

## MARCH 2017 QUARTERLY ACTIVITIES REPORT

### HIGHLIGHTS

- Preliminary Feasibility Study (PFS) completed, delivering:
  - Post-tax unlevered project NPV<sub>10</sub> of US\$624m (NPV<sub>8</sub> of US\$798m)
  - Post-tax unlevered IRR of 48.2%
  - EBITDA in first full year of production of US\$135 million (EBITDA margin of 66%)
  - Two 83ktpa staged modules, with second module to be self-funded
  - 32-year life of mine with average grade of 8.9% TGC
  - Ore Reserve declared of 48.3 million tonnes at average grade of 8.7% Total Graphite Contained (TGC)
  - Operational expenditure ("opex") estimated at US\$382/tonne - average (basket) price of US\$1,241/tonne
  - Pre-production capital expenditure ("capex") estimated at US\$90.1 million including 15% contingency
  - Total capex estimated at US\$159 million including 15% contingency
  - Construction partner expected to be confirmed Q2 2017, construction on track to commence in 2018 with initial production in 2019
- On going testwork continued to validate industry-leading battery test results including:
  - Uncoated graphite flakes producing a near-perfect lithium-ion battery reversible capacity
  - Uncoated and coated spherical graphite in battery cells designed for long-term cycling demonstrated excellent performance characteristics
  - Long-term cycling of uncoated and coated graphite showing virtually no change in battery performance
- Signed a partnering MOU with Meiwa Corporation of Japan to evaluate viability of a long-term commercial relationship
  - Meiwa is a joint venture partner in a spherical graphite production facility in China
- John de Vries appointed Black Rock's COO and Interim CEO
- Global search begins for new CEO to lead Black Rock through development into production
- Options exercised raised approximately \$2m
- Commencement of construction remains on track for 2018 with initial production in 2019.

Tanzanian graphite developer Black Rock Mining Limited (BKT: ASX) ("Black Rock" or "the Company") pleased to provide its March 2017 Quarterly report.

During the March Quarter, the Company delivered several key items for its 100%-owned Mahenge Graphite Project.

**Black Rock Mining Limited**  
ACN 094 551 336  
ASX: BKT

**Issued Capital**  
364.7m ordinary shares  
47.2m options  
9.4m performance rights

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**Tanzanian Office**  
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PO Box 80003  
Dar es Salaam, Tanzania

**Directors**  
Stephen Copulos  
John de Vries  
Gabriel Chiappini

**Company Secretary**  
Gabriel Chiappini

## Mahenge Graphite Project PFS

Post quarter-end, Black Rock announced results of a Preliminary Feasibility Study (PFS) for its Mahenge Graphite Project in Tanzania prepared by independent engineering firm Battery Limits Ltd, a project development and consulting engineering group with significant experience in the graphite sector. The PFS confirmed the project's outstanding potential as a long life, low capex, high margin operation.

The PFS built on the Scoping Study completed in March 2016, also by BatteryLimits, confirming the technical viability of the project and its ability to deliver robust financial returns under various financial and operating scenarios.

Black Rock is moving towards commencing a Definitive Feasibility Study (DFS). With a successful DFS and associated financing, construction could commence in 2018 with first production in 2019. The Company is commencing pilot plant and variability test work at SGS Lakefield Laboratories in Canada, and intends to appoint a DFS Engineer shortly.

### Financial Highlights

Pre-production capex is estimated at USD\$90.1m with total capex estimated at US\$159m including Stage 2 and a 15% contingency. This investment delivers an initial production of 83kt per annum rising to 167kt for stage two. Product is 98%-99% natural flake graphite mineral concentrate. Opex (cash costs to port) in full production, is estimated at US\$382 per tonne. This includes all transport to the port of Dar es Salaam where product is sold on an FOB basis.

