low grade stockpiles occurs. Royalty costs are as prescribed by the Government Regulations.

PTAI commissioned CRU an industry consultant to provide a future forecast of the gold price from 2021 to 2026. The price used in the PFS for gold averaged \$1,812/oz and \$29/oz for silver for the period 2021 to 2041. PT Archi Indonesia enters into master sale and purchase agreements with all of its buyers, which set forth general terms of the sales, with certain terms such as product specification, sales price mechanism, discount (if applicable), method of payment and delivery procedure to be decided upon each of the transaction. The price to be paid by its buyers is typically at the prevailing spot price with a discount, based on the LBMA price one business day prior to the pick-up date. PTAI has on occasion sold its gold as based on the LBMA price plus a premium. Payment is typically made on the pick-up date or the day after.

The PFS Financial Model confirms that the Ore Reserves estimate provide PT Archi Indonesia generates a robust Net Cash Flow for the period 2021 to 2041 using the Net Profit After Tax calculation.

The Toka Tindung Gold Mine is an operating mine and the existing infrastructure and services are sufficient to support the operation. PLN has sufficient power and the transmission and transformation station have sufficient capacity to support the gold processing plant expanding to 4.5Mtpa. Figure 1.6 details the infrastructure and services in place.

Sealed roads link the Toka Tindung Gold Mine with the Sam Ratulangi International Airport near Manado as well as the Bitung deep-sea port, 30 kilometers south of the mine site. PTAI also has access to the Rundor Port six kilometres away east of the mine site linked by an all-weather gravel road, which it uses as a landing site for large equipment and for the mobilization of mobile mining equipment.



Figure 1.6 Toka Tindung Gold Mine Infrastructure and Services

As part of the PFS, PT Archi Indonesia's Occupational Health and Safety performance was incorporated. In summary it highlights that PTAI have developed a strong safety culture since it commenced operations in 2011. PTAI seek to maintain a "zero harm" policy by implementing our Tokasafe health and safety work system, which complies with the national Health and Safety Management System for Mining (*Sistem Manajemen Keselamatan Kerja Pertambangan* or "**SMKP**") and ISO 45001. PTAI are ISO 45001 certified for the 2020 to 2023 period by SGS United Kingdom Ltd.

By implementing an Occupational Health and Safety Management System ("**OHSMS**") that complies with international standards, PTAI are able to protect its visitors, employees and contractors and improve its health and safety performance as an organization. Increasingly, customers and countries are becoming health and safety conscious and are requiring that companies show proof of sound health and safety commitment, thus PTAI believe its commitment to health and safety also serves a commercial purpose as well.

In respect of its Environmental performance the PFS noted that PTAI's mining operations have fulfilled provisions under the prevailing environmental laws and regulations in any material aspects. In conducting its business, PT MSM and PT TTN have obtained AMDAL approvals based on the Decree of the Head of the One-Stop Investment and Integrated Services Office for North Sulawesi Province No. 503/DPMPTSPD/IL/141/VIII/2020 on the granting of environmental permits for Addendum ANDAL, RKL and RPL for Batupangah gold mining in East Likupang district, North Minahasa Regency and Ranowulu District, Bitung City for TTN and No. 503/DPMPTSPD/IL/138/VIII/2020 on the granting of environmental permits for Addendum ANDAL, RKL and RPL for Toka Tindung gold mining in East Likupang district, North Minahasa Regency and Ranowulu District, Bitung City for MSM.

The Ownership, Legal and Approvals section of the PFS, was provided by the lawyers Hadiputranto, Hadinoto & Partners in February 2021 with a legal opinion of the status of PT Archi Indonesia;

'The Company and Subsidiary: (i) have obtained the material Operational License* and General License required to conduct its main business activities as required in Indonesian Law, and those licenses are still valid until the Date of Legal Opinion, as well as (ii) have materially conducted the compliance required pursuant to all licenses held (among others thing the payments of contribution and royalty relating to the mining activity and the periodical reporting to the competent authority)...'

*"Operational License" means the operational license and life environment license which is material in nature to the sustainability of the main business activity of the Company, Subsidiary, Associated Company and/or subsidiary incorporated outside the jurisdiction of the Law of Indonesia.

The Human Resources of PT Archi Indonesia, as of December 31, 2020, there were approximately 2,445 people working under the Group and the Toka Tindung Gold Mine, of which 747 were employees PTAI employees and 1,698 were employees under its various mining contractors. Local community members are given employment priority when possible. As of December 31, 2020, 70% of our workforces are from the local community and more than 98%

of our workforce is from Indonesia. Since commencing operations, PTAI has implemented an extensive range of training programs for employees at the mine.

