

Concentrate Production Moves to Steady State, Element 25 Renews Focus on Battery Grade Manganese

- Rapid extraction at ambient temperature and atmospheric pressure confirmed.
- Alternative reagent selection reduces process complexity and carbon intensity.
- Recoveries of up to 97% Mn achieved with further optimisation planned.
- Programme utilised run-of-mine concentrate from the Stage 1 Butcherbird processing plant.
- Concentrate from the beneficiation plant to be the feedstock for the HPMSM conversion process.

Element 25 Limited (E25 or Company) (ASX:E25) is pleased to confirm run-of-mine concentrate product from the Stage 1 beneficiation plant at the Company's 100% owned world class Butcherbird Manganese Project (Project) has been successfully leached to produce a manganese sulphate solution as the first step in producing battery grade High Purity Manganese Sulphate Monohydrate (HPMSM) for the manufacture of lithium-ion batteries for electric vehicles (EV) .

The product from the simple low-cost beneficiation process currently in use at the Project was always envisaged as suitable feed material for the Company's rapid, simple leach process.

As in previous test work using material from the Project, **high extraction rates of up to 97%** were achieved in under 60 minutes with the bulk of the extraction taking place in the **first 15 minutes of the reaction**. Importantly the current round of extraction tests utilised an alternative reagent which offers advantages over that used previously both from an availability, cost, process simplification and carbon intensity perspective, in keeping with the Company's objective of becoming a low cost **Zero Carbon Manganese™** producer.

E25 Managing Director Mr Justin Brown commented, *"The resumption of the flowsheet optimisation test programme is a critical component of finalising the battery grade manganese sulphate Pre-Feasibility Study which is scheduled for completion in 2021. This work also importantly confirms the suitability of the concentrate produced from the Stage 1 beneficiation circuit for conversion to HPMSM and the market can now expect regular updates from this work stream."*



COMPANY SNAPSHOT

Market Summary

ASX code:	E25
Shares on issue:	149M
Share price:	\$1.83

Board of Directors:

Seamus Cornelius	Chairman
Justin Brown	MD
John Ribbons	NED

Element 25 Limited is developing the world class Butcherbird Manganese Project in Western Australia to produce high quality manganese concentrate and high purity manganese products for traditional and new energy markets.

Test Number	Feed Size	Duration (min)	Temp (C)	Pulp Density (%)	Relative Reductant Addition	H2SO4 Stoichiometric Ratio (%)	Feed Ore Conc (%)		Final Filtrate Conc (mg/L)		Recovery from Solids (%)	
							Mn	Fe	Mn	Fe	Mn	Fe
HY10563	500 μ m	60	90	20	1.5	200	33.7	10.5	104900	16800	97.1	52.99
HY10564	500 μ m	60	90	20	1.0	200	33.7	10.5	84350	10860	86.6	34.73

Table 1: Leach extraction details

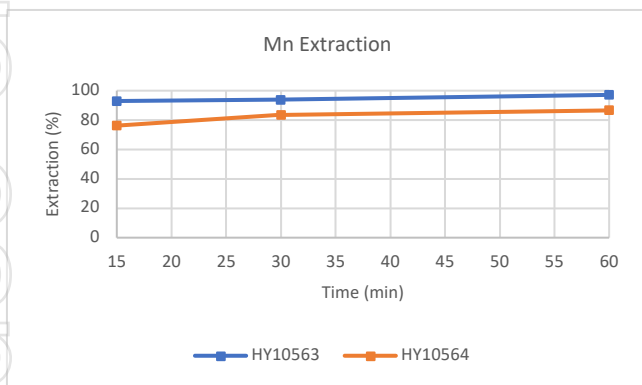


Figure 1. Manganese extraction over time

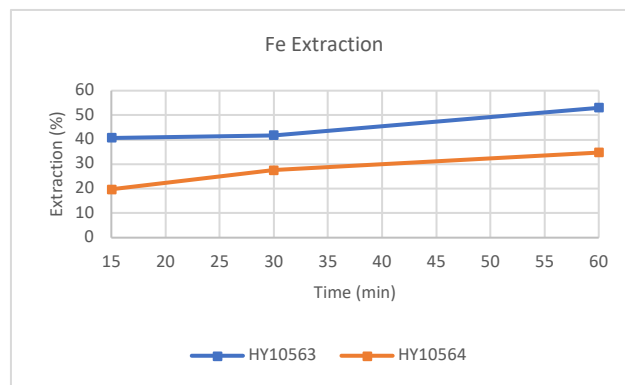


Figure 2. Iron extraction over time

The test results also show the selectivity over impurities the E25 process can deliver, with clear partitioning of iron and manganese into the liquor and waste residue streams. The next stage of the optimisation work will investigate the optimal way to purify the leach liquor to both minimise cost and process complexity, whilst also meeting the requirements of potential offtake partners.