**Table 1: Mahenge key project financial parameters**

KEY FINANCIAL PARAMETERS		STAGE 1	STAGE 2	LOM
<b>Commencement</b>	(Year)	1 & 2	3+	
<b>Capital Cost</b>	(US\$ M, real)	90.1	68.8	159
<b>IRR - after tax</b>	(%, real)			48.7%
<b>NPV @ 10% - after tax</b>	(US\$ M, real)			624
<b>NPV @ 8% - after tax</b>	(US\$ M, real)			798
<b>Cash Costs</b>	(US\$/t, real)	485	378	382

The key financial metrics are:

- A post-tax, unlevered, internal rate of return ("IRR") for the Project of **48.7%**; and
- A net present value (NPV) using a discount rate of 10% (NPV<sub>10</sub>) of **US\$624m**.

Financial analysis was performed by Modus Capital, an independent analysis company under direction of BatteryLimits.

The project financial parameter calculations have been repeated using several alternative sources for pricing information.

The base case valuation is based Benchmark Minerals historical FOB China price, with a USD\$40/tonne freight normalisation penalty applied to replicate FOB Dar es Salaam. A USD\$100 premium per percentage above 95%.

TGC Chinese FOB grade, has been used to normalise the grade premium for Mahenge's 98% nominal grade product. This price protocol compares conservatively, using publicly reported price protocols from a peer group of East African graphite developers.

The Ore Reserve Protocol reflects the base case valuation; however, the grade premium is suppressed for finer fractions. All price protocols support a robust project.

Mining will be by conventional open-cut mining techniques. Waste will primarily be used for tailings dam wall construction, or will be stacked in waste dumps to form integrated landforms.

Processing will be by well-proven crushing, grinding and flotation methods, with the plant development in two stages, comprising:

- **Stage One** - processing plant and infrastructure at a nominal design basis rate of 1Mtpa to produce up to 83ktpa graphite concentrate in the first two years of production
- **Stage Two** - a second 1Mt/y plant and associated additional infrastructure doubling throughput to 2Mtpa and graphite concentrate production to 167ktpa from Year 3 of operation.

The PFS is based on mining and milling 61.1 million tonnes of Resource and Reserve at an average grade of 8.9% TGC for a life of mine (LoM) production of 5.1 million tonnes of concentrate. The LoM strip ratio is exceptionally low, at 0.8:1, benefiting from an even distribution of mining material at high grades through both pits. Metallurgical test work indicates the concentrate will have commercially desirable product size, and purity attributes. The mine plan is also advantaged by bulking in all mineralisation above cut-off grade resulting in limited need for costly selective mining methods.

The Ore Reserve is inclusive of the broader Mineral Resource Estimate ("MRE") for the Mahenge Project, of 202.9 million tonnes at an average grade of 7.8% TGC (ASX 12/12/2016).

More information regarding the PFS is available in the ASX announcement dated 24 April 2017.

### **Product Development**

Long term cycle testing of batteries produced using Mahenge graphite passed the 100 cycle milestone during the quarter. The batteries continue to perform well and exhibit excellent stability, with indications of out-performance against a leading industry branded product. Specifically:

- Uncoated graphite flakes producing a near perfect lithium-ion battery reversible capacity of 371.28mAh/g out of a theoretically possible 372mAh/g for natural graphite flakes;
- Uncoated and coated spherical graphite in battery cells designed for long-term cycling demonstrated excellent performance characteristics with reversible capacities of 368.94mAh/g and 354.26mAh/g respectively;
- Uncoated and coated spherical graphite delivered exceptionally low BET (Brunauer, Emmett and Teller) surface area values of 4.15m<sup>2</sup>/g and 0.82m<sup>2</sup>/g respectively, considered very suitable for high energy lithium-ion batteries;

- Uncoated and coated irreversible capacity loss (ICL) values of 8.35% and 5.61% respectively which are regarded as exceptional for natural flake graphite, having the potential to lower cell cost and increase cell cycle life; and
- Long term cycling of uncoated and coated graphite showing virtually no change in battery performance with 100 cycles completed to date of a planned 500+ cycle period.

The test results suggested Mahenge Graphite Project graphite has the potential to enable battery manufacturers to produce more stable lithium-ion batteries at a lower cost with a longer cycle life. Potential exists to displace synthetic graphite in lithium-ion batteries once performance, cost advantages and the ability to consistently supply spherical graphite for long-term production can be demonstrated.