Total remuneration for PTAI's employees includes salary, wages, bonuses and employee benefits. PTAI incurred salaries, wages, bonuses and employee benefits expenses of U.S.\$26.7 million in the year ended December 31, 2020. PTAI also offer other benefits, including health insurance, contribution to provident and social security funds and certain educational scholarships.

As part of capital costs, a cost for Mine Closure and Rehabilitation was included in 2020 approved Mine Closure and Rehabilitation Plans have a combined total of \$12.6M for TTN and MSM COWs. At the time these 2020 submissions were approved, the planned ore and waste to be mined was 442Mt (SMGC 2019 Ore Reserve Statement). The 2020 Ore Reserve estimated the volume of ore and waste to be mined at 651Mt and increase of approximately 150%.

After internal discussion reviewing the mine plan and schedule, the current status of rehabilitation of the out of pit dumps and the availability of inpit dumps, a provision of \$25M has been included in the financial evaluation. This is considered a prudent provision with the current understanding.

Appendix 1: JORC Table 1 Section 4 - Estimation and Reporting of Ore Reserves- Araren Pit

(Criteria listed in Section 1, and where relevant in Section 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. 	 PT Archi Indonesia Tbk (Archi Indonesia) has reported (in this Table 1) a Mineral Resource Estimate (MRE) prepared by PT Archi Indonesia Tbk and SRK Consulting (Australasia) Pty Ltd (SRK) for the Araren deposit in North Sulawesi, Indonesia, in accordance with the JORC Code 2012. Only the Measured and Indicated mineral resource were included in the production scheduling process as a potential source of ore feed to the processing plant. The economically evaluated mineralised blocks used the gold and silver grade estimates to determine the block revenue.
to ore neserves		 The Mineral Resource classifications have been applied to the MRE based on consideration of the confidence in the geological interpretation, the quality and quantity of the input data, the confidence in the estimation technique, and the likely economic viability of the mineralised material.
		The Araren MRE is reported inclusive of Ore Reserves and is intended to be used for Archi Indonesia's 2020 Ore Reserve estimate.
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. 	Mr Arthur Pacunana is a full time employee (since November 2020) of Archi Indonesia and is currently the Principal Mining Engineer based on the Toka Tindung Gold Mine site responsible for Long Term Mine Planning and Mine Optimization. The Toka Tindung Project encompasses the six deposits (Araren, Toka, Marawuwung, Talawaan, Alaskar and Kopra) that are forming the Toka Tindung Gold Mine PFS and associate Ore Reserve estimate. As part of his daily duties Mr Pacunana regular conducts site visits of all aspects of the operation, including Araren.
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 	 Archi Indonesia has completed a Pre Feasibility Study (PFS) for Toka Tindung Project (Toka Tindung Gold Mine PFS Report). The Araren deposit contributes to this Ore Reserve estimate. All material modifying factors have been considered and included in the PFS study

Criteria	JORC Code explanation	Commentary
	determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	that supports the Ore Reserve estimate. The resultant mine plan is deemed technically achievable and economically viable.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	 Due to gold and silver contributing to the revenue of each block, a gold equivalent grade (AuEq) was utilised that also took into consideration post processing costs and element recovery. The marginal breakeven grade has been applied as the cut-off grade and is based on the gold equivalent (AuEq) grade calculated by formula: AuEq = ((Au grade x (Au price- Au royalty) x Au recovery) + (Ag grade x (Ag price - Ag royalty) x Ag recovery) - selling cost)/Au price. Blocks that were below the marginal breakeven grade (0.233 g/t AuEq) were classified as waste. High Grade ore was deemed to have a grade above 0.55g/t Au and was preferential presented to the process plant. Low grade was classed as above the marginal breakeven grade and the high grade lower cutoff. Low grade was stockpiled and fed to the process plant after the high grade was depleted. Existing low grade stockpiles were also classed as Indicated Mineral Resources and converted to Probable Ore Reserves and fed to the process plant after depletion of
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). 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 (eg pit slopes, stope sizes, etc), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used. The manner in which Inferred Mineral Resources are utilised in 	 All assumptions were tracked and are listed in a Basis of Design document confirming the appropriate/approved modifying factor. A mining recovery factor of 4.85% has been applied for Araren. A mining dilution factor of 8.40% at zero grade has been applied for Araren. The mining method proposed uses established medium-scale open pit mining equipment, selectively mining through the ore zone from the hanging wall to the footwall to minimise ore loss and dilution. This selective mining method is deemed appropriate for the style of mineralisation. This mining equipment is readily available in the North Sulawesi mining environment with appropriate local skilled labour. Archi Indonesia currently utilise a contractor for all earth movement at the Toka Tindung Gold Mine. The use of contract mining is currently proposed for the life of mine for all deposits. Technical services and statutory roles. Including ore quality control and mine planning will be the responsibility of Archi Indonesia.
	mining studies and the sensitivity of the outcome to their inclusion.The infrastructure requirements of the selected mining	 The open pit is relatively deep at approximately 280 metres from surface. Archi Indonesia has both recent studies and actual performance to base the

