

ASX ANNOUNCEMENT

21 December 2022

PEER REVIEW CONFIRMS RAZORBACK PROCESS PLANT DESIGN

Highlights:

- **Razorback Project process flowsheet and design reviewed by industry specialists, confirming feasibility**
- **Recommendations include increased output, economies of scale benefits**
- **Optimisation Studies investigating key plant components, on track for delivery Q1 2023**

Magnetite Mines Limited (MGT or Company) is pleased to announce the completion of a peer review of the Razorback Iron Ore Project's (**Project**) process plant (**Review**), with outcomes confirming the feasibility of the Hatch-engineered flowsheet and plant design.

With the overall objective of producing high-grade magnetite concentrate with iron grades above 67.5% Fe, the Razorback process flowsheet has been designed to process iron ores for minimum operating cost. An accompanying metallurgical testwork suite has been undertaken to de-risk the flowsheet at every stage of processing.

The Review was completed by independent industry specialists with extensive magnetite processing experience. The independent technical team completed the assessment across four key areas:

- Process flowsheet;
- Equipment selection, including crushing, HPGR, milling, dewatering and filtration;
- Materials handling aspects; and
- Metallurgical results.

While confirming the feasibility of the current process flowsheet and plant design, the Review also highlighted economies of scale benefits that may be realised with increased production capacity. This is in line with the Company's decision to increase the scale of Stage 1 production capacity to a minimum of 5Mtpa¹. In particular, scale-up opportunities were identified in the areas of stockpile reclaim and primary grinding for capacities of 5Mtpa and higher.

Optimisation Studies

The Review's findings have underpinned and supported the scope of processing-focused Optimisation Studies being undertaken by the Company. These studies also reference the extensive metallurgical testwork and engineering design studies already completed and are well underway with results due in the first quarter of 2023.

Key features of the process plant design and flowsheet are expected to carry over into scaled-up designs, including:

- Process plant feed flexibility:** To accommodate anticipated ore variability from the mine during operations, the process plant has been designed to cope with a wide range of head grade and mass recovery parameters at nominal throughput rates. This feature allows the process plant to maintain throughput consistency and yield over the life of mine, addressing many of the orebody variability issues seen in West Australian magnetite processing operations.

