

# Delivering power to the people

ASX RELEASE ASX:AFR

31 January 2017

## **QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 DECEMBER 2016**

## **HIGHLIGHTS**

- Extensive field activities and technical programs continued under First Quantum Minerals Ltd management at the Sese Joint Venture Project during the quarter:
  - WSP Parsons Brinckerhoff were engaged to provide project engineering services to the Sese power project, including preliminary power station design and layout plans for 450MW and preparation of a minimum functional specification to be used to obtain EPC quotes on costing.
  - Analytical data was received for the four large diameter holes that were drilled in the previous quarter. A detailed fuel specification will be finalized next quarter.
  - Four lines of seismic and electrical surveying were completed, and eight geotechnical holes were drilled over the planned Sese power station site to evaluate soil and bedrock strength for power station footings.
  - o Thirteen infill core holes were completed in the proposed mining area for the power project to provide information for detailed mine planning and mine scheduling.
  - A three-hole core program was completed at Foley North to provide data on the extent and nature of the limestone at depth. Limestone can be used to reduce Sulphur emissions from power stations.
- Project development programs continued at the wholly owned Mmamabula West project:
  - o An infill drilling program was completed in the shallowest part of the deposit to provide information to allow a portion of the resource to be re-classified as a Measured resource.
  - The Environmental and Social Impacts Assessment and Environmental Management Plan for 600MW of power generation and 4Mtpa of coal mining were completed and are now being prepared for submission to the Department of Environmental Affairs in Q1 2017.
  - o An application for Land Rights over the SE corner of the project was submitted.
- AFR continued to assist TM Consulting (TMC) with work programs for the Mmamantswe Project to ultimately deliver a formal submission into South Africa's cross-border IPP procurement program.
- Two year extensions to the Sese, Sese West and Mmamantswe prospecting licences were approved.
- An application to renew the Mmamabula West prospecting licence was submitted in November.
- On-market share buyback facility expired during the quarter and has not been renewed.
- At 31 December 2016, the Company had cash reserves of AU\$4.5M.



## **OUTLOOK FOR NEXT QUARTER**

## Sese Integrated Power Project (45% AFR, 55% FQM)

- Finalise work programs to advance the Sese Project including;
  - Update the Environmental Approvals to allow up to 450MW of power generation.
  - o Finalisation of the detailed fuel specification for the power station.
  - Update the mining study to meet the requirements of a 450MW power project using information from the recently completed infill drilling.
  - o Complete preliminary power station design and layout and obtain EPC quotes on plant costing for a 450MW power station (2 x 225MW).
- Finalise documentation to apply for a Generation and Export Licence.
- Execution of the Water Supply Agreement for the project.
- Negotiate finalization of the Manufacturing Development Approval Order to secure the fiscal regime for the project.
- Continue to assess power market opportunities in the southern African region suitable for expansions of the Sese Integrated Power Project.
- FQM are required to commit a further A\$8.7M by 12 July 2017 to acquire an additional 20% interest in the project.

## Mmamabula West Project (100% AFR)

- Ongoing hydrogeological observations for the ESIA baseline study.
- Submission of the ESIA and EMP to the Department of Environmental Affairs.
- Evaluate the results of the infill drilling and establish a measured resource in the area of proposed mining for an initial 600MW power station fuel supply.

## Mmamantswe Power Project (100% AFR, operated by TM Consulting)

- Complete Phase 2 of the feasibility study for the proposed coal mine and CHPP.
- Commence detailed power station design studies.



## **PROJECTS**

## Sese JV, Botswana (AFR 45%, FQM 55%)

## 1.1 Overview

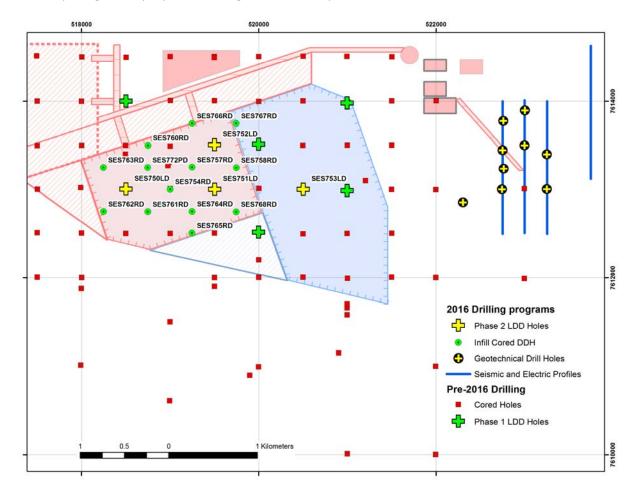
- FQM acquired a 51% interest in the Sese Project in January 2015 and can increase their interest in to 75% by investing a further A\$8.7M by 12 July 2017.
- Once FQM has reached a 75% project interest, AFR's ongoing 25% interest in all projects undertaken in the Sese JV will be loan carried through to commercial operation.
- FQM spent A\$668,156 in the quarter and has spent A\$3,295,907 to date since their initial investment on January 2015 and currently own 55% interest in the Sese Project.