Criteria	JORC Code explanation	Commentary		
	methods.	 geotechnical parameters for Araren. The surface and ground water requirements are well understood at Araren, as it is currently in operations. There has been recent study work completed in 2020-21 Toka Tindung Gold Mine has been operated for 10 years, it does RC grade control of ore zones for 3 benches (30m) and models the ore zone with a dedicated grade control team who reconcile monthly forecast grade and tonnage versus actuals. Inferred mineral resources are classified as waste. Practical pit designs based on the Whittle optimisation outputs for Araren were defined and utilised to constrain the production schedule. A production schedule was developed supporting a targeted Project feed of 4.5Mtpa and a target gold head grade of 2 grams per tonne for the economic assessment and risk assessment. The mining method aligns closely with current operations and existing infrastructure at the Araran mine site. 		
		at the Araren mine site.All tonnes are presented as dry metric tonnes.		
Metallurgical factors or assumptions	 The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. 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 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? 	 Processing will occur at the single Toka Tindung processing facility. Necessary processing costs and parameters were derived based on the Archi Indonesia actuals and budgets. An average gold metal recovery of 88.7% was applied in the process plant for the ore feed. An average silver metal recovery of 72% was applied in the process plant for the ore feed. A processing cost of US\$14.342/ tonne ore feed was applied. Archi operates a traditional CIL plant with a jaw crusher of 600t/hr feeding a SAG mill which has tertiary and secondary ball mills in parallel, prior to the leach tank the slurry is thickened and then enters the tanks for standard CIL processing. Daily production is 10,000 t/day prior to planned expansions being completed in Q2 2021 Testwork was completed on Alaskar and Talawaan to support this PFS noting Toka, Araren and Kopra are operational pits. Testwork is planned for Marawuwung in 2021 To date no deleterious elements or minerals have been detected in the operational pits or in the test work for Alaskar and Talawaan, Toka Tindung ore is very clean with typical recoveries of 89%, reagent consumption is generally lower than industry benchmarks. 		
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste	The spring water in existing Araren pit results in a significant monitoring and management effort to minimize the impact to mining in Araren, other pits		

Criteria	JORC Code explanation	Commentary		
	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.	 historically have not been impacted by ground water. Currently PAF has not been an issue, monitoring of waste dumps ground water that flows into natural waterways after residing in settling ponds has not detected any elevated acid drainage. Work is always ongoing to classify waste rock into NAF & PAF. Archi is required to pay a bank guarantee for each of the COWs (TTN -\$1.8M and MSM-\$1.6M). Every year since commencing operation the Ministry of Environment and MEMR have awarded Archi with a Certificate of Compliance to its Environmental requirements. 		
	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.	 Archi has all the required infrastructure to operate a mid scale open pit gold mine in Indonesia, This includes a gold processing plant, workshops to support each contractor, magazines, camp accommodation, office facilities, religious buildings, waste dumps, tailings storage dam, clean water storage ponds, mine haul roads, mine access roads, transformer for PLN power, security and access gates. Site can be accessed by sealed road from the capital city of Manado after a one and 		
Infrastructure		half hour trip by car. Goods and services can be brought to site via the Bitung port or Rundor Port which is suitable for Landing Craft.		
		 The Mine is in a high rainfall area in the tropics, the mine has two ponds dedicated to storing water for the process plant, water is recycled from the TSF. 		
		 Indonesia has a mature mining workforce, skilled people are relatively available for all levels required in the operation. Sulawesi also has a long history of mining so local skills are available. 		
		 The mine has a camp for staff and selected non-staff and the mining contractor also have their own camps either offsite or onsite. 		
		 Archi has access to Telkomsel's network and uses this for mobile and internet data. There are 5 radio channels available and operational vehicles are fitted with radios and key staff have hand held radios. 		
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mining operational costs were derived based on the actuals and budgets applicable to the Archi Indonesia Toka Tindung deposits.		
	The methodology used to estimate operating costs.	 Royalties of 5% for Au and 3.25% for Ag are applied. 		
	Allowances made for the content of deleterious	There are no deleterious elements identified in the ore feed.		
	elements.	All costs were defined in US Dollars.		
	 The source of exchange rates used in the study. 	Currently both COWs have a mine closure plan approved by the MEMR. However,		
	 Derivation of transportation charges. The basis for forecasting or source of treatment and 	with the increased ore reserve this will require a new MEMR compliant Feasibility Study and AMDAL (Environmental Impact Statement) to detail the expanded work program. The approval of the Feasibility Study then triggers the requirement for a		

