

# SHREE MINERALS LTD

**ASX Announcement** 20 February 2019 Shree Minerals Limited to reassess Iron Ore project mining potential following recent Iron Ore price increase

## Highlights

ASX Code SHH

ACN 130 618 683

COMPANY DIRECTORS

Sanjay Loyalka Director and Company Secretary

Andy Lau Non-Executive Director

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- Focus on re-permitting in relation to the Nelson Bay River Iron Ore project
- Economic assessment of the project based on recent surge in the Iron Ore spot price
- Assessment of exploration potential to increase strike length of current defined ore body
- Due diligence being conducted across the Golden Chimney project (currently under option)
- Detailed review of various mineral projects that may be suitable for acquisition

Following on from its recent Quarterly Activities and Cashflow reports announced to ASX on 16 January 2019, Shree Minerals Ltd (**Shree** or the **Company**) is pleased to provide the following update on its ongoing activities on its existing projects and the continued assessment of additional project opportunities for SHH.

Since completion of the Company's recent rights issue in November 2018, the Company has seen an improvement in the condition of the iron ore market that has warranted the Company's re-assessment of its Nelson Bay Iron Project. SHH Executive Director Sanjay Loyalka said "We have been actively assessing the possibility of restarting our iron ore operations. The opportunity to increase the deposit is real based on our current understanding of the project and recent strength in the iron ore price demonstrating that the Company has a potentially valuable asset. We continue to assess the merits of this project as well as new opportunities that may also deliver shareholder value in time."

## Nelson Bay River Iron Project update

Shree wholly owned Nelson Bay River Project ("NBR" or the "Project") including Mining Lease 3M/2011 is engaged in the mining and shipment of iron ore. NBR was previously producing a direct shipping product until being placed on care and maintenance since June 2014 following sharp iron price fall as a result of over-supply in the global seaborne iron ore markets.

## Current iron ore market conditions

The iron ore markets have been gradually re-balancing with no major supply additions in recent years and demand growth in Asian markets.

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The only new projects announced by major companies over the last three to four years are for replacement capacity for current mine life depletions. The price environment has been improving in recent times with a reduction in the discount for medium grade ores, improvement in lump premiums and premiums for material with lower impurities like low alumina (as per the NBR ore produced previously) as Chinese authorities continue emphasis on environment control. There seems to be a structural shift in iron ore markets with preference and premium for higher grades reaffirming long term attractiveness of Shree's NBR project.

Further, the short term prices have been volatile and spiking upwards due to mine disruptions and uncertainty on Vale's iron ore production outlook following the recent environmental disaster and consequent declaration of force majeure. Any near-term supply response is expected to be limited, particularly with little latent capacity left at Australian ports and railways.

Based on the Company's estimates, the current iron ore price environment may support the recommencement of NBR operations dependent on the successful completion of an economic study and permitting process. The Company is currently working through these processes.

## **NBR status**

While market conditions are positive, Shree is currently pursuing a new environmental permit prior to making any assessment on the restart of operations.

As previously reported in various Company announcements, to resolve the legal issues with the current permits, the Company applied for a new Tasmanian Environmental permit for Direct Shipping Iron operations. The EPA issued for public consultation and comment draft guidelines for preparation of DPEMP (Development Proposal & Environment Management Plan). These Guidelines have now been finalised and were issued during November 2018.

Consequently, Shree has initiated requisite technical studies as some of the surveys completed are now considered out of date. These studies are in advanced progress and the Company is aiming to complete the draft DPEMP in the coming months. The detailed technical studies include waste and ore characterisation, hydrogeology modelling, groundwater modelling and ecological surveys.

## Background

Shree's wholly owned Nelson Bay River Iron Project is located in the far North-West of Tasmania, an area that has substantial infrastructure devoted to major mining activities and is approximately 100 kilometres by mostly sealed road to Port Latta, approximately 150 kilometres from the Burnie Port.

The Project is within an established mineral province in the region. Operating mines include Grange Resources' (ASX: GRR) Savage River Iron Ore and MMG's Roseberry Mine.

The project has three types of resources: Direct Shipping Ore ("DSO"), Beneficiable low-grade resource ("BFO") and a Magnetite Resource.



Figure 1.

Source: SHH

The NBR occurrence is a 4km long magnetic feature (anomaly). The iron mineralisation is hosted by a steeply SW dipping mafic dyke, intruded into siliciclastic country rocks. The magnetic feature has been divided into two parts, northern and southern.

