22 May 2019

Neometals
All the right elements

DFS RESULTS FOR BARRAMBIE VANADIUM PRODUCTION AND COMMENCEMENT OF TITANIUM PILOT PROGRAM

HIGHLIGHTS

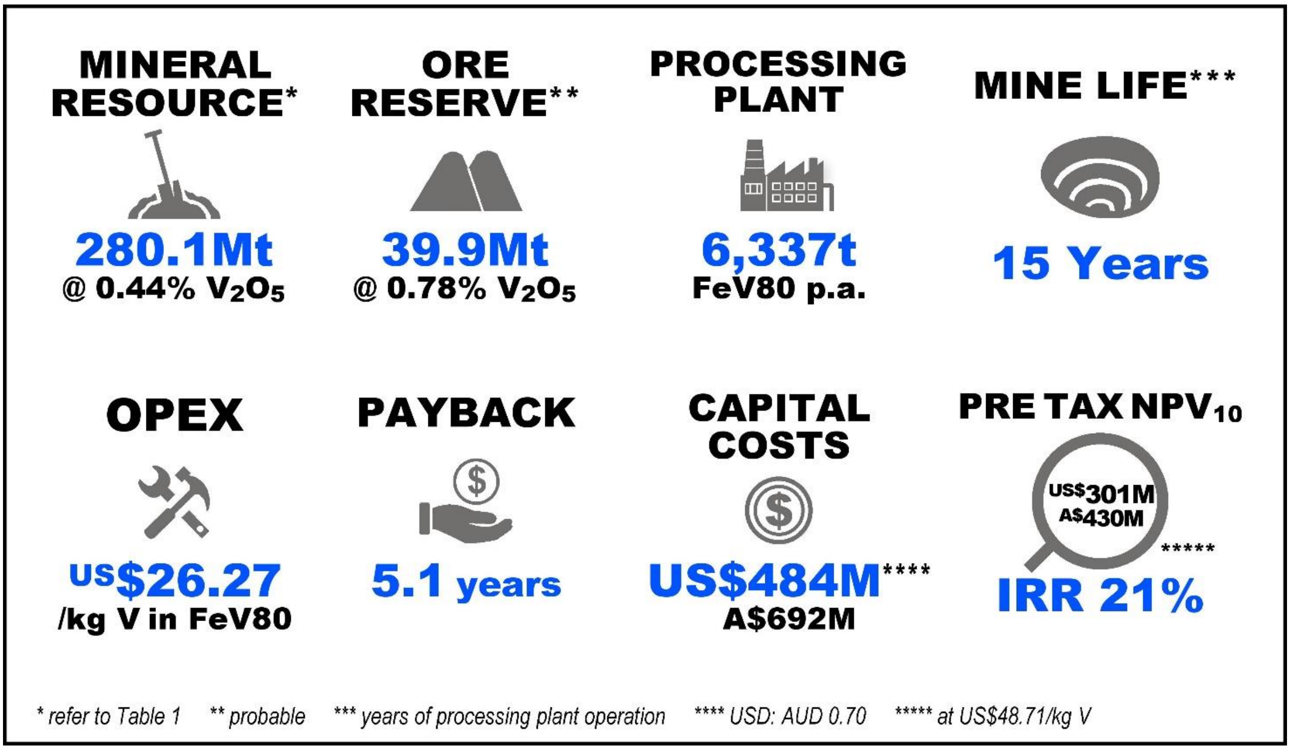

Figure 1: *Highlights of study*

- Neometals confirms primary production of vanadium pentoxide and ferrovanadium from vanadium-rich Central Bands to be technically feasible and economically viable
- Revised DFS focused on vanadium production only (primarily from Central Bands). Next step to determine how to extract value from titanium which represents ~95% of contained Barrambie resource metal
- Commenced staged pilot-scale evaluation of conventional hydrometallurgical flowsheets to recover titanium and vanadium from the titanium-rich Eastern Band
- Pilot to provide data to upgrade the accuracy of 2015 PFS to DFS standard and determine optimal flowsheet to process 'whole of deposit' before commencing a FEED Study
- A Canadian NI 43-101 Technical Report is nearing completion as a capstone document for ongoing offtake, partner and financing discussions

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Industrial mineral and advanced materials project developer, Neometals Ltd (ASX: NMT) ("**Neometals**" or the "**Company**"), is pleased to announce the completion of an update to its 2009 Definitive Feasibility Study ("**Revised DFS**") that considered primary vanadium production from the conventional salt roast-leach process at its 100% owned Barrambie Vanadium-Titanium-Magnetite ("**VTM**") project ("**Barrambie**"). The Revised DFS used the latest Neometals 2018 Mineral Resource Estimate as a basis (*see Neometals ASX announcement dated 17th April 2018, titled 'Updated Barrambie Mineral Resource Estimate' available at www.neometals.com.au*). The Revised DFS establishes Ore Reserves, estimated using the guidelines of the 2012 edition of the Australian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves "(**JORC Code (2012)**)". It also confirms the strong technical and financial merits of producing high purity vanadium pentoxide and ferrovanadium, primarily from Barrambie Central Band ore.

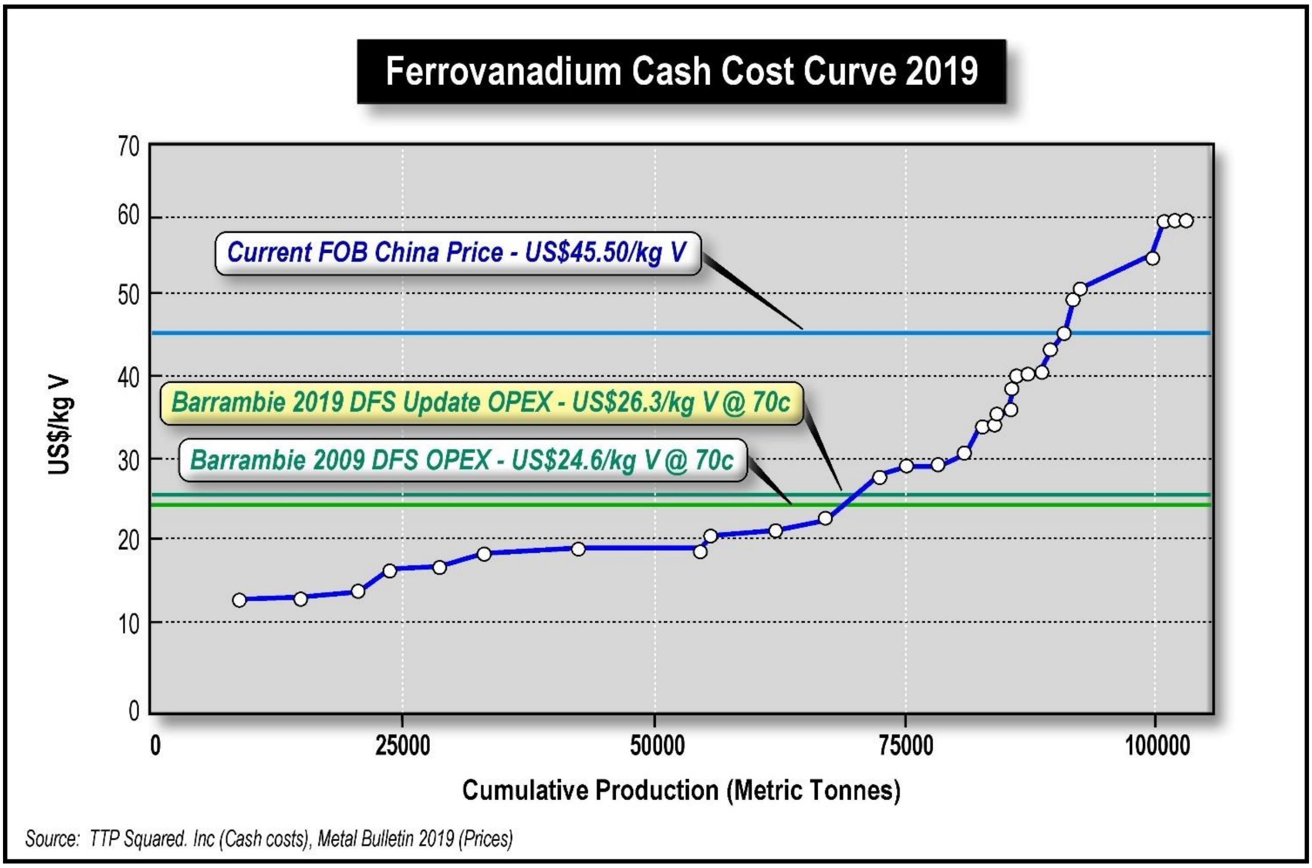

Figure 2: *Ferrovanadium Industry Cash Cost Curve 2019*

Neometals has invested approximately $A30 million in the acquisition, exploration and evaluation of Barrambie since 2002. Given the size and scale of the hard-rock titanium and vanadium resources, the Company continues to evaluate a range of metallurgical processing routes seeking how best to realise value from both the titanium and vanadium minerals contained. Following the original 2009 DFS on primary vanadium production, the market experienced an extended period of depressed vanadium prices which spiked in 2018 before normalising in the first half of calendar year 2019. Neometals has maintained a focus on recovering a titanium co-product to maximise the probability of developing Barrambie and realising maximum value for shareholders.

A pre-feasibility study ("**PFS**") was completed on a hydrometallurgical process which showed titanium chemical production to yield the highest returns (*see Neometals ASX announcement dated 25th August 2015).* Since 2017, Neometals has completed metallurgical drilling, bulk sample mining, beneficiation and pilot scale testing of the conventional pyrometallurgical process (electric-arc smelting) to recover titanium slag (intermediate product used in titanium pigment production).

With the 2012 JORC compliant primary vanadium Revised DFS finalised, the focus returns to advance the level of titanium evaluation from PFS to DFS standard through piloting the hydrometallurgical flowsheet in Australia. The aim is to identify the optimal 'whole of deposit' flowsheet to recover the maximum value from this globally significant VTM resource before moving to a Front-End Engineering and Design ("**FEED**") Study.

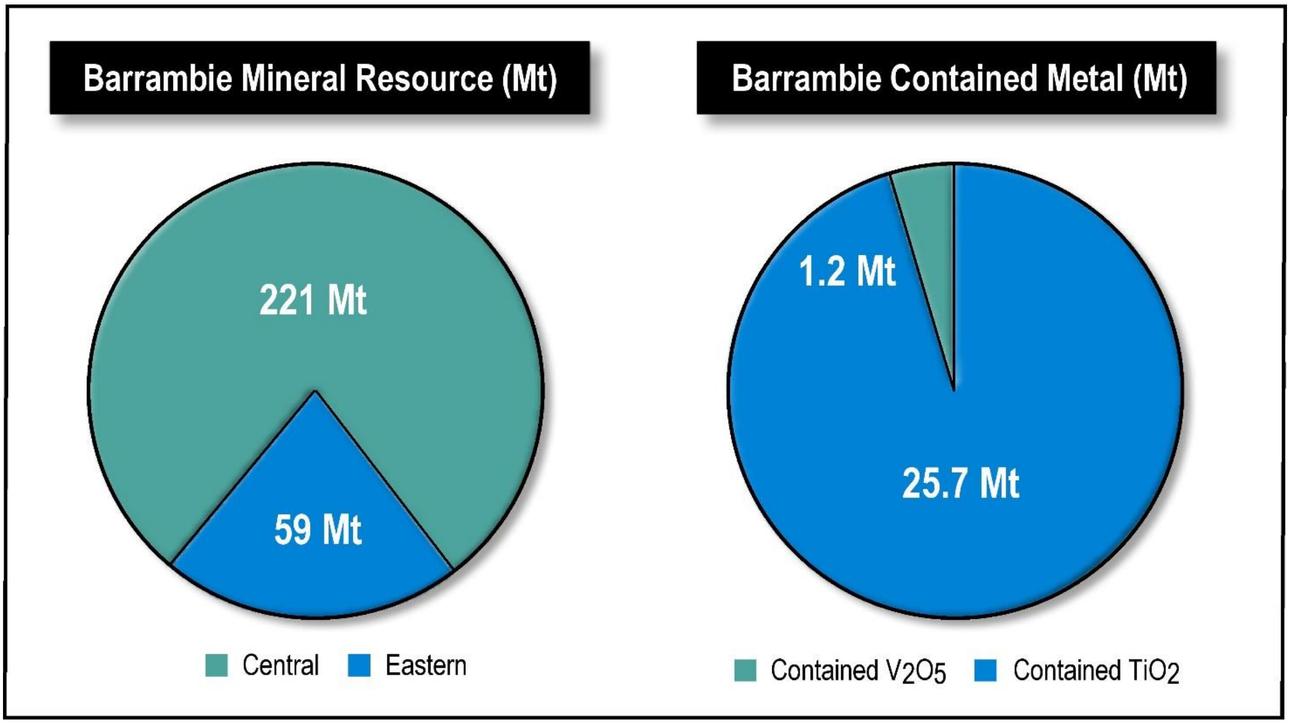

Figure 3: *Barrambie Mineral Resource by Size and Contained Metal*

The Revised DFS confirms the feasibility of the conventional vanadium production pathway, but it does not consider the impact to project economics of exploiting the contained titanium through a whole of deposit processing solution. Neometals has a significant opportunity to also produce an ultra-high purity titanium feedstock (+99% TiO_2) for the Chinese sulfate pigment producers. Chinese sulfate pigment producers must eliminate the storage and environmental issues associated with acidic iron-sulfate tailings and remove the need to transition the county's ~4Mt of sulfate pigment capacity (~50% of global capacity) with chloride pigment capacity courtesy of new green-fields plants. The Neometals 2015 PFS, which considered hydrometallurgical processing of the Eastern Band, indicated 99% pure TiO_2 chemical feedstocks could be produced at industry leading operating costs.

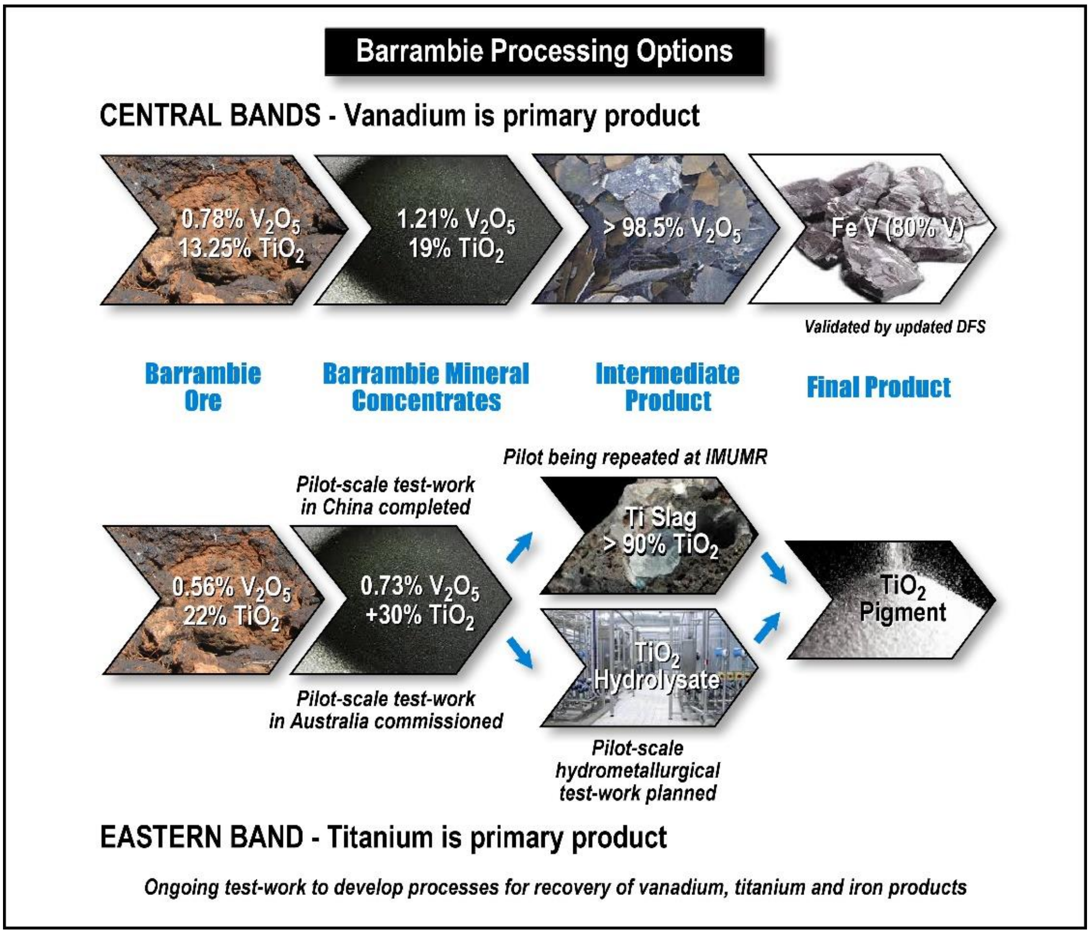

Figure 4: *Barrambie Processing Options*

Forward work programs will focus on the pilot-scale evaluation of a conventional, commercially proven, hydrometallurgical flowsheet utilising atmospheric acid leaching to recover titanium, vanadium and iron products in combination with conventional and proprietary acid regeneration equipment. The optimised flowsheet will then form the basis of the final Neometals Barrambie evaluation, a FEED study. An indicative timeline showing evaluation steps can be found below:

