TECHNOLOGY
METALS AUSTRALIA LIMITED

ASX Announcement

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Directors

Michael Fry:
Chairman

Ian Prentice:
Managing Director

Sonu Cheema:
Director and Company Secretary

Issued Capital

32,800,001 ("TMT") Fully Paid Ordinary Shares

22,500,000 Fully Paid Ordinary Shares classified as restricted securities

14,800,000 Unquoted Options exercisable at $0.25 on or before 31 December 2019 – 13,700,000 classified as restricted securities

3,000,000 Unquoted Options exercisable at $0.35 on or before 12 January 2021

6,666,666 – Quoted Options ("TMTO") exercisable at $0.40 on or before 24 May 2020

3,333,334 - Unquoted Options exercisable at $0.40 on or before 24 May 2020 vest on 15 September 2018

ASX Code: TMT, TMTO

FRA Code: TN6

TMT DELIVERS ROBUST GABANINTHA PRE FEASIBILITY STUDY; DIRECT PROGRESSION TO DEFINITIVE FEASIBILITY STUDY

HIGHLIGHTS

- **PRE-FEASIBILITY STUDY CONFIRMS GABANINTHA AS A HIGH VALUE, RELATIVELY LOW RISK AND TECHNICALLY STRONG PROJECT.**
- **STUDY BASED ON INDICATED MINERAL RESOURCE COMPONENT (21.6MT AT 0.9% V_2O_5) OUT OF GLOBAL MINERAL RESOURCE OF 119.9MT AT 0.8% V_2O_5.**
- **DELIVERS MAIDEN PROBABLE RESERVE OF 16.7MT AT 0.96% V_2O_5.**
- **PROJECT METRICS COMPARE VERY FAVOURABLY TO GLOBAL PEERS.**

BACKGROUND

Technology Metals Australia Limited (ASX: **TMT**) ("**Technology Metals**" or the "**Company**") is pleased to announce the results of the pre-feasibility study ("**PFS**") on its 100% owned Gabanintha Vanadium Project ("**Gabanintha" or "Project**").

Details of the PFS are attached, including the PFS Report Executive Summary as an Appendix to this release, with key highlights summarised in the table below.

Pre-feasibility Study Highlights[1]	
Targeted Annual Production Rate	13,000 tpa V_2O_5
Estimated Processing Life (LOM)	13 years
LOM Revenue	A$4,935 million
LOM EBITDA	A$3,070 million
Pre-tax NPV (10% discount rate)	A$1,277 million
Pre-tax Internal Rate of return	55 %
Post-tax NPV (10% discount rate)	A$850 million
Post-tax Internal Rate of return	43 %
Average Operating Cost	US$4.27/lb V_2O_5
Capital Expenditure	A$380m (US$284m)
Payback of Capital	3.4 years

1 – estimated to confidence level of -15% to +25%

Managing Director Ian Prentice commented; "This is an outstanding result for the technically robust, extremely high quality Gabanintha Project in a vanadium market environment that is desperate for injection of new production, with considerable upside expected from the work to be completed during the upcoming Definitive Feasibility Study"

GABANINTHA PRE-FEASIBILITY STUDY

Wave International ("**Wave**"), an independent resource development / engineering consultant has, as the lead consultant supported by a range of industry leading consultants with considerable expertise in their fields, completed the Gabanintha PFS on behalf of the Company. Wave was engaged to manage the PFS with the scope to develop the processing flowsheet, complete basic plant engineering and site / infrastructure assessments, specify and quote on major long lead items, provide capital and operating cost estimates to the pre-feasibility study and generate a Project financial model. The PFS has been developed to a confidence level of -15% to +25%. The other consultants involved in the preparation of the PFS included:

- METS Engineering for ongoing metallurgical testwork, product assessment and mineral processing.
- CSA Global for resource and mining study work, involving the generation of conceptual open pit designs, a preliminary mining and production schedule, mining capital and operating cost estimates, and initial ore reserve estimate, and
- Integrate Sustainability for environmental, heritage, health, safety and statutory approvals advice and support.

The PFS confirms the Project to be a high value, relatively low risk and technically strong development opportunity for the Company. Given these outcomes, the Board has agreed to proceed immediately with the commencement of a Definitive Feasibility Study.

The PFS mining and production schedule is based on the Ore Reserve of 16.7 Mt at a mined grade of 0.96% Vanadium Pentoxide (V_2O_5), which is contained within the currently defined Indicated Mineral Resource of 21.6 Mt at 0.9% V_2O_5 in the Northern Block of tenements. The total Gabanintha Project comprises a global Indicated and Inferred Mineral Resource of 119.9 Mt at 0.8% V_2O_5.

The full amount of mineralisation to be mined in the PFS schedule is 19.2 Mt at 0.96% V_2O_5 with the inclusion of 13% Inferred Mineral Resources which are not anticipated to impact materially on the project economic viability. The mine plan revolves around the development of two open pits; the North Pit and the Main Pit.

It is anticipated that the Project will commence in 2021, ramping up to an approximately 13,000 tpa high purity (+99%) V_2O_5 operation with a rapid capital payback of slightly over three years. The low risk of this WA-based project allows the assumption of a discount rate of 10%, providing an anticipated pre-tax NPV in the region of $1,277 million over a projected 13 year mine life, with an IRR of 55%.

Table 1 below provides the material physical assumptions and outputs on which the PFS and Ore Reserves on the wholly owned Gabanintha Project is based.

Targeted V_2O_5 Production Rate	Tonnes Per Annum	13,000
Targeted Production Commencement	Year	2021
Estimated Mine / Processing Life	Years	13
Life of Mine Production	Tonnes V_2O_5	129,000
Processing Rate	Mtpa	1.6 - 1.9
Estimated mineralisation to be mined	Mt	19.2
Average Diluted Mining Grade	% V_2O_5	0.96
Average Strip Ratio		5.6

Table 1: Gabanintha PFS – Material Physical Assumptions and Anticipated Outputs

Table 2 provides the key financial assumptions and forecasts used in the PFS and the resultant financial outputs.

Commodity Price Forecast	US$/lb V_2O_5	13
Exchange Rate Assumption	A$: US$	0.75
Total Revenue	A$m	4,935
Total EBITDA	A$m	3,070
Total Capital Expenditure	A$m	380
Total Operating Expenditure	A$m	1,600
Average Operating Costs	US$/lb V_2O_5	4.27
Discount Rate Assumption	%	10
Net Present Value (pre-tax)	A$m	1,277
Internal Rate of Return (pre-tax)	%	55
Net Present Value (post-tax)	A$m	850
Internal Rate of Return (post-tax)	%	43
Anticipated Payback on Capital	Years	3.4

Table 2: Gabanintha PFS – Material Financial Assumptions and Anticipated Outputs

FURTHER PROJECT ENHANCEMENT OPPORTUNITIES

The Company believes that there is significant opportunity to enhance the results of the PFS through:

- Upgrading more of the Inferred Mineral Resources to the Indicated category, thereby increasing the mine life, with a focus on the Southern Tenement Mineral Resource of 21.5Mt at 0.9% V_2O_5 as well as along strike and at depth from the designed pits at the Northern Block. The Company is of the view that the quantum of the Indicated Resource estimate is primarily a factor of drill density, with scope to materially increase the volume of the Indicated Resource estimate with further drilling;
- Conducting a detailed geotechnical assessment, focussed on the footwall of the designed pits, allowing steeper pit walls and significantly reducing the overall strip ratio. CSA Global have estimated that steeper wall angles have potential to deliver significant increases in the Project DCF; and
- Optimising the open pit mine scheduling to ensure maximum financial returns with staged open pit development, early access to higher yielding ore and scope for in pit dumping of waste once final open pits have been defined.

In addition to these opportunities there is also scope to assess the potential to extract other valuable commodities from the Gabanintha deposit, including a base metal concentrate (such as Co-Ni-Cu), a titanium dioxide product and a high grade iron ore product. Ongoing metallurgical testwork is aimed at assessing the potential to extract these other commodities for additional revenue streams.

Downstream metallurgical testwork completed by the Company has delivered a V_2O_5 product with a purity in excess of 99% using the conventional salt roast / water leach processing technique, requiring significantly less salt addition than other conventional salt roast leach operations. Impurities within the final V_2O_5 consist of a small volume of alumina, chromium, potassium and sulphur.

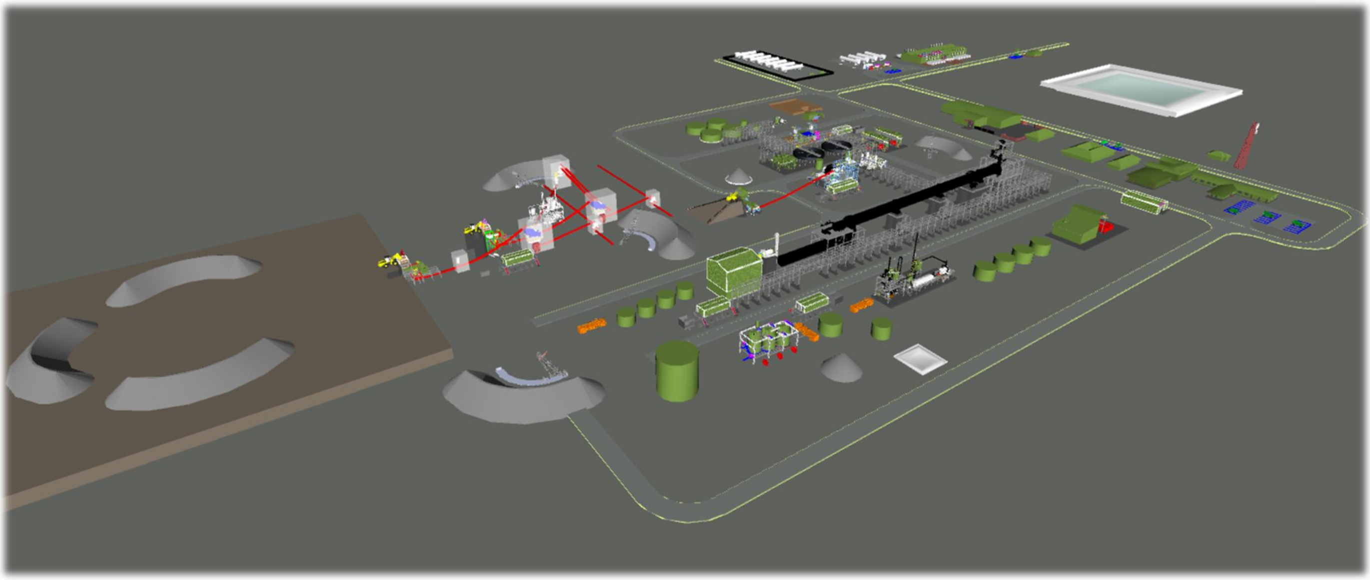


Figure 1: Gabanintha Project – Schematic Processing Plant Layout

Ongoing testwork being completed on larger composite samples, designed to provide final product for potential vanadium end-users, incorporating some minor refinements to the testwork program, is expected to result in the delivery of even higher purity of final V_2O_5 product. This testwork has scope to deliver a niche ultra-high purity V_2O_5 product specifically for the Vanadium Battery and Aeronautical industries, which may attract substantial premiums to the 98% V_2O_5 product pricing index.

COMMODITY PRICE PROJECTIONS

The estimated life of mine revenue projections from the PFS are based on forecast V_2O_5 sales prices sourced from Merchant Research & Consulting Ltd, a UK based market research company specialising in the chemical sector and related industries. These forecasts take into account the anticipated vanadium market developments and healthy demand scenarios. Based on the Merchant Research and Co. forecasts, the weighted average V_2O_5 sales price for the Project revenue projections is US$13/lb, ranging from US$11/lb in 2020 through to a high of US$14.74/lb in 2026 and down to US$12.73/lb by the end of the forecast period in 2027.

The forecast V_2O_5 sales prices compare very favourably to current market prices, with European V_2O_5 prices of US$15.50 to US$16.15/lb as at 20 June 2018 and Chinese V_2O_5 prices of US$14.00 to US$15.05/lb as at 20 June 2018 (source: FerroAlloyNet).

Commodity price is a key sensitivity for the PFS financial projections. A sensitivity analysis completed by Wave (see Table 3) shows that a 20% increase in expected sales price, to US$15.30/lb (equivalent to or slightly below current pricing) could potentially deliver a post-tax NPV of up to $1,200 million and an IRR of 54.2%.

Impact of Change in Price	(20.00%)	(10.00%)	Base Case	10.00%	20.00%
Revenue (A$)	3,948.1	4,441.6	4,935.1	5,428.6	5,922.1
EBITDA (A$)	2,132.8	2,601.6	3,070.4	3,539.3	4,008.1
NPV 10% Post Tax (A$)	499.0	673.9	848.8	1,023.7	1,200.4
IRR Post Tax (A$)	31.3%	37.4%	43.2%	48.8%	54.2%

Table 3: Vanadium Sales Price Sensitivity Analysis – Post Tax

FUTURE WORK

The Company's ongoing activities are focused on the immediate progression to preparation of a Definitive Feasibility Study ("**DFS**") on the Gabanintha Vanadium Project. The PFS has highlighted a number of risks and opportunities that will form the focus of the next stages of work to be completed, including:

- Drilling designed to upgrade, and convert part of, the Southern Tenement Inferred Mineral Resource estimate to the Indicated Resource category;
- Drilling designed to extend the Northern Block Mineral Resource estimate both along strike and at depth to increase the overall resource size and the Indicated Mineral Resource category / Probable Reserve estimate;
- Geotechnical drilling targeting, in particular, the footwall portions of the designed pits designed to provide sufficient geotechnical data that is expected to enable a steepening of the designed open pit walls, thereby dramatically decreasing the overall strip ratio and increasing the Project NPV;
- Collection of a bulk sample for pilot scale and product generation metallurgical testwork, designed to provide both plant and equipment vendors with material to confirm suitability of proposed equipment as well as provide end-users with final product for confirmatory testing;
- Progression of potential off-take discussions and negotiations with vanadium end-users and intermediaries;
- Ongoing metallurgical testwork assessing the potential to recover cobalt, nickel and copper from the non-magnetic waste product of the fresh massive magnetite material and the scope to recover TiO_2 and high quality iron ore from the calcine product; and
- Progression of environmental and heritage studies in support of the proposed development of the Project.

ORE RESERVE ESTIMATE

The Company engaged CSA Global to provide an Ore Reserve statement prepared by a Competent Person in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code (2012 Edition)). The Ore Reserve estimate was based on the Indicated Mineral Resource of 21.6 Mt at 0.9% V_2O_5 located within the Northern Block of tenements at Gabanintha, as reported to the ASX on 7 March 2018, and resulted in a Probable Reserve estimate of 16.7 Mt at 0.96% V_2O_5. (see Table 4). This represents a very high +77% tonnage conversion from Indicated Resource to Probable Reserve.

Table 4: Ore Reserve Estimate as at 31 May 2018

Reserve Category	Tonnes (Mt)	Grade V_2O_5%	Contained V_2O_5 Tonnes (Mt)
Proven	-	-	-
Probable	16.7	0.96	0.16
Total	**16.7**	**0.96**	**0.16**

- *Includes allowance for mining recovery (95%) and mining dilution (10% at 0.0 %V_2O_5)*
- *Rounding errors may occur*

The information that relates to Ore Reserves is based on information compiled by Mr Daniel Grosso and reviewed by Mr Karl van Olden, both employees of CSA Global Pty Ltd. Mr van Olden takes overall responsibility for the Report as Competent Person. Mr van Olden is a Fellow of The Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Person in terms of the JORC (2012 Edition). The Competent Person, Karl van Olden has reviewed the Ore Reserve statement and given permission for the publication of this information in the form and context within which it appears.

ORE RESERVE ESTIMATION PROCESS

The format of the following description of the Ore Reserve estimation process is based on the requirements of the Australian Stock Exchange (ASX) Chapter 5, Paragraph 5.9 Requirements applicable to reports of Ore Reserves for material mining projects, sub-paragraph 5.9.1 relating to the components of a market announcement.

1. MATERIAL ASSUMPTIONS AND OUTCOMES FROM THE PFS AND OPTIMISATION STUDY, INCLUDING ECONOMIC ASSUMPTIONS

Appropriate studies for the development of the Gabanintha Vanadium Project have been undertaken by Technology Metals, and a number of suitably qualified independent consultants, experts and contracting firms. All studies are at least at a Pre-Feasibility Study (PFS) level standard of confidence.

The PFS was completed in June 2018 under the direction of Technology Metals. Wave International was appointed by Technology Metals to prepare a PFS for the Northern Block of tenements of the 100% owned Gabanintha Vanadium Project (the Project). The PFS targets a production rate of 13 kt per year of V_2O_5 product over a 13-year life of mine (LOM). The PFS has been developed to a confidence level of -15% to +25%. This PFS forms the basis for this Ore Reserve estimate.

At this stage the PFS schedule is largely based on the Indicated Mineral Resource of 21.6 Mt @ 0.9% V2O5 which delivers a schedule of 19.2 Mt @ 0.9% V2O5 after considering cut-off grades, mine dilution, and mining recovery (and includes 13% Inferred Mineral Resource). The life of mine at this stage has over 11 years of Indicated Resource plant feed with an additional 2+ years of Inferred Resource within the current pit designs.

The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals, is the owner of all tenements associated with the Project.

The outcome of the PFS has been to demonstrate that the project currently meets the investment criteria of Technology Metals to progress the project to the next stage of development.

2. CRITERIA USED FOR CLASSIFICATION, INCLUDING CLASSIFICATION OF MINERAL RESOURCES ON WHICH ORE RESERVES ARE BASED AND CONFIDENCE IN MODIFYING FACTORS

The Gabanintha Northern Block deposit Mineral Resource estimate has been classified using guiding principles contained in the JORC Code (2012 Edition). Please see ASX announcement 7 Mar 2018 for details relating to the Mineral Resource Estimate, and related JORC Table 1, sections 1, 2, and 3.

In the Competent Person's opinion, mineralised material that has been classified as Indicated is sufficiently informed by adequately detailed and reliable geological and sampling data, including surface mapping, geophysical modelling, drillhole sample assay results, drillhole logging and density measurements, to assume geological and mineralisation continuity between data points.

The remaining mineralised material that has been classified as Inferred were considered by the Competent Person to be informed by more limited geological and sampling data sufficient to imply but not verify geological and grade continuity between data points.

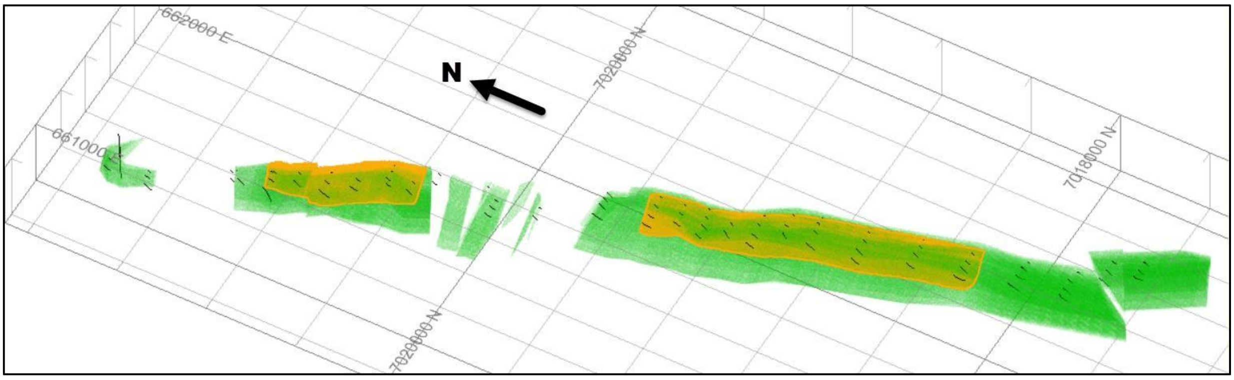


Figure 2: Oblique long section view towards 070° of classified model (Indicated – orange, Inferred – green)

The Ore Reserves have been classified according to the underlying classification of the Mineral Resource and the status of the Modifying Factors. The status of the Modifying Factors is generally considered sufficient to support the classification of Probable Reserves when based upon Indicated Resources.

3. MINING METHOD SELECTED AND OTHER MINING ASSUMPTIONS, INCLUDING MINE RECOVERY FACTORS AND MINING DILUTION FACTORS

Open cut mining using a typical conventional truck and excavator approach has been selected for the Gabanintha Project. The open pit mining equipment selected during this study is matched to the proposed scale and selectivity of this operation.

Detailed pit designs have been prepared based on the results of the pit shell optimisations and incorporating appropriate wall angles, geotechnical berms, minimum mining widths, and access ramps appropriate for the equipment selected. The optimisation results show flat cash curves, indicating that the optimisation is Mineral Resource constrained. This indicates that the deposit may continue at depth and possibly along strike as the confidence in the Mineral Resource is increased. An optimal shell has been chosen at an approximate Revenue Factor of 0.82.

Geotechnical parameters used in the PFS mining study have been based on preliminary estimates following analysis of 953 m of diamond drill logging and relevant RC drill data. The preliminary geotechnical analysis comprised the consideration of geotechnical domains, weathering profiles, factor of safety, probability of failure, geological structure, wedge and planar failure modes. Further geotechnical analysis is required before the final pit design. Particular attention will be required for final slope criteria and the deeper portions of the deposit. The available geotechnical information and subsequent preliminary design criteria used for this estimate are considered to be within a reasonable range for an open pit of these dimensions and location.