The programme built on previous successful spherical graphite and purification test work showing that the Mahenge Graphite Project spherical graphite has unique positive physical features that have the potential to improve the stability, battery safety performance and enhance the cycle life of lithium-ion batteries. The results are from an independent US battery testing facility.

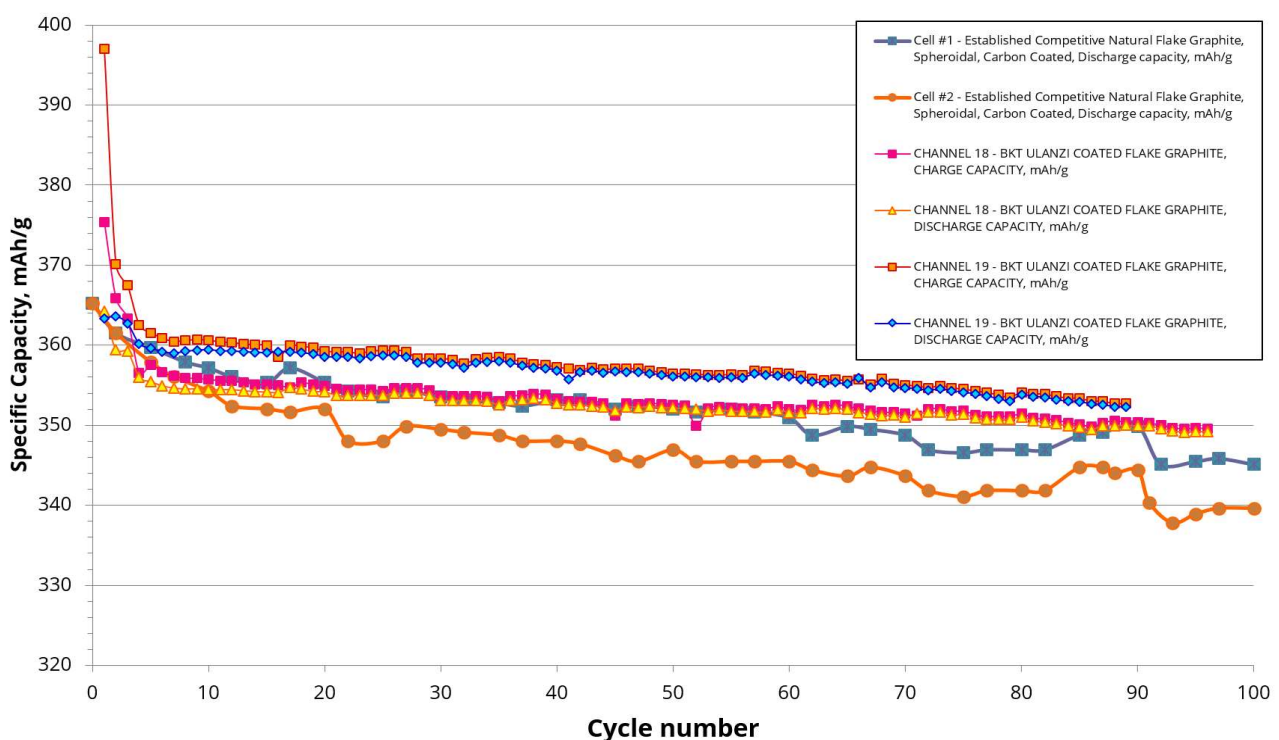


Figure 1. Coated spherical graphite showing cell capacity in mAh/g and cell cycles. Variance in charge capacity between the channel 18 and channel 19 cells is due to different chemical binders used in the anode.

More detailed information is available in the ASX announcement dated 7 February 2017.

## **MOU with Meiwa Corporation**

Black Rock announced a partnering Memorandum of Understanding (MOU) with global lithium-ion battery market participant Meiwa Corporation of Japan ("Meiwa Corporation").

The MOU established a framework for Meiwa Corporation to offer advice and the organisations to evaluate the commercial viability of a long-term commercial relationship.