## 1.2 Technical Programs

The following activities were undertaken during the quarter:

## Sese (PL96/2005)

o A thirteen-hole infill core drilling program to tighten up drill spacing to a nominal 350m spacing in the proposed mining area was completed.





- Proximate analyses from the main coal seam (SS-seam) in this infill drilling were received during the quarter and show that variation in average raw (ROM) coal quality across the proposed mining area is low (from a low of 17.4MJ/kg to a high of 20.3MJ/kg).
- Data from the infill drilling program will be used in Q1/Q2 to update the measured resource for this part of the overall project, and this will form the basis for a mining reserve once updated mining studies have been completed over the proposed mining area.
- o Four lines of seismic and electric sounding data were collected to assist with the geotechnical evaluations of rock mass strength in the proposed area of power station construction.
- Eight cored holes were drilled along the seismic lines for to provide additional geotechnical information for potential power station footings/foundation material.
- o Four large diameter cored holes were drilled in the previous quarter for a total of 241.02m.
- Three ~50kg composite samples have been created from each large diameter hole and these have been subject to particle size distribution analysis to determine how the coal will physically behave during crushing and washing. Data are currently being interpreted.
- Each composite sample has also been subjected to washability test work at RD's of 1.5, 1.6, 1.7, 1.8 and 1.9. Results were received in late January and are currently being interpreted.
- JHDA were appointed to complete a pre-feasibility study on a coal processing and handling plant (CHPP) by the end of Q1 2017 (based on the results from the large diameter test work and infill drilling washing results).
- Selected samples from the large diameter core have been sent to an Eskom facility in South Africa for combustion testing to evaluate how this coal will perform in a pulverised coal boiler. Results are expected in February.
- Continued review and update of the proposed site layout, mining plan and mine schedule to meet the requirements of a 450MW power station.
- WSP Parsons Brinckerhoff were engaged to provide project engineering services to the Sese power project, including preliminary power station design and layout plans for 450MW and preparation of a minimum functional specification to be used to obtain EPC quotes on costing in Q1 2017.

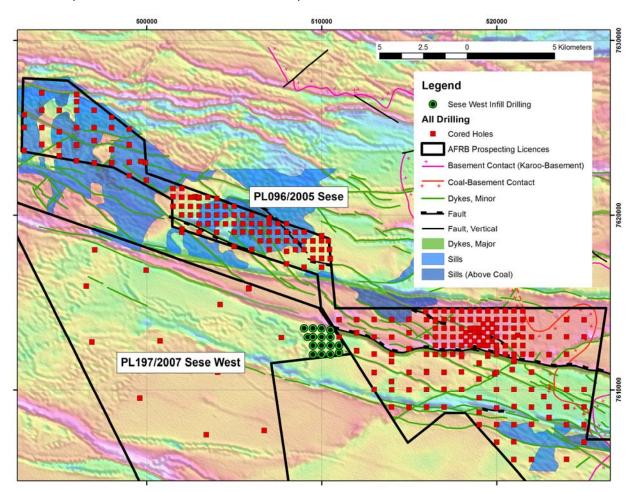
## Sese West (PL197/2007)

- Sixteen vertical cored holes were drilled in the previous quarter on a 500m x 500m grid at Sese West to provide information for the development of a measured resource estimate for part of the Sese West deposit. Most holes intersected multiple coal seams of varying quality.
- o A total of 1,468m was drilled, of which 634m was drilled as RC-percussion pre-collars, and 834m was HQ3 diameter core.
- o A total of seventy samples of coal were analysed for proximate analyses on an air-dried basis (CV, Moisture, Ash, Volatiles, Sulphur, Fixed Carbon). These data have been used in the resource modelling to determine raw (ROM) coal characteristics.
- Twenty-five composite samples were created from these seventy original samples. Each composite sample has been subjected to washability testing at float RD's of 1.6, 1.7, 1.8, 1.9,



2.0, plus sinks at an RD of 2.0 and the -0.5mm fraction. These data will be used to determine product coal specifications for washed coal in future feasibility studies.

