Element 25

The future has always been electric...

ASX ANNOUNCEMENT 26 AUGUST 2021

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.

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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 µm	60	90	20	1.5	200	33.7	10.5	104900	16800	97.1	52.99
HY10564	500 µm	60	90	20	1.0	200	33.7	10.5	84350	10860	86.6	34.73

Table 1: Leach extraction details

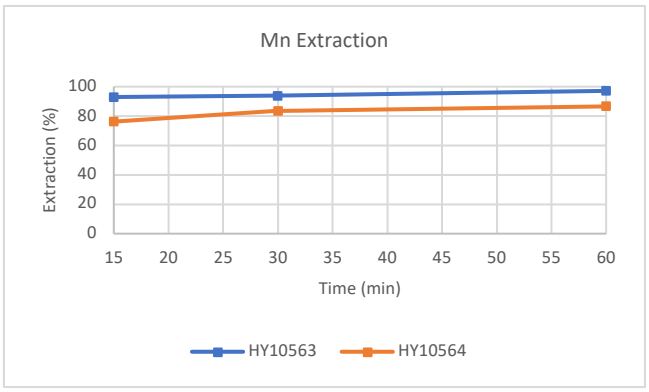

Figure 1. Manganese extraction over time

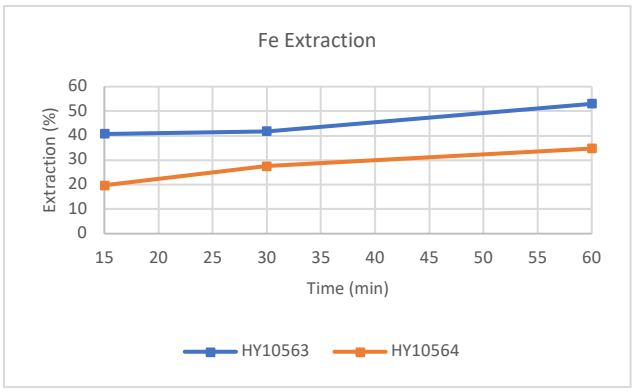

Figure 2. Iron extraction over time

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 manufacture[2].

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 ore[3]. 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 requirement[5]. 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 categories[6].

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.

JORC Code, 2012 Edition – Table 1 – Butcherbird Project Hydrometallurgical Test Work

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems.*	• Processing product stockpile sampled at 1 hour intervals and combined and split using a riffle splitter to form a daily composite. Testwork conducted on a sub-sample. • Samples are pulverized to 75 µm, with elements determined by whole rock XRF fused bead analysis.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• N/A
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• N/A
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• N/A
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	• Daily composite is subsampled using a riffle splitter. • Sample sizes are considered appropriate for the nature of the test work which is bench scale lab testing. • Samples are routinely assayed for Mn, Fe, Si, Al, Ca.

Criteria	JORC Code explanation	Commentary
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The samples were assayed by whole rock XRF fused bead analysis. • Samples are routinely assayed for Mn, Fe, Si, Al, Ca.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• All data has been checked internally for accuracy by ALS staff. • All data is collected via Surpac following validation. • No adjustments have been made to assay data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• N/A.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• N/A
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• N/A
Sample security	• *The measures taken to ensure sample security.*	• Chain of custody of the samples is managed by company representatives and is considered appropriate. The samples were delivered directly to ALS Laboratories in Perth.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The data and sampling techniques are reviewed internally.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Butcherbird Project consists of granted exploration license E52/2350 and Mining Lease Application M52/1074. • The tenure is 100% owned by Element 25 Ltd.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The historical exploration data has been collected by Element 25 Limited and has been reported to high standards. • The methods of exploration and techniques used are considered appropriate for the deposit types sought (Mn)
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Butcherbird is a stratiform sedimentary manganese deposit. • The deposits are hosted within the Ilgarari Formation which is generally flat lying with gentle open folding in places. • The manganese mineralisation within the ore zones is divided into three distinctive units – a high grade manganiferous cap, supergene enriched manganiferous laterite and basal shale.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.*	• See historical ASX releases regarding the Butcherbird Mineral Resources.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• N/A.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• N/A. The samples are run-of-mine production samples
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• NA
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• NA
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• NA
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The next phase of work will focus on further metallurgical testwork.