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Projects: Mozambique
Balama North Graphite-Vanadium
Ancuabe Graphite
Balama South Graphite

Project Locations



*Holder of the world's largest known
combined graphite-vanadium resource*

NICANDA HILL SCOPING STUDY

Globally Significant - Commercially Viable Graphite Project Demonstrated

HIGHLIGHTS

- Independent Scoping Study indicates Triton's Nicanda Hill resource, is a low technical risk, economically robust and commercially viable graphite project.
- NPV_{10%} of US\$1,230 million (pre-tax).
- IRR of 137% (pre-tax).
- Scoping Study based 100% on Indicated Resource Classification utilizing a base-case mining inventory of 51Mt grading 12.4%TGC for a contained 6.3Mt graphite.
- 1.8Mtpa throughput plant resulting in average annual production of 210,000t graphite concentrate.
- Production of premium quality flake graphite concentrates planned to commence in 2017 with an initial life of mine of 30 years, including 1 year construction period.
- Free on Board cost Port of Pemba estimated at an average of US\$315 per tonne.
- Vanadium credits currently not included in Scoping Study.
- Estimated capital cost of US\$110 million including US\$10 million of contingency.
- Payback period within less than 12 months of commission.
- Pre-Feasibility Study scheduled to commence as a result of the positive Scoping Study results.

Triton Minerals Ltd (ASX: TON, **Triton, Company**) is pleased to announce the results of the Independent Scoping Study for the Nicanda Hill graphite resource, located at its Balama North project in Mozambique.

The receipt of positive Scoping Study results now justifies the commencement of feasibility studies that will form the basis for the rapid development of the Nicanda Hill resource and establish Triton as a low cost, high quality graphite producer.

CAUTIONARY STATEMENT

The Scoping Study referred to in this announcement is based on lower-level technical and economic assessments and is insufficient to support estimation of Ore Reserves, or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised.

Although the Scoping Study is preliminary in nature, its conclusions are drawn entirely (ie., 100%) on Indicated Resource classification, according to guidelines of the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (**JORC Code, 2012 edition**), and thus have a higher level of geological confidence basis for such conclusions – relative to inferred classification. The stated production target is based on the Company's current expectations of future results or events and should not be solely relied upon by investors when making investment decisions. Further evaluation work and appropriate studies are required to establish sufficient confidence that this target will be met.

Further, the Company cautions that there is no certainty that the forecast financial information derived from production targets will be realised. All material assumptions underpinning the production targets and forecast financial information derived from the production targets are set out in this announcement.

The mineral resource estimate underpinning the Scoping Study production targets has been prepared by competent persons in accordance with the guidelines of the JORC Code, 2012 edition and the current ASX Listing Rules.

INDEPENDENT SCOPING STUDY RESULTS INDICATE WORLD'S LARGEST KNOWN GRAPHITE PROJECT IS LOW TECHNICAL RISK, ECONOMICALLY ROBUST AND COMMERCIALY VIABLE

Triton Managing Director & CEO, Mr. Brad Boyle said: *"The release of the Nicanda Hill independent Scoping Study is a significant milestone for our Company given that exploration drilling only commenced in April of this year. It confirms the quality of the Nicanda Hill resource and demonstrates the potential for Triton to become a leading global producer of high-purity flake graphite. On-going feasibility work is anticipated to improve the project economics as the higher grades identified by drilling to date will be defined with greater confidence and expanded.*

In addition, it should be noted that the scoping study was based on a relatively small percentage of the existing global resource in order to test the commercial viability of a conservative base-case production scenario. More comprehensive metallurgical studies, which will form part of the future feasibility program, combined with additional resource drilling may identify an alternate and improved development route."

SUMMARY

The Scoping Study was undertaken and prepared by independent geological and mining consultants Optiro Pty Ltd (**Optiro**) of Perth, Western Australia, who also prepared the initial Mineral Resource estimation for the Nicanda Hill deposit. Optiro were engaged to evaluate the technical and economic potential of the Nicanda Hill deposit and to provide the foundations of future development.