Mining dilution of 10% has been based on a review of the mineralisation width and dimensions versus bench height and bucket size. Mine dilution has been assumed to have a grade of 0% V2O5. Mine recovery of 95% has been assumed as a typical value for this style of deposit.

PIT DESIGN PARAMETERS

Similar pit design parameters have been used for both the North Pit and the Main Pit, with varying geotechnical parameters as provided by Mine Geotech.

Ramps have been designed with the following characteristics:

The dual lane pit ramps are 24.8 m wide to allow for safe passage of the selected trucks with an allowance for a bund wall on the open side of the ramp and a drain on the inner side.

The single lane ramps are 15.0 m wide and are utilised for the final 25 m vertical in the Main Pit and 80 m vertical depth in the North Pit. A passing lane has been designed every 20 m vertical depth and there will be a minimum number of trucks operating in these mining areas. Reducing the ramp width saves significant waste stripping.

- Switchbacks have been designed with an inside radius of 6 m
- Gradient of 1:10 for the Main Pit ramp and the dual lane component of the North Pit ramp.
- Gradient of 1:9 for the North Pit single lane ramp to reduce waste stripping.
- Ramps are located predominantly in the HW due to the shallow FW geotechnical recommendations.
- Ramps exit the pit crest in the direction of both ROM and waste dumps.

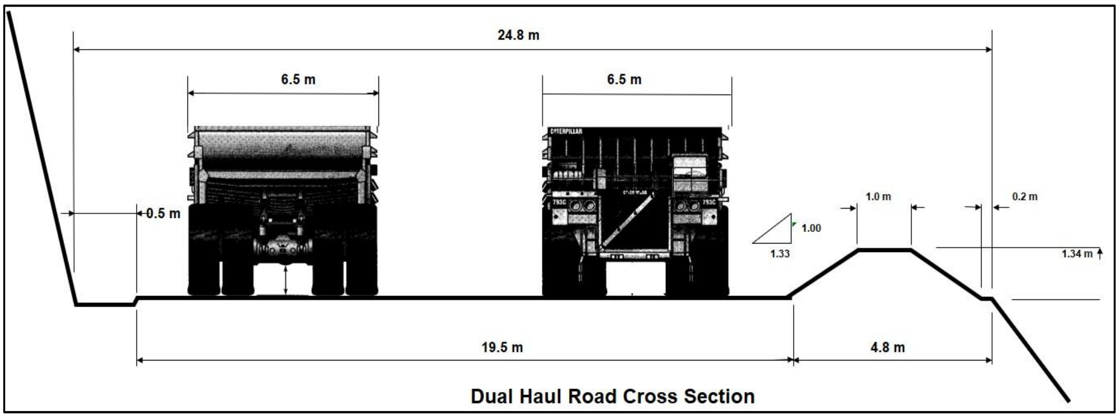


Figure 3: Dual lane haul road width determination

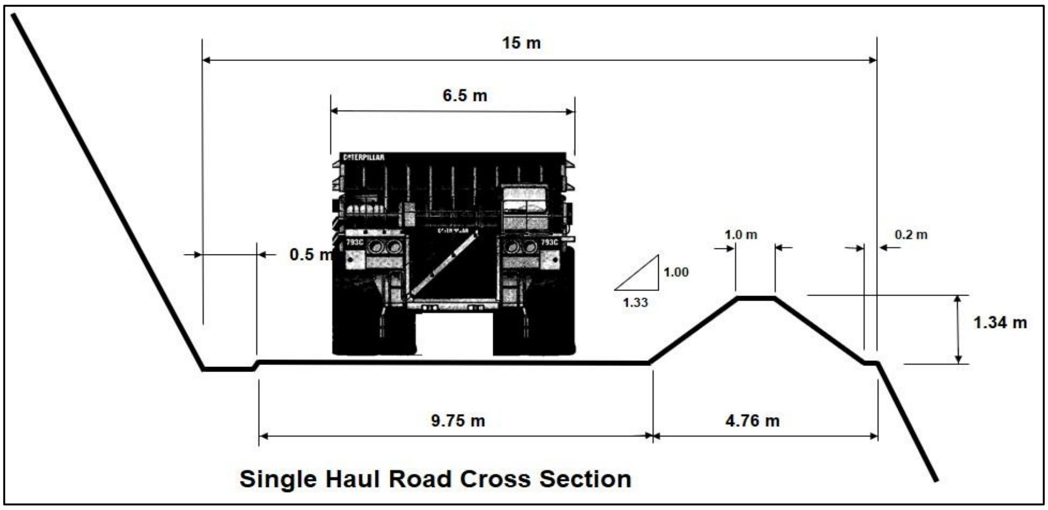


Figure 4: Single lane haul road width determination

Pits have been designed to have a minimum mining width of 25 m and the staged cutbacks a minimum of 30 m width.

All pits are within a reasonable distance from the existing tenement boundaries. At the closest point, the tenement boundary is 60 m from the pit crest. The pit floor extruded at a 37-degree angle to the topography surface also has a 45 m horizontal distance to the tenement boundary.

3.1 **Final Pit Designs**

Figure 5 and *Figure 6* (below) are views of the final pit designs for the North Pit and the Main Pit, respectively.

The North Pit mine will extract resources between the surface and the base of the open pit at 320RL, a depth of 150 m. The pit development will consist of an initial high-grade starter pit and a cutback to the final pit design, as shown in *Figure 7*. Access to the full pit depth is via a dual-lane ramp in the HW and a single-lane ramp in the FW from the 400RL. This single-lane ramp has passing lanes designed every 20 m vertical depth.

The base of the Main Pit is at 330RL, a depth of 155 m. Pit development will be in three stages, the first accessing the near-surface section of the deposit, the second stage develops the bulk of the resource, and the final stage mines the southern waste to reach the final depth of the pit design. A dual-lane ramp switchback is located at the southern end of the pit design at the 345RL.

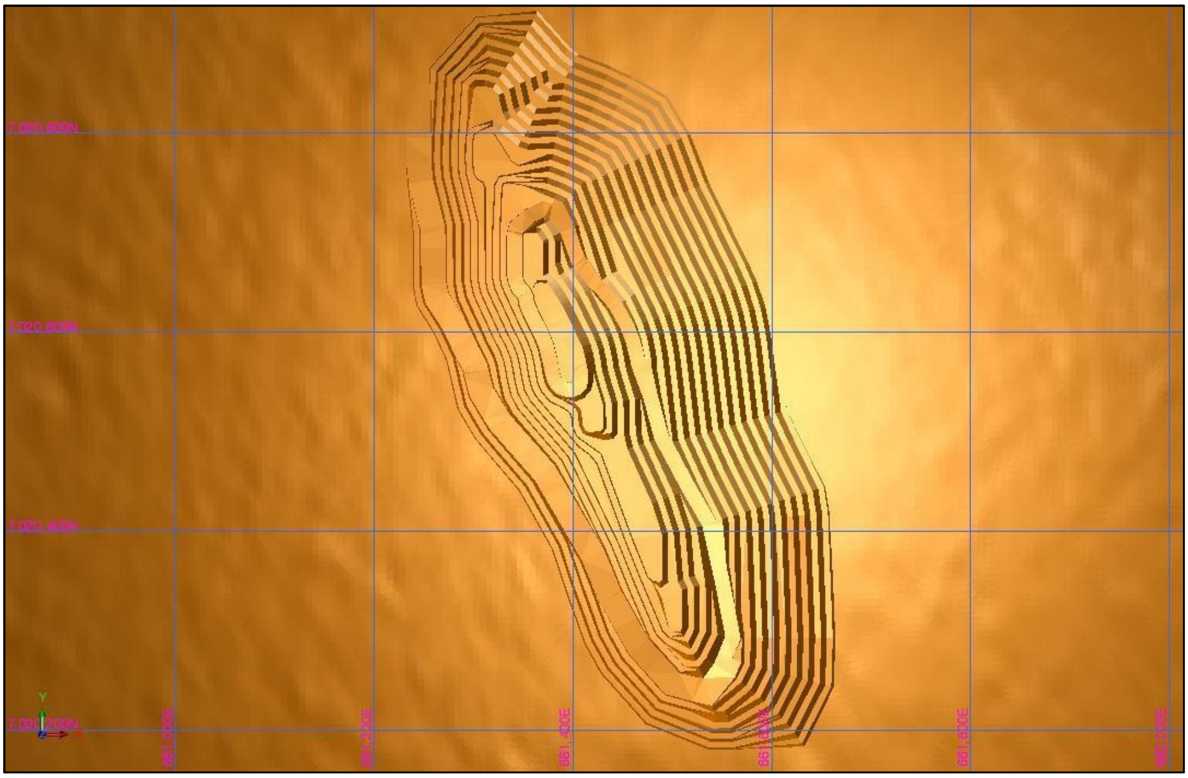


Figure 5: North Pit final design

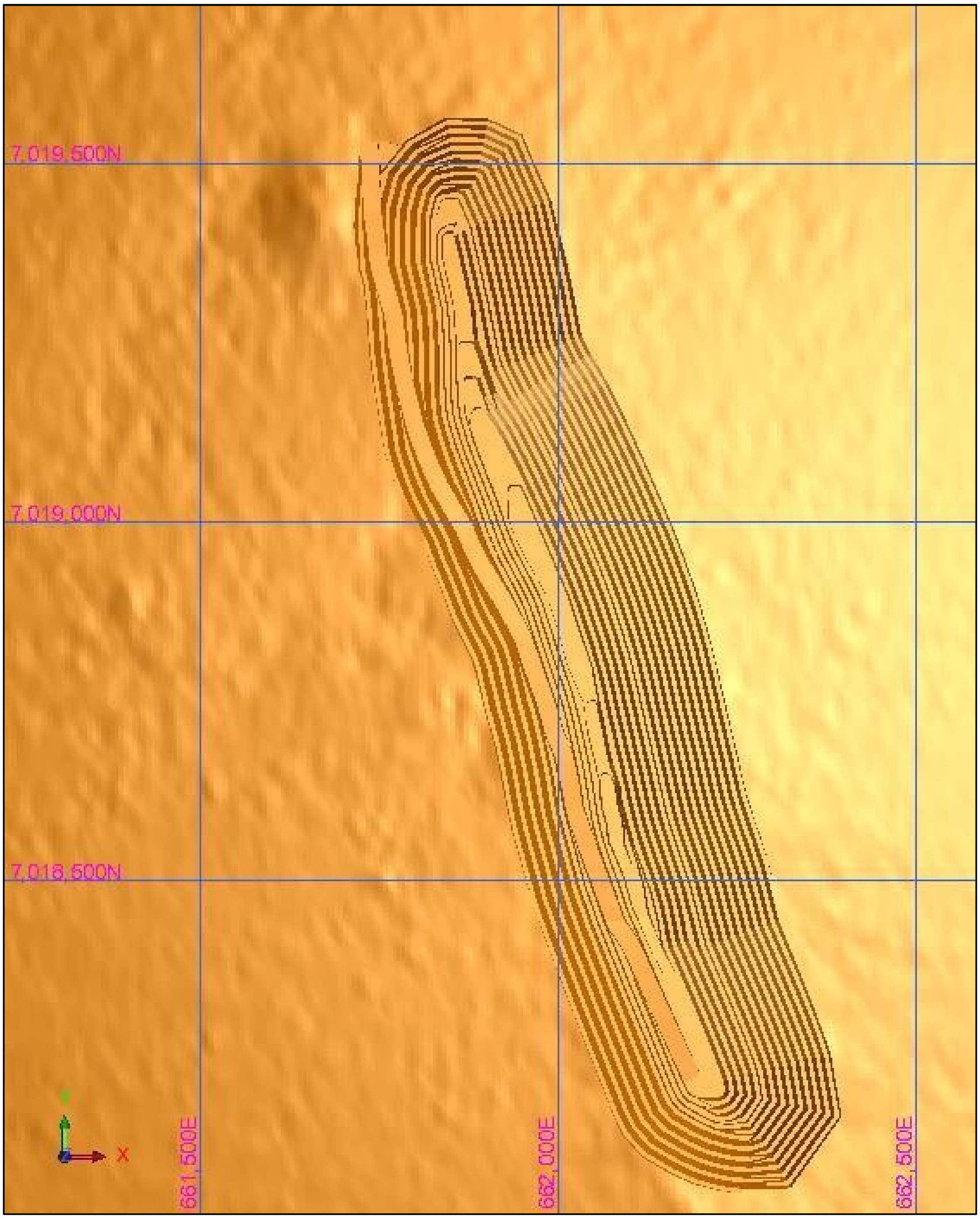


Figure 6: Main Pit final design

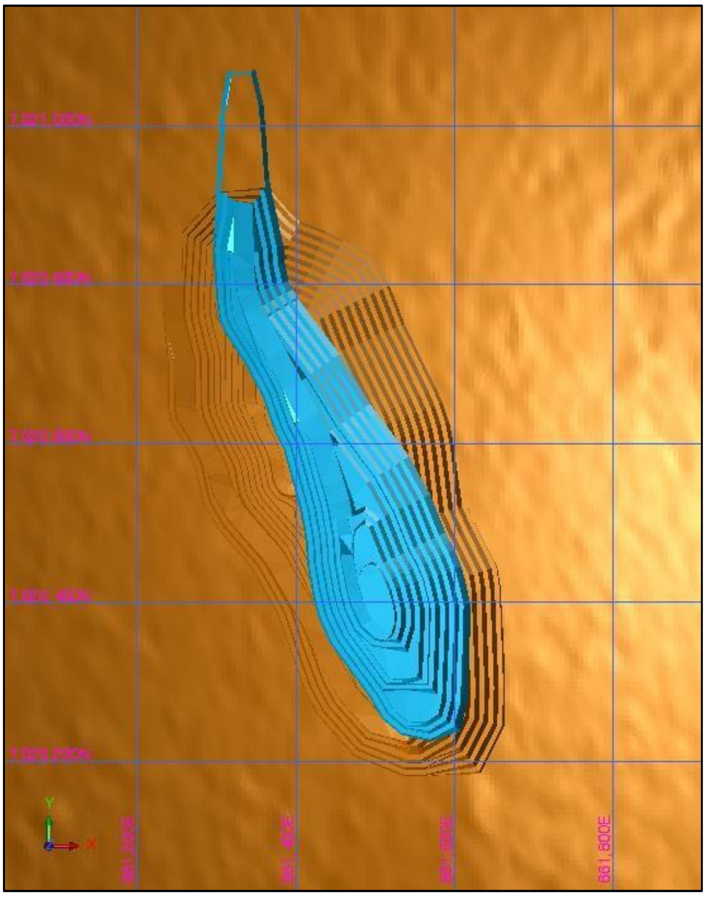


Figure 7: North Pit Stage 1 with Stage 1 topographic intercept to show ramp crest location

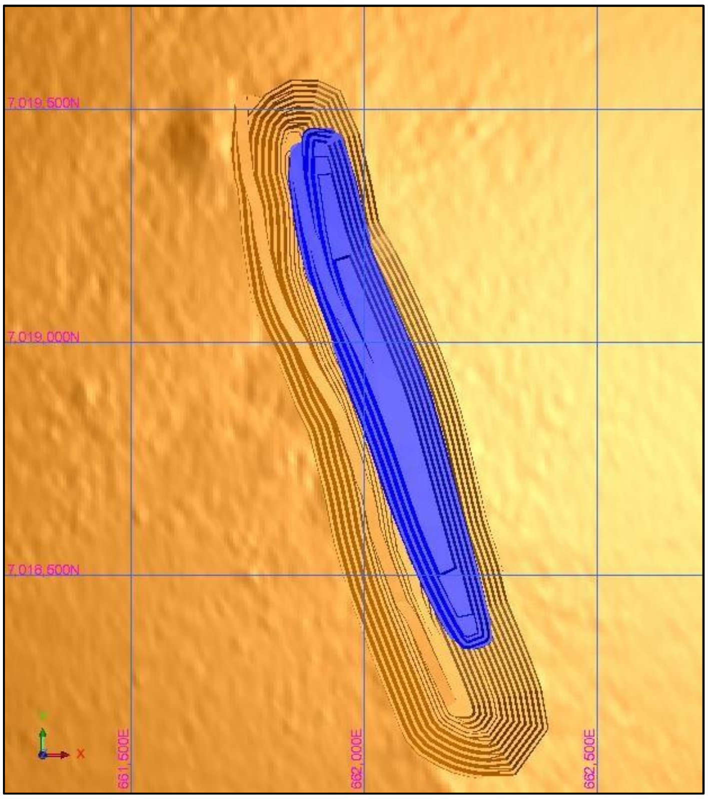


Figure 8: Main Pit Stage 1 and final pit design

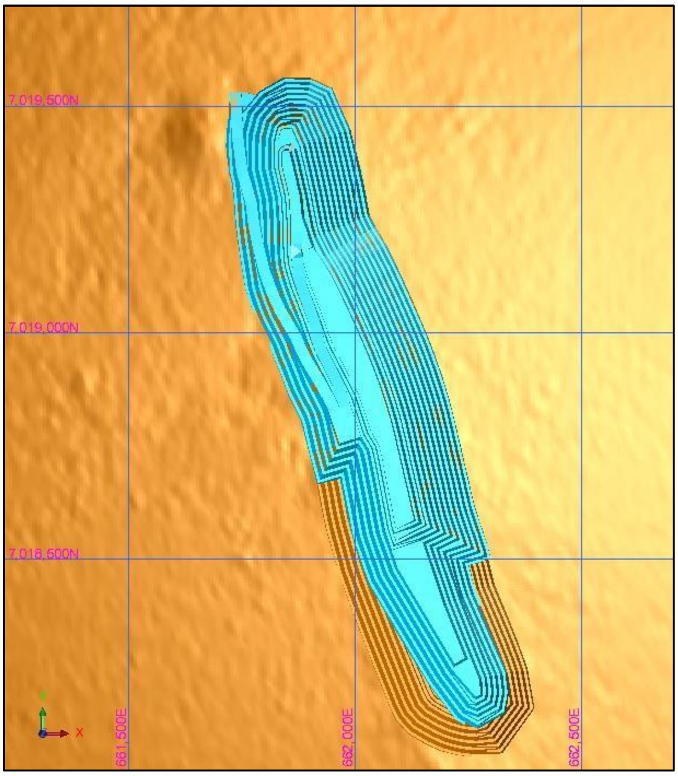


Figure9: Main Pit Stage 2 and final pit design

The overall wall angles for the two final pit designs are given in *Table 5*.

Table 5: Designed pit wall angles

Pit wall	Material	North Pit		Main Pit	
		Overall wall angle (°)	**IRA (°)**	**Overall wall angle (°)**	**IRA (°)**
HW	Oxide/Transitional		60.0		45.6
	Fresh		64.0		60.0
	All	53.7		49.4	
FW	All	39.4	40.3	41.3	40.2

The designed overall wall angle and inter-ramp slope angles for all quadrants of the two pits are within the preliminary geotechnical recommendations.

Waste rock characterisation studies to indicate potential acid forming (PAF) material was not available at the time of this study. Detailed PAF management systems have not been designed or planned at this stage. Relatively simple waste dumps were designed, including 20° final slopes suitable for rehabilitation, to cater for the total waste from the two pits. The waste dump designs allow for sufficient capacity for encapsulation of PAF material. No consideration has yet been given to backfilling waste rock into pits, given that Inferred Mineral Resources extend at depth and along strike. Backfilling can provide potential waste rock management options after the extent of the final economic Mineral Resource has been defined. Waste dumps were designed within the available tenement boundaries.

4. PROCESSING METHOD SELECTED AND OTHER PROCESSING ASSUMPTIONS, INCLUDING RECOVERY FACTORS APPLIED AND ALLOWANCES MADE FOR DELETERIOUS ELEMENTS

METALLURGICAL TESTWORK

Initial RC sample work undertaken in Q3 2017 established that the vanadium does concentrate through low intensity magnetic separation (LIMS), that the base of oxidation is variable and, that some near surface material (<30 m depth) displays minimal oxidation. The fresh zone recovered >90% of the vanadium present into approximately 73% of the mass.

Once the ability to use magnetic separation to concentrate the vanadium was confirmed additional work was undertaken utilizing diamond core sample.

A total of six half meter sections of HQ diamond core were provided for comminution and physical testwork. These sections had their In-situ density measured and were tested for their Uniaxial Compressive Strength (UCS). Samples were selected for Bond Impact Crushing Work Index (CWi) testing based on mineralogical origin. Samples were selected from the CWi products as well as products from the UCS for SAG Mill Comminution (SMC) testing and Bond Ball Mill Work Index (BBWi).

Once the composites were made up the grind sensitivity of the material was tested with respect to vanadium recovery and grade of magnetic concentrate. Composites 1 and 2 (Massive Fresh and Massive Transitional respectively) are the critical results for the PFS, as the Basal Massive Magnetite unit is being considered as the primary feed for the study with a LOM average of 85% Fresh (Composite 1) and 15% Transition (Composite 2).

Mineralogical analysis of the products produced through LIMS at P80 106 µm indicates that recovery of the Fe-Ti oxides containing vanadium is exceptional through the LIMS with 99.7% recovered to the magnetic fraction.

The mineralogical analysis also indicates that both the concentrate grade is unlikely to be increased significantly and that gangue rejection likely can't be improved. There would be an opportunity to recover Ni-Co-Cu sulphides present that report to the non-magnetic fraction in the LIMS, flotation will likely yield high recoveries of these sulphides however, the economics of this are unknown at this stage.

