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27 August 2020

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(9 pages by email)

HENGJAYA MINE RESOURCE UPGRADE

Highlights:

- 185 million dry metric tonnes ('dmt') at 1.3% nickel and 0.08% cobalt (cut-off 0.8% nickel) containing **2,405,000 tonnes of nickel** and **148,500 tonnes of cobalt** estimated using the JORC 2012 Code, covering an area of 1,144 hectares within the Hengjaya Mine ('HM') concession area (total HM area 5,983 hectares).

- Resource exceeds the Resource calculated in December 2018 which covered an area of 1,919 hectares.

- **Measured Resources** vs 2018 resources have **increased 185%**, **Indicated Resources** by **117%** with a decrease in Inferred Resources by 49%, delivering much greater than expected conversion of Inferred and Indicated to Measured Resources, providing very strong resource confidence.

- Grades of up to **4.75% nickel** reported in recent infill drill assay results, a 2.75% nickel top cut was used for the Resource update (no top cut was applied in the 2018 Resource estimation).

- **High grade saprolite Resource of 60.5 million wmt at 1.8% nickel** (cut-off 1.5% nickel), represents more than 15 years of ore supply to Hengjaya Nickel and Ranger Nickel RKEF projects' total combined ore requirements of approximately 4 million wmt per annum.

- **Exploration Target** of an **additional 60 - 120 million wet metric tonnes** currently identified in the remainder of the HM concession area.

Nickel Mines Limited commissioned PT Danmar Explorindo ('Danmar') to calculate an updated JORC compliant Resource based on data used in its maiden 2018 Resource calculated by PT GMT Indonesia and incorporating 203 kilometres of Ultra Ground Penetrating Radar survey (Ultra GPR) and more than 21,825 metres of additional new drilling, over a 1,100 hectare area.

Model Details

Wireframing

Wireframing was set up on each drill line in both east-west and north-south directions to create a 50-100 metre grid over the entire database to develop a morphology wireframe. The wireframe sections were then digitised from a combination of drilling/assay database (points of observation) and supporting interpretive data from GPR survey between drilling points.

From these wireframes, gridded surfaces were produced to represent the roof and floor limits of limonite, saprolite and bedrock zones. 10 metre grids were set up and interpolation of the gridded points was conducted using Inverse Distance Weighted (IDW^2) methods.

Assay Data and Compositing

Only assay data from the validated database from included holes (INCL) were extracted for use in the compositing process. Composite lengths of 1 metre were used.

Based on analysis of the downhole statistical data additional constraints were applied to Ni% content to impose a limit of no greater than 2.75% to avoid over-estimation of nickel content due to possible nugget effect. For this reason, all core sample measurements over 2.75% nickel were assigned a default value of 2.75% nickel. A total of 350 nickel top cuts were applied from a database of 42,555 samples.

Bulk Density

Relative density was manually added to the composites based on the weighted average recorded for each zone within the corresponding domain (see Table 1). APL block was assumed to be similar in geological characteristics to Central East block as they are located at the same area. For this reason, the density was assumed to be the same.

DOMAIN	BETE_WEST	BETE_BETE	BETE_SOUTH	CENTRAL_WEST	CENTRAL_EAST
SOIL	1.83	1.94	1.93	1.97	1.9
LIMONITE	1.77	1.85	1.73	1.77	1.73
SAPROLITE	1.5	1.53	1.61	1.59	1.61
BEDROCK	2.28	2.49	2.75	2.68	2.62
analysis done	212	950	684	548	572

Table 1 - HM Density measurements applied to the Mineral Resource

Moisture Content

Since April 2019, every 1 metre drill core sample was measured for moisture using the Japanese Industrial Standard (JIS). A total 33,544 moisture measurements were performed. In areas where moisture content measurements were not available, the domain default weighted average was applied to the corresponding composite zone. Table 2 summarises the weighted average Moisture Content by domain.

LITHZONE	BETE BETE	BETE SOUTH	BETE WEST	CENTRAL WEST	CENTRAL EAST
	% moisture				
SOIL	32.45	35.78	35.53	33.79	33.7
LIMONITE	40.67	43.51	41.43	42.02	40.88
SAPROLITE	30.46	31.87	35.17	31.55	29.91
BEDROCK	14.73	12.86	24.9	13.62	12.51

Table 2 - HM Moisture Content measurements applied to the Mineral Resource

Block Modelling

A 3D block model was created covering the Mineral Resource area constrained using the final gridded surface models from the wireframing process to use as the base of volume estimation of the laterite zones of limonite and saprolite.

