BARRAMBIE FLOWSHEET BREAKTHROUGH

HIGHLIGHTS

- **Conventional reduction roasting and magnetic separation of gravity concentrates generates ilmenite for titanium pigment and a vanadium-rich magnetite for specialty steel production at high recoveries**
- **Large scale concentrate products meet commercial specifications for both ilmenite and magnetite products**
- **High quality ilmenite suitable for both chloride and sulphate pigment production, maximising marketability**
- **Samples of gravity concentrates in transit to IMUMR in China for flowsheet validation and generation of concentrates to advance potential offtake discussions**
- **Commenced early contractor engagement for a mining and gravity concentrate operation on site.**

Innovative project development company, Neometals Ltd (ASX: NMT) ("**Neometals**" or "**the Company**"), is pleased to announce excellent results from beneficiation test-work which has generated further concentrate samples for scale up validation work in China.

The largest-scale test work program was conducted on three bulk samples (20 tonnes) of Barrambie Eastern band (high titanium zone) mineralised material which generated 11 tonnes of heavy mineral concentrate (containing titanium, vanadium and iron) from traditional gravity spirals used by the mineral sands industry. Low-temperature reduction roasting and subsequent magnetic separation produced a high-quality ilmenite (> 52 % TiO_2 content) at high recoveries (> 87% TiO_2 recovery) and mass yield of 60%, and a marketable magnetite by-product concentrate (with grades equivalent to 58.7% Fe and 1.58% V_2O_5).

Historically, Neometals has evaluated the production of either vanadium or titanium in isolation using different flowsheets. Vanadium and titanium are industrial minerals which require significant proof of value-in-use when negotiating with potential off-takers. The Barrambie development strategy seeks to realise value from both the titanium and vanadium in the deposit via the generation of clean multi-metal concentrates from an initial capital-light mining and beneficiation operation for export to end-users. The reductive roast-magnetic separation work is a breakthrough for the Company as we can with confidence produce two separate products that achieved market ready specifications, with high mass pulls towards the potential higher value ilmenite product.

Neometals' Chinese partner, IMUMR*, is due to take delivery of a 1 tonne sample of the mixed concentrate material to allow replication of the Neometals reductive roast results and further downstream processing of the products. Validation of Australian test-work results using Chinese laboratories is standard practice in China and will support ongoing product offtake dialogues.

Neometals' Managing Director Chris Reed commented:

"These test work results are a breakthrough in simplifying the development concept for Barrambie. Proving that a simple gravity concentrate can be roasted and separated into two high quality concentrates is a significant step forward in realising our goal of developing Barrambie with strong partners. We are attracting strong interest from potential off-take partners and we look forward to continuing to work with IMUMR on advancing the project."

*Institute of Multipurpose Utilization of Mineral Resources Chinese Academy of Geological Sciences ("**IMUMR**"). MOU was executed 4th October 2019 (*see Neometals ASX announcement titled "Development Agreement for Barrambie"* defining a co-funded evaluation pathway towards a 50:50 joint venture to develop Barrambie.

Background

Barrambie is the most advanced, undeveloped hard-rock titanium Mineral Resource in Australia, located adjacent to existing transport infrastructure giving access to open user port facilities (see image below). Barrambie has a granted Mining Proposal for a 1.2 Mtpa mining operation and Ministerial Approval for construction of a processing plant with a throughput of 3.2Mtpa.