The majority of the salt roast and water leaching work was done on an 85/15 blend of magnetic concentrates from Composite 1/Composite 2. The key result from this phase of work was that a temperature of 1200°C is required to achieve satisfactory vanadium recoveries regardless of large excesses of sodium carbonate. At optimal sodium carbonate dosage of approximately 23 kg/t of magnetic concentrate, the gangue constituents of the massive zone being silica, alumina and chromium, do not appear to be significantly reactive.

Desilication and Ammonium Metavanadate (AMV) precipitation testing was undertaken simultaneously with roast and leach optimization due to the pressing timeline. The most significant results from this testing were from test HY6265; desilication removed 82.9% of the aluminium, 68.7% of the silicon with vanadium losses of 5%. With further testing this can be refined, and vanadium losses lowered even further.

When this desilicated solution was taken to AMV precipitation it yielded a precipitation efficiency of 99.15% for vanadium, but also precipitated 67.8% of the aluminium and 89% of magnesium in solution. This isn't a large issue as aluminium and magnesium have low solution tenors; 20 mg/L for both in this desilicated leach liquor. The AMV produced is of a 99.4% purity based on the sum of impurities on an oxide basis. Impurities were considered to be at the Limit of Detection (LOD) if they were below the LOD. This AMV was taken and calcined to V2O5.

The calcined V2O5 assays at 99.02% on a sum of impurities basis, with further work and process refinement this will be able to be improved. This definitively shows the viability of the traditional salt roast process to produce high purity AMV or V2O5 from Technology Metals' Gabanintha deposit.

DESIGN BASIS

The plant basis of design was developed using the metallurgical testwork results and standard industry assumptions for retention times and stockpile capacities made by competent engineers to align with the plant operating philosophy. Process engineers involved with this area of design have experience in vanadium processing operations.

5. BASIS OF CUT-OFF GRADE APPLIED

The cut-off grade has been determined by the Whittle™ software. The following cut-off grades for the revenue factor 1 pit for each material type are shown in Table 6. These cut-off grades were used in the production schedule for the PFS.

Table 6: Cut-off grades from Whittle™ software

Material	Cut-off grade ($\% \, V_2O_5$)
Massive magnetite oxide	0.60%
Massive magnetite transitional	0.52%
Massive magnetite fresh	0.41%
Disseminated magnetite oxide and transitional	0.70%
Disseminated magnetite fresh	0.63%

6. ESTIMATION METHODOLOGY

The modifying factors used to estimate the Gabanintha Ore Reserve are informed and bound by the findings of the PFS.

Whittle™ pit optimisation software has been used to identify the preferred pit shell on which the pit design was based for the recovery of oxide, transitional, and fresh Indicated Mineral Resources. The mine design and subsequent mining and production schedule is based on the specific cut-off grades and production criteria of the planned operation.

Capital and operating costs estimated to a PFS level of confidence have been applied to the planned activities. The revenue assumptions are based on forward-looking Vanadium Pentoxide prices from the Merchant Research & Consulting Ltd Vanadium 2017 World Market Review.

The LOM revenue per pound of V_2O_5 is modelled at US$13.03/lb. The exchange rate has been modelled at a flat rate of AU$1.00 = US$0.75.

The financial model for the Gabanintha PFS indicates a net present value (NPV) after tax at a discount of 10% (EBITDA basis) of approximately AU$850 million with an internal rate of return of 43%. These results meet the investment criteria for Technology Metals to pursue the next stage of project development.

The simplified sensitivity analysis completed in the PFS indicates that the project results remain favourable when the key project parameters (revenue, exchange rate, grade, metallurgical recovery, capital and operating costs) are individually flexed to plus and minus 20% of the PFS average values.

7. MATERIAL MODIFYING FACTORS, INCLUDING STATUS OF ENVIRONMENTAL APPROVALS, MINING TENEMENTS AND APPROVALS, OTHER GOVERNMENT FACTORS AND INFRASTRUCTURE REQUIREMENTS FOR SELECTED MINING METHOD AND TRANSPORT TO MARKET

PERMITS AND APPROVAL

Mining lease applications have been lodged over the Northern (M51/883) and Southern (M51/884) resource areas in March 2018, with Miscellaneous licence applications for site access and water anticipated to commence in the second half of 2018.

Typical approvals anticipated for the next project steps and likely to be needed for the final Gabanintha Project include:

Primary Approvals:

- Environmental Protection (EP) Act Part IV - Environmental Impact Assessment
- Aboriginal Heritage Act 1972 – Section 18
- Mining Act 1978 – Mining Proposal/Mine Closure Plan
- EP Act Part V – Native Vegetation Clearing Permit
- Safety Project Management Plan

Secondary Approvals:

- EP Act Part V – Works Approval and Licence
- Rights to Water and Irrigation Act 1914 – 26D and 5C

A series of desk-top reviews have been completed for the Environmental, Heritage, Social (EHS) and permitting components of the Gabanintha project. The findings of the current reviews indicate that there are several items that are likely to require further study and development of management plans to satisfy the highest standards of EHS governance of the Gabanintha project. No material issues that would inhibit the progress of the project have been identified.

The following are a summary of the desk-top review findings:

PHYSICAL ENVIRONMENT

No project specific soil assessments have been undertaken to date. A pilot material characterisation (ARD and metals) study of mine waste and ore indicated that the high grade and low grade fresh ore appear to be PAF, while the fresh waste, oxide waste and clay band have been classified as Uncertain. Elevated levels of potentially problematic metals such as Arsenic, Chromium and Cobalt were observed in some samples.

A detailed soil assessment and material characterisation assessment are planned for the DFS which will influence the selected mine closure landform design and proposed closure completion criteria.

BIOLOGICAL ENVIRONMENT

A review of the Department of Environment and Energy (DEE) matters of national environmental significance and the Department of Biodiversity, Conservation and Attractions (DBCA) Nature Map were undertaken to identify any threatened or priority flora and fauna species previously recorded in the Project area.

Results indicated that no flora species of conservation significance or declared rare flora have been recorded, however two Priority 3 species (Drummondita miniate and Eremophila fasciata) were previously recorded. Additionally, no Threatened Ecological Communities (TEC) have been recorded in or adjacent to the Project.

The potential presence of 45 fauna species was identified of which 12 EPBC Protected species were identified as potentially occurring. No State conservation significant species were identified as occurring in the search area.

Desktop assessment by Biologic Environmental Survey Pty Ltd identified the presence of various stygofauna and troglofaunal taxa within and surrounding the Project and determined that the Project is partially within and close to the buffer zone for two Priority Ecological Communities (PEC) associated with the subterranean fauna communities.

SOCIAL ENVIRONMENT

Mining Leases were first taken out in the Gabanintha area in 1895 and the town of Gabanintha was gazetted in 1898. Today the region is dominated by pastoral activities and mineral extraction.

The project is located on the Polelle and Yarrabubba Pastoral Stations, with a portion of pending Mining Lease 51/883 sitting on Common Reserve 10597.

A search of the Department of Planning, Lands and Heritage's (DPLH) Aboriginal Heritage Inquiry System (AHIS) has identified two registered aboriginal heritage sites and a search of the Heritage Council of Western Australia database has identified three non-Aboriginal Heritage Sites within 10km of the Project, but outside the indicative Project tenements. There is a strong possibility that unrecorded sites exist in the area and these sites may be located near sources of water, at rock outcrops and in breakaways.

AIR QUALITY AND NOISE

Whilst he Project has the potential to generate the following emissions it is unlikely, given the remote location, that these emissions will impact any sensitive receptors. Emission types include

- Ammonia (NH3);
- Oxides of nitrogen (NOx);
- Particulates (as PM10); and
- Vanadium pentoxide (V2O5).

Similarly, noise is unlikely to affect any sensitive receptors, with the closest receptors being the homesteads associated with the Polelle (7km) and Yarrabubba (14km) Pastoral Stations.

PROJECT SERVICES AND INFRASTRUCTURE

Operation of the Gabanintha Vanadium Plant will require various services and infrastructure. These services include infrastructure, roads, an accommodation village, workshops, laboratory, gatehouse, fuel supplies and stores.

Site access roads from the adjacent Meekatharra Sandstone road are approximately 3.3km from the adjoining access and the major haul roads 3.4km.

The project requires a fuel supply solution to provide:

- Electricity for the Process plant, mining and camp facilities (Power Station Load) (950 Terajoule (TJ); and
- Heating for the Kiln, Furnace and Flash Heater (Heat Load) (1963 TJ).
- The respective supply options are:
- Power Load Demand – Gas and/or Diesel; and
- Heat Load Demand – Gas or Heavy Fuel Oil.

Gas supply alternatives includes trucked Liquid Natural Gas (LNG,) trucked Compressed Natural Gas (CNG) and pipeline delivered natural gas.

TAILINGS MANAGEMENT

The PFS has included the construction of tailings storage facilities, waste product storage facilities and an evaporation pond. Dry non-magnetic separated tailings and wet non-magnetic separated tailings will report to the Tailings Storage Facility (TSF) approximately 20ha in area, calcine waste product will report to the calcine waste product HDPE lined storage facility approximately 30ha in area. The lined evaporation pond is approximately 50ha in area and comprises a series of ponds and is constructed of compacted earth walls with an HDPE liner.

8. ORE RESERVE ESTIMATION

The Ore Reserve estimates are based on the results of investigations and studies completed for the Gabanintha Vanadium Deposit.

ABOUT VANADIUM

Vanadium is a hard, silvery grey, ductile and malleable speciality metal with a resistance to corrosion, good structural strength and stability against alkalis, acids and salt water. The elemental metal is rarely found in nature. The main use of vanadium is in the steel industry where it is primarily used in metal alloys such as rebar and structural steel, high speed tools, titanium alloys and aircraft. The addition of a small amount of vanadium can increase steel strength by up to 100% and reduces weight by up to 30%. Vanadium high-carbon steel alloys contain in the order of 0.15 to 0.25% vanadium while high-speed tool steels, used in surgical instruments and speciality tools, contain in the range of 1 to 5% vanadium content. Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.

An emerging and likely very significant use for vanadium is the rapidly developing energy storage (battery) sector with the expanding use and increasing penetration of the vanadium redox batteries (“**VRB’s”**). VRB’s are a rechargeable flow battery that uses vanadium in different oxidation states to store energy, using the unique ability of vanadium to exist in solution in four different oxidation states. VRB’s provide an efficient storage and re-supply solution for renewable energy – being able to time-shift large amounts of previously generated energy for later use – ideally suited to micro-grid to large scale energy storage solutions (grid stabilisation). Some of the unique advantages of VRB’s are:

- a lifespan of 20 years with very high cycle life (up to 20,000 cycles) and no capacity loss,
- rapid recharge and discharge,
- easily scalable into large MW applications,
- excellent long term charge retention,
- improved safety (non-flammable) compared to Li-ion batteries, and
- can discharge to 100% with no damage.

Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.

The global vanadium market has been operating in a deficit position for the past five years (source: TTP Squared Inc), with a forecast deficit of 9,700 tonnes in 2017. As a result, vanadium inventories have been in steady decline since 2010 and they are forecast to be fully depleted in 2017 (source: TTP Squared Inc). Significant production declines in China and Russia have exacerbated this situation, with further short term production curtailment expected in China as a result of potential mine closures resulting from environmental restrictions and the banning of the import of vanadium slag.

The tightening supplies of vanadium are resulting in a global shortage, with prices appreciating dramatically since mid 2017, with reports indicating that vanadium pentoxide prices have rallied further in 2018 to in excess of US$15/lb V_2O_5, from a low of less than US$4/lb V_2O_5 in early 2017.

For, and on behalf of, the Board of the Company,

Ian Prentice
Managing Director
Technology Metals Australia Limited

- ENDS -

About Technology Metals Australia Limited

Technology Metals Australia Limited (ASX: TMT) was incorporated on 20 May 2016 for the primary purpose of identifying exploration projects in Australia and overseas with the aim of discovering commercially significant mineral deposits. The Company's primary exploration focus is on the Gabanintha Vanadium Project located 40 km south east of Meekatharra in the mid-west region of Western Australia with the aim to develop this project to potentially supply high-quality V_2O_5 flake product to both the steel market and the emerging vanadium redox battery (VRB) market.

The Project consists of six granted tenements (and two Mining Lease applications). Vanadium mineralisation is hosted by a north north west – south south east trending layered mafic igneous unit with a distinct magnetic signature. Mineralisation at Gabanintha is similar to the Windimurra Vanadium Deposit, located 270 km to the south, and the Barrambie Vanadium-Titanium Deposit, located 155 km to the south east. The key difference between Gabanintha and these deposits is the consistent presence of a high grade massive vanadium – titanium – magnetite basal unit, which results in an overall higher grade for the Gabanintha Vanadium Project.

Data from the Company's 2017 drilling programs (85 RC holes (for 8,386 m) and 13 HQ diamond holes (for 1,235.5 m) at the Northern Block and 23 RC holes (for 2,232 m) at the Southern Tenement) has been used by independent geological consultants CSA Global to generate a global Inferred and Indicated Mineral Resource estimate, reported in accordance with the JORC Code 2012 edition, for the Project. The Resource estimate confirmed the position of the Gabanintha Vanadium Project as one of the highest grade vanadium projects in the world.

Table 3: Global Mineral Resource estimate for the Gabanintha Vanadium Project as at 5 March 2018

Technology Metals Gabanintha Vanadium Project - Global Mineral Resources as at March 2018										
Material	**Classification**	**Tonnage (Mt)**	**V2O5%**	**Fe%**	**Al2O3%**	**SiO2%**	**TiO2%**	**LOI%**	**P%**	**S%**
Massive magnetite	Indicated	14.5	1.1	49.2	5.1	5.8	12.8	-0.2	0.007	0.2
	Inferred	40.5	1.1	48.3	5.5	6.5	12.7	0.2	0.007	0.2
	Indicated + Inferred	**55.0**	**1.1**	**48.5**	**5.4**	**6.3**	**12.7**	**0.1**	**0.007**	**0.2**
Disseminated magnetite	Indicated	7.1	0.6	29.9	12.6	24.4	7.8	2.9	0.032	0.1
	Inferred	57.7	0.6	27.2	13.7	26.7	7.2	4.0	0.024	0.2
	Indicated + Inferred	**64.9**	**0.6**	**27.5**	**13.5**	**26.4**	**7.2**	**3.9**	**0.025**	**0.2**
Combined	**Indicated + Inferred**	**119.9**	**0.8**	**37.1**	**9.8**	**17.2**	**9.7**	**2.1**	**0.016**	**0.2**

* Note: The Mineral Resource was estimated within constraining wireframe solids using a nominal 0.9% V2O5 lower cut-off for the Massive magnetite zone and using a nominal 0.4% V2O5 lower cut-off for the banded and disseminated mineralisation zones. The Mineral Resource is quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% V2O5. Differences may occur due to rounding.

Capital Structure	
Tradeable Fully Paid Ordinary Shares	*32.8m*
Escrowed Fully paid Ordinary Shares[1]	*22.5m*
Fully Paid Ordinary Shares on Issue	*55.3m*
Unquoted Options[2] *($0.25 – 31/12/19 expiry)*	*14.8m*
Unquoted Options ($0.35 – 12/01/21 expiry)	*3.0m*
Quoted Options (TMTO) ($0.40 – 24/05/20 expiry)	*6.66m*
Unquoted Options[3] *($0.40 – 24/05/20 expiry)*	*3.33m*

1 – 22.5 million fully paid ordinary shares will be tradeable from 21 December 2018.
2 –13.7 million unquoted options are subject to restriction until 21 December 2018.
3 – 3.33 million unquoted options vest on 15 September 2018.

Forward-Looking Statements

This document includes forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Technology Metal Australia Limited's planned exploration programs, corporate activities and any, and all, statements that are not historical facts. When used in this document, words such as "could," "plan," "estimate," "expect," "intend," "may", "potential," "should" and similar expressions are forward-looking statements. Technology Metal Australia Limited believes that its forward-looking statements are reasonable; however, forward-looking statements involve risks and uncertainties and no assurance can be given that actual future results will be consistent with these forward-looking statements. All figures presented in this document are unaudited and this document does not contain any forecasts of profitability or loss.

Competent Persons Statement

*The information in this report that relates to Exploration Results are based on information compiled by Mr Ian Prentice. Mr Prentice is Managing Director of the Company and a member of the Australian Institute of Mining and Metallurgy. Mr Prentice has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this report and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("**JORC Code**"). Mr Prentice consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

*The information in this report that relates to Mineral Resources is based on information compiled by Mr Aaron Meakin. Mr Meakin is a Principal Consultant with CSA Global and a Member of the Australian Institute of Mining and Metallurgy. Mr Meakin has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this report and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("**JORC Code**"). Mr Meakin consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

The information that relates to Ore Reserves is based on information compiled by Mr Daniel Grosso and reviewed by Mr Karl van Olden, both employees of CSA Global Pty Ltd. Mr van Olden takes overall responsibility for the Report as Competent Person. Mr van Olden is a Fellow of The Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Person in terms of the JORC (2012 Edition). The Competent Person, Karl van Olden has reviewed the Ore Reserve statement and given permission for the publication of this information in the form and context within which it appears.

*The information in this report that relates to the Processing and Metallurgy for the Gabanintha project is based on and fairly represents, information and supporting documentation compiled by Damian Connelly who is a Fellow of The Australasian Institute of Mining and Metallurgy and a full time employee of METS. Damian Connelly has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("**JORC Code**"). Damian Connelly consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

APPENDIX 1

JORC Code, 2012 Edition – Table 1

8.1 **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. 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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.*	• A combination of reverse circulation (RC) and diamond drilling was completed across the project area to obtain 1m samples as follows: o 85 RC holes for 8,386m on the Northern Block o 13 HQ diamond holes for 1,235m on the Northern Block • For the RC drilling 1m samples were cone split off the rig cyclone, with sample weights of nominally 2 to 3 kg collected. • Duplicate 2 to 3 kg samples were collected from every metre sample. • Duplicate samples were submitted for analysis for every 20 m down hole, ensuring duplicates were submitted for mineralised zones (based on geological logging and hand-held Olympus Vanta XRF results). • For the diamond drilling 1m samples were cut half core except where duplicates were presented to the lab and the primary sample was quarter core (one in every 20 to test the consistency of sample preparation) with samples typically 2 to 6 kg being collected. • Six ~0.5m whole core samples were collected for metallurgical testwork. • Individual samples were assayed for every interval, with a representative half core being kept for the majority of intervals drilled. • Standards were submitted for analysis for every 20m down hole, testing QC of the XRF analysis. • Blank material (sand) was presented to the lab every 50th sample to test the cleanliness of the crushing procedure at the lab. • Samples analysed by XRF spectrometry following digestion and Fused Disk preparation.

Criteria	JORC Code explanation	Commentary
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).*	• RC drilling utilised a 5.5" face-sampling hammer • HQ3 triple tube (for oxide) and HQ2 (below weathering surface) diamond core was drilled and oriented using a reflex ACT III tool and holes were surveyed using a Reflex Gyroscope.
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.*	• RC sample recovery was assessed based on the estimated bulk sample collected for each metre. Each bag was not weighed. For 1 in 3 holes a spring gauge was used to ensure the cone split remained within the 2 to 3 kg range. • Diamond drilling sample recovery was assessed based on the measured lengths of presented core, grinding marks and core loss noted in the drillers log with >95% recovery below the base of complete oxidation (which ranges from 5-70m across the mineralised units). Recoveries approached 100% in all but the faulted intervals in the fresh rock. • There does not appear to be any relationship between recovery and grade except that the massive mineralisation approximates 100% recovery as it does not weather easily.
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.*	• Drill samples were logged in the field, with the total length of holes logged in detail. • RC drill chips for every meter were collected in trays and photographed. • Drill core was collected in trays, photographed, cut and palletised by hole near site for reference. • Basic geotechnical logging of the diamond core was undertaken including collecting recovery, rock quality designation (RQD) and fracture orientation data.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.*	• For the RC drilling duplicate 2 to 3 kg samples were collected from every metre sample. • Samples were cone split at the drill rig and represent approximately 5% of the total material for each metre sampled. • Most samples were dry. • Samples were dried and pulverised in the laboratory and fused with a lithium borate flux and cast into disks for analysis. • Field duplicates were submitted such that there were at

Criteria	JORC Code explanation	Commentary
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	least 1 duplicate sample for every 20 samples analysed. • For diamond drilling half core was taken using a V notched slider on a manual diamond core saw, except for one in twenty samples where quarter core was presented to the lab as the primary sample and a duplicate quarter core presented with a different sample number. • The core saw cuttings were cleared every 30 samples and between high and low-grade samples and when chips were dislodged • Samples were collected in calico bags, double bagged in polyweave bags and triple bagged in bulk bags to ensure no sample loss. Calico bags were dried then emptied and crushed in jaw crushers then pulverised in ring mills at Intertek Genalysis • Samples were fused with a lithium borate flux and cast in to disks for analysis by XRF. • Diamond twin drilling has been completed for 5 holes from the previous RC program with the RC under reporting grade only marginally suggesting the sample size has been appropriate to the material being sampled. Any loss of fines in previous RC drilling is not contributing to a systematic 'upgrading' of V_2O_5 or TiO_2 • Standards were submitted for analysis for every 20m down hole, validating QC of the XRF analysis • Blank material (sand) was presented to the lab every 50th sample to test the cleanliness of the crushing procedure at the lab.
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Pulverised samples from every interval (overwhelmingly one metre samples) were fused with a lithium borate flux and cast in to disks and analysed by XRF spectrometry – method FB1/XRF77. • Field duplicates, appropriate certified reference materials (CRMs) including crushed standards derived from previous RC drilling, laboratory check samples and blanks were used. • Quality control procedures demonstrate acceptable levels of accuracy and precision have been achieved. CRM materials inserted to the sample stream at the laboratory have performed acceptably, and field duplicate samples have performed well. Blanks have not

Criteria	JORC Code explanation	Commentary
		shown signs of target element enrichment.
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.*	• Significant intersections correlate with mineralised zones as defined from geological logging. All sampling was completed by an independent geologist Mr John McDougall BSc. (Hons). MAIG. • The estimation of significant intersections has been verified by an alternate company personnel. • There were no adjustments to assay data. Where the half metre core for metallurgical testwork was removed the intersection was reported excluding this interval.
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 grid system used for collar positions was MGA94 – Zone 50. • Planned hole collar positions were located using hand held global positioning system (GPS). Collars were later located by differential GPS (DGPS). The coordinates correlate well so DGPS hole position data has being verified. • RL's are also derived from the DGPS and were collected to +- 0.10m. The accuracy has been rounded for presentation. • Down hole surveys were completed using an Axis Gyro every 30m down hole and at the collar and end of hole.
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.*	• The drill data in the Northern Block is on nominal 100m and 200m line spacing with holes located every 40 to 50m along the drill lines. • 13 diamond holes were drilled in the Northern Block with 5 twins of previous RC drilling and a broad spread of locations to measure representative density data. • Detailed airborne magnetics supports strike and down dip continuity assumptions of the massive magnetite zone which is known to host high grade mineralisation. • This continuity has been additionally supported by drilling data. • Data is considered appropriate for use in estimating a Mineral Resource. • No sample compositing is applied to the resource numbers.
Orientation of data in relation to	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• The drilling has been completed at an orientation that would have been unlikely to have introduced a sampling bias. The drill holes are drilled orthogonal to the measured

Criteria	JORC Code explanation	Commentary
geological structure	• *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.*	strike +-10°, the apparent thickness is 0.85 X the true thickness, drill deviations were not noticeably higher through the mineralised zone
Sample security	• *The measures taken to ensure sample security.*	• Samples were collected in calico, polyweave and bulk bags, sealed securely and transported by Company personnel until handover to a commercial transport company, which delivered the samples by road transport to the laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• A representative from the independent geological consultants, CSA Global, visited the site during the infill and extensional drilling program in the Northern Block and found drilling and sampling procedures and practices to be acceptable. • No other audits or reviews have been completed to date.