### *Key Terms of Memorandum of Understanding*

The MOU establishes a framework for the organisations to work together to:

1. Determine appropriate development routes, sales and marketing strategies;
2. Evaluate the commercial viability of a long-term business relationship including the appropriate products to produce, market opportunities and other items relevant to the construction and operation of the Mahenge Graphite Mine; and
3. Discuss a variety of pricing options that would provide for the sale of products by Black Rock to Meiwa Corporation, including a sales and marketing agreement, a supply agreement or an option agreement once the project has proven its feasibility.

Meiwa Corporation is a listed Japanese trading house that was established in 1947. It is involved in numerous businesses, including chemicals, plastics, construction materials, fuel, machinery and metals. In 2010 Meiwa Corporation became a joint venture partner in a spherical graphite production facility in Shandong Province, China.

## **CORPORATE**

### **Management Changes**

During the quarter, Black Rock appointed mining industry veteran John de Vries as its Chief Operating Officer on 13 March 2017 and following the release of the Mahenge PFS, appointed him Interim Chief Executive Officer.

Mr de Vries is a highly-respected mining professional with more than 30 years of industry experience, commencing his career with WMC Resources in 1984. Other roles have included:

- General Manager, Technical Services, St Barbara Ltd
- Manager Strategic Mine Planning, BHP Billiton NiWest
- Global Business Manager, Advanced Mining Solutions, Orica Mining Services
- Principal Mining Engineer, Mine Optimisation, AMC Consultants.

Mr de Vries will serve as interim CEO as the company commences a global search to secure a new CEO. Mr de Vries will be an Executive Director of the Company.

Previous CEO Steven Tambanis agreed to step down and will support the organisation through a transitional period whilst the Company searches for a suitably experienced CEO with construction, production and marketing experience.

Mr Tambanis will serve his six months' notice period and will be paid his current salary during the notice period. Following completion of the notice period, Mr Tambanis will be retained as a consultant on an as needs basis at the direction of the company and will retain his current unvested performance rights.

Following the discovery of the world-class Mahenge Graphite Project, the Company is in the process of transitioning from explorer to developer and ultimately producer of graphite concentrate. The Company is grateful to Mr Tambanis for leading the Company through this phase of the Company's growth, and for helping establish the Company's project as industry leading in terms of capex to scale and opex in production.

Following the announcement on 24 April 2017 confirming the appointment of John de Vries as Interim CEO and Executive Director, the company confirms the following key terms of John's remuneration package which remains unchanged from his original appointment as Chief Operating Officer:

- Salary: \$300,000 per annum plus statutory superannuation
- 2.4m performance rights subject to satisfaction of milestones and continuous employment
- 6 months' notice by either the company or the executive

### Options exercised

During the quarter, Black Rock completed the issue of fully paid ordinary shares in the capital of the Company as the result of applications received to exercise 39,675,000, \$0.05 options which were due to expire on 25 March 2017.

The conversion of options raised approximately \$2 million.

### For more information:

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**Interim CEO**  
**Executive Director**