Grade Interpolation

Ordinary Kriging (OK) algorithm was used in the grade interpolation for nickel grades for limonite and saprolite laterite zones. In the absence of a geostatistical analysis for other elements Inverse Distance Weighted Squared (IDW^2) methods were used to estimate the model grade interpolation for other elements Co, Fe, Mg0, $Si0_2$, Al_20_3, Ca0 and moisture content.

The subsequent model validation process showed similar nickel to volume ratio between OK and IDW^2 results. In total, three main passes were applied to both the OK and IDW^2 methods when interpolating the model grades, with increasing search ellipsoid distances between drilling. A fourth pass was completed to ensure all blocks within the model were given a grade within the Mineral Resource area.

Resource Classification

Determination of the Resource classes were applied to the Mineral Resource, with a digitised polygon boundary based on the spatial continuity of each geological domain around regular spaced drilling grids of 25, 50, 100, 200 metres from INCL points of observation in the final validated database. Also taken into account was the GPR grid lines between the drilling locations increasing confidence in interpretation of the laterisation contact surface between the points of observation in the model. Resources were classified as follows;

- **MEASURED** - Areas of 25-50 metres of drilling spacing on a continuous grid pattern, where significant influence from Pass 1 and 2 dominate the search ellipsoids, with no extrapolation from the last line of drilling.

- **INDICATED -** Areas of 50-100 metres of drilling spacing on a continuous grid pattern, where significant influence from Pass 1 and 2 dominate the search ellipsoids, with 50 metre extrapolation from the last line of drilling.

- **INFERRED** - Areas of 100-200 metres of drilling spacing on a continuous grid pattern, where significant influence from Pass 1 and 2 dominate the search ellipsoids, with 100 metre extrapolation from the last line of drilling. In some areas between holes greater than 200 metres the polygon was included into the Inferred category to allow for more practical polygon shape fit to the model area.

Bete Bete and APL mine areas were given the Resource class **MINED OUT** as it is considered mining depletion has sterilised these areas. Figure 1 shows the polygons applied to the model to prepare the statement of Mineral Resource in this report.