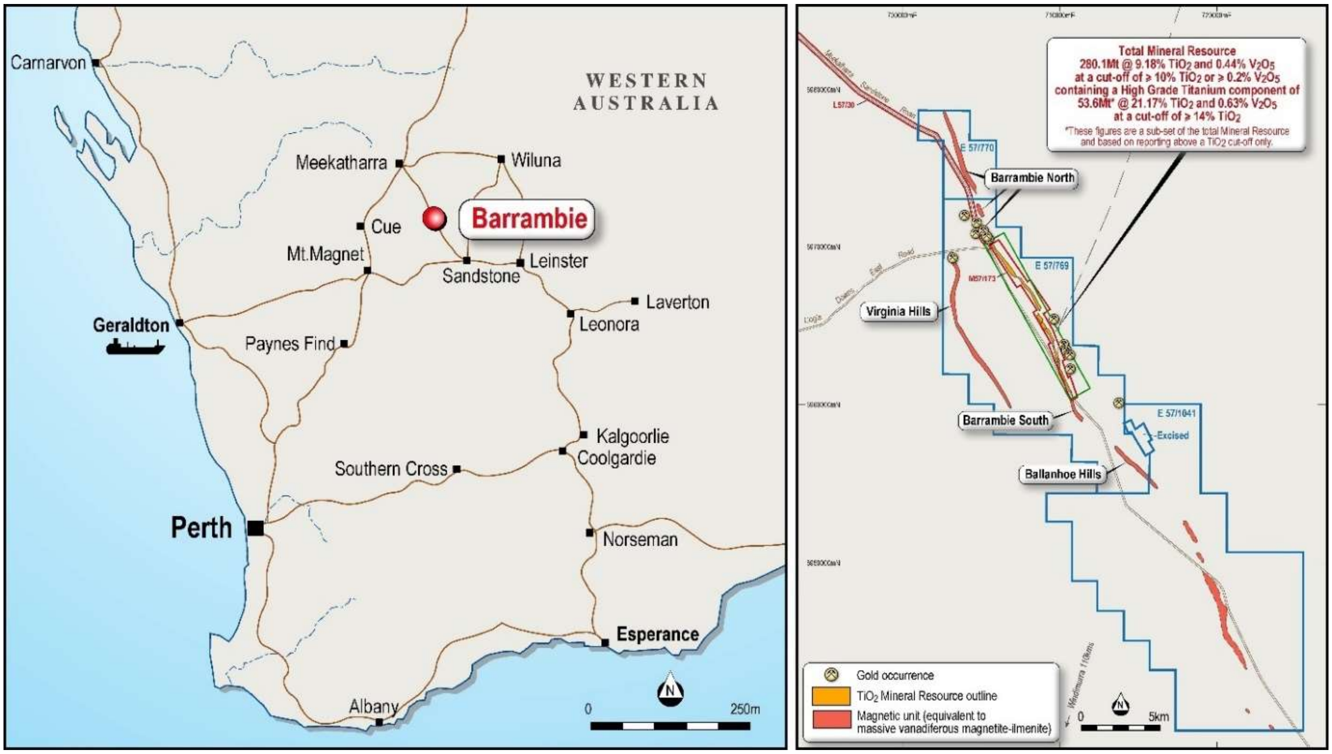

Figure 1 - *Location of Barrambie Project*

Test-work technical details

The Barrambie mineralisation contains high-grade ilmenite intergrown with a vanadium-bearing magnetite (iron) and, as demonstrated, the Neometals planned process flowsheet can produce a superior concentrate with high recoveries. The Barrambie development strategy revolves around extracting value from both the titanium and vanadium in the deposit. The high-level schematic flowsheet for this processing option involving mining, gravity beneficiation, reductive calcination and magnetic beneficiation into an ilmenite (TiO_2 concentrate) and an Fe-V concentrate is shown in Figure 2.

Beneficiation test work, including scaled up beneficiation on three bulk samples (20 tonnes of mineralised feed) of Barrambie Eastern mineralised material have found both gravity and magnetic beneficiation options work exceptionally well to produce a high-grade mixed concentrate. A gravity circuit based on spirals was found to give a slightly improved grade for TiO_2 and V_2O_5 grades and an improved recovery for TiO_2 to the concentrate. Overall mass pull to concentrate was typically around 58% with recoveries of TiO_2 and V_2O_5 to gravity concentrate of around 77% and 63% respectively

Bench scale reductive calcination test work has previously been shown to produce a material susceptible to magnetic fractionation, enabling the production of a TiO_2-rich concentrate and an iron-vanadium concentrate. Recent confirmatory test work has been performed at larger scale (22 kg) using syngas as the reductant in a fluidized bed contactor for reductive calcination and magnetic separation processing stages. Encouragingly mass pull and value metal deportment to product concentrate streams are improved over earlier test work outcomes. The flowsheet and overall mass pull to each fraction along with the elemental composition of these streams is depicted in Figure 3.

