



MAGNETITE MINES
High Grade Iron Ore Concentrate

ASX Announcement

7 October 2020

Ore Sorting Technology Agreement Update

Magnetite Mines Limited (ASX: **MGT**) (the **Company**) is pleased to announce it has entered in to an Agreement with NextOre Pty Ltd (**NextOre**) to supply a mobile bulk ore sorting plant using a Magnetic Resonance (MR) sensor for a trial of the technology to the Razorback High Grade Iron Ore Project (Razorback Project). This advances our exclusive partnership with NextOre and is an important step in our journey to unlocking the potential of the Razorback Project. The Company is excited by the potential of the NextOre technology to enhance processing of by 'pre-concentrating' run of mine ore feed to increase plant head grade.¹

The NextOre agreement includes a non-refundable deposit of \$100,000 and contemplates further, staged payments of \$700,000. The scope of the agreement covers supply of a full-scale mobile ore sorting plant to site at the Razorback Project for sorting magnetite ore using MR technology during the trial period for the purpose of mine feasibility analysis. The agreement includes milestone dates, with the equipment despatch from the CSIRO Lucas Heights facility in 2021.

As previously announced the Company entered into an Exclusivity Agreement (**Agreement**) with ore sorting technology company NextOre.² The Agreement grants the Company exclusive use of NextOre's leading-edge Magnetic Resonance ore sorting technology for any magnetite processing applications Australia-wide and all iron ore applications in the Braemar (including NSW) for a period of 4 years.²

Magnetite Mines Chairman Mr Peter Schubert commented, *"Ore sorting technology, once demonstrated, has the potential to significantly enhance the competitiveness and value of the Razorback High Grade Iron Ore Project. We have been working with NextOre using advanced orebody modelling, giving us insight into the potential application of this technology."*¹ *We are pleased to have exclusive access to this technology for application to magnetite in Australia.*² *The bulk trial is the appropriate next step in a carefully planned and staged commercialisation pathway to build up our knowledge base and demonstrate its application at our Razorback High Grade Iron Ore Project*

NextOre's Magnetic Resonance sorting technology, developed over many years in conjunction with the CSIRO, has a rapid response time allowing unprecedented selection accuracy and speed. The result is potential for a substantial increase in the head grade of plant feed, resulting in lower unit operating costs and a significant improvement in capital efficiency. This technology also offers potential environmental

benefits, with enhanced water efficiency and reduced tailings volumes. The Razorback High Grade Iron Ore Project already has a number of unique advantages, notably scale, proximity to established ports and rail and near surface mineralisation^{1,3} We are progressively and carefully working through ways to enhance the inherent project value through staging, selective mining and technology. We are particularly interested in the potential of the NextOre technology to increase the grade of ore fed to the concentrator. The bulk trial of this exciting technology will contribute to the study work now underway.”

Mr Chris Beal, CEO of NextOre said, “We are enthusiastic supporters of Magnetite Mines’ vision of unlocking the vast resources in South Australia’s Braemar region. Their disciplined approach, which leverages emerging technologies with well-established mining methodologies, is a testament to the team’s knowledge and experience in the field. In our collaborative planning, the Magnetite Mines methodology of carefully integrating mine and mill activities speaks strongly to the ability to generate the maximum value from bulk ore sorting solution. I am thrilled that NextOre can contribute to this transformative project and I look forward to jointly developing Australia’s reputation as a global leader in green resource extraction.”



Figure 1. NextOre’s Magnetic Resonance Analyser (MR) apparatus

Background on NextOre Pty Ltd

Formed in 2017 by CSIRO, Advisian Digital and RFC Ambrian, NextOre Pty Ltd supplies Magnetic Resonance ore sorting solutions to global mining companies that applies mineral sensing technology developed by the CSIRO. NextOre’s Magnetic Resonance analysers (MRA) apply a form of radio frequency spectroscopy to generate quantitative measurements of target ore minerals in production applications.

The use of the MRA allows for a high throughput, high accuracy bulk sorting application that is typically added to the front-end of a processing flow sheet to divert waste ores away before processing. This has the effect of improving mining grades by pre-concentrating the ore that will be subject to processing, whilst

rejecting significant tonnages of low grade material to tailings via a diversion method such as a chute flop gate or dead box diverter (see Figure 1). The theorised result of ore sorting is a reduced volume of upgraded ore that performs better in the processing plant whilst reducing processing costs as nil-value material that would ordinarily be subject to downstream processing is rejected early on.¹

