



Lithium Recovery Patent Application Filed

Highlights

- TG Metals has developed technology that materially enhances the recovery and quality of spodumene concentrates for both DMS and flotation
- A provisional patent application has been lodged - securing the intellectual property rights for this technology
- The technology enhances the metallurgical flowsheet for the Burmeister deposit to ensure a high quality spodumene concentrate from the Lake Johnson Lithium Project
- The technology can be applied to other ore sources, providing commercial opportunities through royalty streams or licensing arrangements

TG Metals Limited (**TG Metals** or the **Company**) (ASX:TG6) is pleased to announce the filing of a provisional patent application with IP Australia, for its proprietary enhanced recovery of spodumene concentrate technology from lithium pegmatite mineralisation from the Burmeister deposit at its Lake Johnston Project (**Burmeister** or the **Project**) in WA. The patent application secures the intellectual property rights for TG Metals enhanced metallurgical flowsheet for the recovery of spodumene concentrate from an integrated dense media separation (**DMS**) and flotation process.

Following a forensic analysis and extensive literature search, the Company prepared a draft provisional patent application (**Provisional Patent Application**). TG Metals subsequently engaged Wrays patent attorneys (**Wrays**) to review the invention including conducting a technology review and preliminary subject matter search. Upon completing the review and working with the TG Metals team to finalise the Provisional Patent Application, Wrays confirmed the lodgment of the application with the Australian Government agency, IP Australia.

The new TG Metals technology is a significant enhancement of the application of flotation following the upstream application of DMS technology, resulting in enhanced lithium recovery and quality flotation concentrates. The provisional patent application lays the foundation for future international patent filings and the potential to commercialise through licensing agreements, such as non-exclusive licences and royalty agreements.

**TG Metals CEO, Mr. David Selfe stated;**

“The discovery of this breakthrough process is a game changer for Burmeister. A determined approach by the TG Metals team has now allowed us to enhance the flotation recovery characteristics of the DMS downstream processing feed.

Higher overall recoveries translate into lower processing costs and a higher quality concentrate which increases margins. The enhanced flowsheet will form the basis of future feasibility studies at Burmeister. An added bonus is the potential to commercialise the patent via licensing agreements.”

Background

During the course of the Company’s research, the flotation characteristics of spodumene mineralisation from the Burmeister pegmatite samples responded poorly under specific DMS operating conditions. A loss of lithium minerals selectivity over gangue minerals was observed. The Company completed a forensic investigation of the root cause and contributing factors that resulted in the loss in selectivity and identified the root cause whilst also finding a remedy to the loss of selectivity.

During semi-continuous DMS operation, recovered DMS middlings and combined fine products were treated via flotation technology. The concentrate product recovered from flotation lacked lithium mineral selectivity, not previously observed. A subsequent literature review and forensic analysis identified the root cause and contributing factors impacting on the recovery and quality of the lithium concentrate. Further research identified a viable method for restoring the lithium mineral selectivity from other pegmatite constituent minerals such as quartz and feldspars in the flotation process. **Table 1** summarises the results as reported (ASX 19 December 2024).

Many hard rock lithium processing operations utilise DMS technology only or opt for whole of ore flotation flowsheet. By only using one stage of lithium minerals recovery, in the concentration process, the operations compromise on overall lithium recovery and/or concentrate quality with an associated operating cost penalty. The Company recognised that a hybrid integrated flowsheet maximises lithium concentrate recovery and quality for the Burmeister pegmatites. Further, TG Metals believes the forensic analysis can be applied to spodumene and other lithium minerals.

TG Metals acknowledges the technology benefits and application in hybrid flowsheets for integrated DMS - Flotation lithium pegmatites hard rock processing. Many DMS only operations produce an unrecovered spodumene fines stream which, like the Burmeister mineralisation, may be afflicted with poor selectivity under certain conditions. TG Metals patent application addresses the root cause and provides the remedy for poor selectivity under these conditions.

The Company has integrated the new process into its hybrid flowsheet for Burmeister (refer to ASX announcement 19 December 2024) and believes that it can be applied to other operations either with existing hybrid flowsheets or those considering adding a downstream flotation recovery circuit.



The clear benefits are:

- High grade SC6 concentrate from application of DMS
- Improved recoveries from downstream flotation on DMS fines
- Overall improved recoveries from a more efficient hybrid DMS/Flotation flowsheet

A comprehensive flowsheet has been developed providing a systematic outline of each stage and material flow. The process showcases methods for improving spodumene selectivity in the flotation stream.

The Company registered a wholly owned subsidiary, TG Metals Tech Pty Ltd, as a vehicle to hold the patent application and facilitate future commercialisation.