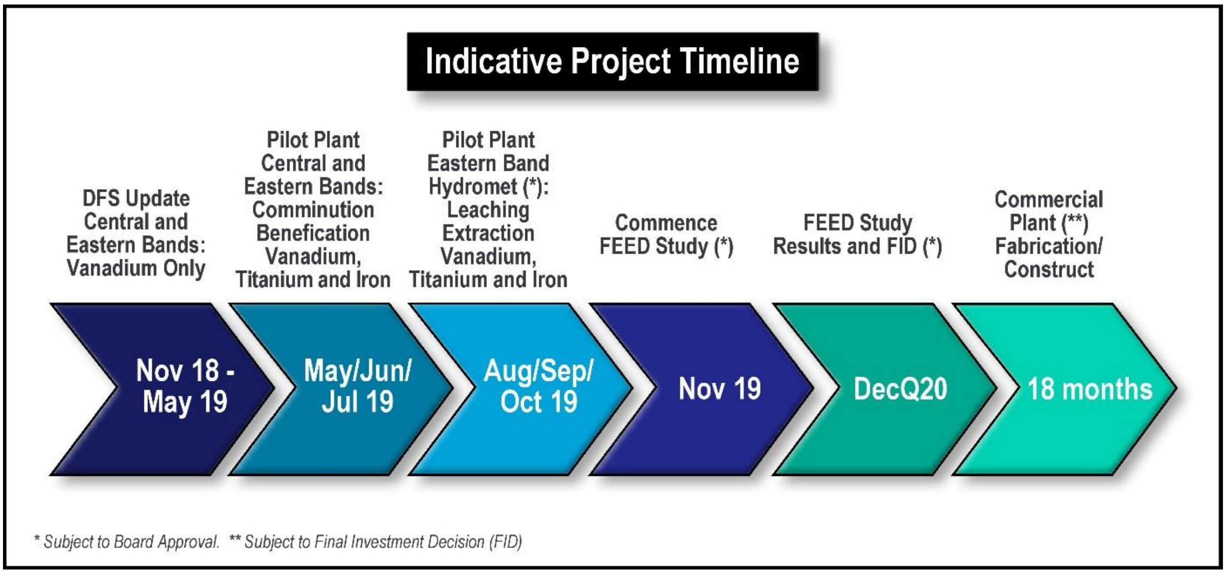

Figure 5: *Indicative Project Timeline*

IMPORTANT INFORMATION

Competent Persons Statement

The information in this announcement that relates to Mineral Resources is based on, and fairly represents, information and supporting documents compiled by John Graindorge who is a full-time employee of Snowden Mining Industry Consultants Pty Ltd and is a Chartered Professional (Geology) and a Member of the Australasian Institute of Mining and Metallurgy. John Graindorge has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012). John Graindorge consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to Ore Reserves is based on, and fairly represents, information and supporting documents compiled by Frank Blanchfield who is an employee of Snowden Mining Industry Consultants Pty Ltd and is a Fellow of The Australasian Institute of Mining and Metallurgy. Frank Blanchfield has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012). Frank Blanchfield consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to Ore Reserves (Metallurgy and Metallurgical Factors and Assumptions) is based on, and fairly represents, information and supporting documents, compiled by Gavin Beer who is a full-time employee of Neometals Ltd and is a Chartered Professional (Metallurgy) and Member of The Australasian Institute of Mining and Metallurgy. Gavin Beer has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012). Gavin Beer consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The estimated Ore Reserves underpinning the production targets in this announcement have been prepared by a competent person in accordance with the requirements of the JORC code (2012).

Forward-looking Statements

This release contains "forward-looking information" that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the pre-feasibility and feasibility studies, the Company's business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, Mineral Resources and results of exploration. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'likely',' believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this news release are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.

Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current exploration activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of vanadium, titanium and other metals; possible variations of ore grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the mining industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward-looking information. These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information.

Neither the Company, nor any other person, gives any representation, warranty, assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statement will actually occur. Except as required by law, and only to the extent so required, none of the Company, its subsidiaries or its or their directors, officers, employees, advisors or agents or any other person shall in any way be liable to any person or body for any loss, claim, demand, damages, costs or expenses of whatever nature arising in any way out of, or in connection with, the information contained in this document. The Company disclaims any intent or obligations to or revise any forward-looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law. Statements regarding plans with respect to the Company's mineral properties may contain forward-looking statements in relation to future matters that can be only made where the Company has a reasonable basis for making those statements.

Advice

Nothing in this document constitutes investment, legal or other advice. Investors should make their own independent investigation and assessment of the Company and obtain any professional advice required before making any investment decision based on your investment objectives and financial circumstances.

FEASIBILITY STUDY OUTCOMES

Mineral Resources

The Mineral Resource estimate on which this Ore Reserve was estimated and reported in accordance with the JORC Code (2012) by independent resource consultants Snowden on 17th April 2018 (ASX announcement dated *"***Updated Barrambie Mineral Resource Estimate").**

The Mineral Resource estimate contains total Indicated and Inferred Mineral Resources of 280.1 million tonnes at 9.18% TiO_2 and 0.44% V_2O_5 to a maximum depth of 80m, reported above a cut-off grade of 10% TiO_2 or 0.2% V_2O_5.

Table 1: *Barrambie Project Mineral Resource Estimate as at April 2018* [1, 2]

Classification	Domain	Oxidation	Tonnes Mt	TiO_2 %	V_2O_5 %
Indicated	Central	Strongly oxidised	112.6	6.71	0.44
		Weakly oxidised	28.1	7.21	0.47
		Fresh	6.8	6.47	0.40
	Central sub-total		**147.5**	**6.80**	**0.45**
	Eastern	Strongly oxidised	26.4	19.68	0.50
		Weakly oxidised	10.0	21.45	0.56
		Fresh	3.2	19.14	0.47
	Eastern sub-total		**39.6**	**20.09**	**0.51**
Indicated Total			**187.1**	**9.61**	**0.46**
Inferred	Central	Strongly oxidised	16.0	5.32	0.39
		Weakly oxidised	18.3	6.02	0.41
		Fresh	38.8	5.76	0.38
	Central sub-total		**73.1**	**5.73**	**0.39**
	Eastern	Strongly oxidised	6.5	15.19	0.36
		Weakly oxidised	5.1	18.80	0.47
		Fresh	8.3	19.18	0.45
	Eastern sub-total		**19.9**	**17.78**	**0.42**
Inferred Total			**93.0**	**8.31**	**0.40**
Grand Total			**280.1**	**9.18**	**0.44**

1. *Reporting criteria: ≥ 10% TiO_2 or ≥ 0.2% V_2O_5; small discrepancies may occur due to rounding*
2. Mineral Resources reported are inclusive of Ore Reserves

See Neometals ASX announcement dated 17th April 2018, entitled **Updated Barrambie Mineral Resource Estimate,** for details of the estimation process.

Mining and Ore Reserves

Snowden completed a DFS-level mining study based on an updated Mineral Resource geological model completed in April 2018, with updated and new mining contractor costs (Adaman Resources and SMS Mining Services).

During the DFS stage of work, Snowden's scope of work included the work areas outlined below:

- Mine Planning Criteria
- Optimisation
- Mine Design and Scheduling
- Study Reporting
- JORC Code (2012) Ore Reserve Reporting

Adaman Resources in conjunction with SMS Mining Services provided the following input into the DFS:

- Mine Infrastructure
- Mine Contractor Pricing
- Mining Cost Modelling

Mining of the Barrambie deposit will be completed with conventional excavator and truck, supported by ancillary fleet with all works provided by a professional mining contractor including mobile plant, maintenance and drill and blast. The orebody consists of multiple steep dipping lodes which will need to be mined selectively on 2.5m flitches within the central ore zones to minimise dilution and 5m benches within the eastern ore zone and waste zones. Mining fleet has been scoped utilising a primary 32t excavator with CAT 777F 100t trucks. It is anticipated that all material will require drill and blast with an average powder factor of 0.35 within the waste zones increasing as the pattern tightens within the ore zones. Grade control is forecasted for 70% of total pit volume with Reverse Circulation drilling to be conducted on a 12.5m by 6.25m pattern. Ore will be hauled to a central ROM and fed into the ROM bin using front end loaders. Low grade ore will be stockpiled on the surface before rehandling to the ROM later in the mine life. Waste will be hauled to planned external waste rock landforms.

Dilution was applied by applying a 500mm skin (to both hanging wall and footwall) to mineralisation with $V_2O_5 > 0.6\%$ and re-blocking the model to 2.5m E by 10m N by 5m RL. This was deemed to be an appropriate selective mining unit ("**SMU**") when considering blast movement, grade control patterns and loading accuracy. Figure 5 shows an example section through the pit. An additional 4% loss is incorporated.

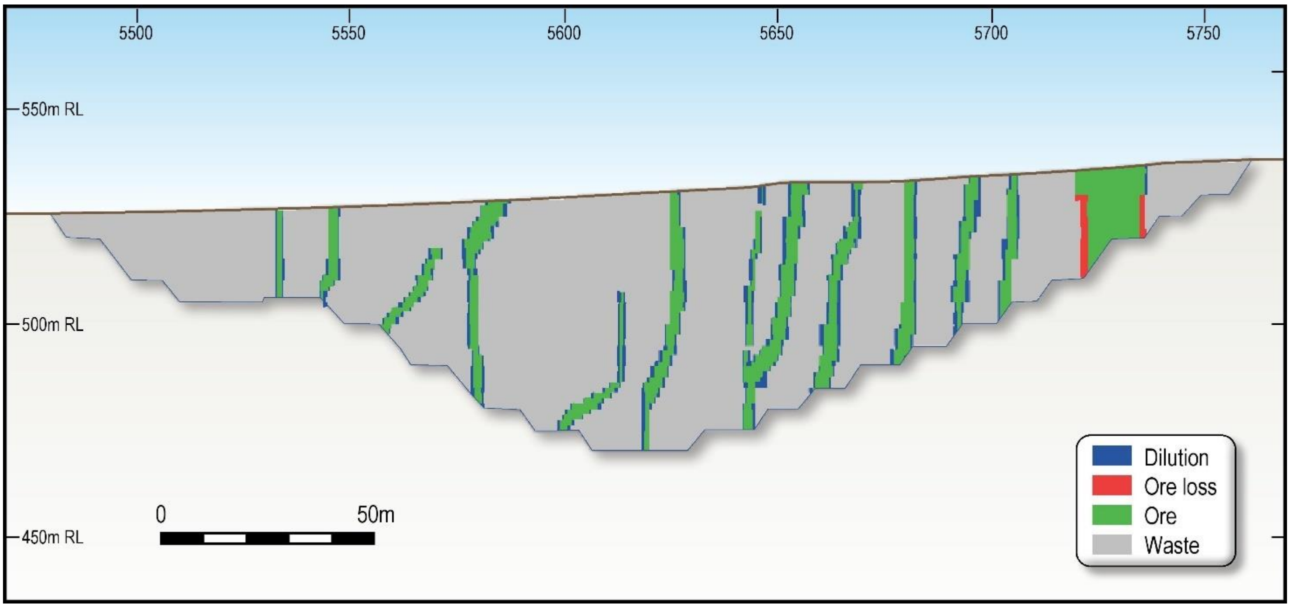

Figure 6: *Section showing Dilution and Ore Loss (12,610m N local grid)*

Table 2 summarises the dilution and ore loss resulting from the re-blocking process. The narrower lodes in the Central zone incur most of the ore loss and dilution. This dilution brings in higher silica and alumina grades that decreases plant recoveries.

Table 2: *Dilution and Ore Loss by Geological Zone*

Item	Eastern	Central	Overall
Ore loss (%)	10.1	7.3	8.2
Dilution (%)	3.8	21.9	16.0
Dilution V_2O_5 (%)	0.47	0.34	0.35
Dilution TiO_2 (%)	21.00	5.59	6.77
Dilution SiO_2 (%)	18.09	34.57	33.31
Dilution Al_2O_3 (%)	10.64	22.63	21.71
Dilution Fe_2O_3 (%)	44.07	24.08	25.61

A Whittle optimisation was performed and subsequent ultimate and staged pits were designed from Indicated Resources only. Key parameters used as part of the pit optimisation process included (but are not limited to):

- Assumed average of 3.14Mtpa of ore processing
- A selling price of US$31.20/kg V
- Average mining costs of A$3.55/t derived from submissions received from Adaman Resources
- Metallurgical recovery varies by zone and input chemistry (V_2O_5, SiO_2 and Al_2O_3) based on work completed from 2009 DFS. Average overall V_2O_5 recoveries were 42.3%
- Average processing, admin and incremental ore cost of A$45.04/t from Neometals, Ausenco and Adaman inputs

An Ore Reserve of 39.9Mt at 0.78% V_2O_5 (Table 3) was calculated through the selection of positive cash flow blocks within the final pit design. In addition, the life-of-mine strip ratio for the JORC Code (2012) Ore Reserve pit design's strip ratio is 3.56 : 1 (waste : ore).

Table 3: *Barrambie Ore Reserve Estimate (May 2019)*

JORC Code 2012 Reserve Category	Ore Tonnes (Mt)	V_2O_5 (%)	TiO_2 (%)	Fe_2O_3 (%)	Al_2O_3 (%)	SiO_2 (%)
Probable	39.9	0.78	15.1	46.4	12.5	17.6

Cut-off based on 0.6% V_2O_5 cut-off (prior to dilution) and net value (revenue minus selling, processing, administration and incremental ore mining costs) > $0/t on a diluted block-by-block basis from the parameters used in the pit optimisation.

The resultant site layout is shown in Figure 7. Infrastructure requirements for open pit mining include maintenance workshop for all mobile equipment, offices, crib rooms and amenities, fuel farm, water dams, and de-watering systems as required.

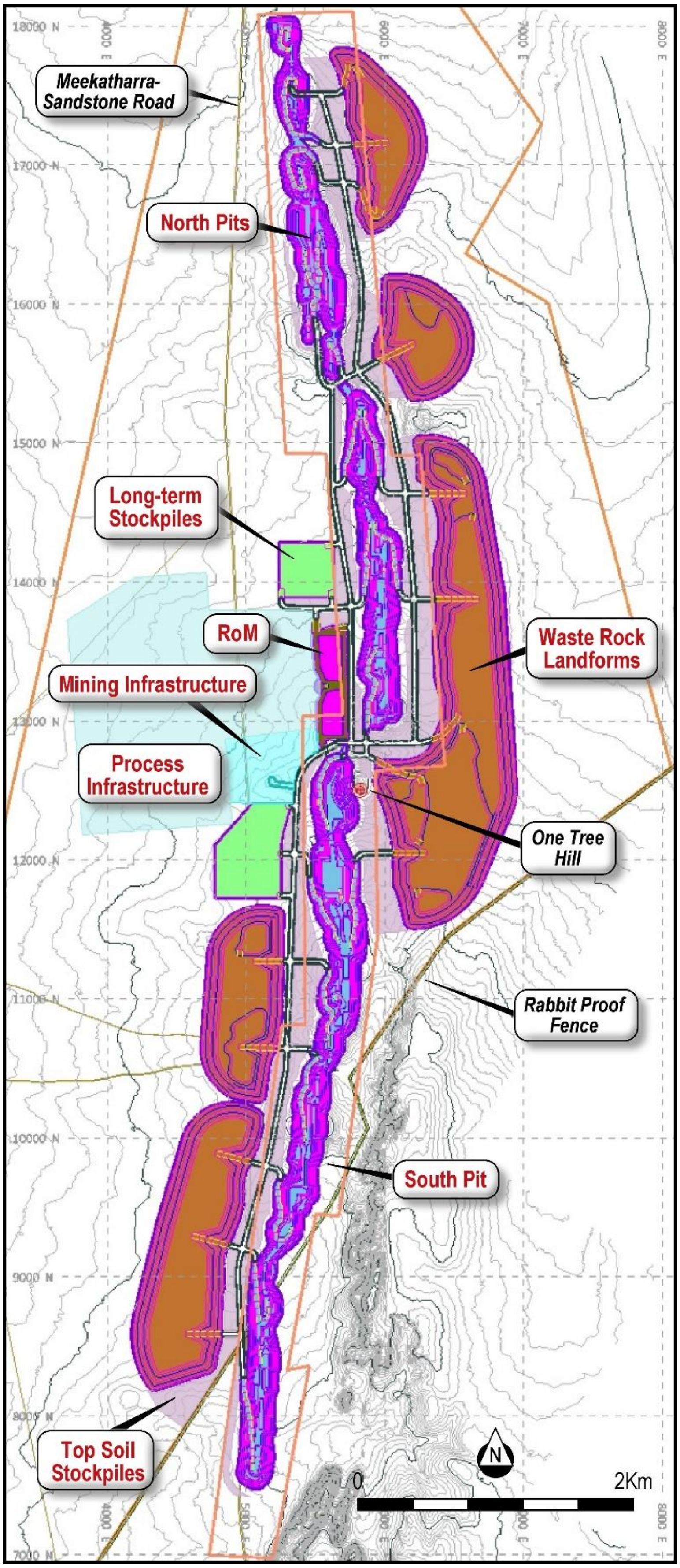

Figure 7: *Overall Barrambie Mining Site Layout (local grid)*

The mine production schedule (Figure 8) was based upon a maximum crusher feed of 3,178ktpa and kiln feed of 1,061ktpa. The schedule considered:

- The need to maximise revenue through early high grade and recovery
- Minimisation of stockpiling
- Minimisation of the number of active areas
- Maximum sinking rate of six benches per annum
- Smooth overall mining rate

There is nine months of pre-production mining that supplies construction waste and ore feed for plant commissioning. Mining commences in both the north and south and ramps up to 15.5Mtpa for the majority of the mine life. This mining rate allows low grade to be stockpiled which brings forward value.