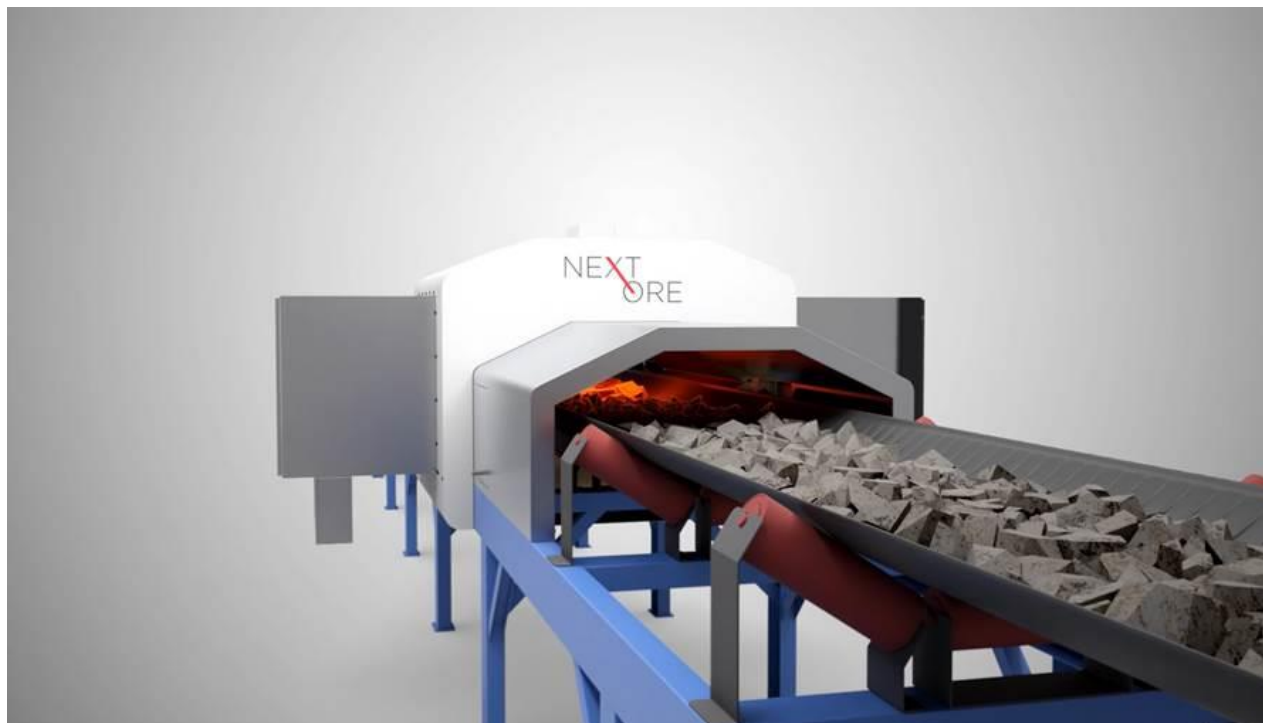


Figure 2. Illustration of ore entering the MR analyser via conveyor belt for assay.

Unlike traditional ore sorting technologies that are based on X-ray or infra-red transmission, NextOre's on-belt MRA ore sorting solution allows for the grade of high throughput ore to be measured at industry-leading accuracies and speeds. Due to the high speed of the technology, the integrative system is able to perform the analysis, computation and physical diversion of waste ores down to 1 second intervals allowing for fast diversion or high-resolution sorting.

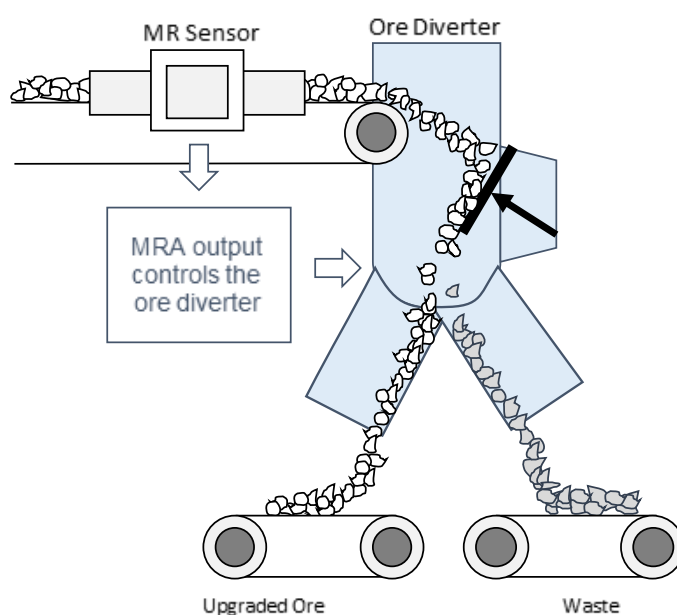


Figure 3: Schematic diagram of NextOre's ore sorting system.

References:

1. ASX Announcement – 11/12/19 – Ore Sorting Update – Technical Release
2. ASX Announcement – 25/10/19 - Ore Sorting Technology Exclusively Secured
3. ASX Announcement – 7/11/19 – Positive Razorback Scoping Study Results

This announcement has been authorised for release to the market by the Board.

For further information contact:

Peter Schubert
Executive Chairman
+61 416 375 346