Further updates will be released to the market as this work progresses, including the PFS documentation that is expected to show the exciting commercial potential around the conversion of the Company's current concentrate product to battery grade HPMSM to power the electrification of the global vehicle fleet.



Project team focus

The Business Development team is focussing on the next stages of the multi-stage development strategy of the Project including a Stage 2 expansion of the concentrate business followed by a Stage 3 development to convert the concentrate material into high purity manganese sulphate monohydrate (HPMSM) for electric vehicle (EV) batteries to power the global transition away from fossil fuel powered mobility.

Manganese is emerging as an increasingly important ingredient for EV batteries, with potential supply constraints for nickel and cobalt forcing battery manufacturers to look to high manganese cathodes to produce the vast amount of cathode material required by the EV industry in coming years.¹

The Project is ideally placed to feed this potential demand, with **advanced flowsheet development** work undertaken in 2019 and 2020 confirming a simple leach process for E25 ores which, when combined with offsets, will target the world's first **Zero Carbon Manganese™** for EV cathode manufacture².

About the Butcherbird Manganese Project

The Butcherbird Manganese Project is a world-class manganese resource with current JORC resources of more than 263Mt of manganese ore³. In May 2020, the Company completed a Pre-Feasibility Study (PFS)⁴ with respect to developing the deposit to produce manganese concentrate for export to generate early cashflow with a modest capital requirement⁵. The outstanding economics and low capital hurdle for the first stage of development has allowed the Company to deliver first production from the Project in less than twelve months from the publication of the PFS.

The PFS also highlighted the Project's potential for significant growth beyond the initial Stage 1 production volumes (the studies examined the potential for a 2X and 3X expansion to Stage 1 within 12 months of initial commissioning), and the Company expects to expedite the expansion of the Project.

In addition to the concentrate export business, the Company has completed extensive research & development and laboratory test work into the production of high purity manganese products including battery grade manganese sulphate (**HPMSM**) and High Purity Electrolytic Manganese Metal (**HPEMM**). The work has highlighted that the Butcherbird ores are highly amenable to an ambient temperature, atmospheric pressure leach process, resulting in a very efficient extraction of the manganese into solution, the key requirement for the cost effective and sustainable production of HPMSM and HPEMM.

The Project straddles the Great Northern Highway and the Goldfields Gas Pipeline, providing turnkey logistics and energy solutions. The Company plans to integrate renewable energy into the power solution over time to target a zero-carbon footprint for the Project, which is expected to also reduce energy costs. A cleaner, lower carbon flowsheet and high penetration renewable energy will place Butcherbird at the forefront of sustainable high purity manganese production.

¹ <https://thenextavenue.com/2021/01/22/svolt-opens-orders-for-its-nmx-nickel-manganese-batteries/>

² Reference: Company ASX release dated 12 February 2019.

³ Reference: Company ASX release dated 17 April 2019.

⁴ Reference: Company ASX release dated 19 May 2020.

⁵ Reference: Company ASX release dated 3 December 2020

Mineral Resources

Category	Tonnes (Mt)	Mn (%)	Si (%)	Fe (%)	Al (%)
Measured	16	11.6	20.6	11.7	5.7
Indicated	41	10.0	20.9	11.0	5.8
Inferred	206	9.8	20.8	11.4	5.9
Total	263	10.0	20.8	11.4	5.9

Notes:

- Reported at a 7% Mn cut-off for the Measured and Indicated categories and an 8% Mn cut-off for the Inferred categories.
- All figures rounded to reflect the appropriate level of confidence (apparent differences may occur due to rounding)

Mining Reserve

Based on the results of the Pre-Feasibility Study completed in May 2020, E25 has published a Maiden Ore Reserve for the Project of 50.55Mt in the Proved and Probable categories⁶.

Classification	Tonnes (Mt)	Grade (Mn%)	Contained Mn (Mt)	Recovered Mn (Mt)
Proved	14.4	11.5	1.65	1.35
Probable	36.2	9.8	3.56	2.92
Total	50.6	10.3	5.21	4.27

Justin Brown

Managing Director

Company information, ASX announcements, investor presentations, corporate videos and other investor material in the Company's projects can be viewed at: <http://www.element25.com.au>.

Competent Persons Statement

The company confirms that in the case of estimates of Mineral Resource or Ore Reserves, all material assumptions and technical parameters underpinning the estimates in the market announcements dated 17 April 2019 and 19 May 2020 continue to apply and have not materially changed. The company confirms that the form and context in which the competent person's findings are presented has not been materially modified from the original market announcements.

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Justin Brown who is a member of the Australasian Institute of Mining and Metallurgy. At the time that the Exploration Results and Exploration Targets were compiled, Mr Brown was an employee of Element 25 Limited. Mr Brown is a geologist and has sufficient experience which is 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'. Mr Brown consents to the inclusion of this information in the form and context in which it appears in this report.

This announcement is authorised for market release by Element 25 Limited's Board of Directors.

⁶ Reference: Element 25 Limited Reserve Statement lodged with ASX 19 May 2020.