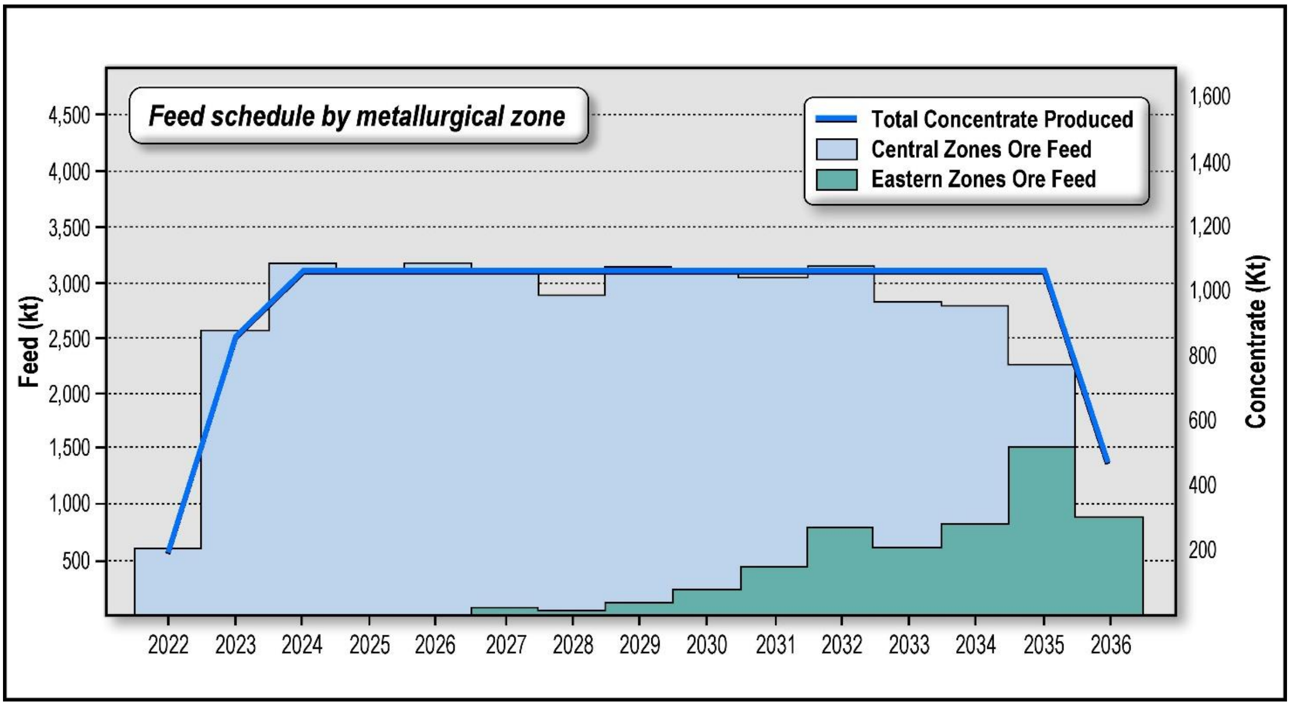

Figure 8: *Barrambie Mine Production Schedule*

The mining operation, at its peak will use:

- One 32t Liebherr R9200 Excavators with a support 15t Komatsu PC1250-8 excavator
- 10 CAT 777F 100t Dump Trucks
- Three CAT D10 Dozers
- Two production drills
- Manning of 120 persons across all three crews including technical, safety and management staff
- 6ktpa of explosives
- 2.2ML pa of fuel

The mining cost inputs (including Drill and Blast) are based on current market pricing received from mining contractors' submissions.

These costs are summarised in Table 4 below:

Table 4: *Barrambie Mining Cost Summary*

Item	$M	$/BCM
Mining Establishment		
Establishment, Mobilisation & Demobilisation	1.9	0.02
Mining Variable Rates		
Waste BCM - Load, Haul, D&B, Overheads, Fixed Capital	572.4	7.0
Ore BCM - Load, Haul, D&B, Overheads, Fixed Capital	156.5	1.91
Stockpile Rehandle Variable Rates		
Ore Rehandle (Yr. 1 - 12 Haul Trucks)	0.7	0.01
Ore Rehandle (Yr. 13 - 14 Road Trains)	2.7	0.03
Mining Fixed Rates		
Grade Control	55.3	0.68
Technical Staff Salaries	57.9	0.71
Technical Staff Messing and Accommodation	5.7	0.07
Technical Staff FIFO	4.1	0.05
Technical Staff Ancillary	9.0	0.11
Total	**866.4**	**10.6**

Processing Facilities

During the 2009 DFS extensive test work has been undertaken within Australia and overseas. Test work evaluations have treated oxidised ore from the eastern zone and central zone separately throughout the investigation. The test work results have been used to generate a process flow sheet, process design criteria and mass balance for the production of vanadium pentoxide from Barrambie oxidised ore. Additionally, a grade recovery relationship has been developed to forecast the recovery rate and quality of concentrate from a parcel of ore.

Beneficiation test work has been performed at the Perth laboratories of Amdel and AMMTEC. The roast leach bench scale work was performed by CSIRO and Amdel in Perth. Bulk samples of central and eastern zone concentrate were prepared at Nagrom's Perth facilities and sent to Polysius in Germany for a pilot kiln roast trial. The calcine produced from the pilot kiln run was used to develop the refinery process, with test work undertaken by SGS at their Perth laboratory.

The work completed as part of the 2009 DFS comprised:

- Process beneficiation circuit concept testing using Caldwell auger bulk composite samples;
- Selection and testing of an all magnetic flow sheet for beneficiation of ore to produce a vanadium rich concentrate;
- Selection of the salt roast AMV process for the extraction and refining of vanadium pentoxide into a flake form,
- Laboratory roasting and leaching of concentrate to establish optimum roasting conditions by use of a novel multiple chamber rotating alumina crucibles furnace;
- Variability testing of the selected beneficiation circuit using unblended spot samples from PQ drill core;
- Preparation of two bulk composite samples at Nagrom, used for pilot kiln roasting trials;
- Pilot roasting of the two bulk concentrates at the research department of Polysius in Germany;
- Development of the refining flow sheet with laboratory simulation of the process at SGS in Perth;
- Development of a mass balance spreadsheet and process design criteria;

- Preparation of a process flow sheet for use in engineering design;
- Inclusion in the process flow sheet of a continuous leaching to flake process replacing the series of batch processes proposed in the PFS;
- Development of a relationship between ore grade and concentrate recovery, produced for estimating the value of each mining block of ore and to support the development of the mining plan;
- Preliminary examination of alternative beneficiation techniques covering dense media separation, froth flotation, SLon separators, up current classification and other gravity separation techniques;
- Evaluation of a small scale and quick test to forecast the grade recovery relationship through beneficiation of an ore sample;
- Demonstration of the average grade recovery for beneficiation though testing of six bulk composite RC chips representing variation along strike and degree of weathering; and
- Evaluation of ore samples from the southern and northern deposit locations.

The beneficiation test work has shown the ore to respond to magnetic, gravity and flotation processes. An all magnetic circuit was selected early in the project to enable the engineering program to progress as it had been established that such a circuit would be able to accommodate the wide range of ore characteristics encountered, while the inclusion of other separation techniques had less certain outcomes.

Process Design

The prime objective has been to develop a safe, efficient, economic and robust process plant to produce vanadium pentoxide flake from the mined ore. In line with the mass balance and flowsheets the plant has been designed to treat 3.14 Mt/a of ore to produce 6,337 tonnes per annum of ferrovanadium ("**FeV80**").

Design Criteria include:

- Design life - structures - 50 years; mechanical plant - 20 years;
- Operating regime - 24 hours/day, seven days/week basis, nominally 7,800 hours/year, allowing 960 hours for scheduled and un-scheduled maintenance works;
- On-site ore beneficiation to create a low silica (<2.4% Si) concentrate;
- Sodium salt roast process;
- Continuous leach, desilication, AMV precipitation refinery operation to produce ammonium metavanadate (AMV) filter cake;
- Sodium sulphate recovery through crystallisation to enable its recycling as roasting salt (subject to further ongoing economic and technical evaluation);
- De-ammoniation and calcining of the AMV to produce a vanadium pentoxide flake; and
- Ferrovanadium Smelter.

An overview schematic of the plant is shown below:

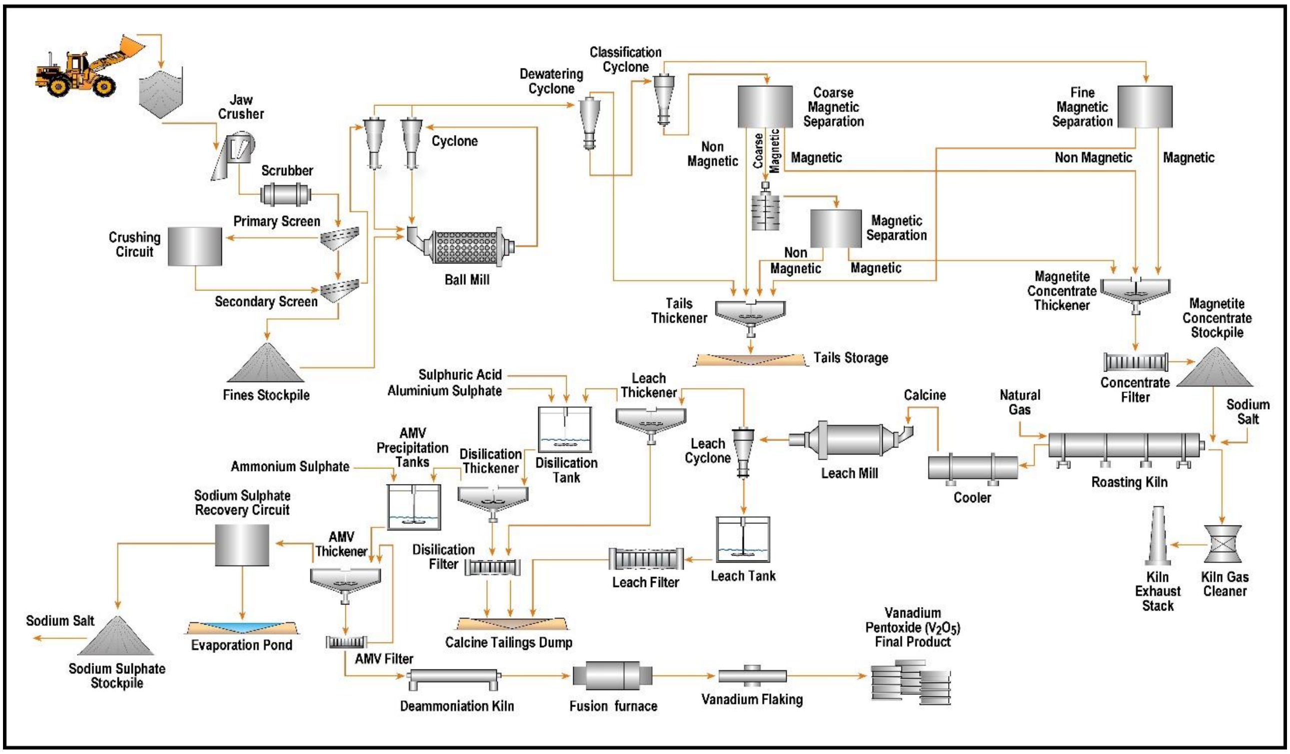

Figure 9: *Overview Schematic of Plant* (includes V_2O_5 but not FeV80)

Metallurgical Test Work

For the pilot plant a 16-tonne sample was sourced from the drilling of 10 Caldwell holes of 0.97 metre diameter for an aggregate of 202 metres of drilling. From this sample 6 tonnes of bulk concentrate were produced at Nagrom's metallurgical facility and was transported to Germany for pilot salt roast leach testing at Polysius.

In addition, extensive variability test work was completed on diamond core to examine the changes in performance of those ores sourced from different areas of the resource as they were processed through a laboratory simulation of the proposed plant flowsheet.

Overall Mineral Recoveries

Overall recoveries determined from the test work program on the two domains are summarised in Table 5 below:

Table 5: *Domain Total Recoveries*

		Central Ore	Eastern Ore
ROM to Kiln Feed	%	51.8	56.8
Kiln Dust Losses	%	0.0	0.0
Concentrate to Flake	%	82.9	73.7
Flake to Ferro Vanadium	%	98.5	98.5
ROM to Flake	%	43.0	41.9
ROM to Ferro Vanadium	%	42.4	41.2

Infrastructure Requirements

All local infrastructure required to construct, support and maintain the Barrambie operation will be supplied as part of the project development. With the exception of the existing Meekatharra to Sandstone Road, which will also require some level of up-grading, none of the required facilities, supplies or services are available in the local area.

Infrastructure will be designed and constructed in a sequenced manner to ensure that those items of infrastructure required to service the construction works are in place and commissioned at an early stage and, where necessary, temporary facilities are in place to meet initial requirements. This is particularly relevant to the early supply of water, accommodation and communications.

Infrastructure requirements for the Barrambie Vanadium Project are discussed below:

Water Supply

Water will be provided from a bore field located approximately 20km north of the plant. The bore-field will source electric power from a locally installed diesel generator set with overhead 11kV distribution between bores. A 450mm HDPE pipeline transfers water from the bore-field pumping station to the plant site at a nominal rate of 315m^3/hr creating an estimated annual bore-field draw-down of 2.5 Giga litres.

Power Supply

A local Build Own Operate (BOO) gas fired powerhouse is proposed which will meet the demand for the process plant, village and airport. The power station will comprise 14 individual 1.75MW gas fuelled reciprocating engine powered generators. Twin 1.65MW backup diesel generators are also included in the powerhouse for emergency backup should the gas supply be interrupted.

Gas Supply

Natural gas supplies for the site will be sourced from the Goldfields Gas Pipeline (GFGP). A 181km DN150 gas pipeline, "The Barrambie Gas Pipeline," will be constructed to supply gas from an offtake near Wiluna on the GFGP. Line capacity is initially required to transport approximately 10TJ/day.

Village

To accommodate this workforce at the Barrambie site a self-contained accommodation village will be established to a standard commensurate with good industry practice. Based on currently forecast workforce numbers and working rosters the village will comprise 250 individual en-suite rooms with supporting facilities and infrastructure.

Roads

The Meekatharra Sandstone Road runs alongside the mining lease and is a dual lane unsealed road maintained by the local Shires. It is anticipated that road transport will be from the south and will access the site leaving sealed arterial roads at Sandstone and travel north along the unsealed Meekatharra Sandstone Road a distance of approximately 70 km. Significant upgrade of this section of the road has been budgeted for with particular attention being given to improving the numerous flood-ways across the road. It is also planned that portions of the Meekatharra Sandstone road be moved to allow optimal location of supporting infrastructure for processing operations and waste landforms. This work will require regulatory approvals which are yet to be sort.

Aerodrome

The Barrambie project will operate with a majority fly in-fly out workforce based from Perth WA. To service this workforce an aerodrome will be required to handle an estimated 4,500 return passenger flights per year.

After discussions with airlines and an internal risk assessment it was decided to seal the runway and tarmac, to make it available in all weather conditions and for all anticipated aircraft including BAe 146-100 jets.

Hydrology and Hydrogeology

Dewatering

Groundwater in the vicinity of the mining and processing operations typically occurs at a depth of around 35m below ground level as indicated by resource drilling. As the proposed mining will typically be to a depth of between 50m and 60m some groundwater abstraction for mine dewatering will be required. Dewatering will be achieved through sumps established within the pits to maintain dry mining conditions. Any water collected in the pits will be pumped to a water storage facility and used in the process plant. No water produced from mine dewatering will be discharged to the environment.

Water Supply

Water will be supplied to the project from a bore-field located approximately 20km north west of the plant site and situated within the general vicinity of the Meekatharra. The bore-field is made up of four existing production bores and a further five bores to be drilled as part of the capital works. In addition, monitoring bores are installed to meet the water table monitoring standards required by the licensing regulations. The production bores vary in depth between 15m and 20m and have casing diameters of either 195mm or 155mm. Bores will be connected by a series flow lines to a common transfer tank at the southernmost bore (Limestone Bore) situated adjacent to the Meekatharra – Sandstone Road. Access tracks (to 4WD standard) will be formed to provide access to each bore and will follow the route of the above ground flow lines and form part of a fire break.

The bore-field is designed to supply an annual project raw water requirement of 2.5 Giga Litres at a nominal flow rate of 315m3/hr. Approvals for the removal of water from the bore-field are yet to be obtained and in order to ensure a contingency additional water exploration work is planned to be completed in conjunction with the FEED study to locate an additional bore field.

Tailings Management

The beneficiation circuit tails (300tph solids pumped to storage as a nominal 50 - 55% w/w slurry) contain the non-magnetics from the beneficiation circuit. The solids have undergone no chemical change from their “as mined” state and contain no potentially soluble vanadium or other contaminants. The pumped tails will be deposited through sub-aerial deposition into a bunded but unlined storage impoundment area located opposite the plant site. The storage facility has area for six separately bunded cells each 550m x 512m. Compacted earth cell walls will be constructed, initially 5m in height with 1:3 batters and trafficable access tracks along the top. A return water decant tower is installed in one corner of each cell to enable pump-out of any decant or rainwater collected. Three of the six bunded cells are included in the initial capital works and have sufficient holding capacity for the first two and a half years of operation. The three additional cells will be added as required to bring total capacity for the 6 cells to 5 years of plant operation allowing a remaining freeboard of 0.5m. Ongoing use of the storage facility after this period will be achieved by either building up the height of the walls incrementally using upstream construction techniques or by increasing the area of the leased land to duplicate the original facility.

Geotechnical Investigation

The open pit geotechnical investigation programme for Barrambie undertaken in 2007/2008 was split into three phases and contains geotechnical data obtained from seven HQ3 and twelve PQ3 diamond drill holes comprising 1,269 m of diamond drill core. Phase 1 (P1) consisted of resource evaluation drilling and metallurgical bulk sampling twinned with geotechnical data collection. Phase 2 (P2) and Phase 3 (P3) consisted of geotechnical drilling programmes designed to provide geotechnical data for the east and west walls of the potential open pits respectively.