Criteria	JORC Code explanation	Commentary		
	refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private.	 new approval of the Mine closure and Rehabilitation Plan. Archi Indonesia does not envisage such approvals to be withheld based on past good relations with the relevant authorities. The US\$4.75/oz dore is based on the actual cost of surface transport, logistics and refining charges. Government royalty charges have been applied as required to Gold and Silver metal content in the dore product. 		
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. 	 The ultimate pit design was based on a Whittle pit shell at a Revenue Factor of 1.20 times the applied gold metal price of US\$1,900/troy oz. The assumptions on revenue and associated value drivers are supported by consensus estimates for the proposed life of mine. For commercial confidentiality reasons, some specific assumptions and inputs are not shown. Sensitivity analysis for mining cost, processing cost, overall slope angle, ore loss, dilution, Au selling price and metal process recovery were completed in the optimization software package. 		
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. 	 There is a transparent market for the sale of gold. Archi sells its gold to buyers in Singapore, it has 5 major clients and historically has been able to sell at or at a small premium to the prevailing LMBA price. 		
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. 	 The Araren Ore Reserve estimate contributed to the overall Toka Tindung Gold Mine 2020 Reserve that demonstrates that the 2020 Ore Reserve Statement is supported by a robust operation even with a decreasing gold price or lower than expected gold grades. The Toka Tindung Gold Mine 2020 Reserve produces a materially positive NPV. 		
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	 Under its COW obligations Archi must actively engage with its surrounding communities. Archi runs extensive scholarship schemes which includes sponsoring young adults to 		

Criteria	JORC Code explanation	Commentary		
		 University in China and high school children to local schools' Archi funds surrounding local medical clinics to improve community health. Archi runs extensive CSR programs that include chicken, cattle and pig farming. It also funds work uniform manufacturing, coconut oil processing and handicrafts. Archi employees are predominately from local communities. Where possible the priority is to employ locally. Local employees are also able to access benefits related to health and education for themselves and/or family members. 		
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, 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. 	 Northern Sulawesi is an area on the Rim of Fire so the area is prone to earthquakes. The mine is located in a tropical environment and adverse weather can impact production. The operation is reliant on PLN power and in recent times Archi has added infrastructure to manage the quality of the electricity. Archi is reliant on contractors for most of its activities, if the contractor does not perform this could impact production. The Government of Indonesia can arbitrarily change legislation or reclassify the status of land that could impact production. Archi operates inside forest areas that require certain permits to be granted to allow operations and exploration inside these State forests, without these permits it could impact production. Archi has the mineral rights to the COWs but not the surface rights. Archi Indonesia has to buy or rent the land. Failure to acquire access to such land could impact production. 		
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). 	 The primary basis for the Ore Reserve classifications is the Mineral Resource estimation classifications. The Measured and Indicated Mineral Resources within the pit limits converted to Proved and Probable Ore Reserves respectively. The applied processes of reporting the Proved and Probable classifications are considered appropriate for the classification applied and reflect the Competent Person's view of both the deposit and the proposed mining operation. 		
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	 There has not been an external audit on this Ore Reserve estimate. Archi Indonesia has utilised SRK Consulting to support the Ore Reserve estimate in a review capacity and to complete aspects of the technical works. 		

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 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. 	 The accuracy of and confidence in the Ore Reserve are considered appropriate to reflect a PFS level of assessment. The PFS mining studies included sensitivity analyses which demonstrated a robust project over plausible input parameter ranges. The majority of the modifying factors are based on the actual mining operations at and budgets used for the Toka Tindung mining operation. Where these modifying factors are applied to 'greenfields' deposits they are applied where similar mining conditions exist or study work has indicated it is appropriate to do so. The Ore Reserve estimate is a global estimate of the Araren deposit. The mining sensitivity assessment indicated the deposit is most sensitive to process plant metal recovery and metal price, followed by the pit slopes. Archi had not updated many of its Mineral Resource models for some time. The decision was made to get a highly reputable organization (SRK) to guide and oversee the process to give management confidence in the resources as it makes some important strategic decisions in 2021. In respect of Ore Reserves, Archi Indonesia required SRK to guide it through the process to ensure that the process was done appropriately to support the PFS base Ore Reserve estimate, giving Archi Indonesia's management the confidence to make key strategic decisions in 2021. 		

PPENDIX 2 Competent Person's	Consent Forms		