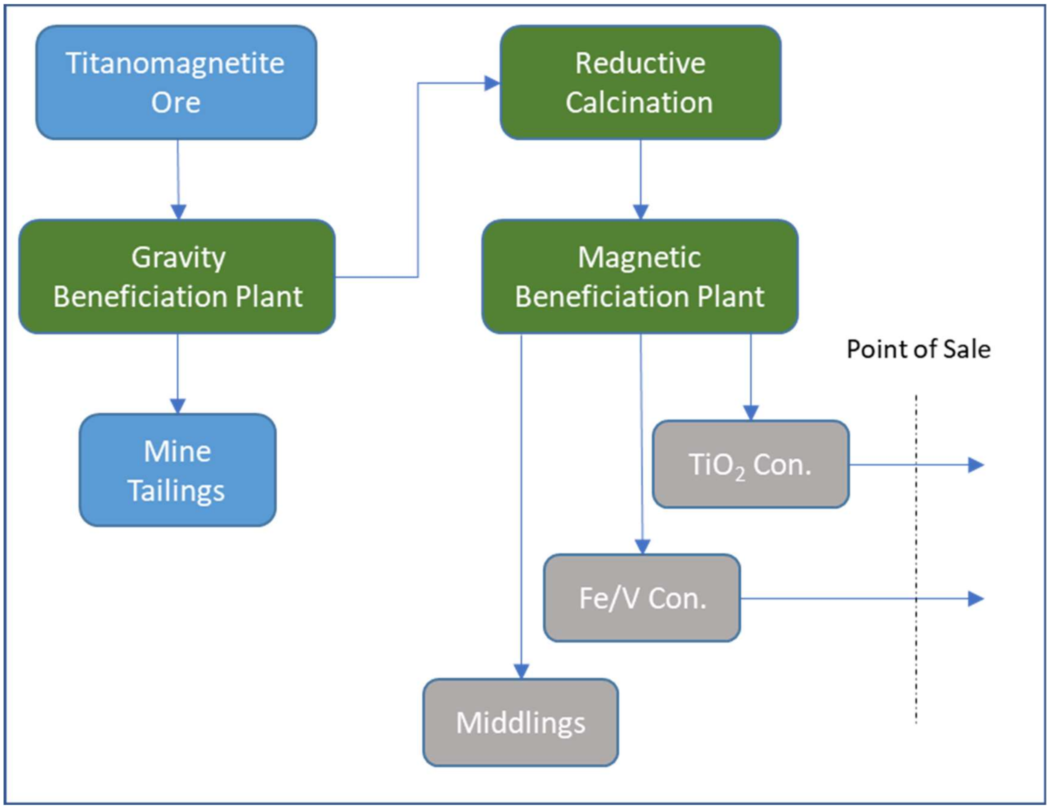

Figure 2 - *Schematic of potential flowsheet*

The combined non-magnetic streams produce an ilmenite (TiO_2 concentrate) with 52.02% TiO_2, 0.40% V_2O_5, 46.95% Fe_2O_3, 1.00% Al_2O_3 and 1.99% SiO_2. The recovery of titanium to the TiO_2 concentrate is over 87% from concentrate feed. Due to the quality of the Barrambie ore and the deportment of other impurities these are low in both the TiO_2 and Fe-V concentrates (See Table 1). Similarly, the Fe-V concentrate produced with this flowsheet has both a high vanadium grade (1.58% V_2O_5) and high iron grade (84.20% Fe_2O_3), The recovery of iron and vanadium to the Fe-V concentrate are 49% and 67% respectively from concentrate feed.

Table 1: *Chemical composition data for Barrambie Concentrate, Ilmenite and Fe-V Concentrate*

Composition	Barrambie Eastern Mineralisation	Gravity Concentrate	Reduced Gravity Concentrate Feed	TiO_2 Concentrate	Fe-V Concentrate
TiO_2 (%)	27.80	36.09	37.98	52.02	13.00
V_2O_5 (%)	0.72	0.78	0.82	0.40	1.58
Fe_2O_3 (%)	47.18	57.28	60.30	46.95	84.20
Al_2O_3 (%)	8.70	1.23	1.30	1.00	1.79
SiO_2 (%)	12.00	2.10	2.21	1.99	2.54
CaO (%)	0.15	0.06	0.06	0.05	0.07
MgO (%)	0.44	0.14	0.15	0.17	0.12
MnO (%)	0.21	0.29	0.31	0.42	0.12
K_2O (%)	0.01	0.01	0.01	0.01	0.01
Nb_2O_5 (%)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
P_2O_5 (%)	0.01	0.01	0.01	< 0.01	0.02
SO_3 (%)	0.01	0.01	0.01	0.01	< 0.01
Th (ppm)	< 10	< 10	< 10	< 10	< 10
U (ppm)	< 10	< 10	< 10	< 10	< 10