The Scoping Study was managed and completed by Optiro who defined the economics, mining process and infrastructure for the future graphite mine at Nicanda Hill. This work was supported by specialist metallurgical work undertaken by ALS Laboratory in Adelaide, South Australia and supported by Mintek, South Africa. The Metallurgy, Process Engineering and Design was supervised by independent metallurgist consultants Battery Limits Pty Ltd. Mineralogical and drill core analysis was performed by SGS Laboratories, South Africa and Intertek/Genalysis, Perth.

The key Scoping Study parameters are shown in Table 2 on page 4 of this announcement.

MINERAL RESOURCE AND MINING INVENTORY

The Scoping Study is based on the Nicanda Hill JORC Resource, released in an ASX announcement on 21 October 2014, which was completed in accordance with the **JORC Code, 2012 edition** and summarised in Table 1.

The Nicanda Hill global Mineral Resource estimate comprises 1,457 Million Tonnes (**Mt**) at an average grade of 10.7% Total Graphitic Carbon (**TGC**) and 0.27% Vanadium Pentoxide (**V₂O₅**) classified as either Inferred Mineral Resources or Indicated Mineral Resources. Using a 15%TGC cut off in the Nicanda Hill deposit, 28.1Mt of graphitic material at an average grade of 15.8%TGC is contained within the Mutola, Grande and Macico (**MGM**) high grade graphite zones.

Classification	Tonnes (Mt)	Grade (TGC%)	Contained Graphite (Mt)	Grade (V ₂ O ₅ %)	Contained V ₂ O ₅ (Mt)
Indicated	328	11.0	36.1	0.26	0.85
Inferred	1,129	10.6	119.7	0.27	3.05
Total	1,457	10.7	155.9	0.27	3.93

Table 1: Balama North – Nicanda Hill Global Mineral Resource

(Note that some of the numbers may not equate fully due to the effects of rounding.)

Competent Person's Statement

The information in this report that relates to Mineral Resource estimate at the Nicanda Hill deposit on Balama North project is based on, and fairly represents, information and supporting documentation prepared by Mr Mark Drabble, who is a Member of the Australasian Institute of Mining & Metallurgy. Mr Drabble is not a full-time employee of the Company. Mr Drabble is employed as a Consultant from Optiro Pty. Ltd. Mr Drabble has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves (the JORC Code)'. Mr Drabble consents to the inclusion in this report the exploration results and the supporting information in the form and context as it appears.

Approximately 328Mt of the Nicanda Hill Mineral Resource estimate is in the Indicated Resource Classification. **The Scoping Study is based entirely within this Indicated portion of the global resource.**

The mining inventory on which the Scoping Study is based, comprises 51Mt grading 12.4%TGC for a contained 6.3Mt flake graphite. Vanadium-credits were not included in the Scoping Study but form part of the future project upside.

SCOPING STUDY PARAMETERS

A. OVERVIEW

Summary of Economic Assessment		
Item	Unit	Value
Production target		51Mt @ 12.4%TGC
Production rate	Mtpa	1.8
Mine Life (including construction)	Years	30
Pre-Production CAPEX	US\$M	110
LOM CAPEX	US\$M	29
Cash Operating Costs	US\$/t produced	338
LOM Free Cashflow	US\$/t produced	624
DCF/NPV10%	US\$ M	1,230
IRR	%	137%

Pit Optimisation Parameters and Revenue Assumptions		
Parameter	Unit	Value
Overall pit slope angle	degrees	43
LOM Waste/Ore Strip Ratio	times	1:1
Average Realised Price	US\$/t	985
Mining Cost	US\$/t	3.97
Mining Recovery	%	96
Metallurgical Recovery	%TGC	90
Concentrate Grade	%TGC	94
Revenue	US\$ M	5,963
Processing Costs	US\$/t ore	14.74
Admin Costs	US\$/t ore	3.29
Royalties	%	3

Capital Cost Estimates	
Item	Costs (US\$M)
Processing Plant including tailings storage facility	65.2
Site establishment	15.7
Other Infrastructure/costs	14.0
Indirect costs including EPCM	5.0
Contingency	10.0
Total	110.0

Table 2: Nicanda Hill Scoping Study Parameters

B. MINING

The anticipated mining schedule comprises a relatively shallow open pit operation, focused initially, on the MGM graphite zones in the vicinity of Nicanda Hill. The open pit will eventually be accessed by three separate ramps (Figures 1 and 2).