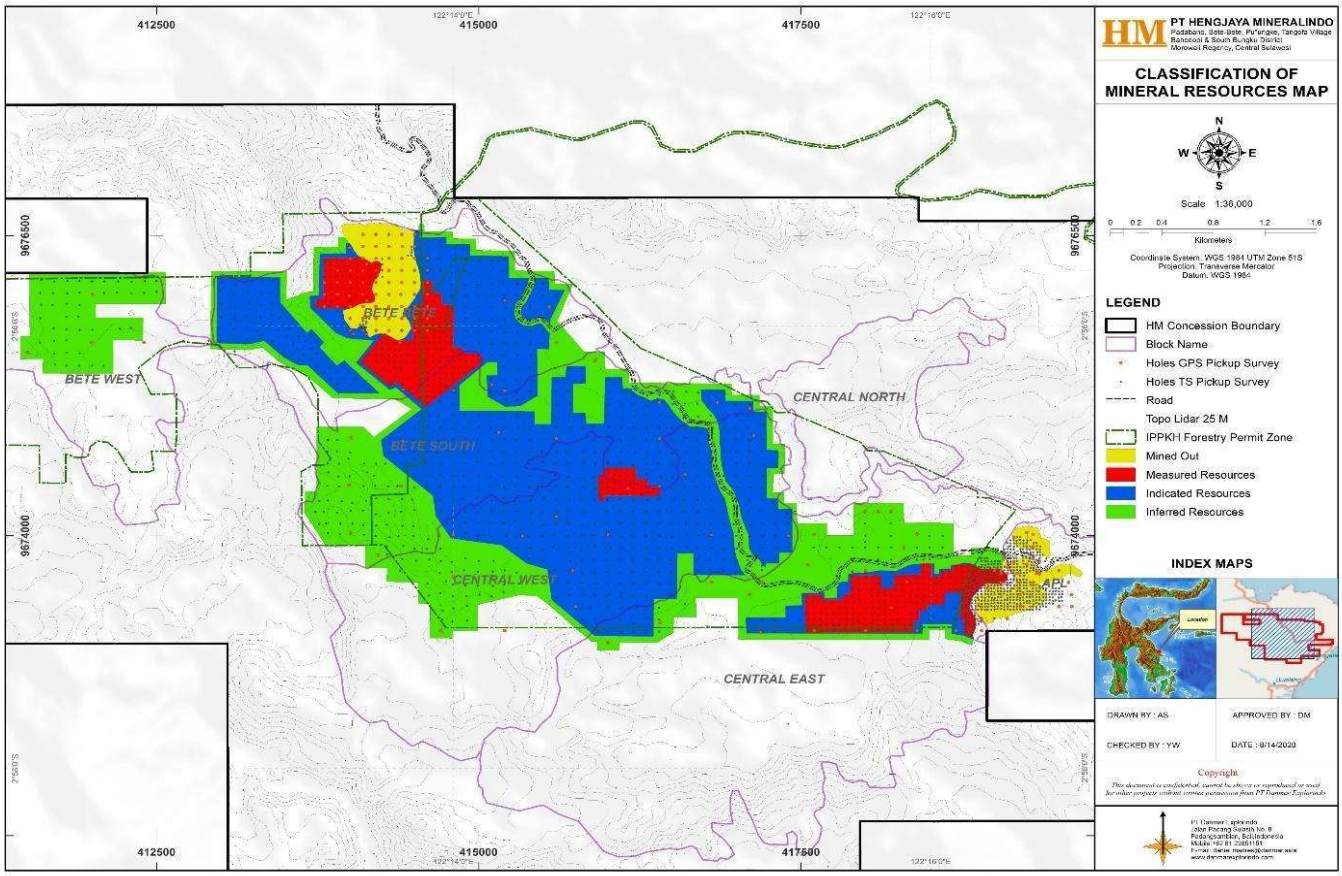

Figure 1 - Resource classification boundaries

Another factor in selection of Resource polygon limits used for the Mineral Resource was a review of the geostatistical inputs and the weighting on each category. This was done by comparing the influence of each pass within the polygon boundaries.

Model Validation

Final block model and interpolated grades were validated using several visual and statistical techniques to gain further confidence in the Mineral Resource estimates stated in this report.

Swath plots were used as a final model validation tool to provide comparisons between sample composites and estimated block model values. This process identifies any bias towards under-estimation or overestimation or any smoothing in the results.

Mineral Resource Statement

All results are represented as remaining volumes with mining depletion excluded up to 30 June 2020 and presented as millions of dry tons. A rounding of the Resource estimate numbers has been applied to reflect the level of accuracy of the Mineral Resource estimate. Table 3 shows the results.

Category	Dry Tonnes (million)	Ni (%)	Co (%)	Fe (%)
Measured	20	1.3	0.08	28
Indicated	109	1.3	0.08	29
Inferred	56	1.3	0.07	27
Total	**185**	**1.3**	**0.08**	**28**

Table 3 - HM Mineral Resource Table

LIMONITE & SAPROLITE - COMBINED GLOBAL MINERAL RESOURCE ESTIMATE (OK 4 pass)													
GRADE CUT-OFF RANGE	MINERAL RESOURCE		XRF (DRY ANALYSIS)								Moisture Content (%)	Relative Density (sg Wet)	METAL CONTENT EQUIVALENT (Ni)
	MILLION TONNES (Wet)	MILLION TONNES (DRY)	Ni %	Co %	Fe %	MgO %	SiO2 %	SM Ratio	Al2O3 %	CaO %			
>0.8	285.1	183.8	1.28	0.08	29.19	11.90	23.68	1.99	7.00	0.48	35.50	1.70	3,651,983
>0.9	259.6	166.8	1.32	0.08	28.53	12.37	24.41	1.97	6.72	0.49	35.69	1.69	3,431,548
>1.0	224.3	143.8	1.38	0.08	27.62	13.06	25.37	1.94	6.36	0.50	35.86	1.68	3,095,613
>1.1	184.1	117.9	1.45	0.08	26.31	14.01	26.73	1.91	5.91	0.51	35.88	1.66	2,670,554
>1.2	145.4	93.3	1.53	0.07	24.61	15.25	28.49	1.87	5.37	0.53	35.74	1.65	2,225,806
>1.3	110.9	71.4	1.62	0.07	22.69	16.62	30.47	1.83	4.79	0.54	35.48	1.63	1,793,625
>1.4	82.2	53.3	1.71	0.06	20.43	18.17	32.82	1.81	4.18	0.54	35.01	1.62	1,406,539
>1.5	60.5	39.4	1.80	0.06	18.66	19.42	34.66	1.78	3.67	0.54	34.65	1.60	1,092,035
>1.6	45.3	29.5	1.89	0.06	17.55	20.27	35.90	1.77	3.32	0.52	34.57	1.60	856,190
>1.7	33.6	22.0	1.97	0.06	16.86	20.88	36.68	1.76	3.06	0.49	34.59	1.59	663,800
>1.8	24.2	15.9	2.06	0.06	16.12	21.58	37.29	1.73	2.82	0.46	34.35	1.59	499,412
>1.9	17.5	11.5	2.14	0.06	15.89	21.84	37.49	1.72	2.74	0.44	34.24	1.59	374,255
>2.0	12.4	8.2	2.22	0.06	15.47	22.39	37.80	1.69	2.56	0.41	33.86	1.59	276,363