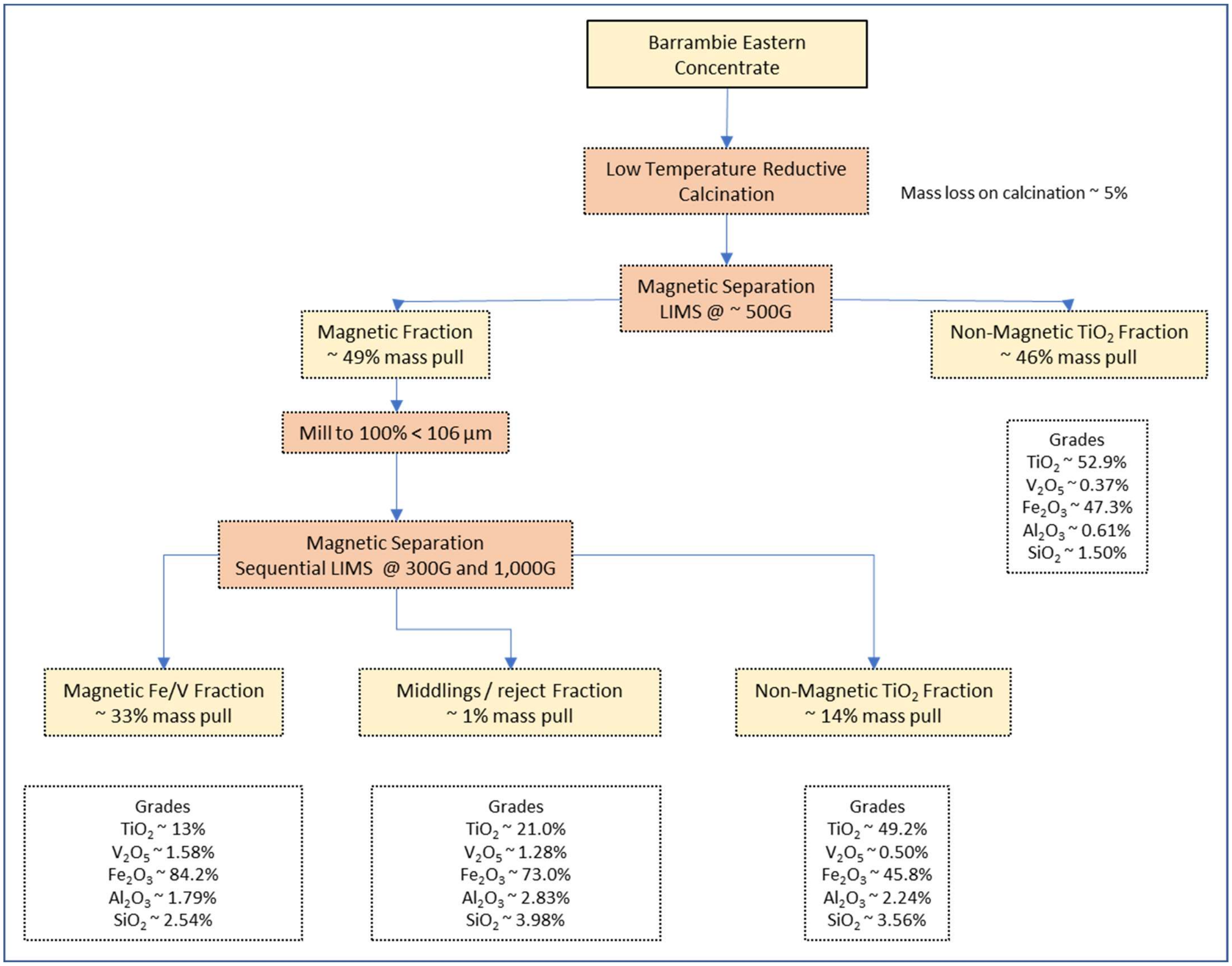

Figure 3 - *Low Temperature Reductive Calcination and Beneficiation Flowsheet and Mass Balance and Stream Composition*

Next Steps

Given the extensive geological, metallurgical and evaluation study data on Barrambie and management preference for capital-light build-own-operate-transfer arrangements, it is progressing discussions with specialist mining and processing contractors under an early contractor involvement model. In parallel management is progressing discussions with potential offtake parties for both the ilmenite and magnetite products in China.

Authorised on behalf of Neometals by Christopher Reed, Managing Director

ENDS

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About Neometals Ltd

Neometals innovatively develops opportunities in minerals and advanced materials essential for a sustainable future. With a focus on the energy storage megatrend, the 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.

Neometals has four core projects with large partners that span the battery value chain:

Recycling and Resource Recovery:

- Lithium-ion Battery Recycling – a proprietary process for recovering cobalt and other valuable materials from spent and scrap lithium batteries. Pilot plant testing completed with plans well advanced to conduct demonstration scale trials with 50:50 JV partner SMS group, working towards a development decision in early 2022; and
- Vanadium Recovery – sole funding the evaluation of a potential 50:50 joint venture with Critical Metals Ltd to recover vanadium from processing by-products (“Slag”) from leading Scandinavian Steel maker SSAB. Underpinned by a 10-year Slag supply agreement, a decision to develop sustainable European production of high-purity vanadium pentoxide is targeted for December 2022.

Downstream Advanced Materials:

- Lithium Refinery Project – evaluating the development of India’s first lithium refinery to supply the battery cathode industry with potential 50:50 JV partner Manikaran Power, underpinned by a binding life-of-mine annual offtake option for 57,000 tonnes per annum of Mt Marion 6% spodumene concentrate, working towards a development decision in 2022.

Upstream Industrial Minerals:

- Barrambie Titanium and Vanadium Project - one of the world's highest-grade hard-rock titanium-vanadium deposits, working towards a development decision in mid-2021 with potential 50:50 JV partner IMUMR.

COMPETENT PERSONS ATTRIBUTION

Exploration and Sampling

The information in this report that relates to Exploration Results is based on, and fairly represents, information and supporting documentation compiled by Mr Gregory Hudson, who is a member of the Australian Institute of Geoscientists. Mr Hudson is a full-time employee of Neometals Ltd and has sufficient experience relevant to the styles of mineralisation and type of deposit under consideration and to the activity he is undertaking, to qualify as a Competent Person as defined in the December 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Hudson has consented to the inclusion of the matters in this report based on his information in the form and context in which it appears.

Metallurgy

The information in this report that relates to metallurgical test work results is based on, and fairly represents, information compiled and / or reviewed by Dr David Robinson, who is a Member of The Australasian Institute of Mining and Metallurgy. Dr Robinson is a full-time employee of Neometals Ltd and has sufficient experience relevant to the activity which he is undertaking, to qualify as a Competent Person as defined in the December 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Dr Robinson has consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.