## Resources

NBR has a JORC compliant global iron Resource of 11.3Mt, including goethitic-hematite Resource of 1.4Mt and magnetite Resource of 7.8Mt. The Resource & Reserve tables are attached **in Annexure 1**.

The Resource at NBR covers approximately 1km in strike length of goethite-hematite mineralisation including approximately 400 metres of magnetite. The Magnetite Resource can produce high grade concentrates for Blast Furnace Pellets ("BFP") and Dense Media Magnetite ("DMM"). A cap of oxide Resource covers the magnetite Resource and extends southwards for a further 600 metres of strike. The oxide Resource is composed of goethitic-hematite "DSO" and magnetic goethitic-hematite material amenable to beneficiation "BFO".

## Mining and Processing

The Company's present mine development strategy includes mining the DSO first followed by BFO material, and then the Magnetite Resource.

## DSO Pit (south pit)

The DSO requires no major processing beyond crushing and screening. It is then trucked to the Burnie port and shipped. The south DSO pit ("SDSO") was developed in 2013 with production commencement in November 2013 and first shipment in January 2014. The operation has been developed as an all contract mining, processing and haulage operation with local contractors in the region. The iron ore shipments totalled 181,000 tonnes to-date with average grades of Fe 57.5%, SiO2 7.7%, Al2O3 1.3%, P 0.07% and S 0.04%. The NBR product (DSO Lump and Fines) has been very well received and is in demand by customers due to its low impurities like alumina.

The SDSO pit is some 25% complete, with waste rock materials deposited in two dumps designated as the Non Acid Forming ("NAF") waste rock dump and the Potentially Acid Forming ("PAF") waste rock dump.

Figure 2 shows the existing mine development on site. The main features are the SDSO pit and waste dumps. Other elements are the mine water treatment dams, ROM stockpile area and the facilities area. Figure 3 on the following page shows a Google Image.



Figure 2: Existing site plan

Source: SHH



Figure 3 Source: Google Images, December 2015

## Magnetite Pit (north pit)

The other pit is the main pit that targets the main magnetite ore body. At the top of this pit, there is an approximate 20 metre section of higher-grade ore - the BFO. This will require only dry magnetic separation in addition to crushing and screening before shipping. The BFO operation is a transition between the DSO operation and the magnetite production stage. The BFO circuit will require only a nominal capital expenditure of circa A\$1 million. The BFO section is fed by a -3mm size ore stream, which is upgraded by dry Low Intensity Magnetic Separation ("LIMS"). Test work by crushing and passing the ore over a coarse LIMS unit at 600 gauss pass produced an upgraded product with grades Fe 57.5%, SiO211.5% and Al2O3 1.55% at 82.3% mass recovery.

For the deeper and longer term magnetite project, completed studies have mine planning for an open pit that will extract 400,000 tonnes of ore per annum for processing through a local plant that will include circuits to grind, mill, magnetically separate to produce 150,000 tonnes of high grade magnetite concentrate capable of being shipped either to coal exporters along the eastern seaboard of Australia, it is utilised in coal washery operations to upgrade coal or to process into high grade BFPs to be used by steel manufacturers within Australia or China. Magnetite Pellets fetch a premium to hematite iron ore as they are higher grade and allow for less energy consumption in blast furnace. Metallurgical test work by SGS Minerals Services has returned a high grade magnetite concentrate with a head Fe grade greater than 69.0% with low impurities: silica (SiO2) less than 1.6%, alumina (Al2O3) less than 0.05% and phosphorous less than 0.01%.

The current market for Coal Washery Magnetite product is niche but very profitable, and is currently only supplied through the Tallawang Mine located in New South Wales and the Kara Mine in Tasmania, with additional supplies imported from overseas indicating a potential market demand for magnetite product from NBR.

The magnetite concentrate is also suitable for production of high grade BFPs, which have a very high demand by steel manufacturers.

## Exploration

The current JORC resource at NBR is based on drilling at the northern end of the strike line, where magnetic survey work indicated that the main strike line of mineralisation extends for at least 2,300 metres and is open along strike and at depth. The mineralisation in some cases is deeper than 300 metres.

A study of recent ground magnetic and the Tasmanian Government's airborne magnetic survey data suggests that the strike length of iron mineralisation at NBR extends to in excess of 2.3km. Mineralisation remains open along strike and down dip and in some parts extends to greater than 300 metres in depth.