Table 4 - HM Mineral Resource at various cut-off grades

Comparison to the 2018 PT GMT Indonesia Model

The 2020 Danmar Mineral Resource upgrade was estimated over an area of 1,144 hectares versus an area of 1,919 hectares which was used to estimate the 2018 PT GMT Indonesia Resource. Significant additional exploration work has been undertaken between the dates for each report, including:

- More than 200 kilometres of Ultra GPR (Ground Penetrating Radar) survey over 1,100 hectares.
- Infill drilling in Bete Bete and Central domains to 50-100 metre spacing, with more than 21,825 metres of drilling over 1,100 drilling locations.

Close spaced drilling since April 2019 and the supportive data provided by Ultra GPR surveys on the same drilling grid has greatly enhanced the confidence in the geological interpretation and resulting geological model at the Hengjaya Mine. The comparison of previous estimate dated 9 December 2018 by PT GMT Indonesia shows a similar result for the total volume of nickel laterite. However, there is now significantly more Measured (+185%) and Indicated Resource (+117%). This is as a result of the ongoing infill drilling in the Bete Bete and Central areas since April 2019.

Other major differences between the two estimates are:

- Mining depletion from Bete Bete of approximately 2 million dmt.
- A 40% reduction in areal extent of the previous Inferred Resource area, while the remaining area has been downgraded to an Exploration Target due to poor historical drilling data records and drilling spacing considered too wide for inclusion into the Mineral Resource at this time.
- The exclusion of most of the APL Resource due to downgrading over poor historical data records and ex-mine rehabilitation.

In the 2018 PT GMT Indonesia Mineral Resource Statement, the Company reported Resources at the Hengjaya Mine using a 1.0% nickel cut-off grade as follows:

Category	Dry Tonnes (million)	Ni (%)	Co (%)	Fe (%)
Measured	6.9	1.2	0.07	23
Indicated	50	1.4	0.07	26
Inferred	120	1.3	0.08	29
Total	**180**	**1.3**	**0.08**	**28**

The map below shows the 2018 PT GMT Indonesia Resource estimation boundaries of 1,919 hectares in purple versus the 2020 Danmar Resource estimation area of 1,144 hectares in shaded red (Measured), blue (Indicated) and green (Inferred).