Triton believes that the shallow nature of the open pit operation combined with a dilution grade averaging 8%TGC, represents exceptionally low technical risk.

Average grades for the first five years of operation are anticipated to be in excess of 13%TGC. During this period the waste to ore strip ratio averages 0.84:1, with the Life of Mine (LOM) strip ratio expected to be approximately 1:1. However, it should be noted that the majority of the waste material averages approximately 8%TGC.

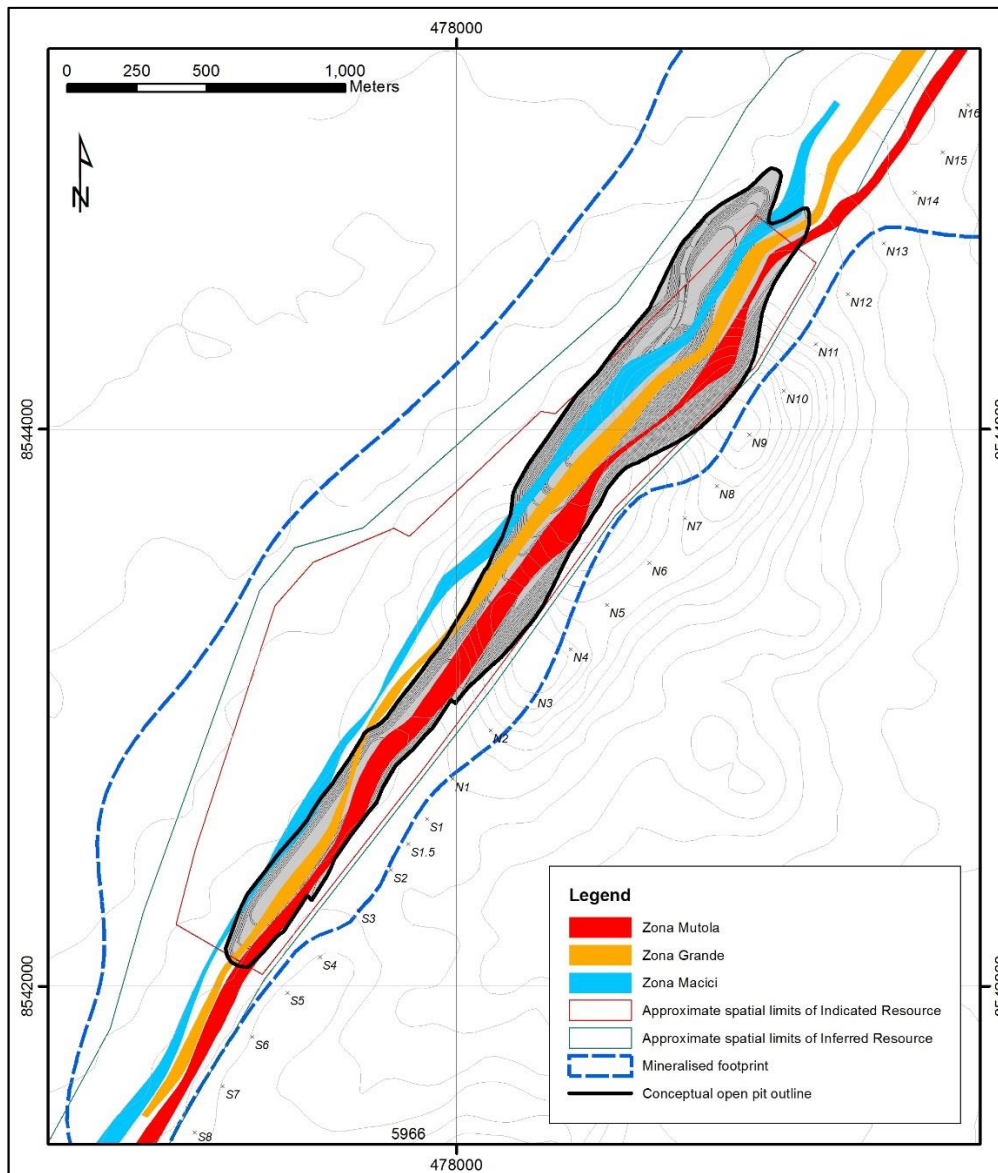


Figure 1. Plan showing conceptual pit outline associated with the high grade Mutola, Grande and Macici graphite zones