	Composite 1			Composite 2			Composite 3		
Stream / Description	Mass	Lithia	Lithia	Mass	Lithia	Lithia	Mass	Lithia	Lithia
	Rec %	Grade%	Rec %	Rec %	Grade%	Rec %	Rec %	Grade%	Rec %
Cleaner Con (Final Fine Con)	31.1%	4.73	92.0%	24.2%	5.21	84.2%	25.0%	5.68	83.0%
Rougher+Cleaner Tails (Tailings)	68.9%	0.19	8.0%	75.8%	0.31	15.8%	75.0%	0.39	17.0%
Calc'd Head	100.0%	1.60	100.0%	100.0%	1.50	100.0%	100.0%	1.71	100.0%

Table 1: Flotation Technology Results (refer to ASX announcement 19 December 2024)

Future Work

The new technology will be integrated into future metallurgical research from core samples to be generated from planned drilling. The drilling program results will also be used to prepare a maiden resource estimate for the 100% TG Metals owned Burmeister lithium deposit.

Ongoing patent management to progress from provisional patent application to approved Australian Patent, this work to be undertaken in conjunction with Wrays.

The Company also plans to progress discussions with third parties to investigate the technology commercialisation opportunities through either royalties or non-exclusive licence agreements.

Further advancement of the Lake Johnston Lithium Project through staged technical evaluation activities to support future development decision-making.



Lake Johnston Project Description

The wholly owned Project is located on the Lake Johnston Greenstone Belt, **Figure 1**, approximately 190km by road east of Hyden, WA and contains the Burmeister lithium spodumene deposit and Jaegermeister lithium spodumene prospect.

Burmeister has an Exploration Target (refer to ASX release 1 May 2024) derived from drilling conducted by the Company as per **Table 2** below.

Tonnes Range Low	Tonnes Range High	Li ₂ O Range Low (%)	Li ₂ O Range High (%)
15.6 million	20.1 million	0.97	1.19

Table 2 – Exploration Target Range at 0.4% Li₂O cutoff

The Exploration Target quantity and grade is conceptual in nature. 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. The Target is based on the Company's resource definition drilling undertaken since discovery in October 2023. The current drill hole density (spacing between holes) at Burmeister is not considered sufficient to determine a Mineral Resource.

About TG Metals

TG Metals is an ASX listed company focused on exploring and developing gold and lithium assets at its wholly owned Lake Johnston Project and 80% owned Van Uden Gold Project in the stable jurisdiction of Western Australia, **Figure 1**. The Lake Johnston Project hosts the Burmeister high grade lithium deposit, Jaegermeister lithium pegmatites and several surrounding lithium prospects. Burmeister is in proximity to four lithium processing plants and undeveloped deposits. The Van Uden Gold Project contains past producing gold mines and is in proximity to operating gold processing Plants.

Authorised for release by TG Metals Board of Directors.

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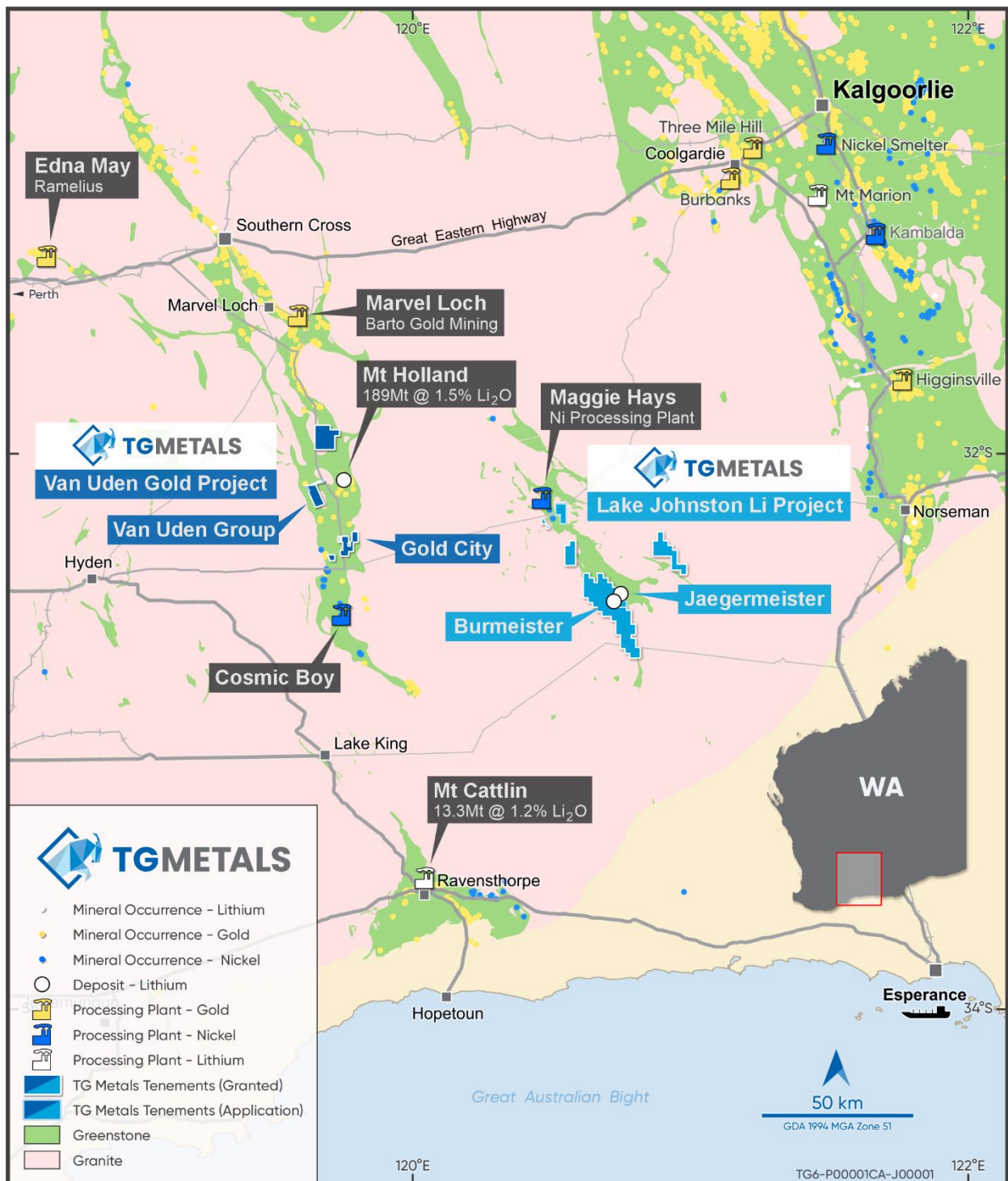