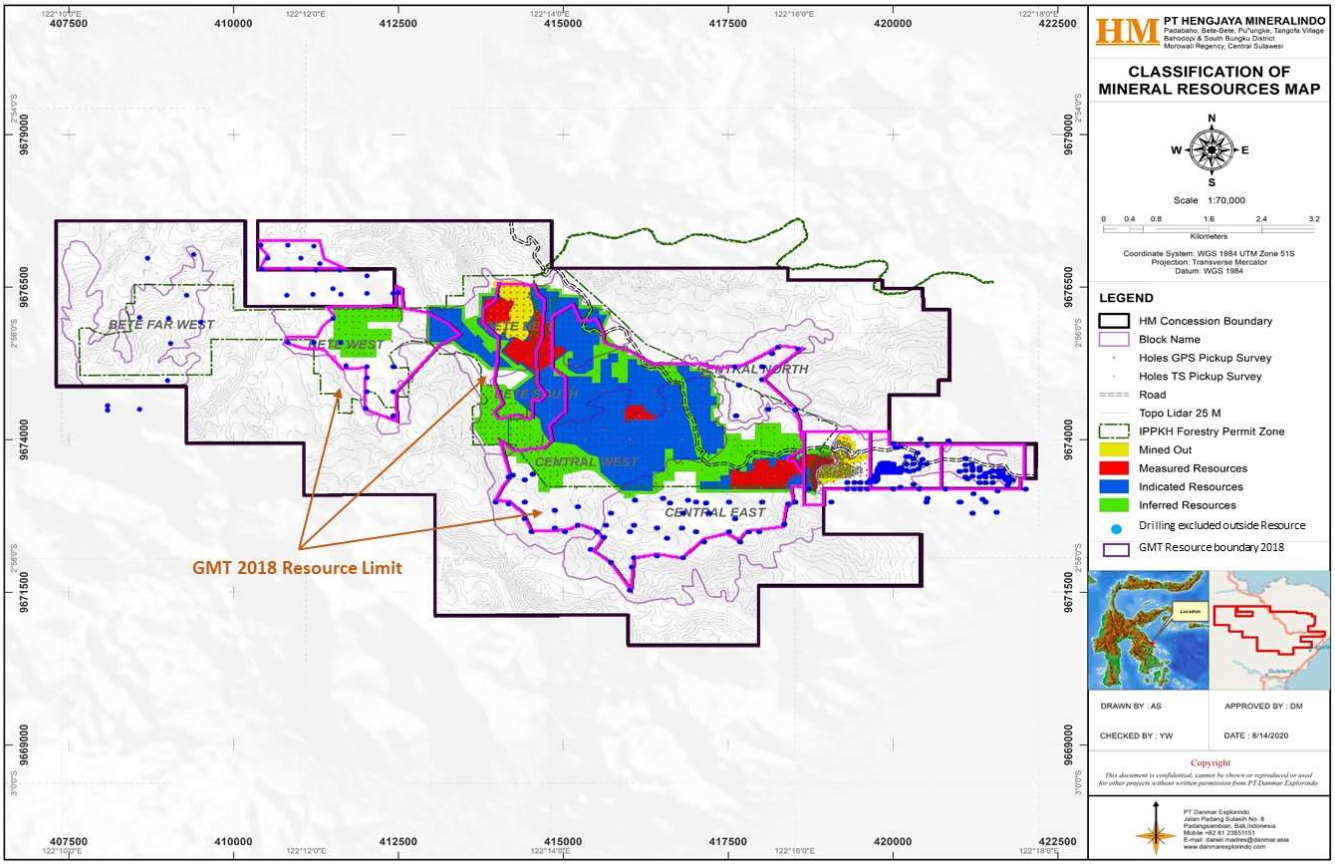

Figure 2 - Danmar vs PT GMT Indonesia Resource boundaries

Exploration Target

In addition to the updated Mineral Resource, at least five significant Exploration Targets, covering a further 1,500 hectares within the Hengjaya Mine licence area have been identified in locations where similar type nickel laterite deposits of between 60-120 million wet metric tonnes is postulated. In these areas nickel laterite has already been identified by surface mapping and wide spaced drilling.

An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade, relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource. The potential quantity and grade of the Exploration Target is conceptual in nature, as there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