Table 6: *Recommended Pit Slope Design Parameters for Barrambie P3 for 50m Deep Pit*

No. of Bench	Batter Angle(°)	Berm Width at base of batter (m)	Batter Height (m)	Slope Height (m)	Overall Slope Angle crest to toe (°)
1	50	5	15	15	50
2	50	5	15	30	44.8
3	60	5	10	40	44.3
4	60	5	10	50	44

The Feasibility Study design recommendations presented apply to 50m high pit slopes developed entirely within strongly oxidised (SOX) materials.

For deeper parts of the pits with pit walls up to 80m high, where the pits penetrate the weakly oxidised (WOX) and fresh (FRE) materials, design parameters are provided in Table 7.

Table 7: *Recommended Pit Slope Design Parameters for Barrambie P3 for 80m Deep Pit*

Batter Angle (°)	Berm Width at base of batter (m)	Batter Height (m)	Inter Ramp Slope Angle (crest to crest, °)	Overall Slope Angle(crest to toe, °)
55	7	10	35.5	38

Financial Evaluation

The key parameters and financial outcomes for the Definitive Feasibility Study are set out below:

Table 8: *Summary of Key Parameters*

Summary of Key Parameters from DFS Financial Model		
Life of Mine (LOM)	Years	15
LOM Ore Mined	Mt	39.9
LOM Waste Mined	Mt	142.1
LOM Strip Ratio	(waste: ore)	3.56
Average Plant Feed Rate	Mtpa	2.66
Average Vanadium Head Grade	% V_2O_5	0.78
Average Vanadium Recovery (Overall)	% V_2O_5	42.3
Average V_2O_5 Flake Production	tpa	9,235
Average FeV80 Production	tpa	6,337
Average Realised Vanadium Price	US$/kg V Real	48.71
Forecast FX Rate	AUD:USD	0.70
Initial Capital Costs (including 14.3% contingency)	A$M	692
Ave LOM Cash Operating Cost[1]	US$/kg V in FeV80	26.27
Average Annual Project EBITDA (Real $)	A$M	172
NPV (10% Discount Rate, Pre-Tax)	**A$M**	**430**
IRR (Pre-Tax)	**%**	**21**
NPV (10% Discount Rate, Post Tax)	**A$M**	**199**
IRR (Post Tax)	**%**	**15**
Payback (Pre-Tax)	**Years**	**5.1**

1. Cash operating costs include all mining, processing, transport to port and site based general and administration costs and excludes state royalties and native title costs.

Capital Cost Estimates

The capital cost estimate to construct a new 3.14Mtpa plant and infrastructure at the Barrambie site, including all direct and indirect costs, is approximately A$692 million. This estimate includes a contingency of 14.3%.

The costs presented have been estimated to an overall accuracy of +15 to – 15%, which is commensurate with the level of study undertaken.

The table below summarises the key components of the capital cost estimate:

Table 9: *Capital Costs Estimate*

Capital	A$M
Infrastructure	99
Mining**	2
Crushing and Beneficiation	162
SRL Kiln and Hydromet Refinery	246
Gas Lateral from GGP	62
Ferro Vanadium circuit	35
Contingency (~15%)	87
Total	692
Sustaining Capex***	123

** Most mining capital included in Mining

*** A$5m per year of processing plus A$1.50/t milled for operating costs additional tails dam capacity from year 4 onwards (A$48m)

Cash Operating Cost Estimates

The DFS LOM average cash operating costs is approximately US$26.27/kg V.

Table 10: *Cash Operating Costs Estimate*

Production Opex	A$M	US$M	A$/t milled	A$/t mined*	US $/kg FeV
General	500	350	12.53	2.75	4.60
Mining cost	864	605	21.65	4.75	7.95
Processing cost	1,284	899	32.20	7.06	11.82
Opex for FeV production	207	145	5.19	1.14	1.90
Total opex for FeV production	2,855	1,998	71.57	15.69	26.27
Selling Costs (Royalty)	132	93	3.32	0.73	1.22

*Mined = ore+waste

Financial Analysis - Sensitivities

A sensitivity analysis on the post-tax NPV is provided below in Figure 9.

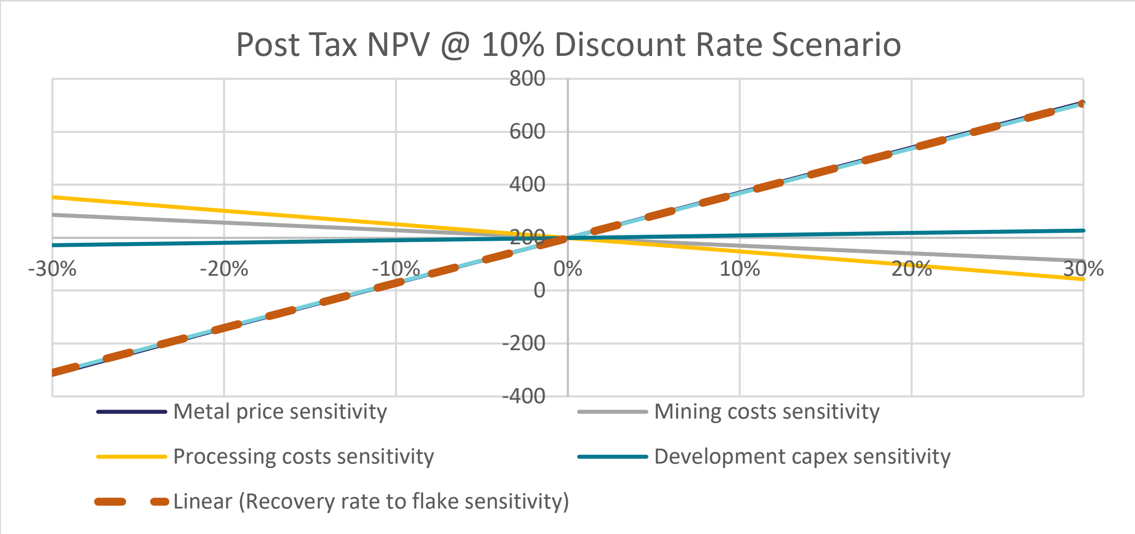

Figure 10: *Sensitivity Analysis on Post-Tax NPV*

MARKETING

Offtake

At this stage the product from the project is unencumbered with any offtake arrangements. A number of discussions have been held with parties both inside and outside China and it is clear due to the current structural deficit in the market that there is strong interest in potential offtake from the project. Anticipated sales arrangements include FOB and CFR export shipments of packed products delivered by road to the port of Fremantle and shipped in full container lots.

Once the planned National Instrument 43-101 report is completed for the Project (expected to be completed this quarter) this document will be used to further advance offtake discussions.

Vanadium Market

Supply

Global vanadium supply in 2018 was 88,905t V (tonnes of vanadium equivalent) and was dominated by China (57%), South Africa (10%) and Russia (9%). Supply is primarily based on production of vanadium from slag generated from the production of steel using vanadium titanium magnetite (VTM) as feedstock (Figure 11).

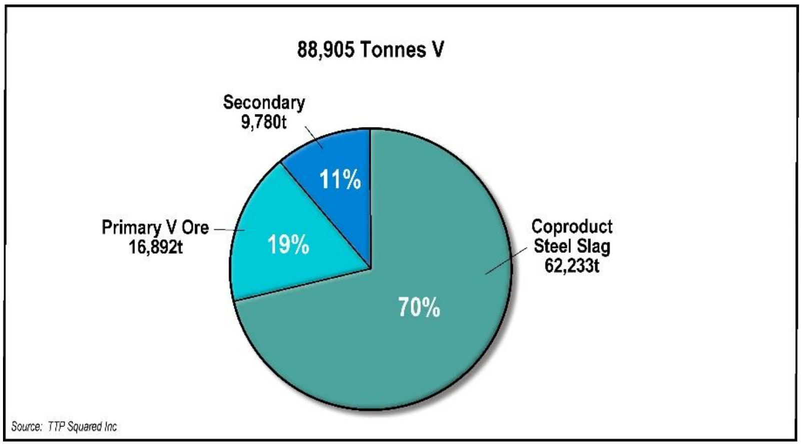

Figure 11: *Vanadium Production by Material Source, 2018*

A leading industry consultancy, TTP Squared Inc., has estimated that global supply of vanadium will reach 107,439t V by the year 2020 and will need to increase to 135,864t V by 2025 to meet demand. In addition to the expansion of all existing primary vanadium mines, the restart of shuttered operations in Australia and South Africa and the recommissioning of stone coal operations in China (assuming permission granted by the Chinese regulators), there will be a requirement for new mine capacity of approximately 20,000t V before 2025.

Demand

Approximately 87% of vanadium demand is consumed in the production of high strength low alloy (HSLA) steels (55%), high alloy steels (31%) and stainless steel (1%), as shown in Figure 12. Another 4% is consumed in the production of super alloys and titanium alloys. The balance of consumption is used in the production of energy storage (4%), chemicals (3%), and cast iron (2%). Vanadium demand growth over the past 10 to 15 years has been driven predominantly by Asian demand, especially in China.

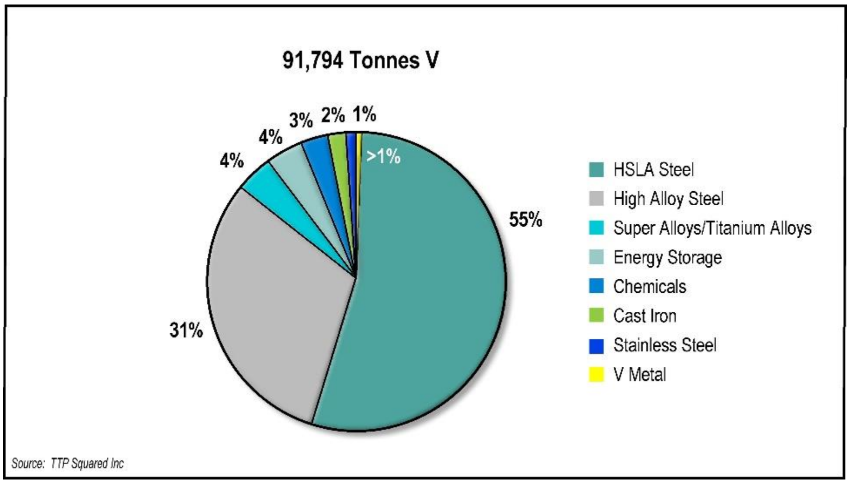

Figure 12: *Vanadium Consumption by Application, 2018*

The flowchart in Figure 13 below provides a schematic overview of the vanadium industry and identifies the main vanadium raw materials and intermediate products in the supply chain as well as the main consumer industries.

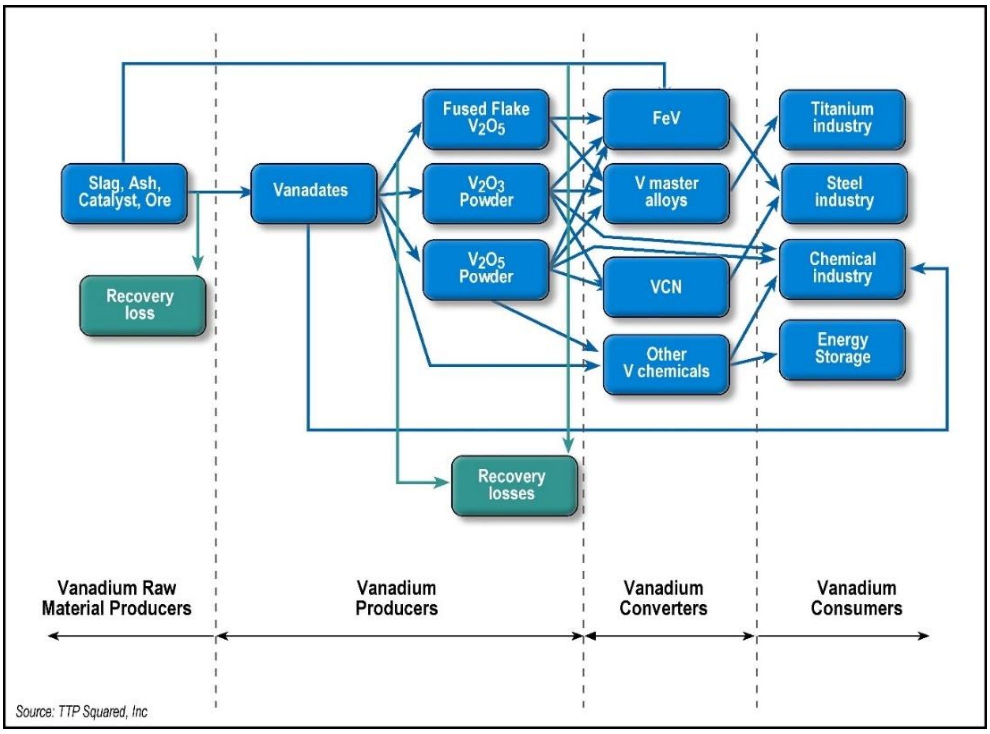

Figure 13: *Vanadium Industry Flowchart*

Market Balance

TTP Squared Inc. estimates that the supply deficit is likely to exceed 20,000t V by 2025 if no new projects are brought online.

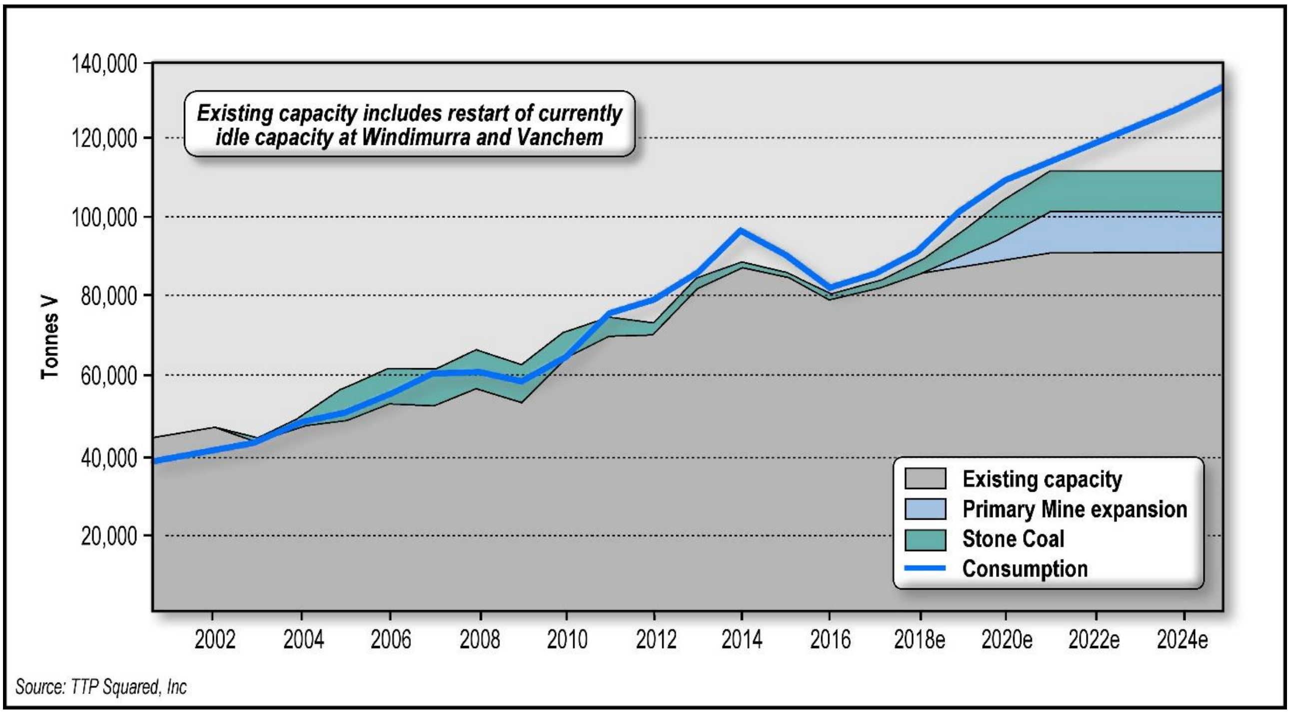

Figure 14: *Vanadium Supply and Demand*

Market Price

Unlike many other commodities, vanadium is not traded in the open market. Prices are settled in private negotiations between sellers and buyers.

Traditionally, vanadium prices like many other metals have shown some volatility due to fluctuations in the supply/demand balance. Prices have ranged from as low as US$16/kg V (US$4/lb V_2O_5) to more than US$120/kg V (more than US$30/lb V_2O_5).

In the current market a growing supply deficit has recently placed strong upward pressure on prices. In Q3 2018 the FOB China price for V_2O_5 briefly broke through the US$30/lb V_2O_5 (US$118/kg V) barrier, which is roughly six times the historical average price. This price escalation was a response to changes in the above-mentioned Chinese regulations governing the addition of vanadium to reinforcing bar used in the construction industry. Many Chinese steel mills stocked up on ferrovanadium to prepare for the scheduled implementation on November 1 of this new policy, which created very tight market conditions. Following this rapid price escalation there was an equally rapid price correction and prices dropped back to roughly half this level by early 2019 where they have remained. However, it is anticipated that prices will rise again during 2019.

As can been seen in Figure 15, monthly average prices for V_2O_5 have increased materially since January 2016. This is largely due to industry rationalizations that occurred during 2014 – 2016 and resulted in a significant decrease in production capacity. Since this time demand for vanadium has grown steadily and inventory in the supply chain has reduced to very low levels.