COMPLIANCE STATEMENT

The information in this report that relates to Mineral Resource Estimates Barrambie Titanium Project are extracted from the ASX Announcement entitled “Updated Barrambie Mineral Resource Estimate” lodged 17 April 2018. The Company confirms that it is not aware of any new information or data that materially affects the information included on the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified form the original market announcement.

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

Criteria	Commentary
Sampling techniques	Drilling to collect material for metallurgical bulk samples from both the eastern and central zones comprised 88 reverse circulation (RC) holes for 6,337 metres. Of this drilling 255 samples from 15 holes were combined to make the 7 tonnes bulk sample used in the beneficiation bench scale work. All drillholes were sampled at 1 metre intervals. Drill chips from each metre drilled were collected in a rig-mounted cyclone, then passed through a cone splitter to create: 1. a sub-sample of ~3 to 4kg in weight and, 2. a "reject sample" of remaining material which was typically between 20 and 30kg.
Drilling techniques	Metallurgical drilling was conducted by reverse circulation (RC) technique using a Schramm rig with booster and auxiliary. A face sampling hammer with a bit size if 5.25 inches (133mm) was used.
Drill sample recovery	A qualitative logging code was used to record recovery for the recent RC drilling. Overall, recovery of samples is considered to be good to very good.
Logging	Geological logging of rock chips was carried out recording lithology, major minerals, oxidation, colour, texture, mineralisation, moisture and recovery. A Terraplus (model KT-10) hand-held magnetic susceptibility meter was used with a reading taken for each metre drilled. The logging was carried out in sufficient detail to meet the requirements of a Mineral Resource estimation and mining studies.
Sub-sampling techniques and sample preparation	All sub-samples were weighed on receipt and dried. Samples greater than 3kg were split. All samples were then pulverised to 75um, from which an aliquot was taken for assay.
Quality of assay data and laboratory tests	From the collection of samples through to the assessment of laboratory results best practice QAQC protocols and standards were followed. An array of Certified reference material (CRMs) suitable for Vanadium-Titanium-Iron deposits were inserted by NMT or contract geologists at a rate greater than 1 per 50 samples basis. Field duplicate samples were taken at the rig and submitted blind to the lab. All duplicate results show very good correlation. ALS conducted internal QAQC including the use of CRM's and repeat and duplicate samples. There have not been any non-compliance issues.
Verification of sampling and assaying	Geological and sampling data was recorded in the field directly onto computers in excel software. Each drillhole was reviewed and saved as individual .xls files prior to being sent to an external database management contractor for merging with project database. No twin holes were drilled. A round robin analysis with samples of known grade sent to an alternate lab was conducted with results confirming accuracy of the original assays.
Location of data points	Planned drill collar locations were pegged in the field using handheld GPS by Neometals staff. Drill collars from the January and February 2019 program (MSC001 to MSC076) were surveyed used RTK Differential GPS by and independent surveyor to within 1 cm accuracy. Drill collars from the August 2019 program (MSC077 to MSC088) only have handheld GPS location (5m accuracy). All grid references refer to the GDA94 system. Barrambie is in Zone 50.
Data spacing and distribution	Metallurgical holes were drilled in 5 "prospect" locations along the 11 km length of the deposit. At these areas drill holes were spaced at 30m intervals in lines across the strike, with drill lines nominally 100 metres apart. In some locations infill lines at 50 metres were drilled.

Orientation of data in relation to geological structure	Holes were drilled across strike to achieve sampling with the best representation of the known mineralised zone.
Sample security	Assay samples were moved from site to Meekatharra by Neometals employees, and then transported to the commercial laboratory in Perth using a transport company. A consignment note system was used for the chain of custody. The bulk sample material was collected on site with each individual metre held in green plastic mining bags put into 44-gallon drums by Neometals employees. The drums were then secured to pallets and transported using a transport contractor to the commercial laboratory in Perth where the metallurgical test work was carried out.
Audits or reviews	No audits or reviews of sampling techniques and data have been conducted.

JORC Table 1, Section 2, Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	The Barrambie Mineral Resource subject to this metallurgical testwork is from the granted mining lease M57/173-I located between Sandstone and Meekatharra in the Eastern Murchison Goldfields of Western Australia. The mining lease and all mineral rights are held by Australian Titanium Pty Ltd, a 100% owned subsidiary of Neometals Ltd. No known impediments exist to operate in the area.
Exploration done by other parties	No relevant exploration has been completed by other parties to acknowledge or appraise at this time.
Geology	The ferrovanadium titanium (Ti-V-Fe) deposit occurs within the Archaean Barrambie Greenstone Belt, which is a narrow, NNW-SSE 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. The layered sill varies in width from 500 m to 1700 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).
Drill hole Information	Tables with drill hole ID's, locations, dip and azimuths are located in Appendix 1.
Data aggregation methods	For the metallurgical drilling within the Barrambie high grade deposit, all assay results from the sub-samples of the drilling were assessed. From this the bulk sample was made by compositing the reject samples from allocated drillhole metres for the hole assayed have been aggregated.
Relationship between mineralisation widths and intercept lengths	The Barrambie mineralised system is at a near vertical orientation, with a moderate north easterly dip. To best intersect the mineralisation drilling was at -60 to -75° to the south west (typically Azimuth of 240). Due to the steep orientation of the deposit there will still be some exaggeration of mineralised intercept widths.