8.2 **Section 2 Reporting of Exploration Results**

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The areas drilled are located on current Prospecting Licences 51/2942, 51/2943 and 51/2944 and Exploration Licence 51/1510. • The tenements are granted and held by The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals Australia Limited.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• RC drilling was completed in 1998 by Intermin Resources NL under an option agreement on tenements held by Oakland Nominees Pty Ltd – consisting of GRC9801 to GRC9805 (on Prospecting Licences 51/2164) and GRC9815 to GRC9817 (on Prospecting Licence 51/2183). • The areas drilled are located on current Prospecting Licences 51/2943 (GRC9801, GRC9802), 51/2944 (GRC9803, GRC9804, GRC9805) and 51/2942 (GRC9815 to GRC9817) held by The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals Australia Limited. • Exploration prior to this drilling included geological mapping and limited rock chip sampling completed across a zone of outcropping vanadiferous titanomagnetite layered mafic igneous unit by various parties.

Criteria	JORC Code explanation	Commentary
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Massive vanadiferous titanomagnetite within an intrusive medium to coarse grained anorthositic gabbroic layered sill roughly 1 km thick in the Gabanintha formation. Fractionation within the intrusive body forms cumulate layers of magnetite near the base of the intrusion. • Occurs both in outcrop and extending down dip in parallel layers with a dip of ~60-65 degrees steepening in the northern zone to >70 degrees.
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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *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.*	• Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3). • All relevant material from previous drilling has been reported to the ASX on the following dates: 9th March 2017, 4th April 2017, 19th April 2017, 31st August 2017, 14th September 2017, 18th October 2017 and 7th December 2017.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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.*	• Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (See Section 3).
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *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').*	• Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (See Section 3).
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.*	• Appropriate diagrams contained in the report to which this Table 1 applies.

Criteria	JORC Code explanation	Commentary
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.*	• Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (See Section 3).
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.*	• Geophysical data in the form of aeromagnetic data assists the geological interpretation of the main high magnetite unit and highlights offsets due to faults and or dykes. Historic drilling data is not used due to uncertainty in location and orientation • Down hole density had been collected as secondary information to the Vernier Calliper and Archimedean measurements on about half the RC and diamond drill holes
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further drilling is expected to consist of infill and extensional drilling, particularly in areas of current nominal 200m line spacing. • Diamond drilling expected to collect further samples for metallurgical testwork. • Geotechnical diamond drilling may be required subject to the outcome of ongoing mining and processing studies.

8.3 Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	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.*	• Drilling data is stored in a DataShed database system which is an industry best practise relational geological database. Data that has been entered to this data base is cross checked by independent geological contracting staff to ensure accuracy. CSA Global has been provided with a number of pdf format assay certificates from the laboratory and completed its own checks, finding that all checked assay data was correctly captured in the relevant database table. • Data used in the Mineral Resource estimate is sourced from a database export. Relevant tables from the data base are exported to MS Excel format and converted to csv format for import into Datamine Studio RM software. • Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing

Criteria	JORC Code explanation	Commentary
		lithological data, and missing collars.
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.*	• A two-day site visit was completed by a CSA Global staff member in August 2017 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling and logging practice being observed. Drill collar locations have been captured by hand held GPS confirming their stated survey locations. Mineralisation outcrop extents were followed, with measurements taken confirming the interpreted strike and dip.
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 factors affecting continuity both of grade and geology.*	• Based on surface geological and structural mapping, drill hole logging and sample analysis data and geophysical TMI data, the geology and mineral distribution of the massive V-Ti-magnetite zone appears to be relatively consistent through the interpreted strike length of the deposit. Cross cutting faults and dykes, interpreted from the drill hole and magnetic data and surface mapping have been modelled. These features displace the mineralisation as shown in the diagrams in the body of this report. Drill hole logging has shown some narrow quartz porphyry units which have been modelled, cutting through the mineralisation on some sections. In the hanging wall and foot wall of the massive magnetite zone, the mineralised units are defined at a nominal 0.4% V_2O_5 lower cut off grade and a nominal minimum 3m downhole continuity. The geological and grade continuity of some of these zones is not as well understood as the massive magnetite unit, however drill sample analysis demonstrates consistent zones of more disseminated mineralisation existing in the hanging wall and foot wall of the massive unit along strike and on section. Weathering surfaces for the base of complete oxidation (BOCO) and top of fresh rock (TOFR) have been generated based on a combination of drill hole logging, magnetic susceptibility readings and sample analysis results. A partially mineralised cover sequence is interpreted as depleting the top few metres of the model interpreted based on lithological logging of the drilling. • Surface mapping, drill hole intercept logging, sample analysis results and TMI data have formed the basis of the geological and mineralisation interpretations. Assumptions have been made on the depth and strike extent of the mineralisation based on the drilling and geophysical data, as documented further on in this table. Based on the currently available information contained in

Criteria	JORC Code explanation	Commentary
		the drilling data, surface mapping and the geophysical data, the assumption has been made that the hanging wall and foot wall disseminated mineralisation lenses that are in the same stratigraphic position relative to the massive magnetite are related and are grouped together as the same zones for estimation purposes. • The extents of the modelled mineralisation zones are constrained by the available drill and geophysical data. Alternative interpretations are not expected to have a significant influence on the global Mineral Resource estimate. • The continuity of the geology and mineralisation can be identified and traced between drill holes by visual, geophysical and geochemical characteristics. Additional data is required to more accurately model the effect of any potential structural or other influences on the modelled mineralised units, Confidence in the grade and geological continuity is reflected in the Mineral Resource classification.
Dimensions	• *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.*	• The modelled mineralisation strikes approximately 160° to 340°, dipping on average about 55° towards 250°, with a modelled strike extent of approximately 4.4km. The mineralisation is interpreted to be folded back on itself at the northern end. The stratiform massive magnetite unit has a true thickness varying between 7m and 25m. The interpreted disseminated mineralisation lenses appear to be better developed in the southern half of the modelled area, with cumulative true thickness of the order of 45m in the south from up to six lenses, reducing to roughly 25m in the northern third from four to five lenses and approximately 8m from one lens in the extreme north of the deposit. The massive magnetite outcrops and has been mapped along the strike extent and has been extended to a maximum of approximately 260m below topographic surface or nominally 50m down dip of the deepest drill hole intersections. The strike extent is extended a nominal 200m, or half the nominal drill section spacing, past the last drilling section in the south to the intersection with the tenement boundary based on the surface mapping and geophysical data extents. In the north the mineralisation is terminated nominally 100m past drilling based on the surface mapping extents of the outcropping mineralisation. In the folded area in the north down dip extent is limited to a maximum 50m down dip of drill section data, or 120m below topographic surface, due to the greater geological uncertainty. The

Criteria	JORC Code explanation	Commentary
		immediate hanging wall disseminated mineralisation zone above the massive magnetite is considered to be the most consistent of the disseminated magnetite zones and is interpreted to similar extents as the massive magnetite. The lenses further up in the hanging wall are not as clearly constrained and understood, mostly due to lower drill coverage at depth, and therefore the down dip extent is successively reduced upwards in the sequence as can be seen in the representative cross section in the body of this report. Given the continuity defined over the drilled extents (fenceline spacings of 100m to 200m) and being additionally informed by the magnetics (TMI), these extrapolation extents are considered reasonable.
Estimation and modelling techniques	• *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).* • *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.*	• The Mineral Resource estimate was completed in Datamine Studio RM software using the ordinary kriging (OK) estimation method, with an Inverse Distance Weighting to the power of two (IDW) estimation method also completed for validation purposes. Estimations were completed for V_2O_5, Fe and contaminant elements, TiO_2, Al_2O_3, SiO_2, P and S, and loss on ignition at 1000°C (LOI). Due to the mineralised zones being cut by and / or offset by faults and dykes the mineralisation interpretation consists of 12 massive magnetite and 36 disseminated magnetite mineralisation lenses. These are grouped together using a numeric zone code as the massive magnetite lenses, or for the disseminated mineralisation lenses they grouped together based on stratigraphic position in the hanging wall or foot wall relative to the massive magnetite. These lens groupings are then further split based on the weathering surface interpretations into oxide, transition and fresh materials. The preliminary statistical analysis completed on the massive magnetite and stratigraphically relative grouped disseminated magnetite domains showed that for the some of the combined mineralisation / weathering state domain groupings there were not sufficient samples to complete a robust grade estimation. As a result, due to insufficient data points for the oxide massive magnetite, the oxide material was combined with transitional to form one estimation domain. Similarly, in the foot wall disseminated magnetite domains, the oxide and transition zones are grouped together. All data in the upper most hanging wall disseminated unit is combined into a single domain. This has resulted in 17 separate estimation domains being defined with hard boundaries being used between the defined combined weathering and mineralisation estimation

Criteria	JORC Code explanation	Commentary
		domains. A detailed statistical analysis was completed for each of the defined mineralisation / weathering state estimation domains. This analysis showed that while co-efficient of variation was generally low (below 0.5) for all grade variables, some outlier grades existed and, in the CP's opinion, required balancing cuts to prevent estimation bias associated with outlier values. For the massive magnetite top cuts were applied to P, S and SiO_2 in the combined weathered domain, and for P and SiO_2 in the fresh domain. For the disseminated magnetite domains, S was top cut in the oxide zone of all hanging wall domains, in the transition zone of the second and fourth up hanging wall domains, and in the fresh zone of third up hanging wall and the foot wall domains. A top cut to P was applied in the fresh zone of the second up hanging wall domain. A top cut for LOI was applied to the fresh zone of the first and third hanging wall domains. Drill spacing is nominally 40m to 50m on sections spaced 100m or 200m apart. Maximum extrapolation away from data points is to 200m in the south and up to 100m down dip. Kriging neighbourhood analysis (KNA) was used in conjunction with the modelled variogram ranges and consideration of the drill coverage to inform the search parameters. Search ellipse extents are set to 320m along strike, 75m down dip and 40m across dip, ensuring that the majority of the block estimates find sufficient data to be completed in the first search volume. The search volume was doubled for the second search pass and increased 20-fold for the third search pass to ensure all block were estimated. A maximum of 8 samples per hole, with a minimum of 15 and a maximum of 36 samples are allowed for a block estimate in the first search pass, reducing to a minimum of 12 samples and a maximum 30 samples for the second pass, and the maximum was then further reduced to maximum 24 samples for the final pass. • The IDW check estimate results produced comparable results with a less than 0.1% difference in global V_2O_5 grade • No assumptions have been made regarding by-product recovery at this stage, however as metallurgical process testwork progresses all options will be assessed. • Potentially deleterious P and S have been estimated • A volume block model with parent block sizes of 50 m (N) by 10 m (E) by 5 m (RL) was constructed using Datamine Studio Software. Minimum sub cells down to 2.5 m (N) by 2.5 m (E) by 2.5 m (RL) were allowed for domain volume resolution. Drill spacing is nominally 40m to 50m across strike on west to east

Criteria	JORC Code explanation	Commentary
		sections spaced either 100m or 200m apart north to south. • No assumptions have been made regarding selective mining units at this stage. • A strong positive correlation exists between Fe and V_2O_5 and TiO_2 and a strong negative correlation between Fe and Al_2O_3, SiO_2 and LOI. • The separate interpreted mineralisation zones domained based on the geological, geochemical and geophysical data, and further domained by weathering state have been separately estimated using hard boundaries between domains. The model is depleted by fault zones, intrusive dykes, cross cutting quartz porphyries and surficial colluvium zones that have been interpreted based on the geological, geochemical and geophysical data. • Block model validation has been completed by statistical comparison of drill sample grades with the OK and IDW check estimate results for each estimation zone. Visual validation of grade trends along the drill sections was completed and trend plots comparing drill sample grades and model grades for northings, eastings and elevation were completed. These checks show reasonable comparison between estimated block grades and drill sample grades, with an increase in block model grade compared to the drill sample data for V_2O_5 of <1% in the massive magnetite, and a decrease of <1% for block grades compared to drill sample data in the disseminated mineralisation. • With no mining having taken place there is no reconciliation data available to test the model against.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages have been estimated on a dry, in situ basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The adopted lower cut-off grade for reporting of 0.4% V_2O_5 is supported by the metallurgical results and conceptual pit optimisation study as being reasonable.
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*	• It has been assumed that these deposits are amenable to open cut mining methods and are economic to exploit to the depths currently modelled using the cut-off grade applied. No assumptions regarding minimum mining widths and dilution have been made.

Criteria	JORC Code explanation	Commentary
	case, this should be reported with an explanation of the basis of the mining assumptions made.	
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 amenability has been assessed based on results from TMT's ongoing detailed metallurgical testwork program (TMT ASX announcement, 22 February 2018) from its Northern Tenement Block. • The work conducted to date consists of comminution testwork and magnetic beneficiation testwork based on six representative composite samples from diamond drilling throughout the Northern Tenement Block. • The magnetic beneficiation testwork consisted of low intensity magnetic separation (LIMS) on the six composite samples (massive fresh, massive transitional, massive oxide, disseminated fresh, disseminated transitional and disseminated oxide) at three nominal grind sizes of P80 passing 45, 106 and 250 microns undertaken by a triple pass methodology at 1200 Gauss. • The results showed that grades of 1.12% to 1.34% V_2O_5 reported to a magnetic concentrate at the P80 passing 106 micron grind size, with iron grades ranging between 52.6% and 57.9%. Massive fresh material showed a mass recovery of 85.6% reporting to the magnetic concentrate, with a vanadium recovery of 97.8%. The massive transitional and massive oxide returned mass recoveries of 68.8% and 25.2% respectively and vanadium recoveries of 77% and 28%. Mass recovery for the disseminated material ranged from 33%, for the fresh, down to 1.9% for the oxide, with vanadium recoveries ranging from 75.9% down to 4.29%. • There was a very high rejection of gangue minerals from all of the composites, with SiO_2 grades in the magnetic concentrates ranged from 0.46% in the massive fresh up to 4.49% in the disseminated transitional, with Al_2O_3 ranging from 1.92% in the disseminated oxide up to 2.8% in the disseminated fresh. • Wet high intensity magnetic separation (WHIMS) is being conducted on the non-magnetic tails stream produced from the LIMS to optimise vanadium grade and recovery in the massive high grade oxide, disseminated fresh, disseminated transitional and disseminated oxide material. • Based on the LIMS results, preliminary WHIMS results and assumed recoveries for the salt roast / leach processing the following recovery factors have been estimated for each composite type: o Massive fresh – 80% o Massive transitional – 75%

Criteria	JORC Code explanation	Commentary
		◦ Massive oxide – 60% ◦ Disseminated fresh – 50% ◦ Disseminated transitional – 45% ◦ Disseminated oxide – 35% • Further beneficiation options will be explored for the more oxidised materials that do not perform as well with magnetic separation techniques. • Additional metallurgical test work currently underway is assessing the extraction of V_2O_5 from the magnetic concentrates utilising traditional salt roast / leach processing. Follow up beneficiation work is also underway focusing on a range of composite samples from discrete locations throughout the Northern Block Resource to provide characterisation along the strike and down dip of the Northern Block Mineral Resource. This work will involve running modified Davis Tube Recovery (DTR) tests designed to replicate the parameters of the completed LIMS testwork on up to 30 individual diamond drilling sample composites.
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.*	• No work has been completed by the company regarding waste disposal options. It is assumed that such disposal will not present a significant barrier to exploitation of the deposit and that any disposal and potential environmental impacts would be correctly managed as required under the regulatory permitting conditions.
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 measurements by calliper method have been completed for 61 samples across a range of material types from the drill core in the Northern Tenement Block. In addition, the density of six core samples submitted for metallurgical testing have been measured using immersion techniques and correlate well with the calliper measurements. • The density data has been separated by weathering state into oxide, transition and fresh, and further by mineralisation type into waste, disseminated mineralisation and massive mineralisation. The means of the measured densities from these various domains have been applied to the appropriate domains in the block model as follows: • Massive magnetite mineralisation mean density in t/m^3:

Criteria	JORC Code explanation	Commentary
		○ Oxide:.3 ○ Transition: 3.8 ○ Fresh: 4.3 • Disseminated magnetite mineralisation mean density in t/m^3: ○ Oxide:.2 ○ Transition: 3.2 ○ Fresh: 3.4
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *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.*	• Classification of the Mineral Resource was carried out taking into account the level of geological understanding of the deposit, quantity, quality and reliability of sampling data assumptions of continuity and drill hole spacing. • The Mineral Resource estimate has been classified in accordance with the JORC Code, 2012 Edition using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table. • The Mineral Resource is classified as an Indicated Mineral Resource for those volumes where in the Competent Person's opinion there is adequately detailed and reliable, geological and sampling evidence, which are sufficient to assume geological and mineralisation continuity. • Indicated Mineral Resources are reported for portions of the transitional and fresh materials in the massive magnetite and the immediate hanging wall disseminated magnetite unit. The confidence in grade and geological continuity is highest in these zones, based on the kriging slope of regression results, the majority nominal drill section spacing of 100 m, which is extended to 200 m spacing for three sections in the south where a high level of confidence was placed in geological continuity based on the drilling, surface mapping and geophysical information. • The Mineral Resource is classified as an Inferred Mineral Resource where the model volumes are, in the Competent Person's opinion, considered to have more limited geological and sampling evidence, which are sufficient to imply but not verify geological and mineralisation continuity. • Inferred Mineral Resources are reported for all oxide material, the volumes of the massive magnetite and it's immediate hanging wall disseminated unit not classified as Indicated, and for all remaining hanging wall disseminated mineralisation lenses and the foot wall unit. These zones have a drill section spacing generally at 200 m or in the case of the upper hanging wall and foot wall disseminated zones there is a lower confidence in the

Criteria	JORC Code explanation	Commentary
		geological and grade continuity. • The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Internal audits and peer review were completed by CSA Global which verified and considered the technical inputs, methodology, parameters and results of the estimate. No external audits have been undertaken.
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 of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. • The Mineral Resource statement relates to global estimates of in situ tonnes and grade. • No mining has taken place at this deposit to allow reconciliation with production data.

8.4 **Section 4 Ore Reserve Modifying Factors**

(Criteria listed in section 1, and where relevant in section 2 and section 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *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.*	• The Mineral Resource estimate was completed by Aaron Meakin of CSA Global. The MRE report is titled R229.2018 - Technology Metals Gabanintha North Block Vanadium Mineral Resource Estimate. 31 May 2018 • The Mineral Resource estimate is reported inclusive of the Ore Reserve estimate.