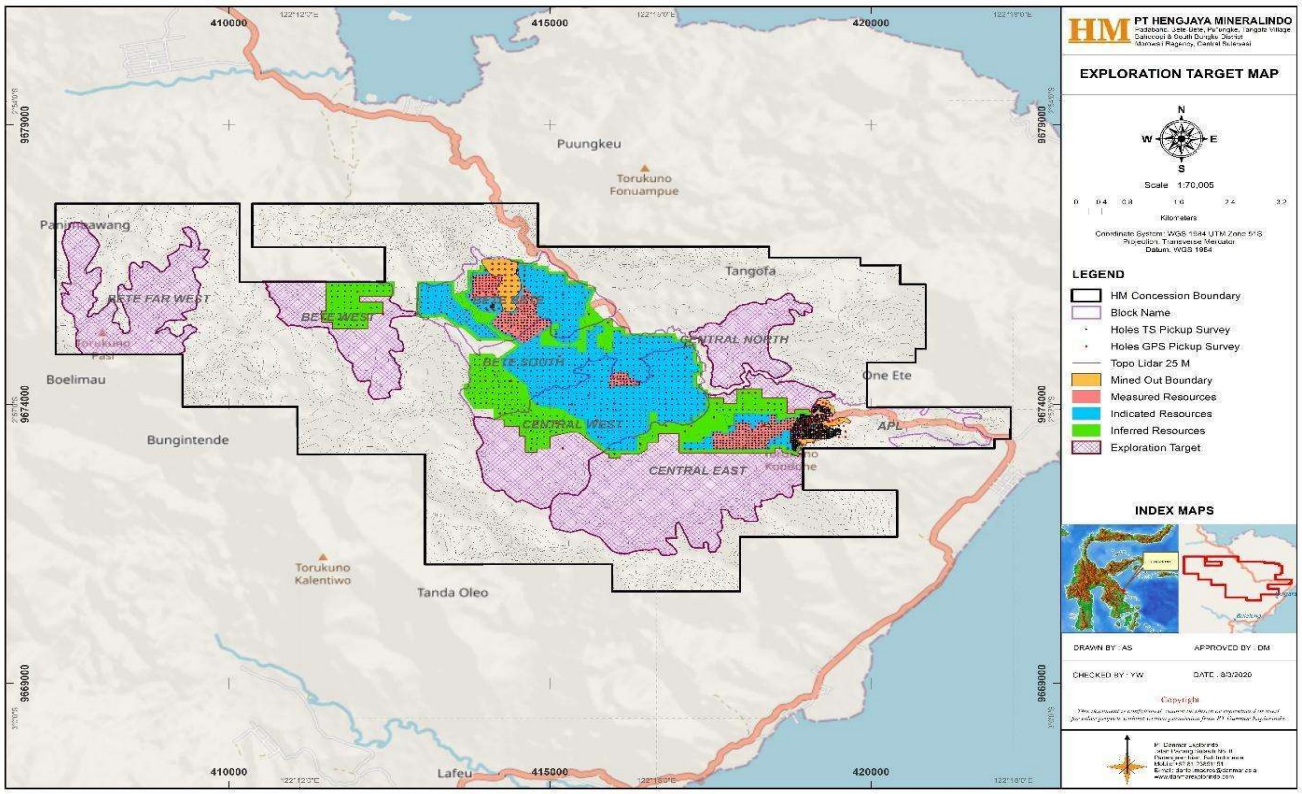

Figure 3 - Exploration Target areas are shown as within domain boundaries and outside shaded Resource areas

Commenting on the upgraded mineral resource statement Managing Director Justin Werner said:

“We are extremely pleased with the results from the upgrade to the Hengjaya Mine resource. To return a larger resource in just 60% of the area of our maiden resource utilising much more stringent methods and parameters such as top cutting nickel grades above 2.75% is a tremendous achievement and highlights the fact that the more we drill out the deposit the better it gets and the greater our confidence in the size and quality of the resource..”

“With our HNI and RNI RKEF operations consuming roughly 4 million wmt a year and the Hengjaya Mine having a current resource of 60.5 million wmt at 1.82% nickel we have 15 years of ore supply purely for our 4 RKEF lines, were we the sole supplier of our lines. With an Exploration Target confirming potential exploration upside of a further 120 million wmt this ore supply timeframe could conceivably double in the years ahead. Furthermore, a 120M wmt resource would be sufficient to supply the IMIP’s entire ore requirements of approximately 30 million wmt for nearly 4 years underscoring the important strategic significance of the Hengjaya Mine deposit.”

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Competent Persons Statement

The information in this report that relates to Mineral Resources, the Exploration Target and Exploration Results is based on data compiled by Daniel Madre of PT Danmar Explorindo. Mr Madre is a member of the Australian Institute of Mining and Metallurgy (AusIMM) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activities which are being undertaken to qualify as a Competent Person as defined in the 2012 edition of the “Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Madre is an independent consulting geologist and consents to the inclusion of the matters based on his information in the form and context in which it appears. Mr Madre has more than 18 years experience in exploration and mining of nickel laterites in Indonesia.

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About Nickel Mines Limited

Nickel Mines Limited (ASX: NIC) is an ASX listed company on the cusp of becoming a significant player in the global nickel industry having established a financial, operational and strategic partnership with China's Tsingshan group ('Tsingshan'), the world largest stainless steel producer.

Under the terms of two separate a Collaboration Agreements with Shanghai Decent, a Tsingshan group company, Nickel Mines will own and operate RKEF processing facilities within the Indonesia Morowali Industrial Park, the world's largest vertically integrated stainless steel facility with a current stainless steel production capacity of 3.0 million tonnes per annum.

Nickel Mines also holds an 80% interest in the long life, high grade Hengjaya nickel mine located in Morowali Regency, Central Sulawesi, Indonesia just 12 kilometres from the IMIP.

Aerial photo of the IMIP