

18 DECEMBER 2017

## Modular development approach reduces Owendale upfront capital expenditure by 59%

### Key Highlights

- Independent study completed by Simulus Engineers reduces estimated Owendale capital costs (“capex”) from USD 94M (July 2017 PFS) to USD 38.5M
- Significant capex reduction driven through the use of ‘off-the-shelf’ components, offshore supply and a scaled, modularised plant design producing a simplified flowsheet
- Modular approach de-risks Owendale development and entry to scandium market
- Scandium oxide production has been scaled to 20 tpa (from 42 tpa) in line with Platina’s modular development strategy at Owendale
- Operating costs increase in line with reduction of plant size

Platina Resources Limited (ASX: PGM, “Platina” or the “Company”) is pleased to announce the results of an independent study by Simulus Engineers ‘Simulus’) on the plant size options for the Company’s 100% owned Owendale scandium, cobalt and nickel project in central New South Wales.

Simulus were engaged to assess several small plant throughput scenarios and to quantify options to initially build a smaller Stage 1 process plant that can be readily expanded to meet growth in the scandium oxide market.

The analysis conducted by Simulus has highlighted a preferred plant scale which will be used within the upcoming Definitive Feasibility Study (“DFS”). The key outcomes of the Simulus optimisation study are provided in Table 1.

**Table 1: Key development metrics: Owendale project**

Key project parameters	PFS results (July 2017)	Simulus Stage1 option (Dec 2017)	Change (%)
Capital cost estimate	USD 94M	USD 38.5M	(59%)
Average plant feed grade	610 ppm Sc	640 ppm Sc <sup>1</sup>	5%
Process throughput	50,000 dtpa	22,570 dtpa	(55%)
Scandium oxide production	42 tpa	20 tpa	(52%)
Overall scandium recovery to product	90.3%	90.3%	-
Scandium oxide (scandia) product grade	99.9%	99.9%	-
Annual average cash operating cost	USD 23M	USD 15.6M	(32%)
Unit cash cost	USD 532/kg Oxide	USD 780/kg Oxide	47%

<sup>1</sup> Updated from maiden Ore Reserve that post-dates the PFS (first 5 years of PFS production)

### Platina Managing Director, Robert Mosig, commented:

*“It is pleasing to see that capital costs for the smaller plant will allow Platina to develop the Owendale Scandium Project with both lower costs and lower risk, which will result in greater value to existing investors. It has become clear that for the scandium market to develop there will need to be reliable primary sources of scandium. The high grade and size of the Owendale Ore Reserve will place Platina in the best position to capitalise on the market growth that will come from the establishment of a reliable supply.”*

### Overview

Platina engaged Simulus to assess a range of smaller production plant options which incorporated the efficiencies of offshore sourcing, modularised units and “off the shelf” components. The studies have refined the plant configuration and provided encouraging capital estimates.

The preliminary feasibility study announced on 10 July 2017 (“PFS”) included a planned scandium-cobalt-nickel facility to process 50 ktpa ore and produce 42 tpa scandia (scandium oxide). This production rate significantly exceeds current annual world usage of scandium. Although growing, the annual consumption of scandium is unlikely to reach the PFS production rate until new, relatively small scale sources of scandium oxide production have been established that will provide secure, low cost supply to potential end users permitting them to develop their products with confidence.

Since completing the PFS, the subsequent Mineral Resource update (announced 9 August 2017) and the maiden Ore Reserve statement (announced 13 September 2017), Platina has focused engineering studies on assessing smaller, lower risk plant configurations to optimise the start-up configuration and reduce up-front capital costs.

The current study is based on similar assumptions to the PFS with modifications to throughput grade drawn from the subsequent maiden Ore Reserve study, removal of the nickel and cobalt recovery for the Stage 1 plant, and a change to contract mining removing initial mobile equipment capital and increasing the contingency to 25% in line with the low level of study.

Two potential development alternatives were assessed.

Platina reviewed the potential to establish a demonstration plant instead of undertaking pilot testing and detailed engineering studies. Such plants are built cheaply and are not designed for long term production but can produce saleable quantities of product on a small scale whilst allowing the opportunity to investigate operation processes and conditions. This process reduces initial capital expenditure but comes at a high operating cost and is unlikely to generate positive cash flow in the short to medium term.

Platina’s investigations determined that the establishment of a small production plant provided a more secure way forward for both capital and operating cost risks. The level of study has been at a  $\pm 35\%$  cost estimate basis generally associated at a scoping study level. The estimates are at a lower level of study than the previous PFS which was completed on a +25% to -15% cost estimate basis. The studies are based on an initial scandium oxide only production to minimise upfront capital requirements. The options for future addition of recovery modules for cobalt and/or nickel will be studied in the DFS.

This optimisation work has helped to refine the DFS scope and plant configuration which will allow the DFS work program to progress in H1 2018. Importantly, this process will allow for an expansion of production at Owendale when necessary.

Environmental studies at Owendale are progressing with the collection of baseline data, with 12 months of baseline data required for the Environmental and Social Impact Assessment (“ESIA”). It is expected the ESIA can be completed at the same time as the DFS in H2 2018.

### Process overview

A block flow sheet of the operating process is shown in Figure 1.