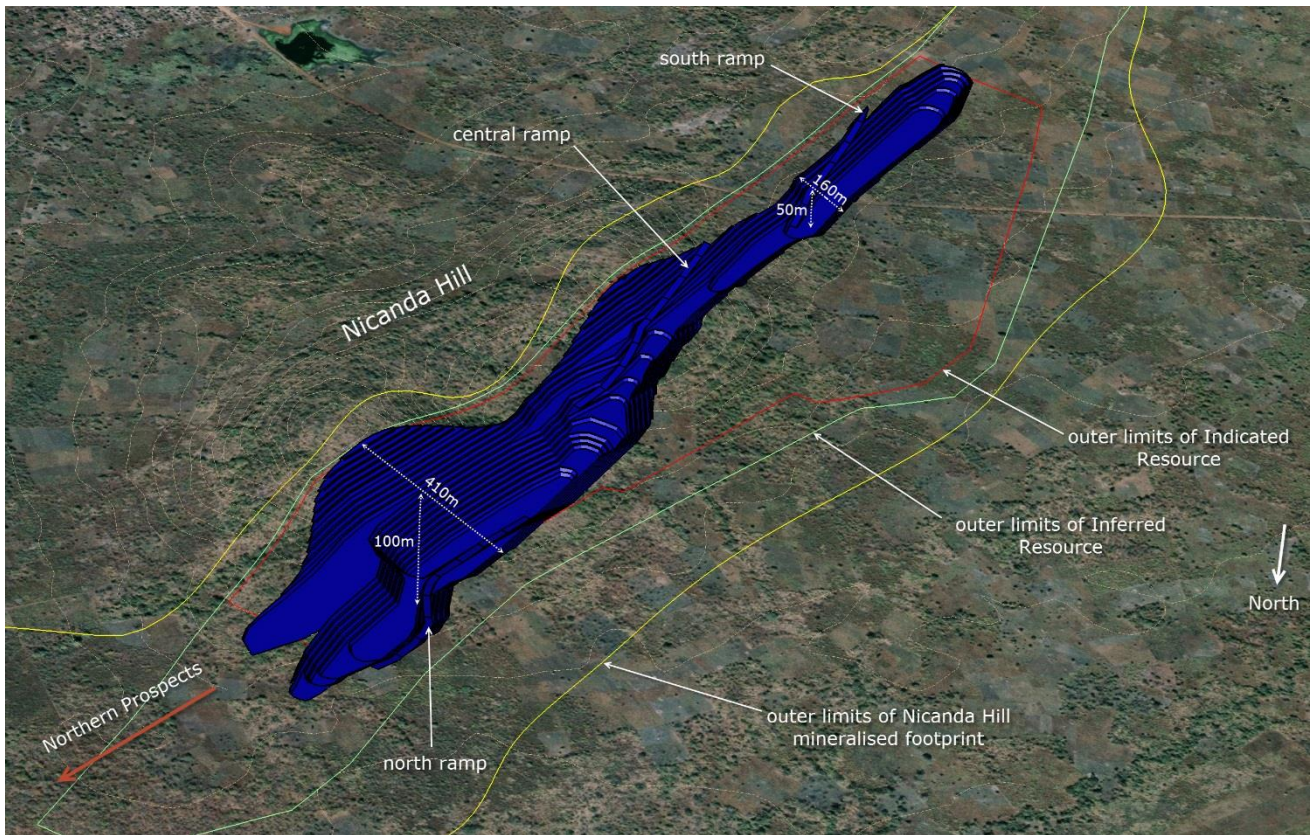


Figure 2. Conceptual open pit design by Optiro for a 30 year mine life. The pit is approximately 3kms long and averaging 200m wide and 60m deep

C. PROCESSING

The Scoping Study anticipates a straight-forward crushing, milling and flotation process together with screening and drying circuits.