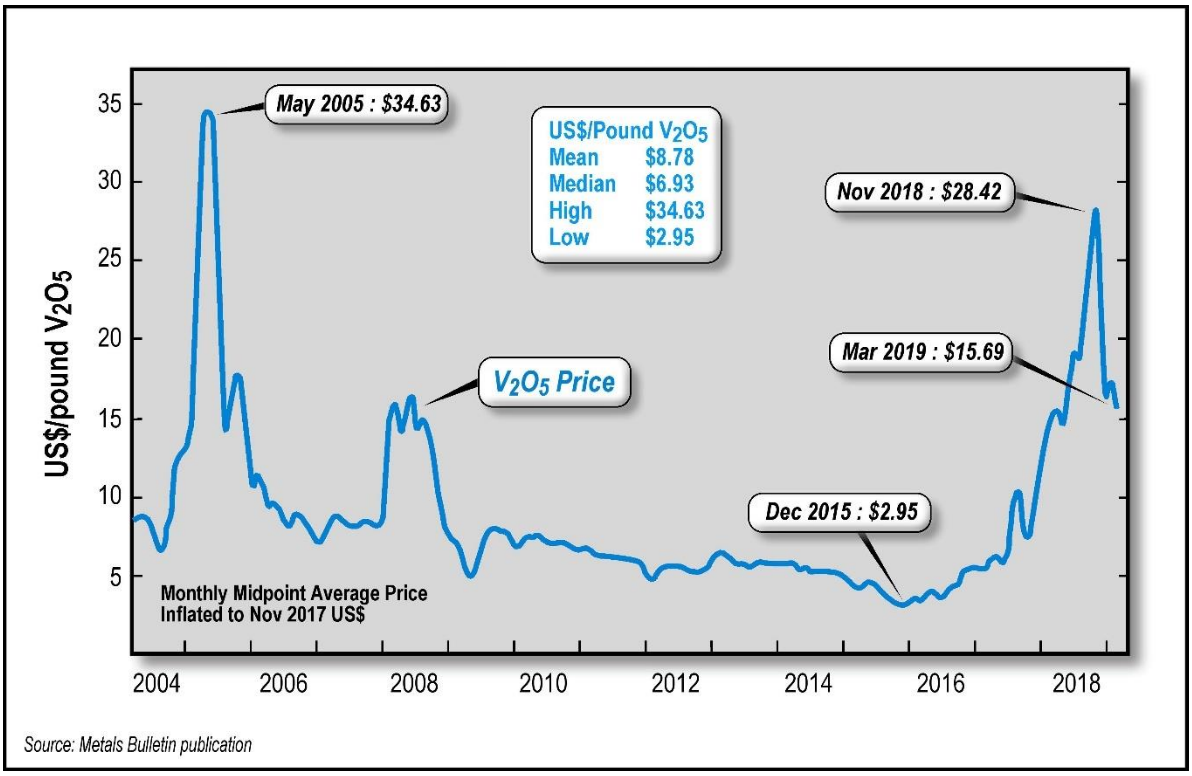

Figure 15: *Monthly Average V_2O_5 Prices, Delivered Warehouse, Rotterdam (Apr 2004 to Mar 2019)*

Outlook

It is expected that the current high price environment will result in the restart of 100% of existing idle capacity and the expansion of all existing primary mines. However, without new greenfield capacity there will still be a shortfall of supply through 2025. New greenfield capacity is required to come to market in the next few years to meet the growing deficit beyond 2021. According to TTP Squared Inc., there are no greenfield projects with construction financing in place and typically the timeline from project financing to first production is 5 years.

In this environment, where demand is expected to exceed supply, the price of vanadium is forecast to remain above historical levels. Vanadium prices have risen dramatically over the past 30 months and there is very little impact idle capacity can have on the market in the next 12 months because the new demand from rebar in China far exceeds any increase in production that can come from this capacity.

The FOB China FeV (78% min) spot price on April 30 2019 was reported as US$52/kg (Source: Fastmarkets) and the weekly average Ferrovanadium price in 2018 was US$81.13/kg V (Source: Fastmarkets, Ferrovanadium min 78%, DDP Western Europe).

Neometals has based its vanadium price forecast on data provided by internationally recognised independent marketing and commodity price forecasters Roskill, CRU and Fastmarkets. For the purposes of this feasibility study Neometals is forecasting real prices for FeV80 in the range US$46.8/kg V to US$75.00/kg V with an average price received of US$48.71/kg V, which sits at the lower end of this range.

ENVIRONMENTAL ASSESSMENT AND APPROVALS

Environmental Impact Assessment

Two phases of studies have been undertaken in order to assess the potential impact of the Project on the various aspects of the environment. These include flora, fauna and vegetation surveys, hydrogeological investigations, air quality modelling, and waste characterisation. The initial studies were completed in the period 2005-2009 and are reported in summary in the BARRAMBIE VANADIUM PROJECT (Project) Public Environmental Review (PER) (Reed Resources, 2010) (http://www.epa.wa.gov.au/sites/default/files/1MINSTAT/Statement%20No.%20911.pdf). The PER was approved under Part IV of the Environmental Protection Act 1986 (EP Act) in Ministerial Statement 911. An application to extend the time limit for implementation of the Project (S46 application) is currently with the WA Environmental Protection Authority for approval (expected in Q2 2019).

Further studies have been completed in 2018 to update the original studies and support the preparation of secondary approvals under the Mining Act 1978, Rights in Water and Irrigation Act 1914 (RIWI Act) and EP Act (Part V). These secondary approvals can only be submitted once the S46 has been approved.

Waste Rock characterisation studies completed to date show that 21 of 22 samples are assessed as Non-acid Forming (NAF). The one Potentially Acid Forming (PAF) sample was ‘trace-pyrite' (0.37%S). Further studies will be completed to support updating the Mining Proposal. Approvals for Tailings characterisation test work was completed in support of the PER but more detailed work will be required to support a Mining Proposal and Works Approval for the Tailings Storage Facility.

An application has been submitted for additional tenure around existing Mining Lease M57/173 to allow for all ancillary infrastructure and stockpiles required for the Project. This tenure is anticipated to be granted in Q3 2019.

Native Title and Heritage

A Native Title Deed has been executed with the Yugungya-Nya people and Reed Resources (Australian Titanium) covering mining tenements associated with the Project. The agreement includes agreement to grant additional tenure and for completion of Heritage surveys on additional tenure. Heritage surveys have also been completed on the granted Mining Lease.

TITLE AND OWNERSHIP

Barrambie is owned 100% by Australian Titanium Pty Ltd (A 100% owned subsidiary of Neometals Limited). Table 11 below shows the applicable tenements for Barrambie. The Mining Reserve is 100% contained within Mining Licence M57/173.

Table 11: *Current Tenement Status – Barrambie Project*

Tenement	Status	Application	Term Granted	Grant Date	Expiry Date	Renewability
M57/0173	LIVE	19 Dec 89	21 yrs (renewed)	31 Jul 90	30 Jul 32	Periods of 21 yrs
E57/0769	LIVE	16 Jul 06	5 yrs (extended)	18 Aug 09	17 Aug 19	Periods of 2 yrs from Aug 2019
E57/0770	LIVE	16 Jul 06	5 yrs (extended)	14 Aug 09	13 Aug 19	Periods of 2 yrs from Aug 2019
E57/1041	LIVE	29 Sep 15	5 yrs	04 May 16	03 May 21	One period of 5 yrs from May 2021, then periods of 2 yrs
L20/0065	LIVE	04 Feb 06	21 yrs	24 Aug 09	23 Aug 30	Periods of 21 yrs
L57/0080	LIVE	04 Feb 06	21 yrs	24 Aug 09	23 Aug 30	Periods of 21 yrs
G57/0011	PENDING	16 Nov 18				
L20/0080	PENDING	14 Nov 18				
L20/0081	PENDING	22 Feb 19				

FUNDING

The Company does not currently have the financial capacity to internally fund 100% of the development of the Barrambie project. External funding in the form of some mix of debt, JV interest and/or equity will be required. In parallel with ongoing work programs pertaining to realising value from the Titanium resource, the Company is continuing to evaluate its financing strategy with the objective of minimising dilution for existing shareholders. Shareholders should be aware that further equity funding may be required for the future funding for development of the Barrambie project, and if so, their ownership of the Company or the Company's economic interest in the Barrambie project may be diluted.

The Company has engaged advisors and has had preliminary discussions with financiers, to understand the debt carrying parameters of the project. Opportunities for potential JV participation (including through contract mining/processing and build-own-operate-transfer plant operations) have been identified and will be explored. Release of the DFS now provides a platform for the Company to advance discussions with potential finance providers and/or JV partners. On the basis of the robust market outlook for vanadium and titanium, the Company's sound financial position (net cash), track record of successfully developing and implementing mineral projects (including through JV and offtake arrangements) and preliminary work already undertaken in relation to financing and JV participation, the Company considers that there is a reasonable basis that the development of the Barrambie project can be successfully funded.

NEXT STEPS

To facilitate the generation of representative samples of additional mineralisation for pilot scale process improvement work, RC drilling has been completed and 20t Central Zone and 20t Eastern Zone mineralisation has been transported to a laboratory in Perth. This material will be processed through a beneficiation pilot plant and will be used as a feed source into planned ongoing hydrometallurgical process work to examine the possibility of generating a saleable titanium product and iron by-product from the ore body. This hydrometallurgical forward work programme is expected to take approximately 6 months to advance the project to the point where a decision can be made to progress to a FEED study.

ENDS

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About Neometals Ltd

Neometals Ltd ("Neometals" - ASX:NMT) innovatively develops opportunities in minerals and advanced materials essential for a sustainable future. The Company has three core projects:

- Barrambie Titanium and Vanadium Project - one of the world's highest-grade hard-rock titanium-vanadium deposits
- Lithium-ion Battery Recycling – a proprietary process for recovering cobalt and other valuable materials from spent lithium batteries
- Lithium Refinery Project – Progressing plans for a lithium refinery development to supply lithium hydroxide to the battery cathode industry, underpinned by a binding life-of-mine annual offtake option for 57,000 tonnes per annum of Mt Marion 6% spodumene concentrate

Neometals' strategy focuses on de-risking and developing long life projects with strong partners and integrating down the value chain to increase margins and return value to shareholders.

APPENDIX 1

Project Background

Located approximately 75km North West of Sandstone in Western Australia, Barrambie has a granted mining permit and is 100% owned by Neometals through Australian Titanium Pty Ltd. Barrambie has had approximately A$30M exploration and evaluation expenditure invested in it since 2003 and is one of the world's highest-grade titanium-vanadium hard-rock assets. Barrambie development was paused after completion of the 2009 DFS where prices remained stagnant for more than six years following the global financial crisis. A strong market backdrop for both vanadium and titanium has driven Neometals to accelerate its development plans at Barrambie where optionality afforded by distinct high-grade zones and the possibility of co-products is driving staged development evaluation for multiple products.

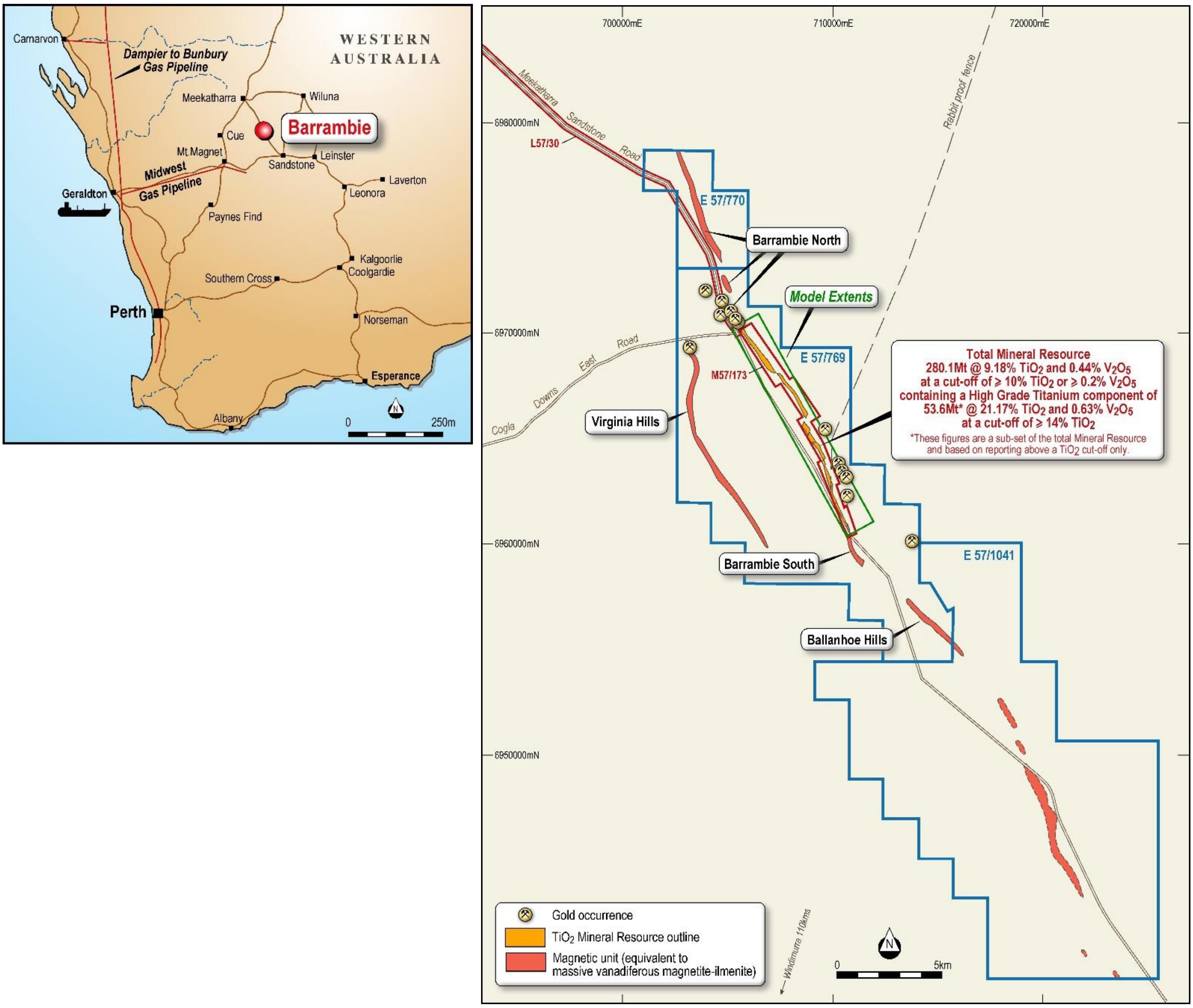

Figure 1: *(Left) Barrambie project location and (Right) Plan of Project tenure over outline of the Mineral Resource. Distribution of titanomagnetite (VTM) mineralization along strike and to the west of Barrambie is based on interpretation of aeromagnetic data.*

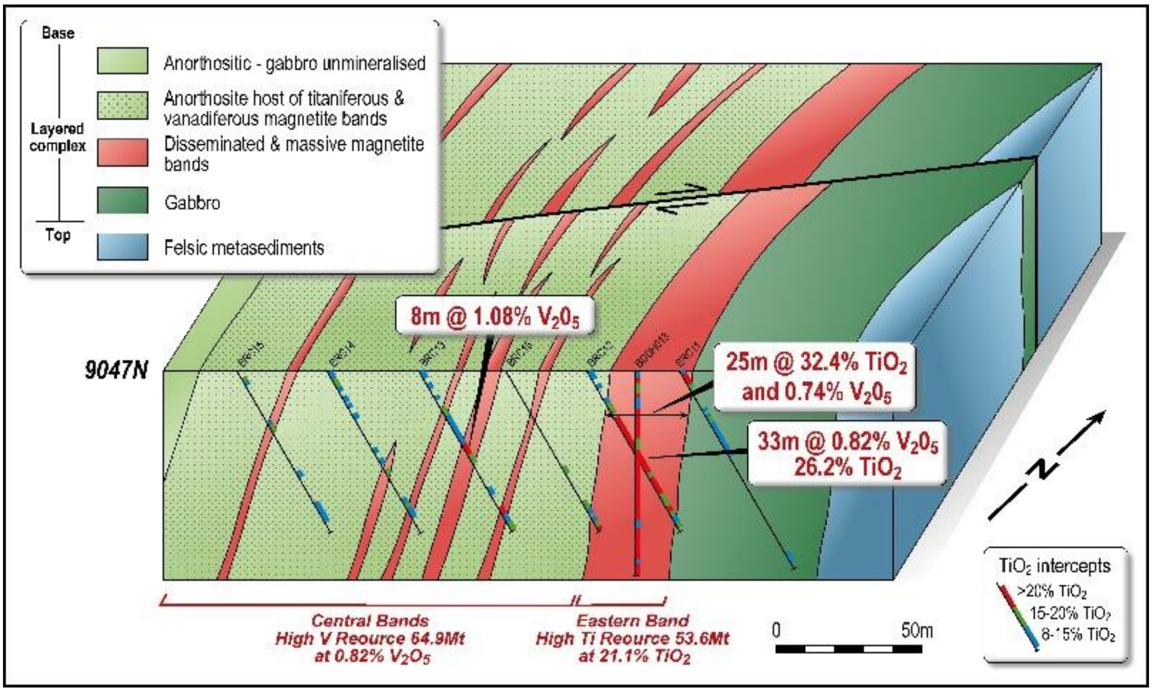

Figure 2: *Cross section showing typical distinct layers of high-grade vanadium and titanium bands*