The 3D Magnetic Inversion study based on aeromagnetic data from Mineral Resources Tasmania ("MRT") suggests continuity between the Main Body (Northern Anomaly) and the South Anomaly, but with in-between areas of non-magnetic material that could be inferred to be oxide mineralisation. Scattered detrital gossan fragments were noticed during recent reconnaissance in the Southern Anomaly area. The modelling indicates substantial continuation at depth of the magnetite-bearing ultramafic dyke.

This provides exploration upside for Shree. In addition to the NBR deposit, four additional targets have been identified from airborne magnetic surveys on the project area and remain to be drill tested.



Figure 4: 3D Magnetic Inversion Study (Source: SHH)

## About Shree Minerals Limited

Shree Minerals Limited is an exploration and mine development company including being engaged in mining and production of iron ore and dense media magnetite at its Nelson Bay River Iron Project in the north-western Tasmania.

**Contact Details** 

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## Annexure 1

## **Resource & Reserves**

Mineral Resources & Reserves Estimates, summarised by JORC classification are as follows:

Category	Tonnes	Fe %	AI2O3 %	P ppm	S ppm	SiO2 %	LOI %
Measured	300,000	57.6	1.3	947	362	9.2	6.4
Indicated	190,000	57.5	1.4	919	377	9.3	6.3
Inferred	150,000	57.3	1.2	945	421	10.0	6.2
Total	640,000	57.5	1.3	938	380	9.4	6.4

### The in situ DSO Mineral Resource Estimates, September 2015

(Nominal 54% Fe cut off; average density 3t/m3; minor rounding errors)

#### **BFO Resource Estimates 2012**

Category	Tonnes	Fe %	$AI_2O_3 \%$	P ppm	S ppm	SiO <sub>2</sub> %	LOI %
Inferred	730,000	46.8	2.7	180	680	23.7	4.7
Total	730,000	46.8	2.7	180	680	23.7	4.7

(30% Fe cut off; average density 3t/m3; minor rounding errors)

"This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported."

#### Skarn Dyke Global Iron Resource Estimates (Includes Magnetite Resource)

Category	M Tonnes	Fe %	
Indicated	1.8	38.6	
Inferred	9.5	35.9	
Total	11.3	36.3	

(30% Fe cut off, fresh rock material; minor rounding errors)

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#### Skarn Dyke Recoverable Magnetite Resource Estimates

Category	M Tonnes	DTR Mag %	Magnetite Kt
Indicated	1.7	38.5	667
Inferred	6.1	38.2	2,324
Total	7.8	38.3	2,991

(20% DTR cut off; average density 3.71t/m3; fresh rock material; minor rounding errors)

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### Magnetite Resource Estimate Concentrate Grades

Category	Fe %	Al <sub>2</sub> O <sub>3</sub> %	S %	SiO <sub>2</sub> %
Indicated	66.4	0.16	0.21	4.6
Inferred	64.3	0.31	0.42	6.0
Total	65.5	0.22	0.30	5.2

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Category	M tonnes	Fe %	AI2O3 %	Р%	S %	SiO2 %	LOI %
Proved	0.27	56.5	1.4	0.091	0.035	8.7	6.5
Probable	0.19	56.5	1.5	0.092	0.036	8.8	6.5
Total	0.46	56.5	1.4	0.091	0.035	8.7	6.5

In situ DSO Ore Reserve Estimates for the Southern DSO pit, September 2015

(Minor rounding errors; cut off based on a nominal 54% Fe; default density of 3t/m<sup>3</sup>)

The information in this report that relates to Mineral Resources is based on information evaluated by Mr Simon Tear, who is a Member of The Australasian Institute of Mining and Metallurgy (MAusIMM). And who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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' ("the JORC Code"). Mr Tear is a Director of H&S Consultants Pty Ltd and he consents to the inclusion in the report of the Mineral Resources in the form and context in which they appear.

The information in this report that relates to Ore Reserve Estimates for the Nelson Bay deposit is based on information evaluated by Mr Richard Beazley who is a Member of The Australasian Institute of Mining and Metallurgy and a Chartered Professional (MAusIMM CP(Min)) and who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 (the "JORC Code"). Mr Richard Beazley is the Principal of Altair Mining Consultancy Pty Ltd and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.