Criteria	JORC Code explanation	Commentary
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.*	• A two-day site visit has been completed by a CSA Global staff member in August 2017 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling and logging practice being observed. Drill collar locations have been captured by handheld GPS confirming their stated survey locations. Mineralisation outcrop extents were followed, with measurements taken confirming the interpreted strike and dip. • Based on this site-visit, a further site visit to the as-yet undeveloped site was considered unnecessary for the purposes of the Ore Reserve estimate.
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.*	• A Pre-Feasibility Study (PFS) has been prepared and will be released at a similar time to this Ore Reserve estimate by Technology Metals. • The PFS was completed in June 2018 under the direction of Technology Metals. Wave International was appointed by Technology Metals to prepare a PFS for the Northern Block of tenements of the 100% owned Gabanintha Vanadium Project (the Project). The PFS targets a production rate of 13 kt per year of V_2O_5 product over a 13-year life of mine (LOM). The PFS has been developed to a confidence level of -15% to +25%. This PFS forms the basis for this Ore Reserve estimate. • The work undertaken to date has addressed all material Modifying Factors required for the conversion of a Mineral Resources estimate into an Ore Reserve estimate and has shown that the mine plan is technically feasible and economically viable.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Cut-off parameters</td><td>The basis of the cut-off grade(s) or quality parameters applied.</td><td>The following cut-off grades for the revenue factor 1 pit for each material type are shown below. These cut-off grades were used in the production schedule for the PFS.
<table><tr><th>Material</th><th>Cut-off grade (% V_2O_5)</th></tr><tr><td>Massive magnetite oxide</td><td>0.60%</td></tr><tr><td>Massive magnetite transitional</td><td>0.52%</td></tr><tr><td>Massive magnetite fresh</td><td>0.41%</td></tr><tr><td>Disseminated magnetite oxide and transitional</td><td>0.70%</td></tr><tr><td>Disseminated magnetite fresh</td><td>0.63%</td></tr></table></td></tr>
<tr><td>Mining factors or assumptions</td><td>The method and assumptions used as reported in the Pre-Feasibility 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.
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>Input parameters for pit optimisations and subsequent financial modelling were; mining costs based on mining contract rates; mineral processing costs and recoveries both from the PFS.
All other project modifying factors and costs are described in the PFS.
The revenue assumptions are based on forward-looking Vanadium Pentoxide prices from the Merchant Research & Consulting Ltd Vanadium 2017 World Market Review.
The LOM revenue per pound of V2O5 is modelled at US$13.03/lb. The exchange rate has been modelled at a flat rate of AU$1.00 = US$0.75.
Preliminary geotechnical analysis has been undertaken by MineGeoTech. The Mine designs in the PFS have been based on the advice from the preliminary geotechnical analysis.
The proposed pit slopes are considered likely to be stable for the current pit designs.
The Mineral Resource model was estimated by CSA Global. The Resource Block Model was used for optimization and mine planning after inclusion of additional attributes.
Fixed values for mining dilution and recovery of 10% and 95% were adopted for both the optimisation and determination of Ore Reserves. A grade of 0% V2O5 was assumed for dilution material. These levels are considered suitable for the deposit geometry, mining method, and size of mining equipment.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		• A minimum mining width of 30m has been adopted for the mine design. • Inferred Mineral Resources have been included in the mine designs for the PFS. The total LOM content of Inferred Mineral Resources in the mining plan is 13%. This material occurs throughout the life of the operation due to the geometry of the deposit, the Resource classification criteria and the mining schedule • The Ore Reserves in this statement have been reported exclusive of the Inferred component of the LOM Plan. This component is considered immaterial to the economic viability of the project. • LOM scenarios have been completed without value from the Inferred portion and the project remains economically viable.
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work 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?*	• METALLURGICAL TESTWORK Initial RC sample work undertaken in Q3 2017 established that the vanadium does concentrate through low intensity magnetic separation (LIMS), that the base of oxidation is variable and, that some near surface material (<30 m depth) displays minimal oxidation. The fresh zone recovered >90% of the vanadium present into approximately 73% of the mass. Once the ability to use magnetic separation to concentrate the vanadium was confirmed additional work was undertaken utilizing diamond core sample. A total of six half meter sections of HQ diamond core were provided for comminution and physical testwork. These sections had their In-situ density measured and were tested for their Uniaxial Compressive Strength (UCS). Samples were selected for Bond Impact Crushing Work Index (CWi) testing based on mineralogical origin. Samples were selected from the CWi products as well as products from the UCS for SAG Mill Comminution (SMC) testing and Bond Ball Mill Work Index (BBWi). Once the composites were made up the grind sensitivity of the material was tested with respect to vanadium recovery and grade of magnetic concentrate. Composites 1 and 2 (Massive Fresh and Massive Transitional respectively) are the critical results for the PFS, as

Criteria	JORC Code explanation	Commentary
		the Basal Massive Magnetite unit is being considered as the primary feed for the study with a LOM average of 85% Fresh (Composite 1) and 15% Transition (Composite 2). Mineralogical analysis of the products produced through LIMS at P80 106 µm indicates that recovery of the Fe-Ti oxides containing vanadium is exceptional through the LIMS with 99.7% recovered to the magnetic fraction. The mineralogical analysis also indicates that both the concentrate grade is unlikely to be increased significantly and that gangue rejection likely can't be improved. There would be an opportunity to recover Ni-Co-Cu sulphides present that report to the non-magnetic fraction in the LIMS, flotation will likely yield high recoveries of these sulphides however, the economics of this are unknown at this stage. The majority of the salt roast and water leaching work was done on an 85/15 blend of magnetic concentrates from Composite 1/Composite 2. The key result from this phase of work was that a temperature of 1200°C is required to achieve satisfactory vanadium recoveries regardless of large excesses of sodium carbonate. At optimal sodium carbonate dosage of approximately 23 kg/t of magnetic concentrate, the gangue constituents of the massive zone being silica, alumina and chromium, do not appear to be significantly reactive. Desilication and Ammonium Metavanadate (AMV) precipitation testing was undertaken simultaneously with roast and leach optimization due to the pressing timeline. The most significant results from this testing were from test HY6265; desilication removed 82.9% of the aluminium, 68.7% of the silicon with vanadium losses of 5%. With further testing this can be refined, and vanadium losses lowered even further. When this desilicated solution was taken to AMV precipitation it yielded a precipitation efficiency of 99.15% for vanadium, but also precipitated 67.8% of the aluminium and 89% of magnesium in solution. This isn't a large issue as aluminium and magnesium have low solution tenors; 20 mg/L for both in this desilicated leach liquor. The AMV produced is of a 99.4% purity based on the sum of impurities on an oxide basis. Impurities were considered to be at the Limit of Detection (LOD) if they were below the LOD. This AMV was taken and calcined to V2O5.

Criteria	JORC Code explanation	Commentary
		The calcined V2O5 assays at 99.02% on a sum of impurities basis, with further work and process refinement this will be able to be improved. This definitively shows the viability of the traditional salt roast process to produce high purity AMV or V2O5 from Technology Metals' Gabanintha deposit. • DESIGN BASIS The plant basis of design was developed using the metallurgical testwork results and standard industry assumptions for retention times and stockpile capacities made by competent engineers to align with the plant operating philosophy. Process engineers involved with this area of design have experience in vanadium processing operations.
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 dumps should be reported.*	conservation significant species were identified as occurring in the search area. • Desktop assessment by Biologic Environmental Survey Pty Ltd identified the presence of various stygofauna and troglofaunal taxa within and surrounding the Project and determined that the Project is partially within and close to the buffer zone for two Priority Ecological Communities (PEC) associated with the subterranean fauna communities. SOCIAL ENVIRONMENT • Mining Leases were first taken out in the Gabanintha area in 1895 and the town of Gabanintha was gazetted in 1898. Today the region is dominated by pastoral activities and mineral extraction. • The project is located on the Polelle and Yarrabubba Pastoral Stations, with a portion of pending Mining Lease 51/883 sitting on Common Reserve 10597. • A search of the Department of Planning, Lands and Heritage's (DPLH) Aboriginal Heritage Inquiry System (AHIS) has identified two registered aboriginal heritage sites and a search of the Heritage Council of Western Australia database has identified three non-Aboriginal Heritage Sites within 10km of the Project, but outside the indicative Project tenements. There is a strong possibility that unrecorded sites exist in the area and these sites may be located near sources of water, at rock outcrops and in breakaways. AIR QUALITY AND NOISE • Whilst he Project has the potential to generate the following emissions it is unlikely, given the remote location, that these emissions will impact any sensitive receptors. Emission types include

Criteria	JORC Code explanation	Commentary
		• Ammonia (NH3); • Oxides of nitrogen (NOx); • Particulates (as PM10); and • Vanadium pentoxide (V2O5). • Similarly, noise is unlikely to affect any sensitive receptors, with the closest receptors being the homesteads associated with the Polelle (7km) and Yarrabubba (14km) Pastoral Stations.
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.*	• The Gabanintha Vanadium Project is located 40km south east of Meekatharra in the mid-west region of Western Australia. A suitable airfield for Fly-in-fly-out (FIFO) labour out of Perth Western Australia is located at Meekatharra. There is no power, or railway available within a feasible distance for use by the project at this stage of investigation. Although there is no gas pipeline within close proximity to the site the viability of NG gas supply requires further investigation. Intermittent mobile network coverage is available on site, this will be complimented with a communication provider mobile booster station.
Costs	• *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 for royalties payable, both Government and private.*	• The capital cost estimate (CCE) for the Gabanintha project PFS is an estimate with an accuracy range of approximately -15% to +25% based on the accuracy levels as defined by the American Association of Cost Engineers' (AACE) Cost Estimation Classification System (As Applied for the Mining and Mineral Processing Industries). • The capital cost estimate is a bottom up estimate, as far as practically possible, generated from preliminary equipment lists and material takeoffs (MTOs). The balance of items was priced based on industry norms and typical estimating factors. • At the upper limit of the accuracy range there is an 80% confidence level of completion within a given cost. • The PFS operating cost estimate (OPEX) was developed as a "bottom-up" estimate over a 13-year mine life to obtain average operating costs. All significant and measurable items are itemised. However, smaller items are factored as per industry practice. The level of effort for each of the line items meets the estimate as defined by the American Association of Cost Engineers and the extent of work performed allows for a -15% +25% accuracy. • The OPEX was generated utilising the information from the mass balance, direct process engineering input for heat loading and reagent usage, mining operating costs and the equipment maintenance aligned with the CAPEX equipment. The organisational chart was developed with

Criteria	JORC Code explanation	Commentary
		Technology Metals and the wages were sought from the Wave data base. The manning inclusive of mining contractor personnel was used, to derive flights and accommodation costs. The equipment sizing was used to generate a load list, from which the power usage for BOO costs and fuel usage costs were derived. Royalties have been applied at a rate of 5% on Revenue. An exchange rate of AU$1.00=US$0.75 has been applied throughout the financial evaluation of the project The selling costs applied in the financial model include transport to an Australian port, sea-freight and insurance for delivery to a nominal Chinese port.
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.*	• The grade of the process feed and metal content is supported by the information in the Mineral Resource estimate and driven by the mining and production schedule. • Technology Metals has based the revenue projections in the financial model on forecast prices from Merchant Research & Consulting Ltd, a UK based market research company specialising in the chemical sector and related industries, which take in to account the anticipated market development and healthy demand scenarios. • These price forecasts anticipate the vanadium market staying in a very tight demand-supply balance over the next decade, with deficits forecast year on year for the forward period. • The pricing for V_2O_5 used in the PFS financial model is for delivery of the product to a warehouse at a nominal Chinese port. The costs of transport, insurance and freight have been accounted as selling costs.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends 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.*	• Technology Metals has commenced discussions with vanadium end-users in both the dominant steel industry and the rapidly expanding VRB / electrolyte and chemical industry with a view to forming long term strategic alliances and negotiating formal vanadium off-take arrangements. • Technology Metals has decided to focus the Company's activity on the production of a high purity +98% vanadium pentoxide (V_2O_5) product on site at Gabanintha. This involves mining, magnetic beneficiation, salt roasting / water leaching and calcining.

Criteria	JORC Code explanation	Commentary
		• The Company's strategy with regard to product marketing is to secure medium to long term off-take agreements over the majority of its forecast vanadium production from Gabanintha. • Pricing strategy will be determined in conjunction with negotiation of offtake agreements but is expected to use moving average prices over a set contract period based on reference prices. • Commentary suggests that China intends to sell more high-end technologically advanced final products and less of the underlying components. The expectation is that most of the raw materials will remain in China for Chinese manufacturers to utilise, particularly vanadium where China produces 57% of global supply of vanadium products across the supply-chain. It is this dynamic that makes it crucial for non-Chinese manufacturers to secure vanadium sources outside of China. With the Gabanintha production plant in Australia, the company is poised to benefit from this new arrangement of the global supply chain.
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.*	• The economic analysis is based on capital cost estimates described in the PFS and cash flows driven by the production schedule. • The cash flow projections include: initial and sustaining capital estimates; mining, processing and concentrate logistics costs to the customer; revenue estimates based on concentrate pricing adjusted for fees, charges and royalties; and a 10% discount factor. • The simplified sensitivity analysis completed in the PFS indicates that the project results remain favourable when the key project parameters (revenue, exchange rate, grade, metallurgical recovery, capital and operating costs) are individually flexed to plus and minus 20% of the PFS average values.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The site is in a remote region that has hosted multiple mining projects. However, over time the larger project footprint may have a marginal impact on pastoral leases. The company has established a process of stakeholder engagement and will continue to pro-actively manage this.
Other	• *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.*	• No material naturally occurring risks have been identified. • Early stage discussions have been established with potential clients for the project. Other than an exchange of sample material, no agreements have yet been formed. • There are no apparent impediments to obtaining all government approvals required for the Gabanintha Vanadium Project.

Criteria	JORC Code explanation	Commentary
	• *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	
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).*	• Probable Ore Reserves were determined from Indicated Resources as per the JORC (2012) guidelines. The Gabanintha Vanadium Deposit has no Measured Resource, therefore there are no Proved Ore Reserves. • Zero (0) % of Probable Ore Reserves have been based on Measured Mineral Resources. • Mr Karl van Olden, the Competent Person for this Ore Reserve estimation has reviewed the work undertaken to date and considers that it is sufficiently detailed and relevant to the deposit to allow those Ore Reserves derived from Indicated Mineral Resources to be classified as Probable.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• The PFS has been internally reviewed by Technology Metals and Wave. The Mineral Resource estimate, mine design, scheduling, and mining cost model has been reviewed by CSA Global. No material flaws have been identified and the Ore Reserve basis of estimate is considered appropriate for a PFS level of study. • No independent external audits or reviews have been completed on the current Gabanintha Vanadium project PFS.
Discussion of 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*	• This Ore Reserve estimate is supported by the Gabanintha Vanadium Project PFS completed in June 2018. • The Gabanintha Vanadium Project has an IRR and NPV which makes it robust in terms of cost variations. The Project is most sensitive to price variations for the V_2O_5 product. • • All estimates are based on local costs in Australia dollars. Standard industry practices have been used in the estimation process.

Criteria	JORC Code explanation	Commentary
	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.*	• Capital and operating expenditure estimates are considered to be within – 15% /+25% accuracy. • There has been no production at the project to date so no comprehensive comparison or reconciliation of data has been made.

APPENDIX 2 – Gabanintha Vanadium Project Pre-Feasibility Study - Executive Summary

Gabanintha Vanadium Project
Pre-Feasibility Study

GABANINTHA VANADIUM PROJECT PRE-FEASIBILITY STUDY

Project number	4693
Client	Gabanintha Vanadium Project
Title	Pre-Feasibility Study

DOCUMENT STATUS

Rev	Date	Description	By	Reviewed	Approved
A	3 June 2018	Compiled Issue	SBB		
B	10 June 2018	Draft Issue	NG	SBB	
C	14 June 2018	Type Copy Issue	CT	SBB	

EXECUTIVE SUMMARY

INTRODUCTION

Wave International was appointed by Technology Metals Australia Limited (TMT) to prepare a Pre-Feasibility Study (PFS) for the Northern Block of tenements of the 100% owned Gabanintha Vanadium Project (the Project). The PFS targets a production rate of 13 kt/a of V_2O_5 product over a 13-year process LOM. The Pre-Feasibility Study has been developed to a confidence level of -15% to +25%. The Project is located 40km south east of Meekatharra in the mid-west region of Western Australia. TMT has the aim of developing this project to supply high-quality V_2O_5 flake product to both the steel market and the emerging vanadium redox battery (VRB) market.

At this stage the PFS schedule is largely based on the Indicated Mineral Resource of 21.6 Mt @ 0.9% V_2O_5 which delivers a schedule of 19.2 Mt @ 0.9% V_2O_5 after considering cut-off grades, mine dilution, and mining recovery (and includes 13% Inferred Mineral Resource). A Probable Ore Reserve estimate of 16.7 Mt at 0.96% V_2O_5 has been defined from the Indicated Mineral Resource component included within designed open pits.

The life of mine at this stage has over 11 years of Probable Reserve plant feed with an additional 2+ years of Inferred Resource within the current pit designs.

The PFS indicates the financial viability of the project to be robust with a NPV (Post Tax) $848.8m, IRR (post tax) 43.2%, project payback after year 3.4 and forecast operational cost per pound US$4.27.

STUDY COMPOSITION

Wave International are the lead consultant for the PFS with considerable expertise contribution from Resource Development Partners (RDP – Process Engineering), CSA Global (Mining Industry Consultants), METS Engineering (Mineral Processing) and Integrate Sustainability (Environmental Heritage and Native Title Consultant). The areas of expertise contribution are further highlighted in Section 3 of this report.

OVERVIEW

The Global Mineral Resource estimate for the Project of 119.9 Mt at 0.8% V_2O_5 and 9.7% TiO_2 includes an outstanding high-grade component of 55.0 Mt at 1.1% V_2O_5 and 12.7% TiO_2 contained within the highly continuous and consistently mineralised massive magnetite zone, including 44.6Mt at 1.1% V_2O_5 and 12.7% TiO_2 in the Northern Block of tenements (the subject of the PFS) (see Table 0-1). The update of the Northern Block Resource in March 2018 delivered an Inferred and Indicated Mineral Resource of 98.4 Mt at 0.8% V_2O_5 and 9.7% TiO_2, a 57% increase on the previously reported Inferred Mineral Resource and included an Indicated Mineral Resource of 21.6 Mt at 0.9% V_2O_5 and 11.2% TiO_2.

- Northern Block mineral resource increased by 57% from 62.8 Mt at 0.8% V_2O_5 to 98.4 mt at 0.8% V_2O_5 including an indicated portion of 21.6 Mt at 0.9% V_2O_5;
- Combined Northern Block and Southern Tenement delivers the Global Mineral Resource for the Gabanintha Vanadium Project of 119.9 Mt at 0.8% V_2O_5;
- High grade resource of 44.6 Mt at 1.1% V_2O_5 in the Northern Block of tenements includes indicated portion of 14.5 Mt at 1.1% V_2O_5;
- Confirms position of Gabanintha Vanadium Project as one of the highest-grade vanadium deposits in the World; and
- Metallurgical testwork has confirmed that conventional salt roast/water leach processing is able to deliver a high purity vanadium pentoxide product.

Table 0-2 shows the Inferred Mineral Resource estimate for the Southern Tenement, not used for the purpose of this PFS, currently being 21.5Mt @ 0.9% V_2O_5. Conversion of a portion of this resource to Indicated category should further improve the proposed life of mine and commercial return.

The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals Australia Limited (TMT), is the owner of all tenements associated with the Project.

PFS SCOPE OF WORK

Wave International's study methodology included the development of process design, associated design criteria and documentation, plant 3D models, design reviews and calculations to support the generation of the Capital and Operating Cost Estimates (CAPEX and OPEX). CSA Global provided the information for the mining strategy, as well as the CAPEX and OPEX for the mining component of the project which were incorporated into the project operating and financial models.

METS delivered the metallurgical testwork results which RDP, and Wave utilised to collectively produce Process Flow Diagrams, Process Design Criteria and Mass Balance conclusions. Mechanical equipment was sized, and pricing quotations were obtained. The equipment and non-process infrastructure was laid out in a site 3D model to estimate quantities for earthworks, structural steel, platework, and concrete. The piping, electrical and instrumentation bulk quantities were factored.

Preliminary investigations into alternative energy types and post comparative analysis was performed to ascertain the best suited energy options for the site.

The project CAPEX and OPEX were developed together with a comprehensive financial model to predict the ultimate project value and its sensitivity to the key variables.

LOCATION AND EXISTING INFRASTRUCTURE

The Gabanintha Vanadium Project is located 40km south east of Meekatharra in the mid-west region of Western Australia. A suitable airfield for Fly-in-fly-out (FIFO) labour out of Perth Western Australia is located at Meekatharra. There is no power, or railway available within a feasible distance for use by the project at this stage of investigation. Although there is no gas pipeline within close proximity to the site the viability of NG gas supply requires further investigation. Intermittent mobile network coverage is available on site, this will be complimented with a communication provider mobile booster station.

GEOLOGY AND MINERALISATION

Mineral Resource

On 7 March 2018, Technology Metals announced an upgraded Mineral Resource for the Gabanintha Vanadium Project. The Mineral Resource was estimated by Mr Aaron Meakin of CSA Global in accordance with JORC (2012) Guidelines.

Technology Metals previously reported maiden Mineral Resources for the Gabanintha Project in June 2017. Exploration drilling from June 2017 to February 2018 focused on improving the confidence of a portion of the Northern Block deposit to an Indicated Mineral Resource classification.

Details of the Mineral Resource estimates, including JORC Table 1 Sections 1, 2 and 3, can be found in the Technology Metals' ASX announcement of 7 March 2018.

Table 0-1 shows the Mineral Resource estimate for the Northern Block and Table 0-2 shows the Mineral Resource estimate for the Southern Tenement. This PFS focuses on the Northern Block due to the location of the higher confidence Indicated Mineral Resources.