Diagrams	Diagrams with plans and a cross section of the location of the RC Holes drilled for the metallurgical testing is, if notin the body of the report, included in Appendix 2. The drillholes from which samples used in the bulk sample have been identified in Appendix 1
Balanced reporting	All results have been reported.
Other substantive exploration data	See ASX announcements 17th April 2018, 8th November 2017, 11 September 2017 and 6 December 2013 for further information regarding the Barrambie deposit.
Further work	Further metallurgical work is planned and discussed in this announcement.

APPENDIX 1.

Drill holes used in the Barrambie Metallurgical testwork bulk sample

HOLE_ID	Area	ORIG_EAST	ORIG_NORTH	ORIG_RL	MAX_DEPTH	Azimuth	Dip
MSC012	Area 2	709,453.5	6,964,608.6	541.7	83	246	-76.2
MSC018	Area 2	709,420.2	6,964,674.3	539.3	101	246	-85.1
MSC023	Area 3	708,436.0	6,966,879.0	523.4	113	243	-61.4
MSC027	Area 3	708,394.9	6,966,913.0	522.6	83	242	-61.1
MSC028	Area 3	708,407.7	6,966,920.1	522.7	125	244	-75.7
MSC031	Area 3	708,355.4	6,966,947.9	522.1	95	242	-60.4
MSC037	Area 3	708,356.1	6,967,007.1	522.0	89	242	-61.2
MSC044	Area 4	706,496.1	6,969,255.3	518.1	137	241	-75.2
MSC049	Area 4	706,418.0	6,969,328.9	515.1	59	243	-66.0
MSC057	Area 5	705,803.6	6,970,100.0	516.5	59	53	-60.7
MSC061	Area 1	710,045.9	6,962,615.0	524.3	71	244	-71.5
MSC065	Area 1	710,033.5	6,962,668.1	524.4	125	243	-76.4
MSC073	Area 1	710,035.2	6,962,869.6	526.7	96	249	-75.6
MSC074	Area 3	708,412.2	6,966,893.7	523.0	102	243	-61.5
MSC075	Area 3	708,423.7	6,966,899.8	523.1	144	245	-74.0

All coordinates are in MGA94_50

APPENDIX 2.

Plans and sections of the Barrambie Project showing the source locations of the bulk sample material