The results are based upon a thirty year conceptual LOM (29 years mining plus 1 year construction) and a processing operation of 1.8Mta resulting in an average annual production rate of 210,000 tonnes of graphite concentrate.

D. PRICING

Triton notes that the Scoping Study has assumed a conservative average graphite price of **US\$985** per tonne, to incorporate price variations between the selling prices of different graphite size and purity fractions. The Scoping Study assumes this selling price will remain constant over the thirty year life cycle of the proposed Nicanda Hill mine and does not take into account any potential price escalation as demand grows.

KEY OUTCOMES

The key outcomes from the Optiro Scoping Study report are outlined and summarised below:

- Estimated initial capital cost US\$110 million which includes contingencies;
- LOM free cash flow of US\$624/t;
- Estimated average mine gate cost of production at US\$250/t;
- Free on Board cost (**FOB**) Port of Pemba estimated average cost at US\$315/t;
- Cash operating costs of US\$338/t;
- Positive cash flow within 2 months of commission; and
- Payback period within approximately 10 months of commission.

VANADIUM/ZINC POTENTIAL

Previous Triton announcements have advised that the Nicanda Hill resource contains numerous high grade vanadium mineralisation zones and has been confirmed in the Mineral Resource estimation averaging 0.27% V₂O₅.

As per Table 1 above, Nicanda Hill contains 3.93Mt V₂O₅ establishing it, in its own right, **as the largest known vanadium resource in the world**, being approximately one third larger than the next largest known vanadium resource (2.7Mt V₂O₅) and approximately three and a half times larger than the Rhovan Vanadium mine in the north West province of South Africa (1.1Mt V₂O₅).

Metallurgical test work to date shows that vanadium is present at significant levels in the process tailings after the flotation and separation of the graphite concentrate from the ore. Also of note is the presence of zinc and other base metals in the tailings.

Further and more comprehensive test work is still required to understand whether the vanadium and zinc can be further upgraded into saleable concentrate levels. Accordingly, the vanadium and zinc potential of the Nicanda Hill has been excluded from the economics of the Scoping Study.

Should the vanadium and zinc be found to be upgradable from the tailings, a positive impact on the overall economics and profitability of a potential mine at Nicanda Hill is likely.

INFRASTRUCTURE

The Scoping Study has incorporated 10km of road upgrades required from the proposed production facility to the main sealed road that connects the project area to the Port of Pemba. The Scoping Study has assumed graphite concentrate will be containerised on site and trucked to the port of Pemba, for export.

Triton notes that construction work on the expanded port in the city of Pemba, is due to begin in January 2015, in order to service the needs of the hydrocarbon industry. The new port facilities will include a 300m dock capable of receiving ships with a maximum draught of 12m and a variety of other facilities on a 36 hectare plot. The environmental impact assessment of the proposed development is currently underway and will pave the way for the construction phase. It is expected that the project will be completed by 2016 (Sourced from: *Banco Nacional de Investimento* website:

[http://www.bni.co.mz/studies/news.aspx?n=construction of port of pemba, mozambique due to begin in 2015&nid=4391](http://www.bni.co.mz/studies/news.aspx?n=construction%20of%20port%20of%20pemba,%20mozambique%20due%20to%20begin%20in%202015&nid=4391), 7 June 2014).

The potential for flow-on infrastructure upgrades at the Port of Pemba that may affect Triton's requirements will be investigated. Triton is also investigating the potential for using the Port of Nacala as an additional viable option for an export port.

Capital cost allowance has been made for the project to source electric power from the local grid together with stand by on-site power generation capability.



Figure 3. Port of Pemba



Figure 4. Port of Nacala

In addition to the established port, power and road infrastructure, the project will benefit from the accessible skilled and unskilled local labour force, ground and dam water, advanced and reliable telecommunications and an international airport in Pemba.