Table 0-1: Mineral Resource estimate Gabanintha Vanadium Project Northern Block (7 March 2018)

Classification	Mineralisation type	Million tonnes	V_2O_5 %
Indicated	Massive magnetite	14.5	1.1
	Disseminated magnetite	7.1	0.6
	Subtotal	**21.6**	**0.9**
Inferred	Massive magnetite	30.1	1.1
	Disseminated magnetite	46.6	0.5
	Subtotal	**76.8**	**0.8**
TOTAL INDICATED AND INFERRED		**98.4**	**0.8**

Note: The Mineral Resource was estimated within constraining wireframe solids using a nominal 0.9% V_2O_5 lower cut-off for the basal massive magnetite zone and using a nominal 0.4% V_2O_5 lower cut-off for the banded and disseminated mineralisation zones. The Mineral Resource is quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% V_2O_5. Differences may occur due to rounding.

Table 0-2: Mineral Resource estimate Gabanintha Vanadium Project Southern Tenement (7 March 2018)

Classification	Mineralisation type	Million tonnes	V_2O_5 %
Inferred	Massive magnetite	10.4	1.1
	Disseminated magnetite	11.1	0.6
TOTAL INFERRED		**21.5**	**0.9**

Note: The Mineral Resource was estimated within constraining wireframe solids using a nominal 0.9% V_2O_5 lower cut-off for the basal massive magnetite zone and using a nominal 0.4% V_2O_5 lower cut-off for the banded and disseminated mineralisation zones. The Mineral Resource is quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% V_2O_5. Differences may occur due to rounding.

METALLURGICAL TESTWORK

Initial RC sample work undertaken in Q3 2017 established that the vanadium does concentrate through LIMS that the base of oxidation is variable and, that some near surface material (<30 m depth) displays minimal oxidation. Table 0-3 shows a summary of the LIMS work undertaken on the initial RC composites. The fresh zone recovered >90% of the vanadium present into approximately 73% of the mass.

Table 0-3:LIMS work undertaken on the initial RC compositesSiO_2

Composite	Mass Rec (%)	V_2O_5		Fe		TiO_2		SiO_2		Al_2O_3		LOI 1000 (%)
		%	Rec (%)	%	Rec (%)	%	Rec (%)	%	%Rec (%)	%	Rec (%)	
Fresh	72.8	1.36	92.2	56.7	86.7	3.18	81	1.15	10.4	2.55	34.7	-1.94
	72.8	1.36	92.38	56.2	86.5	14	81.82	0.92	8.66	2.56	35.17	-2.03
Transitional	50.9	1.49	73.64	53.6	69.08	14.75	66.52	2	6.15	3.13	22.97	-0.25
Oxide A	69	1.37	88.14	56	81.12	13.2	72.01	0.87	8.73	3.22	36.87	-2.32
Oxide B	5.4	1.46	6.23	52.6	6.06	16.05	5.82	1.08	0.94	3.24	2.53	1.67

Once the ability to use magnetic separation to concentrate the vanadium was confirmed additional work was undertaken utilizing diamond core sample.

A total of six half meter sections of HQ diamond core were provided for comminution and physical testwork. These sections had their In-situ density measured and were tested for their Uniaxial Compressive Strength (UCS). Samples were selected for Bond Impact Crushing Work Index (CWi) testing based on mineralogical origin. Samples were selected from the CWi products as well as products from the UCS for SAG Mill Comminution (SMC) testing. Once composites were made up for metallurgical testwork the Bond Ball Mill Work Index (BBWi) was tested. The physical and comminution data is displayed in Table 0-4

Table 0-4: Physical and Comminution Data

Comminution Test		Massive	Disseminated
In-Situ Density		4.48±0.06	3.14±0.11
Uniaxial Compressive Strength		69.6±20.5	113.2±33.3
Bond Impact Crushing Work Index		4.9±2.5	15.5±8.4
SAG Mill Comminution	A	65	62.5
	B	2.32	0.58
	Ta	0.89	0.31
	DWI	2.92	8.54
Bond Ball Mill Work Index	Fresh	20.2	22.1
	Transition	21.1	18.8
	Oxide	18.4	9

Once the composites were made up the grind sensitivity of the material was tested with respect to vanadium recovery and grade of magnetic concentrate. Composites 1 and 2 (Massive Fresh and Massive Transitional respectively) are the critical results for the PFS, as the Basal Massive Magnetite unit is being considered as the primary feed for the study with a LOM average of 85% Fresh (Composite 1) and 15% Transition (Composite 2). The results of this testwork are detailed in Table 0-5. Composites 3-6 (Massive Oxide and Disseminated Fresh, Transitional and Oxide respectively) were tested with the results shown in Table 9-12.

Table 0-5:Vanadium recovery and grade of magnetic concentrate

Composite	Nominal P_{80}	Mass Rec (%)	V_2O_5		Fe		TiO_2		SiO_2		Al_2O_3		LOI 1000 (%)
			%	Rec (%)	%	Rec (%)	%	Rec (%)	%	%Rec (%)	%	Rec (%)	
Composite 1	P_{80} 250	86.7	1.32	97.4	57.7	95.4	14	89.1	0.53	14	2.75	50.5	-2.75
	P_{80} 106	85.4	1.3	96.8	57.4	94.5	13.8	87.9	0.55	13.6	2.75	49.2	-2.73
	P_{80} 45	85.6	1.3	97.8	57.9	95.4	13.7	87.2	0.46	11	2.55	45.9	-3
Composite 2	P_{80} 250	67.4	1.32	75.8	55.6	73.5	14.3	69.1	0.65	17.8	2.5	43.1	0.29
	P_{80} 106	68.4	1.34	77	56	69.2	14.1	64.3	0.47	11.9	2.3	36.3	-0.1
	P_{80} 45	64.2	1.36	73.1	55.1	72.6	14.4	69.1	0.82	21.7	2.73	46.4	0.42

Mineralogical analysis of the products produced through LIMS at P_{80} 106 µm indicates that recovery of the Fe-Ti oxides containing vanadium is exceptional through the LIMS with 99.7% recovered to the magnetic fraction. The mineralogical analysis also indicates that both the concentrate grade is unlikely to be able to be increased significantly and that gangue rejection likely can't be improved. There would be an opportunity to recover Ni-Co-Cu sulfides present that report to the non-magnetic fraction in the LIMS, flotation will likely yield high recoveries of these sulfides however, the economics of this are unknown at this stage.

The majority of the salt roast and water leaching work was done on an 85/15 blend of magnetic concentrates from Composite 1/Composite 2. At optimal sodium carbonate dosage, the gangue constituents of the massive zone being silica, alumina and chromium, do not appear to be significantly reactive.

Desilication and Ammonium Metavanadate (AMV) precipitation testing was undertaken simultaneously with roast and leach optimization due to the pressing timeline. The most significant results from this testing were from test HY6265; desilication removed 82.9% of the aluminium, 68.7% of the silicon with vanadium losses of 5%. With further testing this can be refined, and vanadium losses lowered even further.

When this desilicated solution was taken to AMV precipitation it yielded a precipitation efficiency of 99.15% for vanadium, but also precipitated 67.8% of the aluminium and 89% of magnesium in solution. This isn't a large issue as aluminium and magnesium have low solution tenors; 20 mg/L for both in this desilicated leach liquor. The AMV produced is of a 99.4% purity based on the sum of impurities on an oxide basis. Impurities were considered to be at the Limit of Detection (LOD) if they were below the LOD. This AMV was taken and calcined to V_2O_5.

The calcined V_2O_5 assays at 99.02% on a sum of impurities basis, with further work and process refinement this will be able to be improved. This definitively shows the viability of the traditional salt roast process to produce high purity AMV or V_2O_5 from Technology Metals Gabanintha deposit.

DESIGN BASIS

The plant basis of design was developed using the metallurgical testwork results and standard industry assumptions for retention times and stockpile capacities made by competent engineers to align with the plant operating philosophy. Process engineers involved with this area of design have experience in vanadium processing operations. The compilation of the process and processing variables can be referred in appendix E Process Design Criteria (PDC). The PDC and process description refer section 10.2, where the basis of material and equipment selection and sizing.

MINING AND MINE DESIGN

CSA Global during the PFS study duration completed the mining engineering study suitable for inclusion in the PFS.

The mining study undertaken is to a confidence level of ± 25%, refer appendix D for the full report. The detailed mine designs include confirmatory pit optimisation using project parameters as agreed with Technology Metals, Wave and associated PFS consultants. The mining study includes: detailed pit designs; interim stage designs; waste dump designs; and, run of mine (ROM) pad design and other mining related facilities.

Production schedules have been developed to provide physicals and input to cost and financial models.

Mining cost estimates have been based on the production schedule and estimated contractor mining rates drawn from recent and comparable projects within CSA Global's cost database

PIT OPTIMISATION

Pit optimisation software has been used to generate a series of economic pit shells for each deposit. Physical (Geotech slope), and cost model assumptions form the basis of the pit optimisation exercise.

The outcome of the schedule is a series of pitshells to analyse. Selection of the optimum shell follows. The following figure represents the shell outcomes. Pit shell 22 forms the boundary of the North and Main pit designs.

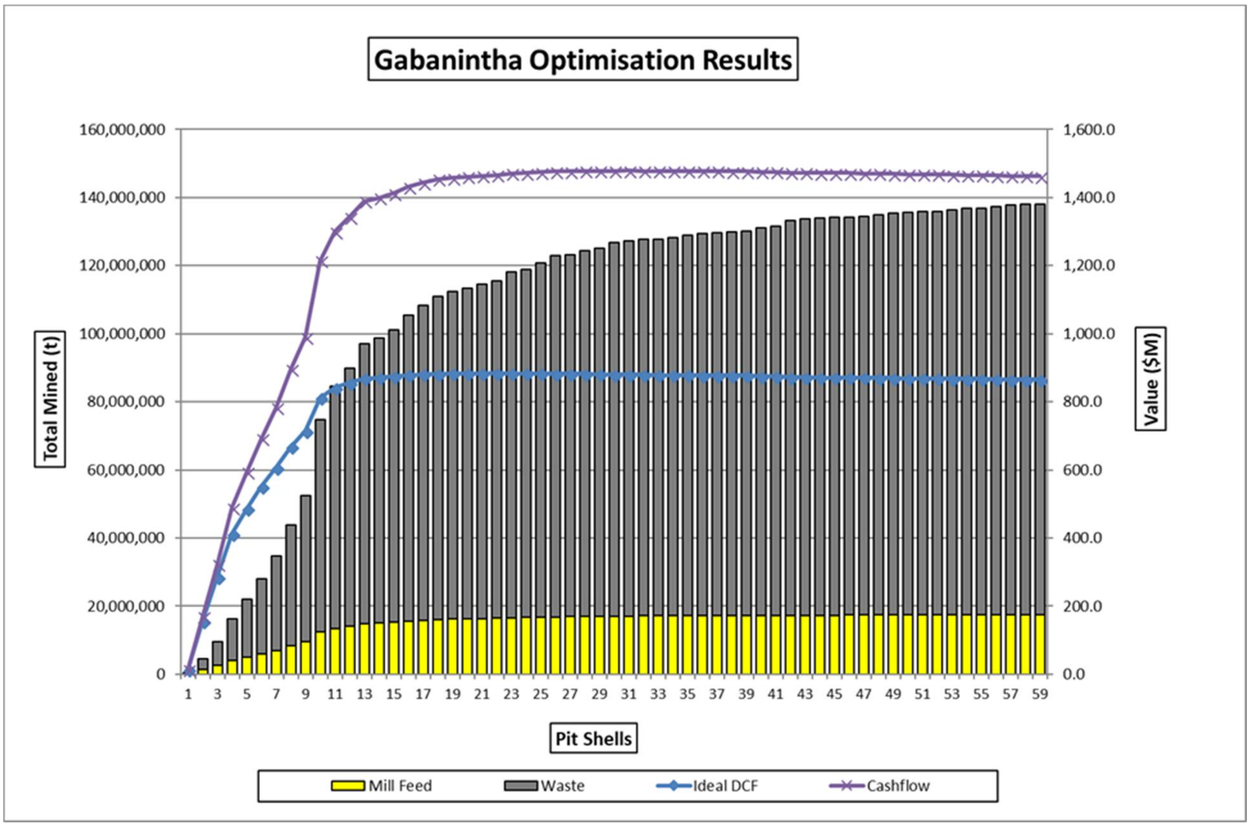


Figure 0-1 Gabanintha Optimisation Results

Detailed pit designs have been prepared based on the results of the optimisation and incorporating appropriate wall angles, geotechnical berms, minimum mining widths, and access ramps suitable for the selected equipment. A starter pit and a cutback to the final pit limits have been designed for the North Pit and two-staged designs to the final pit limits have been designed for the Main Pit.

The final North pit design shown as 2 stages is as follows (Figure 0-2).

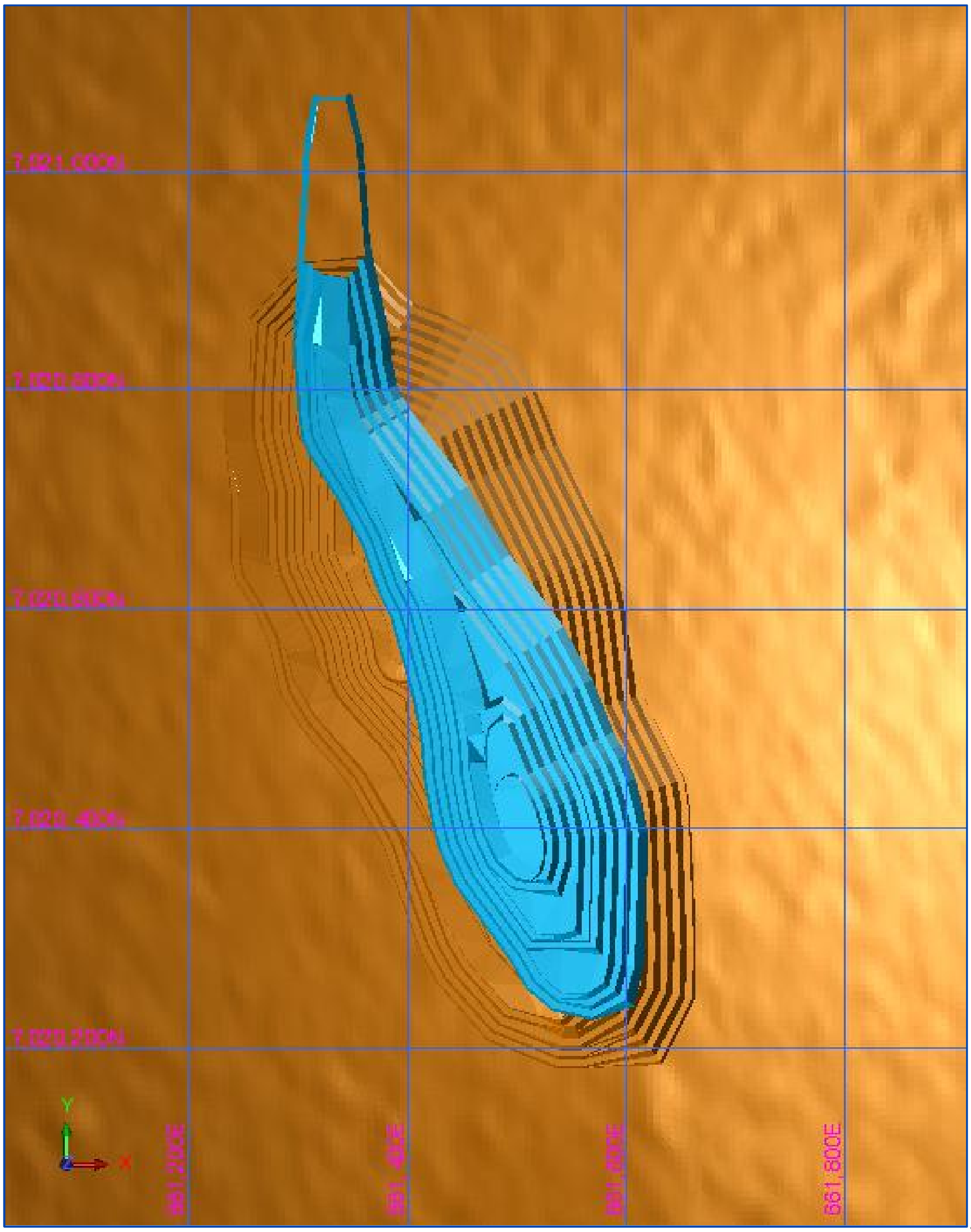


Figure 0-2: Final North Pit Design

The Main pit and 3 stages of the design are shown as follows (Figure 0-3):

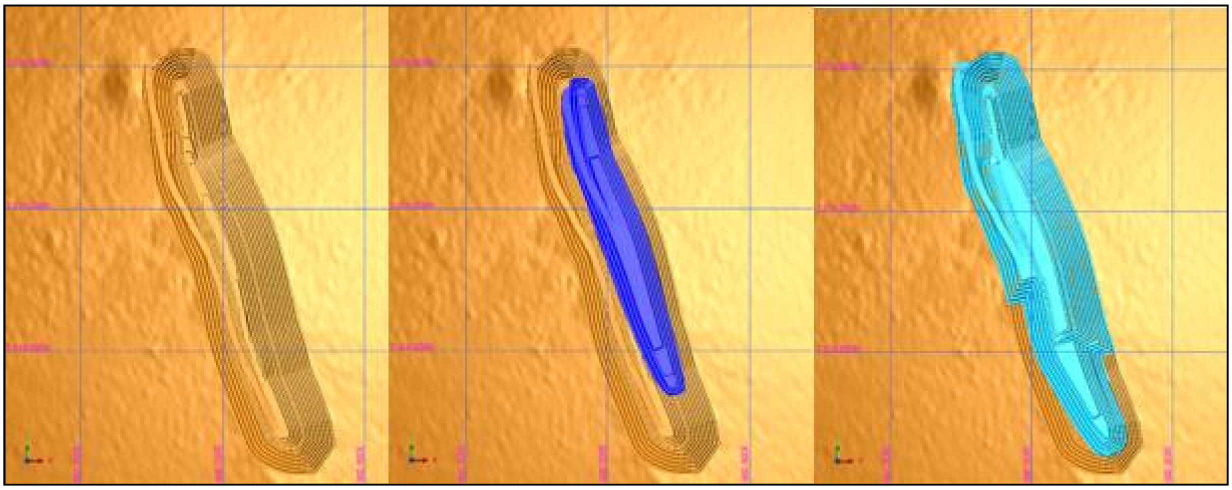


Figure 0-3: Main Pit and 3 Stages of the Design

Detail of the pit inventories of the North Pit and Main Pit are shown as follows in the following tables.

Table 0-6: North Pit Inventory

Material type	Indicated		Inferred		TOTAL	
	kt	Grade % V_2O_5	kt	Grade % V_2O_5	kt	Grade % V_2O_5
Banded/Disseminated transitional and oxide	540	0.73	42	0.73	581	0.73
Banded/Disseminated fresh	741	0.62	652	0.62	1,393	0.62
Massive magnetite Oxide	-	-	52	0.85	52	0.85
Massive magnetite transitional	651	0.85	41	0.95	692	0.94
Massive magnetite fresh	3,805	0.94	142	0.95	3,947	0.94
Total ROM feed (inc. mine recovery and dilution)	**5,737**	**0.87**	**929**	**0.70**	**6,666**	**0.84**
Waste	-	-	-	-	31,485	-

Note: Differences may occur due to rounding.

Table 0-7: Main IT Inventory

Material type	Indicated		Inferred		Total	
	kt	Grade % V_2O_5	kt	Grade % V_2O_5	kt	Grade % V_2O_5
Banded/Disseminated transitional and oxide	80	0.66	9	0.65	88	0.66
Banded/Disseminated fresh	919	0.62	133	0.60	1,052	0.62
Massive magnetite oxide	-	-	1,121	1.08	1,121	1.08
Massive magnetite transitional	2,297	1.07	172	1.06	2,469	1.05
Massive magnetite fresh	7,690	1.05	141	1.06	7,830	1.05
Total ROM feed (inc. mine recovery and dilution)	**10,986**	**1.02**	**1,575**	**1.03**	**12,561**	**1.02**
Waste	-	-	-	-	75,125	-

Note: Differences may occur due to rounding.

Waste dumps have been designed based on the estimated waste total volumes with a swell factor of between 15% to 25%. The dump designs have been incorporated in the site layout and accounts for nominated tramming distance.