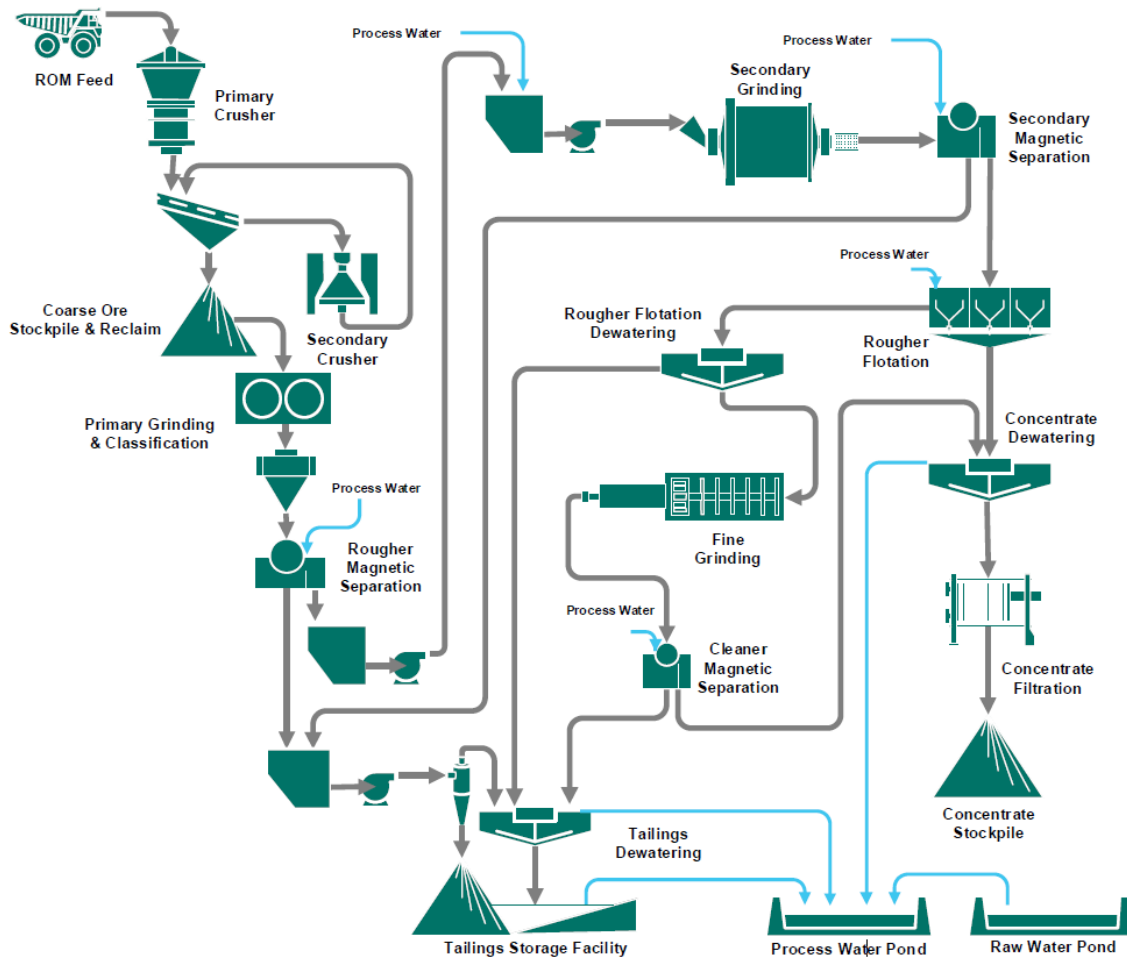


Figure 1. Schematic flowsheet for the Razorback Iron Project

- Concentrate specification flexibility:** The process plant design is centred around the Razorback ore's ability to produce high-grade concentrates with a minimum 67.5% Fe concentrate specification. Metallurgical testwork results have demonstrated that higher-grade outputs are achievable for some areas of the ore body². This feature has been adapted into the design of the process flowsheet and plant design whereby operation can be adjusted with respect to product quality in response to market conditions or customer preference, without capital-intensive plant modifications.

- **Modular construction:** The process plant design centres around single production trains of nominal 2.5Mtpa capacity, with expansion to higher capacities largely entailing duplication. The current Optimisation Studies are assessing economies of scale benefits that apply to increasing plant modules. For example, a single large primary crusher may service two production lines, decreasing capital and operating costs.