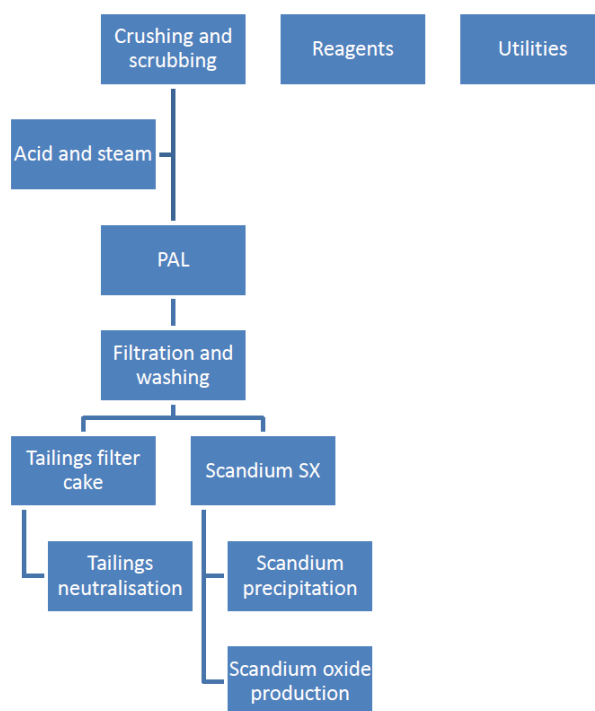


Figure 1 Owendale block flow sheet

### ASX Chapter 5 Compliance and Cautionary Statement

The information and production target presented in this announcement is based on a Scoping Study (SS) level optimization of the previous PFS and is based on moderate accuracy level technical and economic assessments. The SS is of a lower confidence level than a PFS. The previous Ore Reserve estimate is used as a basis for the current study for a stage 1 development. Although the throughput is lower and the processing costs higher, a change in the initial cut-off grade is not required and the Stage 1 development should not materially affect the Ore Reserve.

The SS includes cost estimates based on reasonable assumptions on the modifying factors. The SS has been conducted to determine the potential viability, and optimum pathway to production, of an open pit mining operation and hydrometallurgical route for the Owendale Project.

The Company has concluded that it has a reasonable basis for providing the forward-looking statements and forecast financial information included in this announcement. The detailed reasons for that conclusion are outlined throughout this announcement and all material assumptions, including the JORC modifying factors, upon which the forecast financial information is based are disclosed in this announcement. This announcement has been prepared in accordance with the JORC Code (2012) and the ASX Listing Rules.

The actual results could differ materially from a conclusion, forecast or projection in the forward-looking information. Certain material factors were applied in drawing a conclusion or making a forecast or projection as reflected in the forward-looking information.

The SS has allowed the advancement of all JORC modifying factors with progressive mining studies, metallurgical, processing and engineering studies. Geotechnical and tailings studies are at initial stages and are more conceptual for the SS. Environmental baseline studies have commenced, in preparation for an ESIA. Mining Lease application and environmental permitting are yet to be commenced but no major impediments are currently anticipated.

The Owendale Project is at the PFS phase however the current optimisation is at SS cost estimates. Although reasonable care has been taken to ensure that the facts are accurate and/or that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results and developments of projects and the scandium market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. A key conclusion of the previous PFS and current SS optimisation, which is based on forward looking statements, is that the Owendale Project is considered to have positive economic potential.

The Company believes it has a reasonable basis to expect to be able to fund and further develop the Owendale Project. However, there is no certainty that the Company can raise funding when required.

### Forward Looking and Cautionary Statements

Some statements in this report regarding estimates or future events are forward-looking statements. They involve risk and uncertainties that could cause actual results to differ from estimated results. Forward-looking statements include, but are not limited to, statements concerning the Company's exploration programme, outlook, target sizes and mineralised material estimates. They include statements preceded by words such as "anticipated", "expected", "targeting", "likely", "scheduled", "intends", "potential", "prospective" and similar expressions.

### Competent Person Statements

Information in this announcement relating to the Owendale PFS and Production Target is based on technical data compiled by Mr Boyd Willis, an Independent Consultant trading as Boyd Willis Hydromet Consulting. Mr Willis is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Willis has sufficient experience which is relevant to metal recovery from the style of mineralisation and type of deposits under consideration and to the activity which they are undertaking to qualify as a Competent Persons under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. This includes over 20 years of experience in metal recovery from Laterite ore and over 7 years of experience with Scandium hydrometallurgy. Mr Willis consents to the inclusion of the technical data in the form and context in which it appears.

### Previously Reported Information

This report includes information that relates to Mineral Resources, Pre-Feasibility Study results and Ore Reserves which were prepared and first disclosed under the JORC Code 2012. The information was extracted from the Company's previous ASX:PGM announcements as follows

1. Prefeasibility study announced 10 July 2017
2. Resource estimate update announced 9 August 2017
3. Maiden Reserve announced 13 September 2017

The Company confirms that it is not aware of any new information or data that materially affects the information included in those earlier market announcements. All material assumptions and technical parameters underpinning the Mineral Resources and Ore Reserves estimates in the relevant market announcement continue to apply and have not materially changed.

**For further information, please contact:**

Robert Mosig, Managing Director

Tel: (+61) 7 5580 9094

Email: [admin@platinareources.com.au](mailto:admin@platinareources.com.au)