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## About Black Rock Mining

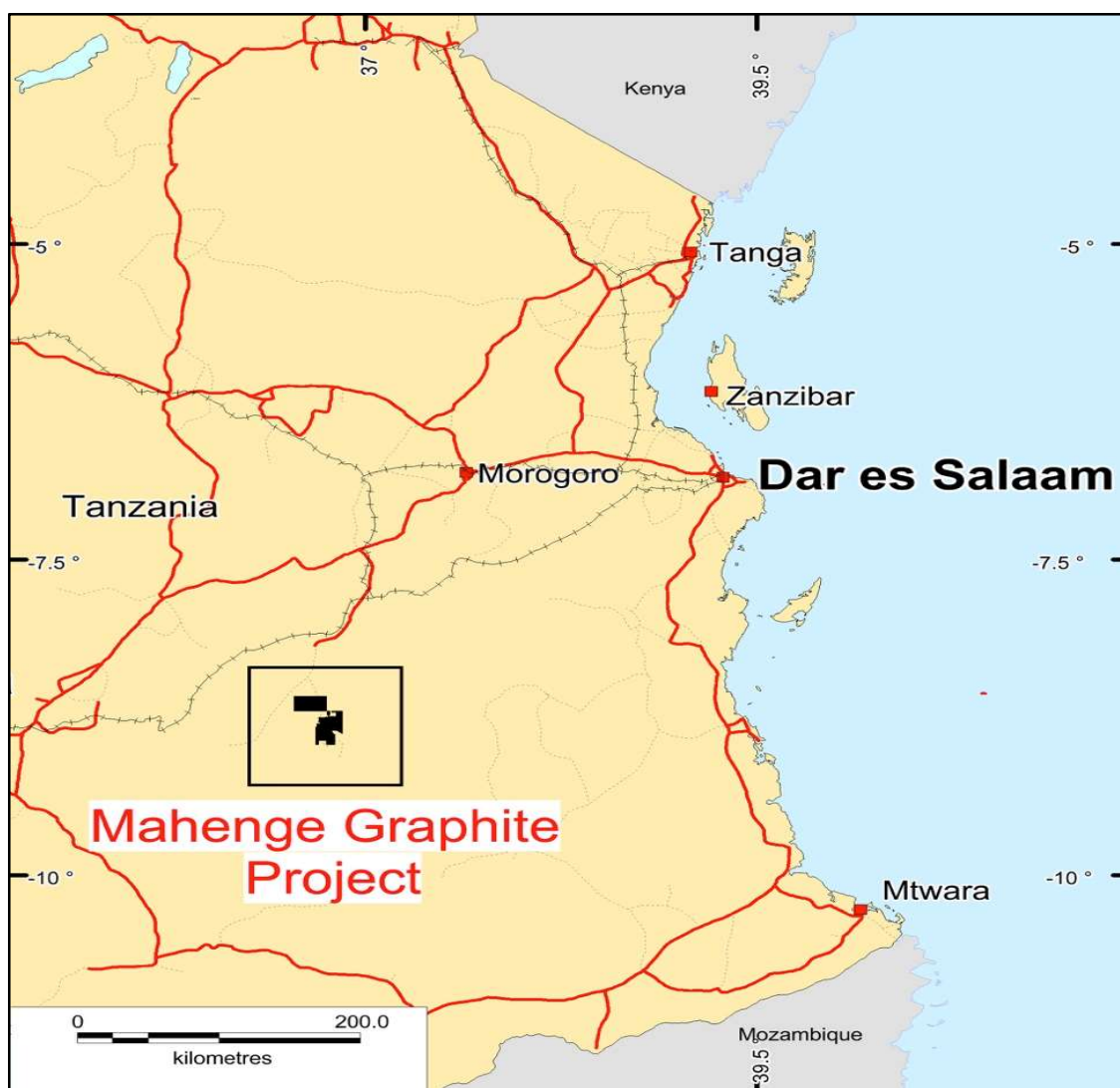
Black Rock Mining Limited is an Australian based company listed on the Australian Securities Exchange. The Company owns graphite tenure in the Mahenge region of Tanzania.

In December 2016, the Company announced a JORC compliant Mineral Resource Estimate of 203m tonnes at 7.8% TGC for 15.9m tonnes of contained Graphite, making this one of the largest JORC compliant flake graphite Mineral Resource Estimates globally. 50% of the Mineral Resource is in the Measured and Indicated categories.

In April 2017, Black Rock announced results of a Preliminary Feasibility Study (PFS) for its Mahenge Graphite Project which confirmed its potential as a long-life, low capex, high margin operation. The PFS estimated a post-tax, unlevered, internal rate of return ("IRR") for the Project of 48.7%; and a net present value (NPV) using a discount rate of 10% (NPV10) of US\$624m.

Black Rock is moving towards commencing a Definitive Feasibility Study (DFS). With a successful DFS and associated financing, construction could commence in 2018 with first production in 2019.

For further information on the company's development pathway, please refer to the company's website at the following link: <http://www.blackrockmining.com.au> and the corporate video presentation at <http://www.blackrockmining.com.au/#video>.