GRAPHITE MARKET SUPPLY AND DEMAND

During the last 12 months there has been a significant reduction in the overall flake and amorphous graphite production from the traditional major global supplier, namely China. Due to environmental concerns and the consolidation of uneconomic mines in China, it appears the Shandong and Heilongjiang provinces of China have withdrawn approximately 40% from the global supply of the graphite. (Sourced from Mining Weekly "*Chinese Flake Graphite Consolidation Could Alter Global Supply Structure*", <http://www.miningweekly.com/article/chinese-flake-graphite-consolidation-could-alter-global-supply-structure-2014-04-17#.U1VWye8OL> k.twitter, 17 April 2014).

Simon Moores from Benchmark Mineral Intelligence comments that the reduction of Chinese production over the coming years, will have a dramatic impact on the global supplies of the flake and amorphous graphite. (Sourced from Myriad Equity, "*Interview with the, 'Graphite Guru' Simon Moores of Industrial Minerals Data*", <http://www.myriadequity.com/?p=4444>, 28 March 2014).

Based on Triton's research, the current trends shows a steady global increase in graphite demand in the industries of electronics and electric and hybrid vehicles. This increase does not take into account the large demand for spherical graphite should the Tesla GigaFactory come online in the near future.

GRAPHITE PRODUCTS

With the completion of the positive Scoping Study, Triton is now reviewing off-take options and conducting further research into the potential uses of the high grade Nicanda Hill graphite.

Potential uses include **Expandable Graphite** (insulation foam, soft foams, mattresses, carpets, textiles, coatings, plastic foils, rubber products, pipe closing systems, fire retardants, graphite foil), **Micronised Graphite Powder** (photovoltaic, high temperature furnaces, lamp carbon, lubricants, carbon brushes), **Spherical Graphite** (anodes in lithium ion batteries), **Recarburisation** (steel making and iron casting) in addition to the more traditional **Refractory** grade graphite market.

ON-GOING ECONOMIC OPTIMISATION

Triton expects that the additional data from the current drilling program may allow for a partial upgrade in the Mineral Resource estimation at the Nicanda Hill deposit, in the classification from Inferred to Indicated category and potentially, from Indicated to Measured category.

The possible outcome of this will be the better delineation of graphite mineralisation averaging more than 15%TGC, which will, in turn, have a positive effect on the economics of the targeted mining operations.

The forthcoming feasibility program will consider the variability metallurgical testing to identify and confirm larger areas of near-surface large flake graphite material.

INCREASED PRODUCTION POTENTIAL

The Scoping Study was based on a steady-state average production of 210,000 tonnes of graphite concentrate per year. However, as noted above there are strong indications of further global demand for high grade graphite. Triton considers this assumption to be conservative given the projected future demand for graphite.

Triton believes that the Nicanda Hill deposit will attract very low, market-leading operating costs, and combined with the large scale of the deposit, gives Triton the ability to selectively mine higher grade zones and to target various graphite flake sizes. This affords the Company a competitive advantage to supply high quality graphite to numerous parts of the global graphite market and the potential substitution of graphite into the general carbon markets (e.g., for use in producing carbon black).

To date no allowance has been made for any additional production to cater for the projected increased global demand. Once in full production, and given the size and quality of the Nicanda Hill deposit, combined with the low operating costs, the Company will be well positioned to increase production to meet the growing demand for graphite.

FURTHER ACTIVITY

Triton confirms that a DUAT (Land Use License) application has been submitted to the Ministry of Coordination of Environmental Affairs (MICOEA) and is due to be finalised in December 2014. With the completion of the Scoping Study, preparation is now underway to submit an application for a Mining License for the Nicanda Hill resource, which includes undertaking a full environmental impact assessment.

Most significantly, the positive and robust Scoping Study results signify the commencement of a comprehensive suite of detailed feasibility studies. The main objective of the feasibility studies will be to develop proven and probable reserves within the Nicanda Hill resource.

The indicative project development timeline outlined in Table 3 below, demonstrates a targeted commencement of graphite concentrate production to be Q1, 2017.