Figure 1 – Location Map showing TG Metals' Lake Johnston Lithium and Van Uden Gold Projects

Competent Persons Statement

Information in this announcement that relates to exploration results, exploration strategy, exploration targets, geology, drilling and mineralisation is based on information compiled by Mr David Selfe who is a Fellow of the Australasian Institute of Mining and Metallurgy and an employee of TG Metals Limited. Mr Selfe has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activities that 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. Mr Selfe has consented to the inclusion in this report of matters based on their information in the form and context in which it appears. Mr Selfe considers that the information in this announcement is an accurate representation of the available data and studies for the Lake Johnston Lithium project.

Information in this announcement relating to technology development, is based on forensic research and literature reviews completed by Mr David Selfe and supported by Mr Michael Rodriguez who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Rodriguez has sufficient experience that is relevant to the preparation and submission of a patent application with the oversight from Wrays patent attorneys under consideration and to the activities that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Metallurgical Results. Mr Rodriguez has consented to the inclusion in this report of matters based on their information in the form and context in which it appears. Mr Rodriguez considers that the information in this announcement is an accurate representation of the available data.

Forward Looking Statements

This announcement may contain certain statements that may constitute “forward looking statements”. Such statements are only predictions and are subject to inherent risks and uncertainties, which could cause actual values, results, performance achievements to differ materially from those expressed, implied or projected in any forward looking statements.

Forward-looking statements are statements that are not historical facts. Words such as “expect(s)”, “feel(s)”, “believe(s)”, “will”, “may”, “anticipate(s)” and similar expressions are intended to identify forward-looking statements. These statements include, but are not limited to statements regarding future production, resources or reserves and exploration results. All such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond the control of the Company, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, but are not limited to: (i) those relating to the interpretation of drill results, the geology, grade and continuity of mineral deposits and conclusions of economic evaluations, (ii) risks relating to possible variations in reserves, grade, planned mining dilution and ore loss, or recovery rates and changes in project parameters as plans continue to be refined, (iii) the potential for delays in exploration or development activities or the completion of feasibility studies, (iv) risks related to commodity price and foreign exchange rate fluctuations, (v) risks related to failure to obtain adequate financing on a timely basis and on acceptable terms or delays in obtaining governmental approvals or in the completion of development or construction activities, and (vi) other risks and uncertainties related to the Company’s prospects, properties and business strategy. Our audience is cautioned not to place undue reliance on these forward-looking statements that speak only as of the date hereof, and we do not undertake any obligation to revise and disseminate forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of or non-occurrence of any events.

The Company believes that it has a reasonable basis for making the forward-looking Statements in the presentation based on the information contained in this and previous ASX announcements.

The Company is not aware of any new information or data that materially affects the information included in this ASX release, and the Company confirms that, to the best of its knowledge, all material assumptions and technical parameters underpinning the exploration results in this release continue to apply and have not materially changed.