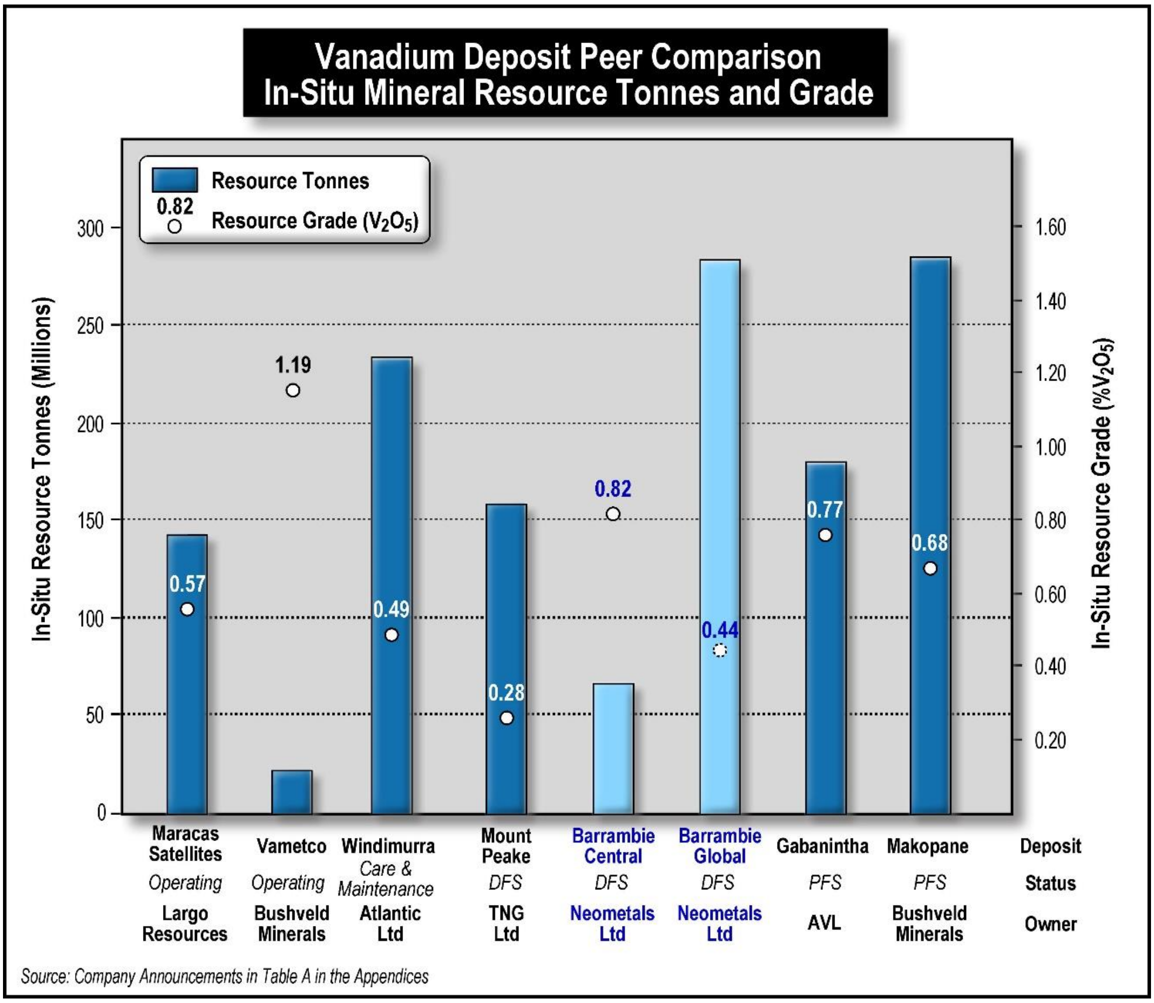

Figure 3: *Chart showing Barrambie project scale against select Primary Vanadium Projects.*

Global Resource as at 17 April 2018[1]

	Tonnes (M)	TiO_2 (%)	V_2O_5 (%)
Indicated	187.1	9.61	0.46
Inferred	93.0	8.31	0.40
Total	280.1	9.18	0.44

High Grade V_2O_5 Resource (at 0.5% V_2O_5 cut-off)[2]

	Tonnes (M)	TiO_2 (%)	V_2O_5 (%)
Indicated	49.0	16.93	0.82
Inferred	15.9	16.81	0.81
Total	64.9	16.90	0.82

High TiO_2 Resource (14% V_2O_5 cut-off)[2]

	Tonnes (M)	TiO_2 (%)	V_2O_5 (%)
Indicated	39.3	21.18	0.65
Inferred	14.3	21.15	0.58
Total	53.6	21.17	0.63

(1) Based on Cut-off grades of ≥0% TiO_2 or ≥.2% V_2O_5

(2) The high-grade titanium and vanadium figures are a sub-set of the total Mineral Resource. These figures are not additive and are reporting the same block model volume but using different cut-off grades.

Refer to Neometalsí ASX release dated 17 April 2018 title 'Updated Barrambie Mineral Resource Estimate' available at www.neometals.com.au/reports/2018-04-17-5645-BarrambieP.pdf

Figure 4: *Mineral Resource Estimate – April 2018*

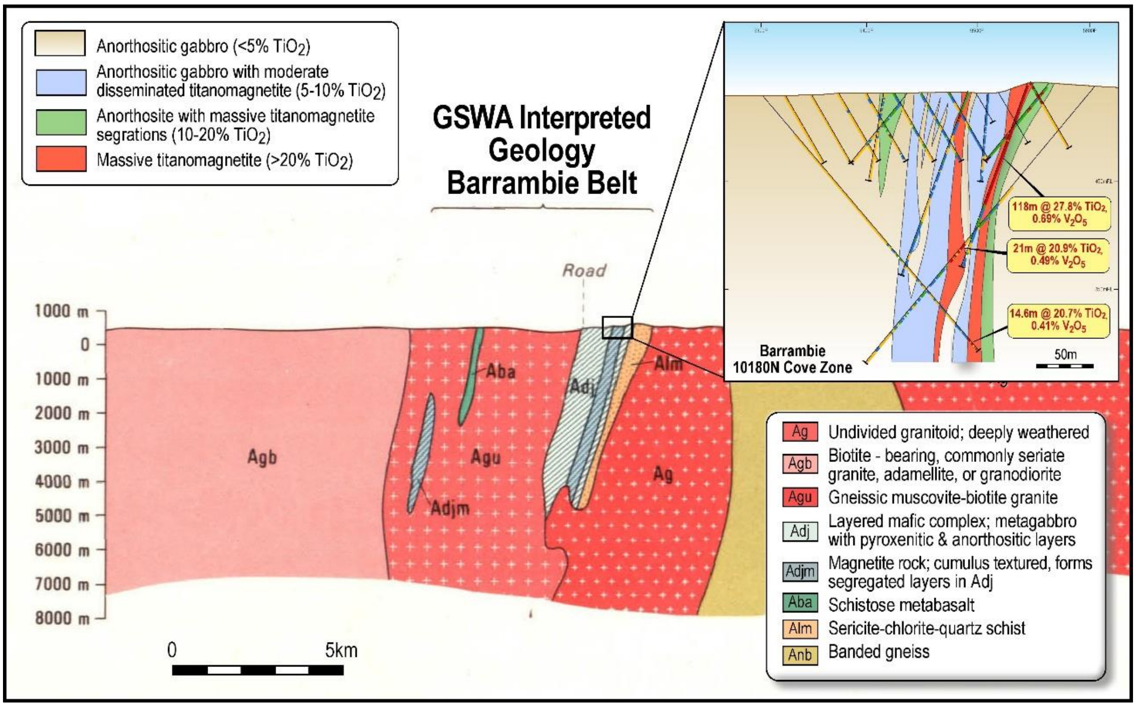

Figure 5: *GSWA Interpreted Geology Barrambie Belt*

APPENDIX 2

JORC Code Table 1, Section 1, Sampling Techniques and Data

Criteria	JORC Guidelines	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. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	The Barrambie Mineral Resource estimation is based on the logging and sampling of 796 reverse circulation (RC) and 61 diamond (DD) drill holes (PQ and HQ3 size). Metallurgical drilling comprises 20 of the PQ core holes. Limited information is available on the sampling methods used for the historic data (pre-2007). Snowden reviewed documents provided by Bryan Smith (Geosciences Pty Ltd) detailing drilling and sampling methods used for the most recent drilling (2007 to present) which are in line with industry standard. Drill holes have been sampled on 3 m intervals in areas of background mineralisation and 1 m intervals within mineralised zones. For RC holes the drill cuttings were collected in a cyclone, discharged at 1 m intervals into a bucket and then passed through a three-tiered Jones riffle splitter to produce a split sample of about 3.5 kg. Diamond core was sampled on 1 m intervals with core being sawn in half and sampled as quarter core samples. Samples have generally been assayed for 13 attributes using x-ray fluorescence (XRF) analysis except for four historical DD holes which were assayed using AAS. Magnetic susceptibility readings have been taken for most of the RC holes on 1 m intervals and 0.5 m intervals for DD holes.

Criteria	JORC Guidelines	Commentary
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).	The Barrambie deposit has a 50-year drilling history. Drilling techniques include rotary air blast (RAB), open hole percussion (OHP), RC and DD. Only RC and DD holes have been used for the resource estimation. Core orientation marks were attempted using a spear and crayon at the end of each core run; however, these were only successful on partly oxidised or fresh material.
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.	A qualitative logging code was used to record recovery for the recent RC and DD drilling. Recovery of samples is considered good with only minor losses within fault zones which are dominated by clay.
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.	Geological logging of core and rock chips was carried out recording oxidation, colour, texture, mineralisation, water and recovery. Magnetic susceptibility readings were taken every 1 m for RC holes and 0.5 m for DD holes. Snowden considers the logging was carried out in sufficient detail to meet the requirements of resource estimation and mining studies.
Subsampling 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.	Core was wrapped in film and transferred to core trays where the downhole depth was marked on core blocks. Core was cut in half using a core saw. RC samples were collected in a cyclone at the rig at 3 m intervals in areas of background mineralisation and 1 m intervals within mineralised zones. All samples within the mineralised zones were mostly dry. Initially core sample intervals were adjusted so samples did not cross geological boundaries. This was modified to routine 1 m samples, due to the difficulty in identifying the contacts during the second drilling campaign in 2007 (hole BDDH012).

Criteria	JORC Guidelines	Commentary
	• 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. • Whether sample sizes are appropriate to the grain size of the material being sampled.	Limited information is available on the quality control (QC) methods applied to the historic drill holes. QC procedures to ensure sampling is representative of the in-situ material for the most recent drilling include the use of field duplicates and twinned holes. Comparison of the original and duplicate assays show an acceptable level of precision indicating field sampling procedures are reasonable. A total of 13 DD holes were twinned with selected RC holes. The results indicate minimal downhole smearing in RC drill holes. The samples sizes are considered appropriate to correctly represent the mineralisation.
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.	Samples have been assayed for TiO_2, V_2O_5, Fe, SiO_2, Al_2O_3, CaO, Cr_2O_3, K_2O, MGO, MNO, Na_2O, P, S and LOI using XRF analysis except for 4 historical DD holes which were assayed using AAS. Limited information is available on the QC methods applied to the historic drill holes. Field QC procedures for the most recent drilling include the use of assay standards, field duplicates and umpire laboratory analysis. Results of the QC analysis indicated that acceptable levels of accuracy and precision have been achieved. No independent QAQC was conducted for the 20 metallurgical DD holes drilled in 2017. Intertek Genalysis conducted their own internal QAQC, with no issues being reported.
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. • Discuss any adjustment to assay data.	A total of 13 DD holes were twinned with selected RC holes. The results indicate minimal downhole smearing in RC drill holes. Primary data from the historic drilling have been compiled into a single Microsoft Excel spreadsheet. The most recent drilling has been compiled into a separate Microsoft Excel spreadsheet. Intersections in metallurgical diamond drill holes drilled in 2017 are commensurate with surrounding drill holes.

Criteria	JORC Guidelines	Commentary
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.	The drilling coordinates are in a local metric grid established by surveyors Hille Tompson and Delfos located in Geraldton, which has a grid north-south baseline at 5500 mE. The historic drill holes were surveyed on the local metric grid. Where the historic hole collars could not be identified the collar locations were converted from the old imperial grid locations. Drill collar and azimuth of the metallurgical holes were pegged in the field using GDA94 system by independent surveyors. The topographic surface was provided by Southern Geoscience Consultants (SGC) compiled as part of an aeromagnetic survey flown on 25 m spaced lines in 2005. The Digital Elevation Model (DEM) was supplied in GDA, MGA Zone 50 coordinates and transformed to the local metric grid using four drill holes as common points.
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.	Drill spacing is predominantly 100 m x 25 m. There is one 100 m area drilled at centres of 25 m x 25 m, and one 25 m area drilled at centres of 12.5 m x 12.5 m. Drill spacing is sufficient to establish the degree of geological and grade continuity necessary to support the resource classification. All samples were composited using a nominal 1 m interval prior to compiling the estimate. Where necessary, the composite interval has been adjusted to ensure that there are no residual sample lengths.
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.	Drill holes are drilled towards local grid east or west at varying angles to intersect the mineralised zones perpendicularly. The location and orientation of the Barrambie drill holes is appropriate given the strike and morphology of the mineralisation. Metallurgical drill holes are drilled within the plane of the mineralisation within the Eastern zone at 50 m intervals along strike.
Sample security	• The measures taken to ensure sample security.	Samples are stored onsite and transported to the laboratory on a regular basis. The laboratory was instructed by Neometals to dispose of the residual samples, the pulps have been retained. Bulk samples required for future metallurgical testwork have been retained and are currently stored at Koorda.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	To date there have been no audits or reviews of sampling techniques and data.

JORC Code Table 1, Section 2, Reporting of Exploration Results

Criteria	JORC Guidelines	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 Barrambie mineralisation is within granted mining lease M57/173 in the Eastern Murchison Goldfields. In April 2003, Reed Resources Ltd (Reed) through its subsidiary AVCH acquired 100% ownership of M57/173. The tenure was secure at the time of resource estimation and reporting. No known impediments exist to operate in the area.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	There is no exploration done by other parties to acknowledge or appraise at this time.
Geology	• Deposit type, geological setting and style of mineralisation.	The ferrovanadium titanium (Ti-V-Fe) deposit occurs within the Archaean Barrambie Greenstone Belt, which is a narrow, north-northwest to south-southeast trending greenstone belt in the northern Yilgarn Craton. The linear greenstone belt is about 60 km long and attains a maximum width of about 4 km. It is flanked by banded gneiss and granitoids. The mineralisation is hosted within a large layered, mafic intrusive complex (the Barrambie Igneous Complex), which has intruded into and is conformable with the general trend of the enclosing Greenstone Belt. From aeromagnetic data and regional geological mapping, it appears that this layered sill complex extends over a distance of at least 25 km into tenements to the north and south of M57/173 that have been acquired by Reed. The layered sill varies in width from 500 m to 1,700 m. The sill is comprised of anorthositic magnetite-bearing gabbros that intrude a sequence of metasediments, banded iron formation, metabasalts and metamorphosed felsic volcanics of the Barrambie Greenstone Belt. The metasediment unit forms the hanging-wall to the layered sill complex. Exposure is poor due to deep weathering, masking by laterite, widespread cover of transported regolith (wind-blown and water-borne sandy and silty clay), laterite scree and colluvium. Where remnant laterite profiles occur on low hills, there is ferricrete capping over a strongly weathered material that extends down to depths of 70 m. Ti-V-Fe mineralisation occurs as bands of cumulate aggregations of vanadiferous magnetite (martite)-ilmenite (leucoxene) in massive and disseminated layers and lenses. Within the tenement the layered deposit has been divided into five sections established at major fault offsets. Cross faults have displacements that range from a few metres to 400 m. The water table occurs at about 35 m below the surface (when measured where the laterite profile has been stripped).

Criteria	JORC Guidelines	Commentary
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. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	No exploration results being reported. Exploration results can be found in previous public reports.
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.	There are no exploration results to report. Past news releases of exploration results include summaries of all length weighted intercepts of vanadiferous mineralisation for all assays with greater than 0.5% V_2O_5, continuous throughout each intercept.
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results.	There are no new exploration results to report. For past news releases of exploration results, all holes drilled at an angle of 60° from the horizontal toward grid east or west, depending on the apparent dip of mineralised bands. All depths and intercept lengths are down-hole distances and not intended to represent the true width of high-grade bands.

Criteria	JORC Guidelines	Commentary
	• 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 (e.g. 'down hole length, true width not known').	Metallurgical holes were drilled within the plane of the mineralisation (i.e. down-dip) and therefore do not reflect the true width of the orebody.
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.	All appropriate maps (with scales) and tabulations of survey parameters are reported.
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.	Due to size of the drill hole database, it is not practicable to report all drilling results. Cut-off grade for reporting is a natural well-defined boundary for the higher grade massive magnetite bands that will be the principal target for selective mining of the deposit.
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.	Only drill hole data used for resource calculation purposes.
Further work	• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Limited ongoing exploration work is planned in the Barrambie area.

Criteria	JORC Guidelines	Commentary
	• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

JORC Code Table 1, Section 3, Reporting of Mineral Resources

Criteria	JORC Guidelines	Commentary
Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. • Data validation procedures used.	Handwritten logs are entered into Microsoft Excel at the end of each day and transferred to a Microsoft Access database on a regular basis. Snowden completed a basic validation check of the database for potential errors as a preliminary step to compiling the resource estimate. No issues were identified. The geological and sample database is maintained by Neometals and was validated by Snowden during the Mineral Resource update in January 2009, this included a review of the QC data. Drilling and sampling procedures were documented by Bryan Smith (Geosciences Pty Ltd) who made regular site visits during the drilling campaigns. Snowden considers sufficient information was provided to develop the geological model and Mineral Resource estimate to the level of an Indicated and Inferred Mineral Resource.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	John Graindorge visited the Barrambie project in May 2019, reviewing the general site layout, outcropping geology and available drill sites.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation.	The interpretations for structural and lithological surfaces were compiled by Snowden in 2009 using the drill hole database supplied by Neometals. Minor adjustments were made by Snowden to the interpretation based on the additional diamond drill holes in 2017. A topography wireframe surface was generated from RC and DD drill hole collars, combined with the DEM points supplied by SGC. Discrepancies in elevation between drill hole collars and the DEM in the order of 2 m to 3 m were found north of 12600 mN.