Activity	2014				2015				2016				2017	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Exploration		■												
Resource Development			■	■										
Scoping Study				■										
EIA					■	■	■	■						
Permitting						■	■	■						
Feasibility Study					■	■	■	■						
Procurement									■	■	■	■		
Pre-Construction									■	■	■	■		
Construction										■	■	■	■	
Commissioning													■	■
Production														■

Table 3. Targeted project timeline for development of the Nicanda Hill graphite deposit, subject to obtaining the relevant funding and regulatory approvals

PROGRESS ON OFF-TAKE AGREEMENTS

Triton advises that discussions are continuing with six separate potential end users or graphite intermediaries that have made contact with the Company over the last twelve months. These groups are located in Europe, Japan, China and North America. Various bulk samples have been delivered to the different groups and further samples have been requested to obtain a better understanding of the physical properties of the Nicanda Hill graphitic material.

With the completion of the Scoping Study, Triton is now in a position to advance and proceed to finalise an off take agreement in the near future with one or more of these groups. Further, with the very encouraging Scoping Study results, Triton is now able to be more active in marketing Nicanda Hill graphite to a broader range of potential end users or graphite intermediaries, all with the intent of securing formal off take agreements in the near future.

GENERAL

The Scoping Study was undertaken by Optiro and reported under the provisions of the JORC Code, 2012 Edition and Valmin Code 2005. The Scoping Study is based on a number of conservative parameters and Optiro have advised that there may be potential to reduce some of the overall project costs as further studies are completed.

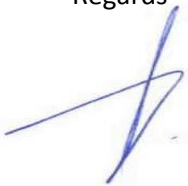
Optiro have consented to the issue of this announcement in the form and context in which is appears.

CONCLUSIONS

The definition of the world's largest combined Mineral Resource estimate for graphite and vanadium at Nicanda Hill demonstrates the true world class potential and the overall prospectivity of the Balama North project.

The positive results of the independent Scoping Study demonstrate that Triton is increasingly well positioned to rapidly advance the Nicanda Hill deposit into graphite production as soon as possible, and in doing so, Triton's aim is to become a global market leader and a prominent global source of low cost, high quality graphite material.

Regards



Brad Boyle
CEO & Managing Director
Triton Minerals Ltd



Figure 5. Bulldozer exposing high grade resource at surface on Nicanda Hill

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Competent Person's Statement

The information in this report that relates to Mineral Resource estimate at the Nicanda Hill deposit on Balama North project is based on, and fairly represents, information and supporting documentation prepared by Mr Mark Drabble, who is a Member of the Australasian Institute of Mining & Metallurgy. Mr Drabble is not a full-time employee of the Company. Mr Drabble is employed as a Consultant from Optiro Pty. Ltd. Mr Drabble has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves (the JORC Code)'. Mr Drabble consents to the inclusion in this report the exploration results and the supporting information in the form and context as it appears.

The information in this report that relates to Exploration Results on Balama North project is based on, and fairly represents, information and supporting documentation prepared by Mr. Alfred Gillman, who is a Fellow of Australian Institute of Mining and Metallurgy (CP Geol). Mr. Gillman is a Non-Executive Director of the Company. Mr. Gillman has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves (the JORC Code)'. Mr. Gillman consents to the inclusion in this report the exploration results and the supporting information in the form and context as it appears.

The information in this announcement that relates to Exploration Results on Balama North project is extracted from the reports entitled ASX Release "Balama North Project Update" created 5 March 2014, ASX Release "Positive Metallurgical Results For Nicanda Hill" created 16 September 2014, ASX Release "Further Positive Drilling Results From Nicanda Hill" created 9 October 2014, ASX Release "Nicanda Hill Maiden Jorc Resource – 1.457 Billion Tonnes At 10.7%TGC And 0.27% V₂O₅", created 21 October 2014 and is available to view on www.tritonmineralsltd.com.au. The reports were issued in accordance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Forward-Looking Statements

This document may include forward-looking statements. Forward-looking statements include, but are not necessarily limited to, statements concerning Triton Minerals Limited's planned exploration program and other statements that are not historic facts. When used in this document, the words such as "could", "plan", "estimate" "expect", "intend", "may", "potential", "should" and similar expressions are forward-looking statements. Although Triton Minerals Limited believes that its expectations reflected in these are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward-looking statements.