Table 0-8: Combined Pit Production Schedule

Year	Mining						Processing				Stockpile balance			
	ROM tonnage		Waste (kt)	Total (kt)	Volume ('000 bcm)	Stripping ratio (W:0 t:t)	Feed			V_2O_5 product (kt)	Massive magnetite		Banded/Disseminated	
	kt	% V_2O_5					kt	% V_2O_5	% Inferred		kt	% V_2O_5	kt	% V_2O_5
1	878	1.09	3,502	4,380	2,156	4.0	458	1.09	71%	3,002	420	1.09	-	0.00
2	2,111	1.03	5,919	8,030	3,295	2.8	1,938	1.05	24%	12,755	465	1.05	128	0.73
3	2,335	0.89	18,893	21,228	9,562	8.1	1,943	0.98	16%	12,746	212	0.98	774	0.70
4	1,557	1.02	19,613	21,170	8,679	12.6	1,617	1.04	15%	11,680	31	1.04	895	0.69
5	1,756	1.03	10,289	12,045	3,928	5.9	1,617	1.05	1%	12,928	107	1.05	958	0.68
6	1,672	1.02	10,373	12,045	3,929	6.2	1,617	1.05	5%	13,018	79	1.05	1,041	0.68
7	2,393	0.97	9,685	12,078	3,785	4.0	1,622	1.05	2%	13,135	417	1.05	1,475	0.66
8	1,804	0.96	10,241	12,045	4,313	5.7	1,617	1.04	3%	13,030	239	1.04	1,839	0.65
9	2,163	0.84	14,262	16,425	5,384	6.6	1,617	0.94	7%	11,739	203	0.94	2,421	0.64
10	2,557	0.87	3,947	6,504	1,938	1.5	1,617	0.96	2%	11,992	449	0.96	3,115	0.64
11	-	-	0	0	0		1,622	0.73	20%	6,711	-	-	1,942	0.64
12	-	-	0	0	0		1,617	0.64	27%	5,068	-	-	325	0.64
13	-	-	0	0	0		325	0.64	27%	1,017	-	-	-	0.00
Total	**19,227**	**0.96**	**106,723**	**125,950**	**46,971**	**5.6**	**19,227**	**0.96**	**13%**	**128,821**				

The production schedule combined both pits to maximise the outcome. The production schedule is designed to produce about 13,000 tpa of V_2O_5 product. The total project life, allowing for stockpile depletion is 13 years. Inferred material was included in the schedule.

The following production schedule tables represent the north pit and main pits contribution to the total and are reported by stage.

Table 0-9: North Pit Schedule by Pit Stages

Year	North Pit								
	Waste			ROM			Total mining		
	Stage 1 (kt)	Stage 2 (kt)	Total (kt)	Stage 1 (kt)	Stage 2 (kt)	Total (kt)	Stage 1 (kt)	Stage 2 (kt)	Total North Pit (kt)
1	-	-	-	-	-	-	-	-	-
2	1,365	-	1,365	315	-	315	1,680	-	1,680
3	5,215	-	5,215	1,688	-	1,688	6,903	-	6,903
4	466	-	466	264	-	264	730	-	730
5	73	-	73	59	-	59	132	-	132
6	84	-	84	117	-	117	201	-	201
7	47	-	47	91	-	91	139	-	139
8	34	6,719	6,753	73	63	136	107	6,781	6,889
9	17	13,630	13,646	54	1,385	1,439	71	15,015	15,086
10	-	3,947	3,947	-	2,557	2,557	-	6,504	6,504
11	-	-	-	-	-	-	-	-	-
Total	**7,302**	**24,295**	**31,597**	**2,661**	**4,005**	**6,666**	**9,963**	**28,300**	**38,263**

Table 0-10: Main Pit Schedule by Pit Stages

Year	Main Pit											
	Waste				ROM				Total mining			
	Stage 1 (kt)	Stage 2 (kt)	Stage 3 (kt)	Total (kt)	Stage 1 (kt)	Stage 2 (kt)	Stage 3 (kt)	Total (kt)	Stage 1 (kt)	Stage 2 (kt)	Stage 3 (kt)	Total Main Pit (kt)
1	3,502	-	-	3,502	878	-	-	878	4,380	-	-	4,380
2	4,554	-	-	4,554	1,796	-	-	1,796	6,350	-	-	6,350
3	667	13,010	-	13,677	384	263	-	647	1,052	13,273	-	14,324
4	-	13,403	5,744	19,146	-	1,197	96	1,294	-	14,600	5,840	20,440
5	-	9,698	518	10,216	-	1,698	-	1,698	-	11,395	518	11,913
6	-	5,064	5,224	10,289	-	1,411	144	1,555	-	6,475	5,369	11,844
7	-	2,490	7,147	9,638	-	1,067	1,234	2,302	-	3,558	8,382	11,939
8	-	-	3,488	3,488	-	-	1,668	1,668	-	-	5,156	5,156
9	-	-	616	616	-	-	724	724	-	-	1,339	1,339
10	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
Total	**8,723**	**43,666**	**22,737**	**75,126**	**3,058**	**5,636**	**3,867**	**12,561**	**11,781**	**49,302**	**26,604**	**87,687**

ORE RESERVE ESTIMATE

CSA Global has provided an Ore Reserve estimate based on the results of investigations and studies completed for the Gabanintha Vanadium Deposit, including results, data and material assumptions from this PFS. The Ore Reserve estimate was based on the Indicated Mineral Resource portion of the Mineral Resource Estimate reported for the Northern Block of tenements as at 5 March 2018. The Ore Reserve statement was prepared by a Competent Person in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code (2012 Edition)).

The Probable Ore Reserve estimate (as shown in Table 0-11) is 16.7 Mt at 0.96% V_2O_5, which represents a +77% tonnage conversion from the Indicated Mineral Resource of 21.6 Mt at 0.9% V_2O_5. The modifying factors used to estimate the Gabanintha Ore Reserve are informed and bound by the findings of this PFS. The estimate allows for mining recovery of 95% and mining dilution of 10% at 0.0% V_2O_5.

Table 0-11: Gabanintha Project Ore Reserve Estimate May 2018

Reserve Category	Tonnes (Mt)	Grade V_2O_5%	Contained V_2O_5 Tonnes (Mt)
Proven	-	-	-
Probable	16.7	0.96	0.16
Total	**16.7**	**0.96**	**0.16**

- *Includes allowance for mining recovery (95%) and mining dilution (10% at 0.0 %V_2O_5)*
- *Rounding errors may occur*

The information that relates to Ore Reserves is based on information compiled by Mr Daniel Grosso and reviewed by Mr Karl van Olden, both employees of CSA Global Pty Ltd. Mr van Olden takes overall responsibility for the Report as Competent Person. Mr van Olden is a Fellow of The Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Person in terms of the JORC (2012 Edition). The Competent Person, Karl van Olden has reviewed the Ore Reserve statement and given permission for the publication of this information in the form and context within which it appears.

Conclusions

The following conclusions are drawn from this study:

- Pit optimisations reached a depth of the currently identified Indicated Mineral Resource, indicating that further depth extensions of the deposits could be economically recoverable by open pit mining;
- Pits have been designed based on the optimisation results and the preliminary pit slope angles recommended by MineGeoTech. The North Pit has been designed with a starter pit and one cutback to the final pit limits. The Main Pit has a starter pit with two cutbacks to reach the final pit limits;
- All pit and infrastructure designs are within the current lease boundaries;
- Pit inventories total 6.7 Mt at 0.84% V_2O_5 ROM feed and 31.4 Mt waste at a strip ratio of 4.7 for the North Pit and 12.6 Mt at 1.02% V_2O_5 ROM feed and 75.1 Mt waste at a strip ratio of 6.0 for the Main Pit;
- A Probable Ore Reserve estimate of 16.7 Mt at 0.96% V_2O_5 has been defined from the Indicated Mineral Resource component included within the designed open pits, and
- A production schedule based on Probable Ore Reserves with 13% Inferred Mineral Resources has been developed to maintain a variable ROM throughput of 1.6–1.9 Mt/a for a Project life of approximately 13 years, inclusive of production ramp-up and ramp-down.

PROCESSING AND PROCESS

The development of the project mass balance and process flow diagrams (PFD), were obtained through the Metallurgical test results. This forms the basis of design for the Processing Circuit for the project and has been divided into the following main sections:

1. **Crushing, Screening and Dry Magnetic Separation Circuit** – The objective of this circuit is to crush the Run of Mine ore down to an 80% passing size of 8mm, followed by Coarse Dry Magnetic Separation to remove coarsely liberated gangue from the Vanadium bearing magnetite.
2. **Wet Magnetic Separation Circuit** – The objective of this circuit is to grind the -8mm Dry Magnetic Separation Concentrate down to an 80% passing size of 0.25mm, followed by Wet Magnetic Separation to remove finely liberated gangue from the Vanadium bearing magnetite.
3. **Roasting Circuit** – The objective of this circuit is mix the magnetic concentrate with a sodium-based salt and roast the material to convert the Vanadium Pentoxide in the ore to water soluble Sodium Metavanadate.
4. **Leaching and Precipitation Circuit** – The objective of this circuit is to leach the Sodium Metavanadate out of the roasted product with water followed by re-precipitation of the Vanadium in the form of Ammonium Metavanadate.
5. **De-ammoniation and Calcination Circuit** – The objective of this circuit is to remove the Ammonia from the precipitated product to form a Vanadium Pentoxide powder. This powder is further melted and cooled down to produce a final Vanadium Pentoxide flake product.
6. **Pack and Handling** – The final processing stage to package the saleable product to meet the requirements for offtake.

The process circuit has been designed to handle circa 1.6 to 1.9Mtpa of ROM feed ore through the crushing circuit to produce 13,000 tpa of final V_2O_5 product.

PROJECT SERVICES AND INFRASTRUCTURE

To operate the Gabanintha Vanadium Plant will require various services and infrastructure. These services include infrastructure, including roads, an accommodation village, workshops, laboratory, gatehouse, fuel supplies and stores.

Site access roads due to the close proximity to the Meekatharra Sandstone road are approximately 3.3km from the adjoining access and the major haul roads 3.4km.

The project requires a fuel supply solution to provide:

- Electricity for the Process plant, mining and camp facilities (Power Station Load) (950 Terajoule (TJ); and
- Heating for the Kiln, Furnace and Flash Heater (Heat Load) (1963 TJ).

The respective supply options are:

- Power Load Demand – Gas and/or Diesel; and
- Heat Load Demand – Gas or Heavy Fuel Oil.

Gas supply alternatives includes trucked Liquid Natural Gas (LNG,) trucked Compressed Natural Gas (CNG) and pipeline delivered natural gas.

Site based Office and accommodation facilities have been priced on new transportable modular units.

TAILINGS MANAGEMENT

The PFS has included the construction of tailings storage facilities, waste product storage facilities and an evaporation pond. Dry non-magnetic separated tailings and wet non-magnetic separated tailings will report to the Tailings Storage Facility (TSF) approximately 20ha in area, calcine waste product will report to the calcine waste product HDPE lined storage facility approximately 30ha in area. The lined evaporation pond is approximately 50ha in area and comprises a series of ponds and is constructed of compacted earth walls with an HDPE liner.

PROJECT IMPLEMENTATION

The PFS definitions of Scope, Cost and Schedule have been established on the presumption that the Project will be implemented utilising the Engineering, Procurement and Construction Management (EPCM) Execution model. The actual methodology used to implement the project will change the responsibilities and risk association to the project, however ultimately the same steps of design, procure, construct / install & commission will occur.

The project will path through a definitive feasibility study (DFS) to identify the most fit for purpose implementation strategy, whilst also identifying unknowns in the process and different project execution options. Planned drilling for July 2018 will commence delivering the required core sample quantities required to perform planned Process metallurgical, geotechnical, equipment trial, and sample offtake testwork. Focus on obtaining approvals and procurement of long lead items, maintain being critical schedule items and will require to be procured in parallel with the final detailed design. Associated risks with this will be managed carefully using a structured format that commenced with the development of the PFS risk register.

Site and Plant construction activities are expected to be a mixture of EPCM or EPC and Design & Construct (D&C) to mitigate the financial risks to TMT.

PROJECT SCHEDULE

The schedule is a class 3 estimate, indicating only a rudimentary analysis of the key items affecting the end date. Following the decision to proceed with the DFS, production should begin in 2.5 years. The critical path includes the feasibility study and testwork, the procurement of long lead items and construction on site. The long lead procurement items of note on the schedule are the gas line, kiln and cooling plant.

Two project schedule scenarios exist for the development of the Gabanintha project; the reason for the two schedules are the two possible approvals processes which will determine the final project path. The determination for the approvals process will be known by the third quarter 2018. For the purpose of the PFS it is envisaged that the remaining studies will be completed by the end of the first quarter of 2019 and detailed design and construction will occur during 2019 and 2020 respectively and ramp-up for production will commence at the start of the first or third quarter of 2021 approvals dependant.

The base financial model is established on the full EIA schedule route shown in Figure 0-4.

Activity ID	Activity Name	Original Duration	Start	Finish
	Gabanintha Vanadium Project PFS - Formal EIA Process	1071	27-Mar-18	02-Jul-22
	Milestones	896	27-Mar-18	30-Oct-21
	DFS Setup	30	20-Jun-18	31-Jul-18
	Finance	413	14-Jun-18	18-Feb-20
	Marketing	241	06-Nov-18	30-Oct-19
	EIA Approvals Process	493	27-Mar-18	27-Mar-20
	Mining Lease	246	27-Mar-18	27-Mar-19
	EP Act - s38	65	01-Jun-18	31-Aug-18
	EP Act - EIA	364	03-Sep-18	28-Feb-20
	EP Act - Works Approval	185	31-May-19	28-Feb-20
	Mining Act - Mining Proposal & Mine Closure Plan	184	01-Jul-19	27-Mar-20
	RIWI Act - 5C Licence	207	01-May-19	28-Feb-20
	Drilling & Test Programme	77	16-Jul-18	31-Oct-18
	Mining	30	17-Oct-18	27-Nov-18
	Process	185	13-Aug-18	17-May-19
	Detailed Feasibility Study (DFS)	191	01-Aug-18	15-May-19
	Final Investment Decision (FID)	21	16-May-19	14-Jun-19
	Detailed Engineering & Design	261	05-Nov-19	24-Nov-20
	Procurement	567	06-Jul-19	22-Jan-21
	Contracts	298	02-Sep-19	12-Nov-20
	Major Infrastructure	348	05-Dec-19	05-May-21
	Construction	355	29-Feb-20	28-Jul-21
	Commissioning	152	06-May-21	30-Oct-21
	Operations Ramp up	245	30-Oct-21	02-Jul-22

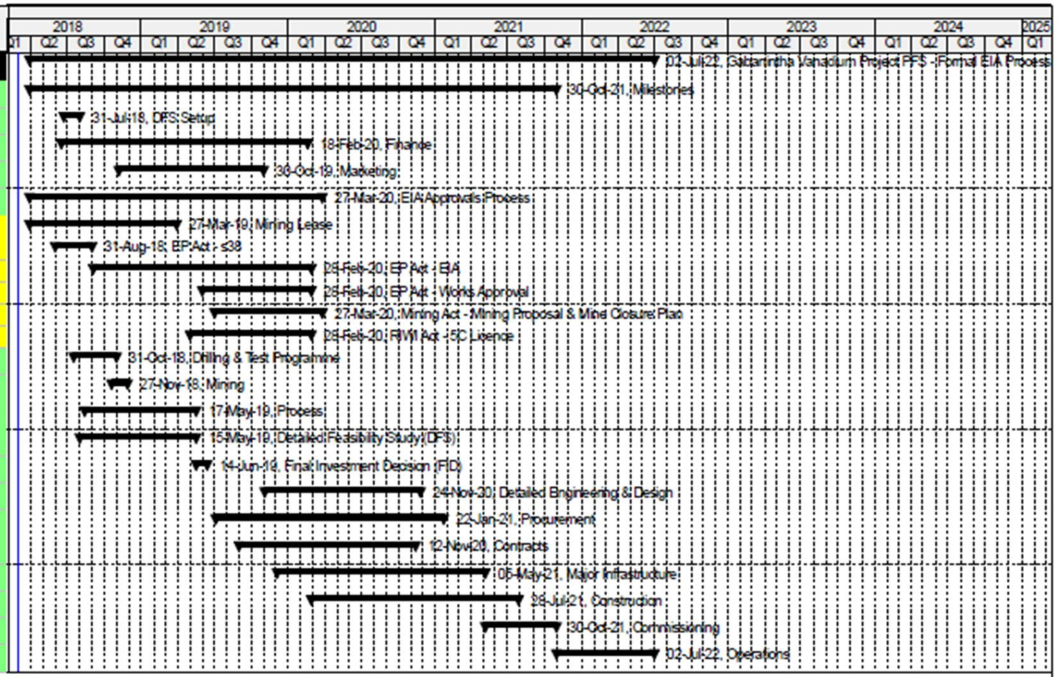


Figure 0-4: Project Implementation Schedule - Formal EIA Approval

Activity ID	Activity Name	Original Duration	Start	Finish
	Gabanintha Vanadium Project PFS - Approvals Process	871	27-Mar-18	25-Sep-21
	Milestones	697	27-Mar-18	23-Jan-21
	DFS Setup	30	20-Jun-18	31-Jul-18
	Finance	230	14-Jun-18	22-May-19
	Marketing	151	27-Jun-18	07-Feb-19
	Aprovals Process	290	27-Mar-18	31-May-19
	Mining Lease	246	27-Mar-18	27-Mar-19
	EP Act - s38	65	01-Jun-18	31-Aug-18
	EP Act - Native Vegetation Clearing Permit	183	02-Jul-18	29-Mar-19
	EP Act - Works Approval	180	03-Sep-18	31-May-19
	Mining Act - Mining Proposal & Mine Closure Plan	138	03-Sep-18	29-Mar-19
	RIWI Act - 5C Licence	203	01-Aug-18	31-May-19
	Drilling & Test Programme	77	16-Jul-18	31-Oct-18
	Mining	30	17-Oct-18	27-Nov-18
	Process	185	13-Aug-18	17-May-19
	Detailed Feasibility Study (DFS)	191	01-Aug-18	15-May-19
	Final Investment Decision (FID)	21	16-May-19	14-Jun-19
	Detailed Engineering & Design	264	12-Feb-19	09-Mar-20
	Procurement	425	29-Jun-19	26-Aug-20
	Contracts	298	26-Nov-18	19-Feb-20
	Major Infrastructure	370	19-Jul-19	19-Jan-21
	Construction	343	01-Jun-19	17-Oct-20
	Commissioning	152	30-Jul-20	22-Jan-21
	Operations Ramp up	245	23-Jan-21	25-Sep-21

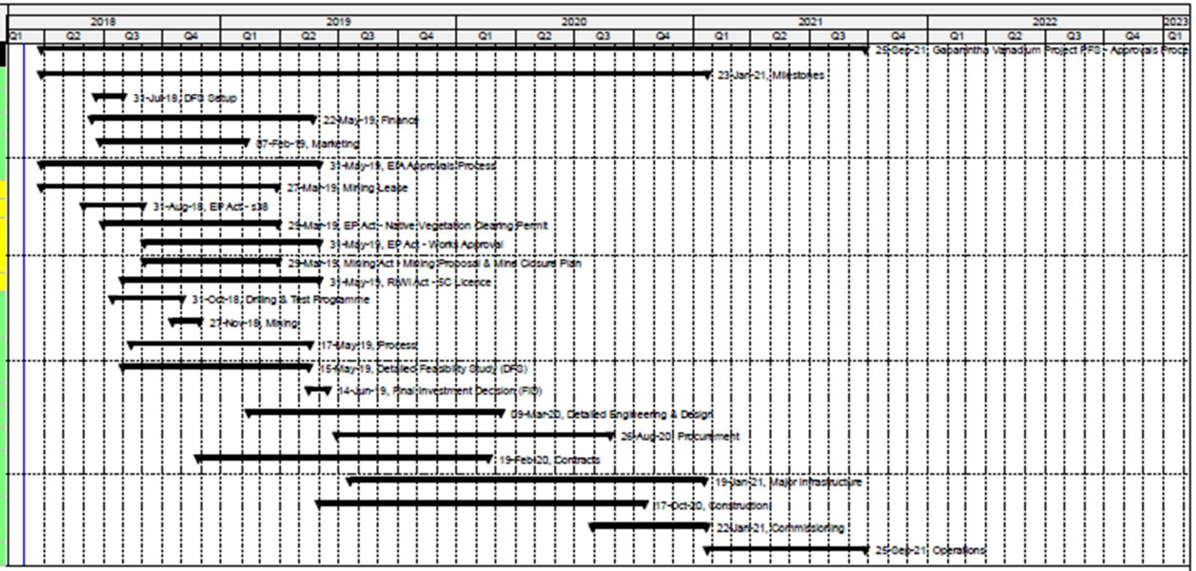


Figure 0-5: Project Implementation Schedule – Approvals Process

CAPITAL COST ESTIMATE

The Capital Cost Estimate for the Project can be summarised in the key aspects below:

Table 0-12: Capital Cost Estimate

Capital Cost	Total Cost (AUD Million)
Direct Costs	242.8
Indirect Costs	72
Subtotal	314.8
Contingency	59.8
Mining CAPEX	4.8
Total Expected Cost	379.4

The Total Capital Cost, Base Cost plus Contingency Provision, represents the Expected Cost for the project. This estimate has an accuracy range of approximately -15% to +25% based on the accuracy levels as defined by the AACE Cost Estimation Classification System (As Applied for the Mining and Mineral Processing Industries).

At the upper limit of the accuracy range, there is an 80% confidence level of completion within cost. Most of the budget quotations for mechanical equipment were provided in Australian dollars. Exchange rates, relevant at the time of the study, used for major equipment sourced overseas was **1 AUD = 0.75 USD.**

The first 12 months setup Mining CAPEX has been included with an accuracy of +-25%. All other mining capital costs required in later project years have been applied to the financial model in operating costs.

OPERATING COST ESTIMATE

The PFS operating cost estimate (OPEX) was developed as a "bottom-up" estimate over a 13-year mine life to obtain average operating costs. All significant and measurable items are itemised. Mining operating costs are included as the PFS base case provided by CSA.

The OPEX was generated utilising information provided in the mass balance, direct process engineering input for heat loading and reagent usage, mining operating costs and the equipment maintenance aligned with the CAPEX equipment.