<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td></td><td>• The factors affecting continuity both of grade and geology.</td><td>The interpretations for the mineralisation envelope and domains were primarily based on V_2O_5 grade cut-offs determined from statistical analysis of the drill hole data. A mineralisation indicator of 0.6% V_2O_5 was used to define the high-grade domain within both the Central and Eastern zones. The Eastern zone low grade mineralisation was based on a threshold of 0.3% V_2O_5 and 0.1% V_2O_5 for the Central and Eastern zone low grade mineralised envelopes surrounding the lodes. Six mineralised domains have been interpreted, four within the Eastern zone and two within the Central zone. Snowden notes that there is a strong correlation between V_2O_5 and TiO_2 and as such, the use of V_2O_5 for definition of the mineralised domains is also considered to be appropriate for TiO_2.

Neometals completed a program of closely spacing drilling within a test area which has provided better understanding of the short-range continuity of mineralisation.</td></tr>
<tr><td>Dimensions</td><td>• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>The deposit covers an area of approximately 11 km north-south by approximately 250 m east-west and extends to a depth approximately 80 m below surface. The deposit remains open at depth and along strike.</td></tr>
<tr><td>Estimation and modelling techniques</td><td>• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.

• The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.

• The assumptions made regarding recovery of by-products.

• Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</td><td>Drill hole data was coded using the wireframe interpretations representing oxidation surfaces, fault blocks and mineralised domains. Samples were composited to 1 m downhole, with the composite lengths adjusted to include all intervals and avoid loss of residual samples.

Top-cuts were applied where required to limit the influence of outlier grades.

Traditional variograms were modelled for the combined Eastern and Central zones and the parameters applied to the six original mineralised domains, with the nuggets and sill values adjusted for those domains. There was insufficient data within the Far Eastern zone high grade domain; therefore, the Eastern zone high grade parameters were applied. The Dyke variogram was modelled as an omni-directional variogram as the low number of samples in this domain could not support directional variography.

Studio 3 (Datamine) software was used to estimate grades for TiO_2, V_2O_5, Fe_2O_3, Al_2O_3, SiO_2, CaO and magnetic susceptibility using ordinary block kriging (OK) into 10 mE x 40 mN x 5 mRL parent cell size as determined by a kriging neighbourhood analysis (KNA) carried out in March 2008. Sub-celling to 0.25 m x 10 m x 1.25 m has been allowed. A block discretisation of 2 x 5 x 1 was used in the easting, northing and elevation directions respectively.

Boundary conditions used in the estimate are listed below:
<table>
<tr><th>Domain</th><th>Attribute</th><th>Boundary conditions</th></tr>
<tr><td>Domains 1-2</td><td>TiO_2</td><td>Soft boundary across grouped domains
Soft boundaries over oxidation horizons</td></tr>
<tr><td>Domains 3-6</td><td>TiO_2</td><td>Hard boundaries across grouped domains
Soft boundaries over oxidation horizons</td></tr>
<tr><td>Domains 1-6</td><td>V_2O_5, Fe_2O_3, Al_2O_3, SiO_2</td><td>Hard boundaries across grouped domains
Soft boundaries over oxidation horizons</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td></td><td>• In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
• Any assumptions behind modelling of selective mining units.
• Any assumptions about correlation between variables.
• Description of how the geological interpretation was used to control the resource estimates.
• Discussion of basis for using or not using grade cutting or capping.
• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</td><td>
<table>
<tr><td>Domains 1-6</td><td>CaO, magnetic susceptibility</td><td>Hard boundaries across grouped domains
Hard boundaries over oxidation horizons</td></tr>
<tr><td>Domain 7</td><td>V_2O_5, TiO_2, Fe_2O_3, Al_2O_3, SiO_2, CaO, magnetic susceptibility</td><td>Hard boundaries across grouped domains
Soft boundaries over oxidation horizons</td></tr>
</table>
The orientations of the search ellipses were defined to suit the approximate local dip and strike of the lode wireframes within each fault block. The initial search pass used ranges derived from the variograms. Blocks were estimated using a minimum of six and a maximum of 30 samples. If the initial search failed to find the minimum number of samples required, then a second search was conducted using 1.5 times the initial search radii.
Blocks within the mineralised domains not estimated due to an insufficient number of samples were assigned the mean assay of the Dyke, Central and Eastern zones as appropriate.
The estimates were validated as follows:
• A visual comparison of the block grade estimates to the input drill hole composite data on a section by section basis shows a reasonable correlation, although there is some evidence of smoothing of low and high grades within the low grade mineralised envelopes.
• A comparison of the estimated block grades to the average composite (naïve) grades for TiO_2, V_2O_5, Fe_2O_3, Al_2O_3, SiO_2 within the mineralised domains show good results, with both sets of results being within 8% for all grades except for Al_2O_3 which are within 13%
• Trend plots show a reasonable comparison of the block grades with the samples grades in the easting and northing directions. For the elevation direction the model and sample means sometimes diverge. This is due to the sub-vertical geometry of the lodes; few drill hole intercepts in the vertical direction and the fact that grades have been estimated using a search ellipse that has a significant range in the vertical direction resulting in apparent smoothing of the model.
The Barrambie Mineral Resource was previously reported in terms of TiO_2 by Snowden in 2013.
A comparison between the 2013 Mineral Resource estimate and the March 2018 Mineral Resource estimate shows that at a 15% TiO_2 cut-off there is no material change.</td></tr>
<tr><td>Moisture</td><td>• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</td><td>Not applicable to this estimate – only dry mass considered.</td></tr>
<tr><td>Cut-off parameters</td><td>• The basis of the adopted cut-off grade(s) or quality parameters applied.</td><td>The TiO_2 and V_2O_5 mineralisation is associated with ilmenite-magnetite mineralogy (generally spatially integrated), either within magnetite-rich layers or as disseminated mineralisation within gabbro and/or anorthosite. As such, Snowden believes that reporting a Mineral Resource based on both TiO_2 and V_2O_5 is appropriate for Barrambie. Based on previous mining studies by Snowden (2015 PFS), which assessed the TiO_2 potential of the project, a cut-off grade of 10% TiO_2 is in Snowden's opinion appropriate for assessing the TiO_2 Mineral Resource. A cut-off grade of 0.2% V_2O_5 is believed to be appropriate for assessing the V_2O_5 Mineral Resource and is commensurate with similar deposits (e.g. Windimurra and Mt Peak).

Based on this, the following cut-off grade criteria have been established by Snowden for Barrambie:</td></tr>
</table>

Criteria	JORC Guidelines	Commentary
		• ≥ 10% TiO_2 or • ≥ 0.2% V_2O_5 A block in the block model will therefore be selected for inclusion in the Mineral Resource if the TiO_2 is greater than or equal to 10% or the V_2O_5 is greater than or equal to 0.2%. Only one of the criteria must be met for a block to be selected for inclusion.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	A Scoping Study was completed by Snowden in November 2013 on the basis that the Barrambie deposit will be mined using conventional drill and blast with truck and shovel open pit mining methods. Reasonably small mining equipment would be used to mine the high grade with limited dilution. Ore mined will be placed on a ROM stockpile and transferred to highway haul trucks and transported to a proposed 50 kt/a hydrometallurgical processing plant to be constructed near Geraldton.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical samples from the oxide and transition zones were provided for laboratory testwork. The testwork demonstrated that both V2O5 and TiO2 can be recovered using a two-stage leaching process. Whilst mineralisation within the primary zone has not been tested this zone constitutes a minor proportion of the defined resource. Testwork carried out on similar primary material from Canadian deposits indicates that the Barrambie primary material would be amenable to this processing technique.

Criteria	JORC Guidelines	Commentary
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The initial studies were completed in the period 2005 to 2009 and are reported in summary in the "BARRAMBIE VANADIUM PROJECT (Project) Public Environmental Review" (PER) (Reed Resources, 2010). The PER was approved under Part IV of the Environmental Protection Act 1986 (EP Act) in Ministerial Statement 911. An application to extend the time limit for implementation of the Project (S46 application) is currently with the WA Environmental Protection Authority for approval (expected in Q2 2019).
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Density values were estimated from the mineralised domains in the block model with regression equations using estimated Fe_2O_3, SiO_2 and Al_2O_3 block grades. Limited data was available from the transitional and very little data was available from the fresh. Waste blocks were assigned a default density based on fresh unmineralised gabbro.
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories.	The Barrambie Mineral Resource is classified as and Indicated and Inferred Mineral Resource for the five major elements V_2O_5, TiO_2, Fe_2O_3, Al_2O_3, SiO_2, based on a number of criteria, including the geological confidence, the integrity of the data, the spatial continuity of the mineralisation as demonstrated by variography and the quality of the estimation. The estimates of CaO and magnetic susceptibility have not been classified as they are considered to have low confidence due to poor validation.

Criteria	JORC Guidelines	Commentary
	• Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	Mineralised zones where the drill spacing is 100 m x 25 m, 120 m x 25 m or 150 m x 25 m and are within the OK variance envelope (based on a threshold of 0.5) and above the base of drilling have been classified as Indicated. Mineralised zones outside the OK variance envelope and below the base of drilling have been classified as Inferred. Mineralised zones have ben extrapolated approximately 20 m beyond the base of drilling. The Mineral Resource estimate appropriately reflects the views of the Competent Person with respect to the deposit.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	Snowden has completed an internal peer review or the estimate which has concluded that the procedures used to estimate and classify the Mineral Resource are appropriate. There have been no external audits or reviews carried out that Snowden is aware of.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The relative accuracy and confidence in the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as set out in the JORC Code.

JORC Code Table 1, Section 4, Reporting of Ore Reserve

The key Modifying Factors used to estimate the Ore Reserve are based on the experience of Snowden and Neometals employees for this type of deposit and style of mineralisation. Table 2 summarises the status of material aspects of the May 2019 Barrambie Ore Reserve estimate, against the items listed in the table as the Competent Person's assessment of Ore Reserve estimation for the Barrambie deposits.

The Ore Reserve estimate is provided in Table 1. The Barrambie Mineral Resources are reported are inclusive of Ore Reserves.

Table 1 *Barrambie Ore Reserve estimate reported at a 0.60% V_2O_5 cut-off*

Classification	Ore tonnes (Mt)	V_2O_5 (%)	TiO_2 (%)	Fe_2O_3 (%)	Al_2O_3 (%)	SiO_2 (%)
Probable	39.9	0.78	15.1	46.4	12.5	17.6

A checklist of assessment and reporting criteria according to JORC guidelines (including Competent Person's assessment and comment on the Ore Reserve estimates) is provided in Table 2.

Table 2 *Barrambie JORC Code (2012), Table 1, Section 4*

<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td>Mineral Resource for conversion to Ore Reserves</td><td>• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.
• Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</td><td>Mineral Resources for the Barrambie deposit were reported in April 2018. A cut-off grade of 10% TiO2 was used for assessing the TiO2 Mineral Resource and a cut-off grade of 0.2% V2O5 was used for the V2O5 Mineral Resources and is commensurate with other deposits. SiO2 and Al2O3 were estimated however not reported in 2018, so are now reported.
The Indicated Mineral Resource was also reported at just a V2O5 cut¬¬-off of 0.2%.
<table><tr><th>Tonnes (Mt)</th><th>TiO_2 (%)</th><th>V_2O_5 (%)</th><th>Fe_2O_3 (%)</th><th>SiO_2 (%)</th><th>Al_2O_3 (%)</th></tr><tr><td>187.1</td><td>9.61</td><td>0.46</td><td>31.8</td><td>28.7</td><td>18.6</td></tr></table>Mineral Resources are reported inclusive of, the Ore Reserves.</td></tr>
<tr><td>Site visits</td><td>• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.
• If no site visits have been undertaken indicate why this is the case.</td><td>Site visits were completed by the following Competent Persons:
<table><tr><th>Competent Persons</th><th>Items</th><th>Date of site visit</th></tr><tr><td>Frank Blanchfield</td><td>Mining</td><td>May 2007</td></tr><tr><td>John Graindorge</td><td>Geology</td><td>May 2019</td></tr><tr><td>Gavin Beer</td><td>Metallurgy</td><td>Not undertaken</td></tr></table></td></tr>
</table>

Criteria	JORC Guidelines	Commentary
		No metallurgy site visit was undertaken as there is no plant or drillhole core to inspect at site.
Study status	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • The Code requires that a study to at least Prefeasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	The Barrambie Vanadium Project is currently at Definitive Feasibility Study (DFS) level with the completion of this 2019 Study.
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	A 0.6% V2O5 cut-off was used to determine mineralisation with which to apply skin dilution. Post dilution application a marginal cut-off grade was calculated for each block using values for: • Processing cost ($/t) • Overheads cost ($/a) • Mill throughput per annum (tpa) • Price per 10 kilograms ($/10kg) • Royalty/refinery cost per 10 kilograms ($/10kg) • Metallurgical recovery (%).
Mining factors and assumptions	• The method and assumptions used as reported in the Prefeasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.	Snowden Mining Industry Consultants (Snowden) completed a mining feasibility study for the Barrambie Project in 2009 (SKM, 2009). The study has been updated to reflect the latest understanding of the project, particularly around vanadium pricing and operating costs. An evaluation using pit optimisation to produce an economic mining shell followed by detailed pit design was used to convert the Mineral Resource to an Ore Reserve. A mine layout was developed for mining of staged designs mine layout development. Mine equipment requirements were determined by contractors, who provided pricing using the Snowden mine production schedule as a basis. Selective mining using an open pit drill blast load and haul mining cycle is used for mining activities. Snowden completed a geotechnical analysis to recommended pit slope design parameters for Barrambie for 80m deep pit as summarised as:

Batter angle (º)	Berm width at base of batter (m)	Batter height (m)	Inter-ramp slope angle, crest to crest (°)	Overall slope angle, crest to toe (°)
55	7	10	35.5	30

<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td></td><td>• The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).
• The mining dilution factors used.
• The mining recovery factors used.
• Any minimum mining widths used.
• The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.
• The infrastructure requirements of the selected mining methods.</td><td>Grade control in the Central Zone, for the high-grade layers, will need a drill spacing of 6.25 mE x 12.5 mN (or similar) and is required to adequately define the layers for mining at a 2.5 x 12.5 m SMU, given the geological and grade continuity of the high-grade layers. Digital grade control will be required as the ore and waste are occasionally visually similar.
The resource model used is named “m1803.dm”, generated by Snowden in March 2018, and is the subject of the April 2018 Mineral Resource estimate. Dilution was applied by applying a dilution skin of 500 mm either side of the orebody (after using a 0.6% V2O5 filter for the mineralisation) and re-blocking the diluted ore to 2.5 mE x 10 mN x 5 mRL. This was deemed to be an appropriate SMU when considering blast movement, grade control patterns and loading accuracy. Dilution and ore loss by geological zone are summarised as:
<table>
<tr><th>Item</th><th>Eastern</th><th>Central</th><th>Overall</th></tr>
<tr><td>Ore loss (%)</td><td>10.1</td><td>7.3</td><td>8.2</td></tr>
<tr><td>Dilution (%)</td><td>3.8</td><td>21.9</td><td>16.0</td></tr>
<tr><td>Dilution V_2O_5 (%)</td><td>0.47</td><td>0.34</td><td>0.35</td></tr>
<tr><td>Dilution TiO_2 (%)</td><td>21.00</td><td>5.59</td><td>6.77</td></tr>
<tr><td>Dilution SiO_2 (%)</td><td>18.09</td><td>34.57</td><td>33.31</td></tr>
<tr><td>Dilution Al_2O_3 (%)</td><td>10.64</td><td>22.63</td><td>21.71</td></tr>
<tr><td>Dilution Fe_2O_3 (%)</td><td>44.07</td><td>24.08</td><td>25.61</td></tr>
</table>
The minimum mining width subject to modified mining procedures in narrow basal pits is 20 m.
No in pit Inferred Resources were used to quantify Ore Reserves.</td></tr>
<tr><td>Metallurgical factors and assumptions</td><td>• The metallurgical process proposed and the appropriateness of that process to the style of factors or mineralisation.
• Whether the metallurgical process is well-tested technology or novel in nature.
• The nature, amount and representativeness of metallurgical testwork undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.
• Any assumptions or allowances made for deleterious elements.</td><td>No significant work programs have been completed since 2009 SKM work on the salt roast leach flowsheet.
The primary metallurgical process employed is the production of ferro-vanadium by the salt roasting process via the metavanadate route and then smelting.
The process comprises of four generic steps:
• Concentrate production through ore preparation and beneficiation to produce a concentrate containing vanadium.
• Roasting the concentrate at high temperature with a sodium containing salt.
• Water leaching the soluble vanadium, purifying the solutions and precipitation of the vanadium as ammonium metavanadate. The production of ferro-vanadium from a vanadium trioxide intermediate produced from the ammonium metavanadate. The preferred form of ferro-vanadium has an iron to vanadium ratio of 20:80 (FeV80).
This technology is commonly used in the industry for producing vanadium pentoxide and ferro-vanadium from vanadium-bearing ores and slags. It is a well-tested and proven technology and is considered by the Competent Persons to be appropriate for the deposit.</td></tr>
</table>

Criteria	JORC Guidelines	Commentary
	• The existence of any bulk sample or pilot-scale testwork and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications	During the DFS completed by SKM in 2009, extensive testwork was undertaken within Australia and overseas. Testwork evaluations treated oxidised ore from the Eastern Zone and Central Zone separately throughout the investigation. The testwork results were used to generate a process flowsheet, process design criteria and mass balance for the production of vanadium pentoxide from Barrambie oxidised ore. Additionally, a grade recovery relationship was developed to forecast the recovery rate and quality of concentrate from a parcel of ore. Beneficiation testwork was performed at the Perth laboratories of Amdel and AMMTEC. The roast leach bench-scale work was performed by CSIRO and Amdel in Perth. Six tonnes of bulk samples of Central Zone and Eastern Zone concentrate were prepared at Nagrom's Perth facilities and sent to Polysius in Germany for a pilot kiln roast trial. The calcine produced from the pilot kiln run was used to develop the refinery process, with testwork undertaken by SGS at their Perth laboratory. The most sensitive variables in the resource optimisation are process recovery followed by metal price and processing cost. Metallurgical recoveries for vanadium were provided by SKM. Recoveries vary between the Eastern Zone and Central Zone ore styles and are dependent on contaminant minerals such as iron oxide, alumina and silica. SKM has retained two residual risks with a high rating in their risk register as follows: • An incomplete understanding of the relationship between the specific properties of the ore being mined and the achievable levels of silica in the concentrate produced and the overall recovery through the beneficiation circuit. This may lead to sub-optimal plant performance. • Previous laboratory-scale roasting tests have lacked consistency which may be attributable to the testing methodology used. This may contribute to the required levels of salt addition indicated and adopted in the Feasibility Study, which are well in excess of industry norms. However, overall, SKM consider that there is a Medium Risk that the processing recoveries quoted in the SKM 2009 report will be different from those adopted in the study. The following table shows the recovery factors used in the Study.