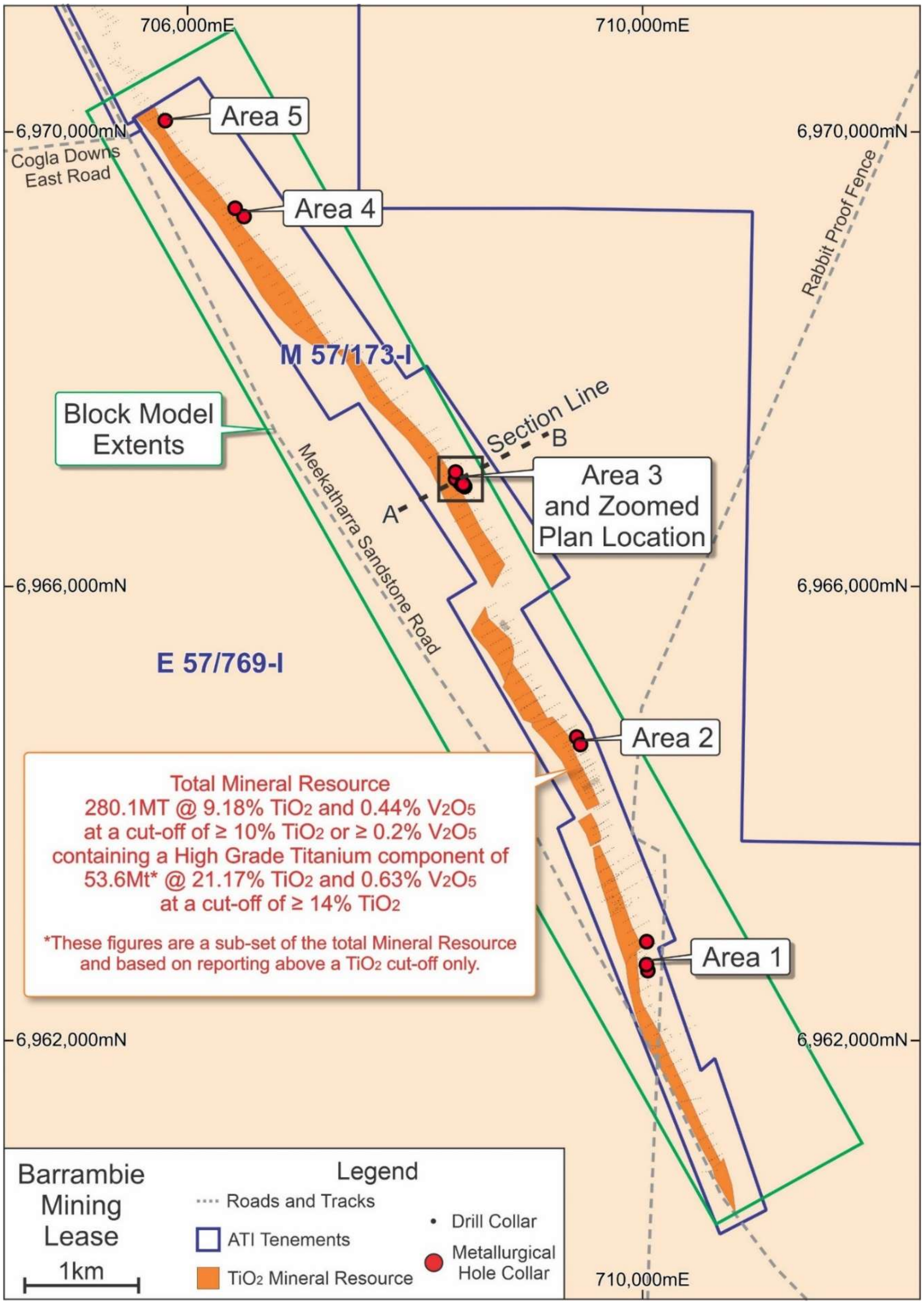

Figure 4 - *Plan of the Barrambie Mineral Resources and Mining Lease showing the 5 areas where drilling was conducted to collect material for the metallurgical bulk sample*