The Operating Cost Estimate base case for the Project can be summarised by the key aspects below:

Table 0-13: Operating Cost Estimate (average over 13 year production period)

Operating Costs	Total Cost (AUD Million)	Total %
Mining	38.2	31
Labour - Admin and Management	2.7	2
Labour - Processing	14.8	12
Flights, Messing and Accommodation	5.9	5
Reagents	16.4	13
Energy Utilities	27.2	22
Utilities - Water	0.17	0
Road Maintenance	3.0	2
Tailings Management	4.05	3
Equipment Hire	2,5	2
Equipment Maintenance	5.55	4
Contract/General Expenses	3.07	2
Packaging and Handling	0.85	1
TOTAL Average Operating Costs	**$124.5M**	**100**

The project operating cost based on product value was calculated at US$4.27lb. This cost is inclusive of mining, processing, package handling and transport to a nominal port in China.

FINANCIAL EVALUATION

The Gabanintha Project delivers an attractive financial return with strong revenue delivering a short pay back (EBITDA) period and IRR of 43.2% post tax. The forecasted life of mine revenue is based on lower sales prices (weighted average US$13.0/lb) than the traded values recorded in April 2018 (Metals Bulletin- in-warehouse Rotterdam) prices of $14.50/lb. Forecast sales prices are sourced from Merchant Research & Consulting Ltd, a UK based market research company specialising in the chemical sector and related industries and take in to account the anticipated market development and the healthy demand scenarios.

Based on a 10% discount rate the Project delivers a pre-tax NPV of $1,277m and IRR of 55%. The life of mine operating costs using an **AUD: USD exchange rate of $0.75 is US$4.27/lb.**

The base case Financial Metrics for the Project are summarised Table 0-14;

Table 0-14: Financial Metrics

Financial Metrics	Total Cost (AUD Million)	Total Cost (AUD Million)
Revenue per Pound (USD)	USD/lb V_2O_5	13.0
EBITDA	$AUD m	3,070.4
NPV 10% Post Tax	$AUD m	848.8
IRR Post Tax	%	43.2%
Payback EBITDA (1st Drawdown)	(Yrs)	3.4

The financial model's key sensitivity is to any movements in the forecasted price for V_2O_5. At a 20% decline in expected price which is a conservative US $10.18/lb the project still delivers post tax NPV of $499m. With a 20% increase in price to US$15.3/lb (slightly above the April price) the project's post tax NPV increases to $1,200m.

Table 0-15 Change in Financial Metrics with a movement in the price of V_2O_5

Impact of Change in Price	(20.00%)	(10.00%)	Base Case	10.00%	20.00%
Revenue	3,948.1	4,441.6	4,935.1	5,428.6	5,922.1
EBITDA	2,132.8	2,601.6	3,070.4	3,539.3	4,008.1
NPV 10% Post Tax	499.0	673.9	848.8	1,023.7	1,200.4
IRR Post Tax	31.3%	37.4%	43.2%	48.8%	54.2%

During the PFS in pit dumping of waste was identified as an opportunity to reduce operating costs. This has not been included in the mining base case, however both TMT and Wave requested this be considered. This resulting in section 13 addendum of the CSA mining report refer Appendix D. This change of waste management yields an increase in the NPV to $861M and the project LOM operating cost of US$4.18. The dumping of waste in pit opportunity combined with a reduction in wall angles as shown in table 0-15, which achieves significantly improvement in the strip ratios, is expected to provide significant upside to the base case financial model outcome. The improved wall angle opportunities tabled by CSA have been estimated to improve the NPV by an estimated A$100M.

FUNDING STRATEGY

The Company proposes to secure funding for the work required to complete the DFS on the Gabanintha Project via domestic and international capital markets, targeting specialist investment funds and high net worth investors.

Given the strategic nature of the vanadium industry, and the structural change being experienced in the supply – demand dynamics of the market, the Company will also investigate opportunities for funding from potential vanadium end-users. There have been a number of examples recently in the mining industry where to ensure offtake supply, customers are willing to invest in both equity and debt of the project. The high grade and very favourable metallurgical characteristics of the Gabanintha ore body presents an opportunity for investors and financiers to profit from these positive trends in the vanadium industry.

Taking this into account, TMT initiated early discussions with potential vanadium end users with a view to securing a cornerstone investor, an off take partner and/or an investor at the project level to support the financing and ultimate development of Gabanintha. It is expected that these discussions will progress further upon delivery of the PFS and potentially support subsequent discussions around potential debt funding.

The Company will also look to work with various government agencies to obtain either direct debt finance or to access guarantees or credit support in an effort to secure senior debt.

PERMITS AND APPROVAL

In Western Australia, development projects are subject to a level of environmental assessment, consummate with potential significance of impact to the environment, with projects likely to have a significant environmental impact subject to the highest level of assessment, being a Formal Environmental Impact Assessment (EIA) by the Environmental Protection Authority (EPA) under the Environmental Protection Act 1986.

The EIA process does not negate the need for other agency approvals, and while these can be lodged in parallel, the government agencies are constrained from making the determination while the EPA is undertaking their assessment.

It is not uncommon for new mining operations to require several State and/or Commonwealth approvals (environmental and non- environmental) to enable construction and then operation. Typical approvals, likely to be needed for the Gabanintha Project include:

Primary Approvals:

- Environmental Protection (EP) Act Part IV - Environmental Impact Assessment
- Aboriginal Heritage Act 1972 – Section 18
- Mining Act 1978 – Mining Proposal/Mine Closure Plan
- EP Act Part V – Native Vegetation Clearing Permit
- Safety Project Management Plan

Secondary Approvals

- EP Act Part V – Works Approval and Licence
- Rights to Water and Irrigation Act 1914 – 26D and 5C

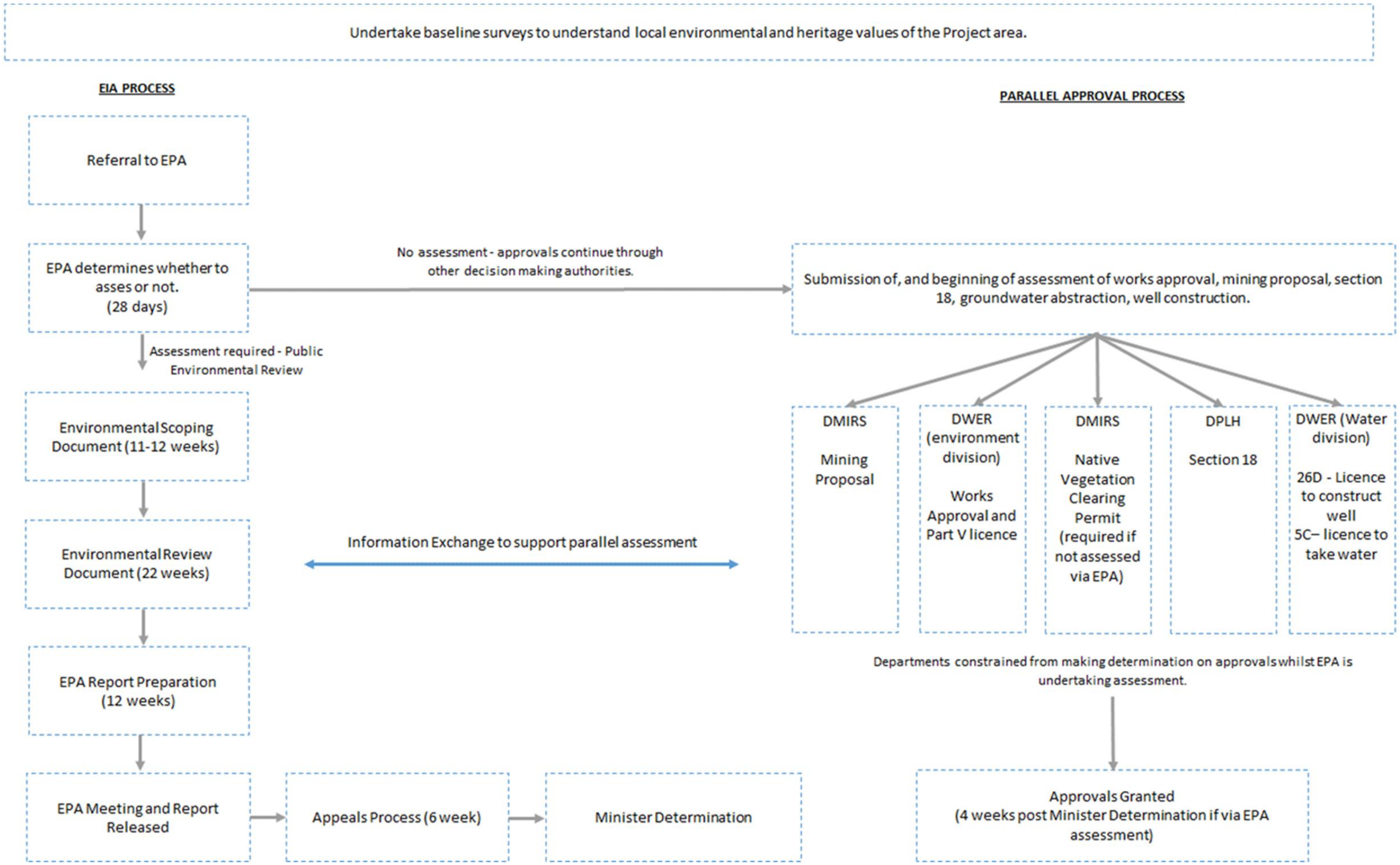
The submission of approval documentation requires a thorough understanding of the local environment and heritage values and potential waste streams that could potentially impact these values. This information is obtained through baselines assessment undertaken by recognised technical specialists and used to develop the relevant submission documentation.

APPROVAL TIMELINES

The various land access and land use approvals required have widely varying timelines, ranging from 4 – 24 months for assessment alone, with primary approvals generally having longer indicative timing than secondary approvals. Additional to this is the time required for preparation of submission documentation by the proponent or consultant, which can take between 1-6months dependent on the type of approval.

Mining lease applications have been lodged over the Northern (M51/883) and Southern (M51/884) resource areas in March 2018, with Miscellaneous licence applications for site access and water anticipated to commence in the second half of 2018.

ENVIRONMENTAL IMPACT ASSESSMENT FLOW CHART



Based on the desktop review and a review of historical vanadium projects in WA, it is anticipated that the Project may trigger a formal Environmental Review under Part IV of the EP Act. The Project will be referred to the WA EPA in the third quarter of 2018.

HEALTH AND SAFETY

TMT believe that all workplace accidents and environmental incidents are preventable through proactive leadership, compliance with legal requirements and the implementation of a structured HSEC management system. The company will continually monitor systems, performance and practices to ensure compliance with applicable HSEC legislation.

TMT currently has a Health and Safety Management Plan (SDMP) for exploration activities, which will be revised and updated as the Project transitions through each phase (i.e. DFS, site mobilisation, constructions, operations and closure)

Environmental and Social Impacts

Integrate Sustainability (ISPL) was commissioned to conduct a desktop environmental and social impact assessment for the proposed Gabanintha Vanadium Project for inclusion in the PFS. The desktop determined known significant environmental and heritage values within the project area and recommend future works necessary to obtain appropriate baseline information required to progress statutory approvals.

PHYSICAL ENVIRONMENT

The project is located within the Murchison Province of the Western Region of the Rangelands of Western Australia. The Murchison Province is characterised by low hills and mesas separate by flat colluvium and alluvial plains. The soils can be summarised as mainly shallow, sandy and infertile underlain by red brown siliceous hardpan.

Topography of the Northern Area is defined by a north-south trending ridge with surround slopes that flatten rapidly to the surrounding area. The Southern Area is also defined by a ridge which runs northwest to southeast, although not as steep as for the north site, with a dominated surface geology of mafic intrusive rocks.

No project specific soil assessments have been undertaken to date. A pilot material characterisation (ARD and metals) study of mine waste and ore indicated that the high grade and low grade fresh ore appear to be PAF, while the fresh waste, oxide waste and clay band have been classified as Uncertain. Elevated levels of potentially problematic metals such as Arsenic, Chromium and Cobalt were observed in some samples.

A detailed soil assessment and material characterisation assessment are planned for the DFS which will influence the selected mine closure landform designed and proposed closure completion criteria.

The Murchison region places great reliance on groundwater, with low rainfall and erratic seasonal distribution. An assessment by AQ2 of the groundwater within the Project area indicates fresh to brackish groundwater (375 – 3,600 mg/L) with interception within the mining area around 48.7mbgl. Groundwater is most likely available in the saprock/transition zone in low yield (less than 2L/s). The assessment also suggests that dewatering will be required.

The potential for flood risk, with infrastructure and pits in the elevated areas, although stormwater draining from the ridges will need to be managed through the use of drainage channels, road crossing and small levees.

BIOLOGICAL ENVIRONMENT

The Gabanintha Project is located in the Eremanean Botanical Province, within the Austin botanical district of the Murchison Biogeographical region of Western Australia. The vegetation of the region consists mainly of low Mulga shrublands.

A review of the Department of Environment and Energy (DEE) matters of national environmental significance and the Department of Biodiversity, Conservation and Attractions (DBCA) Nature Map were undertaken to identify any threatened or priority flora and fauna species previously recorded in the Project area.

Results indicated that no flora species of conservation significance or declared rare flora have been recorded, however two Priority 3 species (Drummondita miniate and Eremophila fasciata) were previously recorded. Additionally, no Threatened Ecological Communities (TEC) have been recorded in or adjacent to the Project.

The potential presence of 45 fauna species was identified of which 12 EPBC Protected species were identified as potentially occurring. No State conservation significant species were identified as occurring in the search area.

Desktop assessment by Biologic Environmental Survey Pty Ltd identified the presence of various stygofauna and troglofaunal taxa within and surrounding the Project and determined that the Project is partially within and close to the buffer zone for two Priority Ecological Communities (PEC) associated with the subterranean fauna communities.

SOCIAL ENVIRONMENT

Mining Leases were first taken out in the Gabanintha area in 1895 and the town of Gabanintha was gazetted in 1898. Today the region is dominated by pastoral activities and mineral extraction.

The project is located on the Polelle and Yarrabubba Pastoral Stations, with a portion of pending Mining Lease 51/883 sitting on Common Reserve 10597.

A search of the Department of Planning, Lands and Heritage's (DPLH) Aboriginal Heritage Inquiry System (AHIS) has identified two registered aboriginal heritage sites and a search of the Heritage Council of Western Australia database has identified three non-Aboriginal Heritage Sites within 10km of the Project, but outside the indicative Project tenements. There is a strong possibility that unrecorded sites exist in the area and these sites may be located near sources of water, at rock outcrops and in breakaways.

AIR QUALITY AND NOISE

Whilst he Project has the potential to generate the following emissions it is unlikely, given the remote location, that these emissions will impact any sensitive receptors. Emission types include

- Ammonia (NH_3);
- Oxides of nitrogen (NOx);
- Particulates (as PM10); and
- Vanadium pentoxide (V_2O_5).

Similarly, noise is unlikely to affect any sensitive receptors, with the closest receptors being the homesteads associated with the Polelle (7km) and Yarrabubba (14km) Pastoral Stations.

Recommended Baseline Assessments
The following key assessments, plans and activities are recommended to commence prior to or during the DSF phase to enable timely preparation of statutory approvals.

Area	Recommendations
Soils and Landforms	Undertake a detail soil characterisation and landform assessment.
Materials Characterisation	Undertake detailed materials characterisation study of mine and processing waste. Undertake Health and Safety assessment of final product and develop Safety Data Sheet to enable transport
Surface Hydrology	Undertake a details surface water assessment to assess environmental impacts and flood risks
Hydrogeology	Undertake a detail mine dewatering assessment and water supply assessment
Flora and Vegetation	Completed Level 1 flora and vegetation survey.
Fauna	Complete Level 1 terrestrial fauna and short range endemic survey. Conduct Level 2 subterranean fauna survey.
Aboriginal Heritage	Undertake a systematic archaeological and ethnographic surveys
Air Quality	Identify potential point sources and estimate using NPI/NEPM calculation tools. Undertake emissions modelling to facilitate works approval application. An occupational health and hygiene assessment to be undertaken.
Waste Streams	Complete a waste / emission material review of processed activities to identify all likely waste streams
Community Consultation	Develop a stakeholder engagement strategy and a stakeholder engagement register. Begin stakeholder engagement as soon as possible.
Stakeholders	Develop and implement the Project Stakeholder Engagement Plan

RISK, OPPORTUNITIES AND RECOMMENDATIONS

Risks

To identify, quantify and manage on going risk a fatal flaw risk review session was performed during the PFS. Risks associated with various areas of the project were identified and addressed throughout the Study, through team discussion and interaction. The outcome of the risk review process is the development of the project Risk Register which is referenced in Appendix Q.

The key risks to the Project are:

- Variation in product selling price and an increase in processing costs;
- Increase in capital cost of major equipment due to labour rates increasing or fall in AUD;
- Ground water and pit dewatering, with further detailed assessment required during the DFS;
- Significant amount of sample for testwork. Specifically kiln vendors require approximately 5 to 10 tonnes of material;
- Mineralogy might prove variable either within individual deposits or between deposits such that mineral processing becomes difficult. This can be overcome by judicious blending but requires the establishment of a detailed geometallurgical mapping process;
- Final specifications of the vanadium product produced;
- Further work is required to assess and manage PAF material - PAF management systems have not been included in waste dump designs due to lack of information at this stage;
- Delays and diminished government support;
- Elevated environmental review processes that may delay the project development schedule;
- Aboriginal heritage site results in no-go zone or changes to site layout:
- Available Natural Gas Capacity in the Pipeline; and
- Waste Rock Dump batter angle may require reduction from 20 to 18˚.

Opportunities and Recommendations

The main opportunities for the Project included in this PFS are as follows:

- Develop the Inferred Mineral Resources to a higher classification in the Southern Tenement (currently not included in this PFS) and both at depth and along strike of the existing designed Pits in the Northern Block;
- Additional drilling on section to validate grade and geological continuity at depth and enable future pit optimisations to consider the economic potential of this material (current optimisations are Mineral Resource Estimates constrained):
- Additional drilling on infill and extensional sections to validate grade and geological continuity;
- Additional detailed surface mapping and investigation of structural data from the drill core to better delineate and interpret the structural framework;
- Mining cost estimates can be improved by approaching potential mining contractors with a request for quotation for budget estimates;
- Once final pit depths have been identified there is an opportunity to assess reduced haul distances by backfilling pits with mined waste rock; and
- Further geotechnical assessment is required to gain a better understanding of the impacts of a steeper footwall. With a steeper overall slope angle, pit optimisation results show a significant reduction in waste stripping ratio and a significant increase in the overall NPV of the Project. This highlights the importance of further geotechnical investigations of the Project. See attached table of results below showing improved mining and strip ratios.

Table 0-16: Geotechnical Table of Results & Comparative Pit Optimisations with Upside Geotechnical Wall Angles

Item	Unit	Current Geotechnical Wall Angles	Upside Geotechnical Wall Angles
Shell	No.	20	19
Revenue factor		0.84	0.80
Total mined	Mt	115.1	89.1
Strip ratio	t:t	6.0	4.3
ROM feed	Mt	16.4	16.9
ROM feed grade	% V_2O_5	0.97	0.97
V_2O_5 produced	kt	113.8	117.4
Mine life	years	10.2	10.5
Shell depth	m	160.0	170.0

Other opportunities to the Project include:

- Possibility to significantly coarsen grind size reducing OPEX costs;
- Reduction in process material handling by FEL in plant design;
- Plant Location more central to the deposits to reduce tramming;
- Sourcing large rotating and process equipment from alternative international suppliers;
- Automation of plant and packaging and handling to reduce labour effort and increase safety;
- Potential to recover cobalt, nickel and copper from the non-magnetic waste product of the fresh massive materials;
- Potential to produce ultra-high purity vanadium product, whether it be AMV or V_2O_5 for use within the battery or aeronautical industries with the ability to demand a price premium;

The key recommendations for the Project emerging from this PFS are as follows:

- Additional drilling on section to validate grade and geological continuity at depth and enable future pit optimisations to consider the economic potential of this deeper material:
- Additional drilling on infill and extensional sections to validate grade and geological continuity;
- Further geotechnical analysis, with geotechnically focussed drill holes to inform pit geomechanics particularly in the FW of the deposit. Include geotechnical analysis of areas where the Mineral Resource classification becomes Indicated; Additional detailed surface mapping and investigation of structural data from the drill core to better delineate and interpret the structural framework, include geotechnical mapping;
- Approach potential mining contractors with a request for quotation for budget estimates;
- Sufficient additional PAF testing be undertaken to allow for the construction of a geological block model including waste classification adequate for waste dump design and management;
- Further testwork to prove magnetic concentrate produced from the transitional massive zone may require less salt during roasting than the fresh massive zone.
- Additional density testwork using sealed immersion techniques to provide further quality control validation of the current primarily calliper measured density data set and provide additional data points;
- Additional metallurgical testwork exploring options for beneficiation of the more oxidised portions of the Mineral Resources, and increasing confidence in the metallurgical amenity and variability of the transitional and fresh material;
- Complete multi-element sterilisation drilling in the proposed location of infrastructure, including the waste rock dumps:
- Intact rock property testing to define material strengths of geotechnical domains to update the conservative properties used in the stability models;
- Revisit the pit optimisations, designs, and production schedule as the study progresses into an improved understanding of key project parameters such as V_2O_5 product price, processing costs, processing recoveries; and
- Conduct energy study to determine the most cost and project effective solution.