	Central Ore	Eastern Ore
ROM to kiln feed	51.8%	56.8%
Kiln dust losses	0.0%	0.0%
Concentrate to flake	82.9%	73.7%
Flake to ferro-vanadium	98.5%	98.5%
ROM to flake	43.0%	41.9%
ROM to ferro-vanadium	42.4%	41.2%

Overall mass recovery from primary milling to a beneficiated concentrate was 36%.

Criteria	JORC Guidelines	Commentary
Environmental	• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste drums should be reported.	Two phases of studies have been undertaken in order to assess the potential impact of the Project on the various aspects of the environment. These include flora, fauna and vegetation surveys, hydrogeological investigations, air quality modelling, and waste characterisation. The initial studies were completed in the period 2005 to 2009 and are reported in summary in the "BARRAMBIE VANADIUM PROJECT (Project) Public Environmental Review" (PER) (Reed Resources, 2010) and in full in the Appendices. The PER was approved under Part IV of the Environmental Protection Act 1986 (EP Act) in Ministerial Statement 911. An application to extend the time limit for implementation of the Project (S46 application) is currently with the WA Environmental Protection Authority for approval (expected in Q2 2019). Further studies have been completed in 2018 to update the original studies and support the preparation of secondary approvals under the Mining Act 1978, Rights in Water and Irrigation Act 1914 (RIWI Act) and EP Act (Part V). A Mining Proposal for a Starter Pit that would allow two to three years of mining at 1 million tonnes per annum was submitted to the Department of Mines, Industry Regulation and Safety (DMIRS) on 31 December 2019. Waste rock characterisation studies completed to date show that 21 of 22 samples are assessed as non-acid forming. The one potentially acid forming sample was "trace-pyrite" (0.37% S). Further studies will be completed to support updating the Mining Proposal. Approvals for tailings characterisation testwork was completed in support of the PER but more detailed work will be required to support a Mining Proposal and Works Approval for the tailings storage facility.
Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.	All local infrastructure required to construct, support and maintain the planned Barrambie operation will be supplied as part of the project development. With the exception of the existing Meekatharra to Sandstone Road, (which will also require some level of upgrading), none of the required facilities, supplies or services are available in the local area. Infrastructure allowed for in the Study include: • A borefield for water supply • A build-own-operate gas-fired powerhouse is proposed • A 250-room self-contained accommodation village • A two-way radio network will be installed for operational communications • An all-weather airstrip located at Barrambie • Upgrades to the existing Meekatharra-Sandstone Road. The Meekatharra-Sandstone Road runs alongside the mining lease and is a dual lane unsealed road maintained by the local shires. It is subject to closure whenever there is a significant rainfall event. Reagents will generally be delivered from the south by road train. Suppliers of all reagents have been identified and there are no indications at present that these materials, with the exception of the soda ash roasting salt, cannot be supplied from Western Australian sources.

<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr>
<td>Costs</td>
<td>• The derivation of, or assumptions made, regarding projected capital costs in the study.
• The methodology used to estimate operating costs.
• Allowances made for the content of deleterious elements.
• The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.
• The source of exchange rates used in the study.
• Derivation of transportation charges.
• The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.
• The allowances made or royalties payable, both government and private.</td>
<td>The operating and capital cost data for this study has come from the following sources: Mining from Adaman Resources/SMS Budget Mining Proposal dated 17 April 2019; Gas Operating Costs from Melson Energy Consulting dated March 19; Gas Line Capital Costs from OSD Engineering dated 21 March 2019; and an update to the SKM 2009 operating and capital cost estimates (beneficiation, salt roast leach, hydrometallurgy, FEV smelter and infrastructure) as completed by Ausenco (DFS Repricing, 2 April 2019).
Operating costs
<table>
<tr><th>Production opex</th><th>A$M</th><th>US$M</th><th>A$/t milled</th><th>A$/t mined*</th><th>US$/kg FeV</th></tr>
<tr><td>General</td><td>500</td><td>350</td><td>12.53</td><td>2.75</td><td>4.60</td></tr>
<tr><td>Mining cost</td><td>864</td><td>605</td><td>21.65</td><td>4.75</td><td>7.95</td></tr>
<tr><td>Processing cost</td><td>1,284</td><td>899</td><td>32.19</td><td>7.06</td><td>11.82</td></tr>
<tr><td>Opex for FeV production</td><td>206</td><td>144</td><td>5.17</td><td>1.13</td><td>1.90</td></tr>
<tr><td>Total opex for FeV production</td><td>2,854</td><td>1,998</td><td>71.54</td><td>15.68</td><td>26.27</td></tr>
<tr><td>Selling costs (royalty)</td><td>132</td><td>93</td><td>3.32</td><td>0.73</td><td>1.22</td></tr>
</table>
*Mined = Ore + Waste
Capital costs
<table>
<tr><th></th><th>A$M</th></tr>
<tr><td>Infrastructure</td><td>99</td></tr>
<tr><td>Mining**</td><td>2</td></tr>
<tr><td>Crushing and beneficiation</td><td>162</td></tr>
<tr><td>SRL kiln and hydromet refinery</td><td>246</td></tr>
<tr><td>Gas lateral from GGP</td><td>62</td></tr>
<tr><td>Ferro-vanadium circuit</td><td>35</td></tr>
<tr><td>Contingency (~15%)</td><td>87</td></tr>
<tr><td>Total</td><td>692</td></tr>
<tr><td>Sustaining capex***</td><td>123</td></tr>
</table>
** Most mining capital included in Mining Operating costs.
*** A$5 million per year of processing plus A$/1.50/t milled for additional tails dam capacity from Year 4 onwards (A$48 million).</td>
</tr>
</table>

Criteria	JORC Guidelines	Commentary
		Exchange rates used are A$:US$0.70 and A$:Euro 0.357 (Source: Qanda Rate 1/12/18). 2.5% State Government Royalty allowed for ferro-vanadium production. No private royalties are applicable. Transportation charges are included and based on FeV80 being trucked to the port of Fremantle in steel drums, packed four per pallet, 20 t per full container load. No allowance is made for further port handling or sea freight costs.
Revenue factors	• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. • The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Neometals received pricing data from internationally recognised experts Roskill, CRU and Fastmarkets. Based on a review of these forecasts Neometals has selected a ferro-vanadium price deck that ranges between US$46.8/kg and US$75.0/kg V FeV80 with an average price received of US$48.71/kg (all prices real). The price deck selected by Neometals was located within the range bounds of the combined price decks from the three experts. The FOB China spot price for ferro-vanadium (min78% V) was reported as US$52/kg (Source: Fastmarkets, 30 April l 2019) and the average ferro-vanadium price for the last 12 months is US$82.17/kg V (Source: Fastmarkets, ferro-vanadium min 78%DDP Western Europe).
Market assessment	• The demand, supply and stock situation for the particular commodity, consumption trends assessment and factors likely to affect supply and demand into the future. • A customer and competitor analysis along with the identification of likely market windows for the product. • Price and volume forecasts and the basis for these forecasts. • For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Neometals has indicated that vanadium pentoxide (98.5% V2O5) and ferro-vanadium (FeV80) can be sold as a mix of spot, short, medium and long-term bilateral agreements. Customers targeted are end users (e.g. steel mills). Any spot sales may be undertaken in conjunction with metal trading companies including such as Glencore, CCMA, Traxys and others. Vanadium prices are currently above historical average levels following a three-year period of sustained price increases. This price escalation is due to industry rationalisation that occurred in the period 2014 to 2016 and resulted in a significant decrease in vanadium production capacity. The implementation of new regulations in China in 2018 governing the use of vanadium in construction steels (i.e. rebar) has resulted in higher vanadium demand levels that cannot be met with existing production capacity. A vanadium supply deficit is forecast until at least 2025 during which time new greenfields production capacity is required to meet the growing needs of the market. The current and projected supply shortfall is likely to result in price levels for vanadium raw materials that are well above historical levels during this period. A customer and competitor analysis, price and product volume was assessed by Neometals. Neometals has indicated healthy interest from metal trading companies suggesting there is low sales risk for the vanadium products. Customer testing and acceptance requirements will occur when a MOU or commercial offtake is established in the market.
Economic	• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. • NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Financial modelling was completed by Neometals, Snowden is reliant on the metal price projections advised by Neometals. Snowden is not expert in the forecasting of metal prices, and other than to draw attention to the sensitivity of the project to these projections, is not able to comment on the risk that these projections will change over time. However, it is noted Neometals has taken into consideration data from three well known and respected companies with extensive expertise in vanadium markets.

Criteria	JORC Guidelines	Commentary
		The key financial metrics for just the reserve portion of the project are:

	Unit	Pre-tax	Post-tax
NPV	A$M	430	199
Discount rate	%	10	10
IRR	%	21	15
Capital intensity	NPV/A$ upfront capex	0.62	0.29
AISC/V_2O_5 flake	A$/lb	9.50	9.50
Payback period	years	5.1	6.2

A sensitivity analysis on the post-tax NPV is provided below.

		Metal price sensitivity						
	430	-30%	-20%	-10%	0%	10%	20%	30%
Discount rate	12%	-340	-186	-36	114	264	414	564
	10%	-318	-143	28	**199**	370	540	710
	8%	-290	-89	106	302	497	693	888
		Mass recovery sensitivity						
	430	-30%	-20%	-10%	0%	10%	20%	30%
Discount rate	12%	-336	-184	-35	114	263	412	560
	10%	-313	-140	30	**199**	368	537	706
	8%	-285	-86	108	302	496	689	883
		Recovery rate to flake sensitivity						
	430	-30%	-20%	-10%	0%	10%	20%	30%
Discount rate	12%	-336	-184	-35	114	263	412	560
	10%	-313	-140	30	**199**	368	537	706
	8%	-285	-86	108	302	496	689	883
		Mining costs sensitivity						
	430	-30%	-20%	-10%	0%	10%	20%	30%
	12%	191	165	140	114	89	63	38

<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Discount rate</td><td>10%</td><td>286</td><td>257</td><td>228</td><td>199</td><td>170</td><td>141</td><td>112</td></tr>
<tr><td></td><td>8%</td><td>401</td><td>368</td><td>335</td><td>302</td><td>269</td><td>236</td><td>203</td></tr>
<tr><td></td><td></td><td colspan="7">Processing costs sensitivity</td></tr>
<tr><td></td><td>430</td><td>-30%</td><td>-20%</td><td>-10%</td><td>0%</td><td>10%</td><td>20%</td><td>30%</td></tr>
<tr><td rowspan="3">Discount rate</td><td>12%</td><td>248</td><td>204</td><td>159</td><td>114</td><td>69</td><td>24</td><td>-22</td></tr>
<tr><td>10%</td><td>353</td><td>302</td><td>250</td><td>199</td><td>147</td><td>95</td><td>43</td></tr>
<tr><td>8%</td><td>479</td><td>421</td><td>361</td><td>302</td><td>242</td><td>182</td><td>122</td></tr>
<tr><td></td><td></td><td colspan="7">Development capex sensitivity</td></tr>
<tr><td></td><td>430</td><td>-30%</td><td>-20%</td><td>-10%</td><td>0%</td><td>10%</td><td>20%</td><td>30%</td></tr>
<tr><td rowspan="3">Discount rate</td><td>12%</td><td>90</td><td>98</td><td>106</td><td>114</td><td>122</td><td>130</td><td>138</td></tr>
<tr><td>10%</td><td>171</td><td>181</td><td>190</td><td>199</td><td>208</td><td>217</td><td>226</td></tr>
<tr><td>8%</td><td>270</td><td>281</td><td>292</td><td>302</td><td>312</td><td>323</td><td>333</td></tr>
</table>
</td></tr>
<tr><td>Social</td><td>• The status of agreements with key stakeholders and matters leading to social licence to operate.</td><td>
Native Title and Heritage
A Native Title Deed has been executed with the Yugungya-Nya people and Reed Resources (Australian Titanium) covering mining tenements associated with the Project. The agreement includes agreement to grant additional tenure and for completion of Heritage surveys on additional tenure. Heritage surveys have also been completed on the granted Mining Lease.
Consultation
Consultation with key local stakeholders including neighbouring pastoral owners, indigenous groups, government agencies including the Department of Mines, Industry and Safety Regulation (DMIRS), the Department of Water and Environmental Regulation (DWER) and the Shire of Sandstone have been undertaken.
Workforce
The workforce will fly-in/fly-out of Perth/Geraldton supplemented by local workforce from Meekatharra/Sandstone/Mount Magnet areas.
Monitoring
Environmental monitoring and reporting required for the site will include the following:
• Annual Environmental Report
• Compliance Assessment Report under MS 911
• Reporting under the site Groundwater Licence(s)
• Reporting under the site Works Approval and Licence.
Training
</td></tr>
</table>

Criteria	JORC Guidelines	Commentary
		All personnel recruited to work at the Project will be inducted to all general safety requirements and emergency procedures relevant to the operation, prior to commencing work at the site. Neometals will implement in-house and/or external training programs which will provide individuals with the necessary skills, knowledge and competencies required to perform their work safely and responsibly. Records of all training completed by each individual will be maintained and a Training Attendance Record will be kept. **Licence to operate** A Works Approval and Licence to operate from DWER is required to operate. A Works Approval and Licence can only be granted once the S46 has been approved and the required additional tenure has been granted. Based on the information currently available, it is anticipated that all necessary approvals will be granted within the required timeframes.
Classification	• The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	In-pit Indicated Mineral Resources were used as the basis of Probable Ore Reserve, estimated using the guidelines of the JORC Code (2012). The result of the classification reflect the Competent Person's view of the deposit.
Other	• The status of agreements with key stakeholders and matters leading to social licence to operate. • To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements.	SKM compiled a risk register in 2009 and identified 49 residual risks to the Barrambie Project. Six hazards are identified in the high risk category, 31 hazards are identified in the medium risk category and 12 hazards in the low risk category. To put this in context, this ranking assesses that a single economic loss in excess of A$10 million (or equivalent non-economic loss) could happen once during the life of the project if the mitigating strategies proposed are not successfully implemented. There are no hazards reported in the "very high" risk category. The Project has previously been approved under Part IV of the of the Environmental Protection Act 1986 (WA) (EP Act) and is subject to Ministerial Statement (MS) 911. Neometals has submitted a Section 46 application under Part IV of the EP Act in order to extend the "Time Limit for Proposal Implementation" (Condition 3 of MS 911). This is anticipated to be granted in Q1 2019. Approval is granted for the extraction of a Bulk Sample (Reg ID 70790). An application has been submitted for additional tenure around existing Mining Lease M57/173 to allow for all ancillary infrastructure and stockpiles required for the Project. This tenure is anticipated to be granted in Q3 2019. The project is currently unencumbered with any offtake arrangements. Secondary approvals are required for the Project, including a Mining Proposal, Mine Closure Plan and Works Approval, before works at the site can commence. The studies required for these approvals have been undertaken and consultation with the relevant government agencies is underway. These secondary approvals can only be granted once the S46 has been approved and the required additional tenure has been granted. The timeframes listed above for the S46 and tenure are expected to be achievable based on currently forecast approvals periods.

Criteria	JORC Guidelines	Commentary
Audits or reviews	• The results of any audits or reviews of Ore Reserve estimates.	There have not been external audits or reviews of the 2019 FS. Mineral Resource estimate, pit optimisation, design and schedule as developed for the Barrambie Feasibility Study were reviewed internally by Snowden.
Relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The capital cost estimates in this study relating to mining, processing and cost performance are underpinned by a comprehensive Feasibility Study which has an assessed with global accuracy of +15% and -15% at the 90% confidence range. Factors that could affect the accuracy of the Ore Reserve are related to the project risks assessed as “high”: • Dilution: A low powder factor averaging 0.35 kg/BCM was proposed by Adaman Resources who completed mine cost estimates. Snowden recommends detailed blast movement modelling be done on several of the lodes differing in shape and thickness in ore to better quantify and control dilution. • Plant kiln design: The kiln design is based solely on recommendations and testwork performed by Krupp Polysius, so Neometals should investigate alternative suppliers. Development of a set of critical design parameters to ensure that the kiln supplier meets perceived operating requirements will reduce the risk that recovery is not achieved. • Roast/leaching: Previous laboratory scale roasting tests have lacked consistency which may be attributable to the testing methodology used. Further laboratory and pilot-scale roasting testwork are proposed using alternative testing techniques to better define optimal conditions. • Silica levels and beneficiation: An incomplete understanding of the relationship between the specific properties of the ore being mined and the achievable levels of silica in the concentrate produced and the overall recovery through the beneficiation circuit. This will require reconciliation between the mine and the mill to manage the ore feed to assist in controlling silica levels in the concentrate.