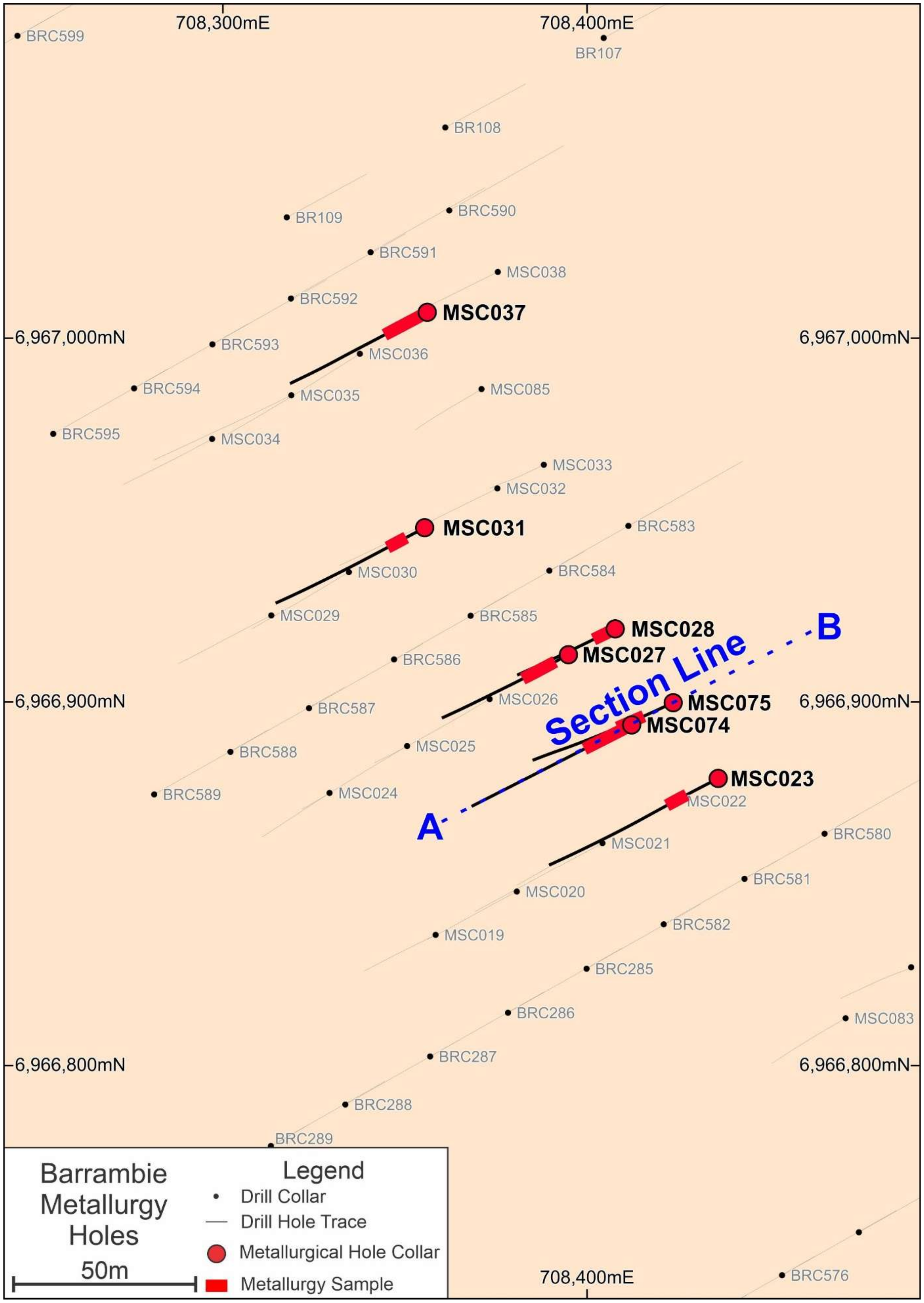

Figure 5 - *Plan of Area 3 showing historic (prefix BRD) and recent (prefix MSC) drill collar and drill traces*

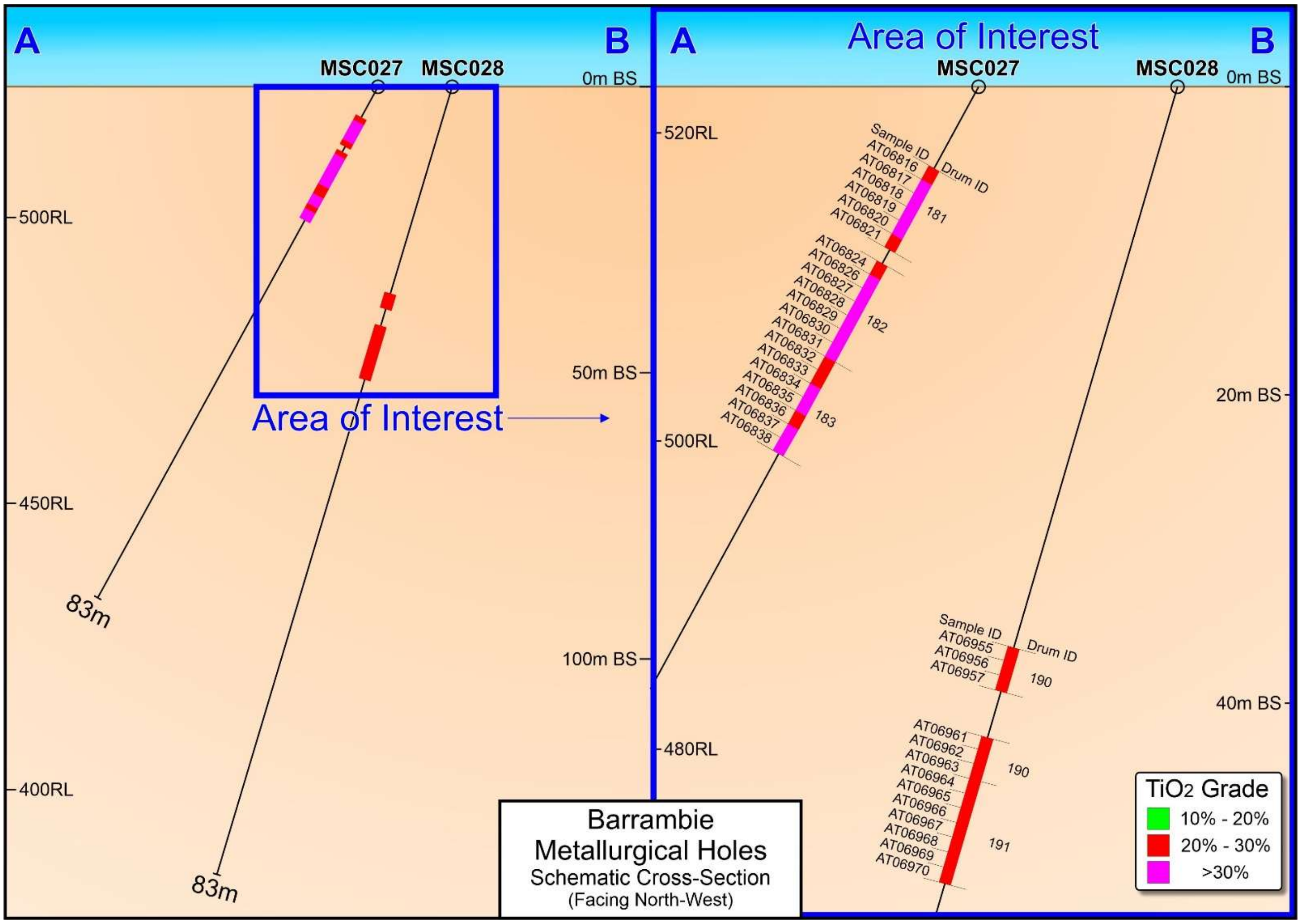

Figure 6 - *Cross section with 2 of the RC holes and TiO_2 grades in Area 3 from which the collected material was used in the metallurgical bulk sample.*