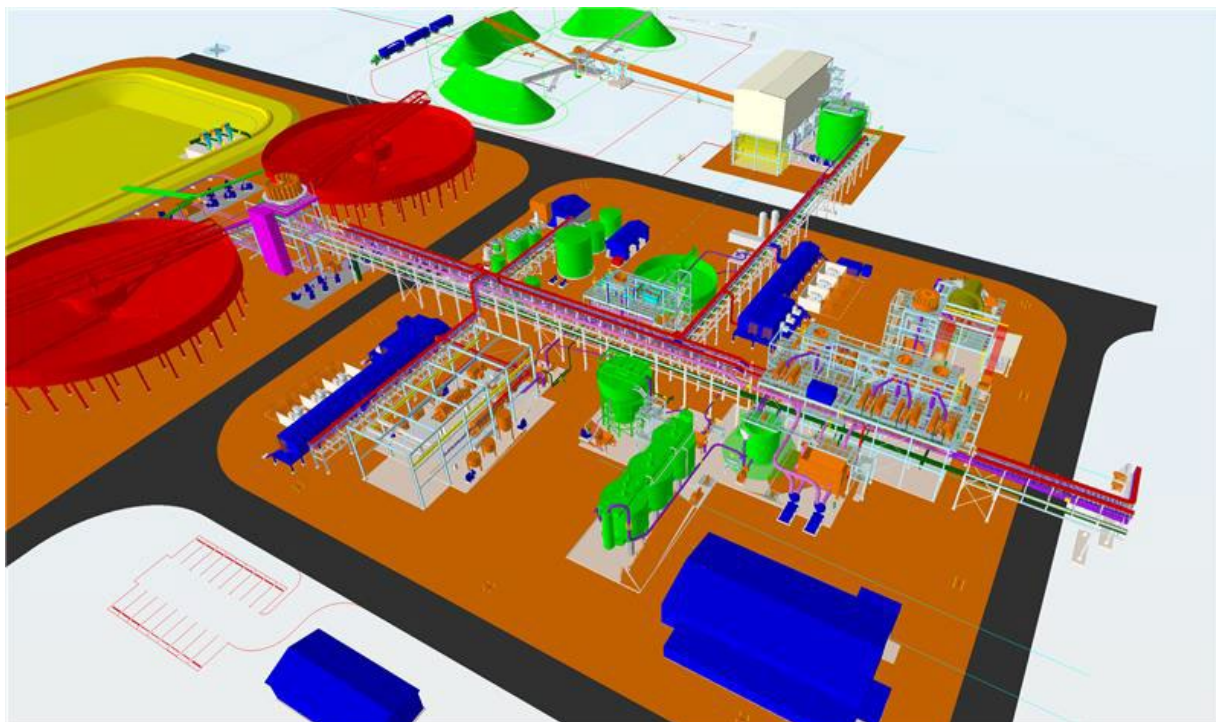


Figure 2. Schematic 3D design of Wet Plant section for single plant module

- **Early-stage rejection of low-grade material:** The process plant has been designed to reject low-grade material early in the flow sheet, taking advantage of high level confidence in the metallurgical and comminution performance of the ore. Early-stage rejection of gangue or low-grade material significantly reduces the downstream plant size for a given output capacity, a key capital and operating cost benefit. Additionally, the production of wet tailings is significantly reduced, a further benefit in terms of capital and operating cost, as well as improved environmental and safety outcomes.

- Tailings construction materials:** The early-stage rejection of gangue material following grinding creates 140 micron (sand size) material for use in tailings dam construction. This use of reject material for tailings dam construction has been validated by rheology testwork and represents a significant cost reduction in incremental tailings dam construction over time with much of the raw materials required being provided by the mine and plant, reducing the need to source external materials, reducing costs and improving environmental outcomes.

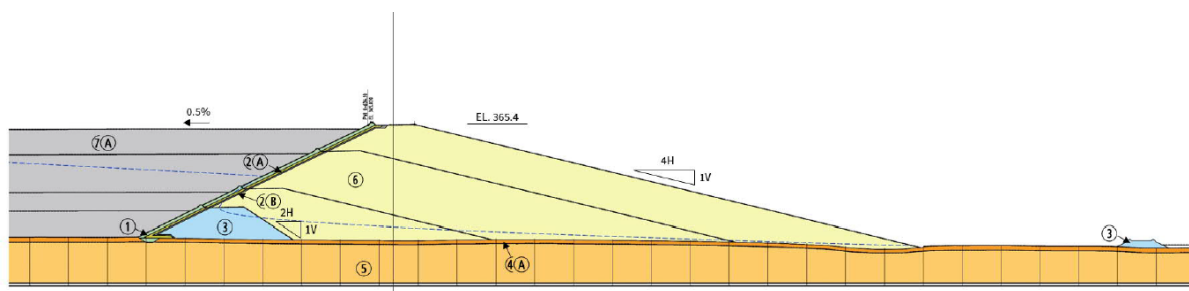


Figure 3. Tailings storage facility, sand dam embankment x-section

The Company is committed to the optimisation and de-risking of the Razorback Iron Ore Project in readiness for development. As previously communicated to the market, an update on the final go-forward position with respect to staged development and production capacity is expected in late Q1, 2023.

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

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References

- ASX Announcement – 13/09/22: Magnetite Mines Transforming To Meet Growing High-Grade Market
- ASX Announcement – 21/07/22: Positive Interim Metallurgical Test Results