**Figure 1: Location of Black Rock's Mahenge Graphite Project within Tanzania**



## Appendix 5B

# Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

### Name of entity

Black Rock Mining Limited

### ABN

59 094 551 336

### Quarter ended ("current quarter")

31 March 2017

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (9 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	0	0
1.2 Payments for		
(a) exploration & evaluation	(1,061)	(4,406)
(b) development	0	0
(c) production	0	0
(d) staff costs	(117)	(281)
(e) administration and corporate costs	(269)	(658)
1.3 Dividends received (see note 3)	0	0
1.4 Interest received	3	6
1.5 Interest and other costs of finance paid	0	0
1.6 Income taxes paid	0	0
1.7 Research and development refunds	0	0
1.8 Other (provide details if material)	0	0
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(1,444)</b>	<b>(5,339)</b>

<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	(12)	(26)
(b) tenements (see item 10)	0	0
(c) investments	0	0
(d) other non-current assets	0	0



<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (9 months) \$A'000</b>
2.2	Proceeds from the disposal of:		
	(a) property, plant and equipment	0	0
	(b) tenements (see item 10)	0	0
	(c) investments	0	305
	(d) other non-current assets	0	0
2.3	Cash flows from loans to other entities	0	0
2.4	Dividends received (see note 3)	0	0
2.5	Other (provide details if material)	0	0
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>(12)</b>	<b>279</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of shares	0	5,000
3.2	Proceeds from issue of convertible notes	0	0
3.3	Proceeds from exercise of share options	1,984	2,130
3.4	Transaction costs related to issues of shares, convertible notes or options	(3)	(288)
3.5	Proceeds from borrowings	0	0
3.6	Repayment of borrowings	0	0
3.7	Transaction costs related to loans and borrowings	0	0
3.8	Dividends paid	0	0
3.9	Other (provide details if material)	0	0
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>1,981</b>	<b>6,842</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	3,682	2,359
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,444)	(5,339)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(12)	279
4.4	Net cash from / (used in) financing activities (item 3.10 above)	1,981	6,842
4.5	Effect of movement in exchange rates on cash held	(172)	(106)
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>4,035</b>	<b>4,035</b>

5. <b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1     Bank balances	4,035	3,581
5.2     Call deposits	0	0
5.3     Bank overdrafts	0	0
5.4     Other (provide details)	0	0
<b>5.5     Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>4,035</b>	<b>3,581</b>

**6.     Payments to directors of the entity and their associates**

- 6.1     Aggregate amount of payments to these parties included in item 1.2
- 6.2     Aggregate amount of cash flow from loans to these parties included in item 2.3
- 6.3     Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

Current quarter \$A'000
117
0

Director related payments – relate to both Executive and Non-Executive Director fees.

**7.     Payments to related entities of the entity and their associates**

- 7.1     Aggregate amount of payments to these parties included in item 1.2
- 7.2     Aggregate amount of cash flow from loans to these parties included in item 2.3
- 7.3     Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2

Current quarter \$A'000
0
0

## Mining exploration entity and oil and gas exploration entity quarterly report

8.	<b>Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	<b>Total facility amount at quarter end</b>	<b>Amount drawn at quarter end</b>
		<b>\$A'000</b>	<b>\$A'000</b>
8.1	Loan facilities	0	0
8.2	Credit standby arrangements	0	0
8.3	Other (please specify)	0	0
8.4	Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

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9.	<b>Estimated cash outflows for next quarter</b>	<b>\$A'000</b>
9.1	Exploration and evaluation	1,904
9.2	Development	
9.3	Production	
9.4	Staff costs	120
9.5	Administration and corporate costs	100
9.6	Other (provide details if material)	
9.7	<b>Total estimated cash outflows</b>	<b>2,124</b>

10.	<b>Changes in tenements (items 2.1(b) and 2.2(b) above)</b>	<b>Tenement reference and location</b>	<b>Nature of interest</b>	<b>Interest at beginning of quarter</b>	<b>Interest at end of quarter</b>
10.1	Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced				
10.2	Interests in mining tenements and petroleum tenements acquired or increased				

**Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

***Gabriel Chiappini***

Director

28 April 2017

**Notes**

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.