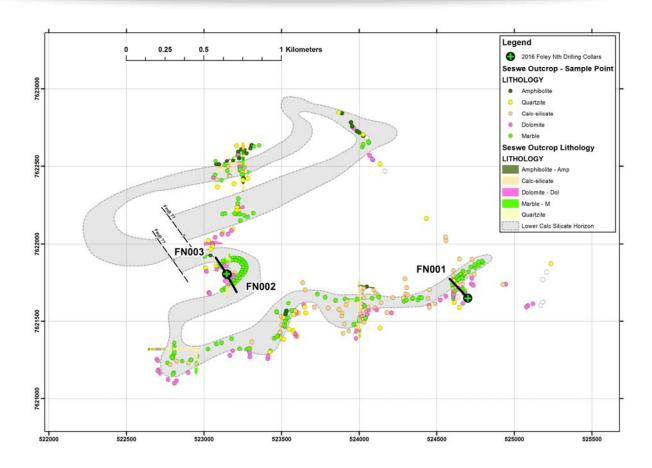
An updated resource estimate will be completed in Q1 2017.



## **Foley North (PL004/2013)**

- o A program of three diamond core holes to collect sample of marble/limestone from the Seswe carbonate occurrence (Foley North industrial minerals prospecting licence) was completed in the quarter.
- Analytical results were received in late January and indicate that most of the samples were dolomitic marbles with high CaO and moderate to high MgO, with subordinate marbles (high CaO, minor MgO) and calc-silicate schists containing a higher proportion of SiO2.
- Surface mapping, now coupled with the drilling data, indicates that at least two carbonate (predominantly dolomitic) horizons of 7-15m true thickness are present. These appear to extend over several kilometres in a moderately strongly folded basin.
- Carbonate samples collected from this drilling will be analysed for their sulphur-dioxide sorbency properties and evaluate its suitability for power station emissions management.





## 1.3 Permitting

- A mining licence application covering enough coal for the initial Sese Power Project and potential future expansions is currently being assessed by the Department of Mines in Botswana. An outcome is expected in Q1 2017.
- Applications for further two-year extensions to the two coal prospecting licences (Sese PL96/2005 and Sese West PL197/2007) were approved the Department of Mines in late November.
- A Land Lease agreement providing guaranteed surface rights over the Sese project area for 50 years was signed during 2016 and remains in the process of being registered as a Deed in Botswana.
- A formal Water Supply Agreement is being finalized for execution.
- The Environmental and Social Impact Assessment for the Sese Integrated Power Project has been approved by the Department of Environmental Affairs (DEA).
  - This covers an initial 300MW power station, associated coal mine and related infrastructure, including an access corridor to the main A1 highway and regional transmission grid.
  - o An update to the ESIA is being prepared to seek environmental approvals sufficient for up to 450MW of power generation (staged development of 2 x 225MW units) and the associated coal mining and processing.



Discussion continued with government departments related to an application for a Manufacturing Development Approval Order for the Sese integrated power project which was submitted to the Ministry of Finance during the previous quarter.

#### 2 Mmamabula West Project, Botswana (AFR 100%)

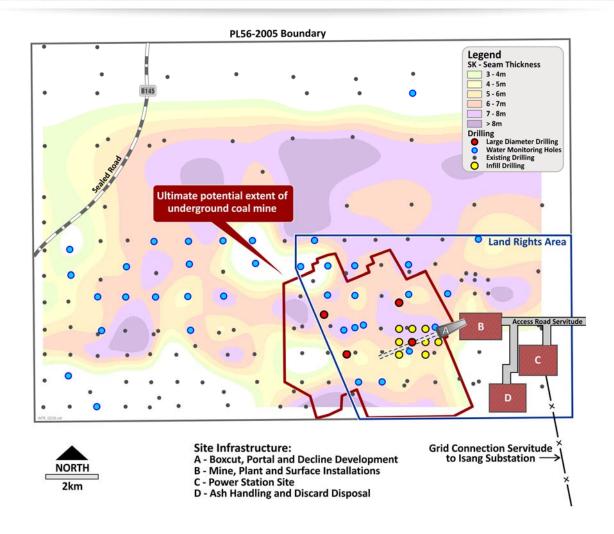
## 2.1 Overview

- In April, South Africa gazetted an updated notice amending it coal-fired, baseload, cross-border IPP procurement program to 3,750MW. Procurement is to be managed via the IPP Office on behalf of the Department of Energy, and can be via direct negotiation for grid connection as soon as possible.
- The Mmamabula West project contains two ~5m thick coal seams (K-Seam, A-Seam) and is being developed as an integrated underground coal mine and 600MW power station for submission into the South African cross-border IPP procurement program.

## 2.2 Project Development Plan

- A program of physical test work on large diameter core, including particle size distribution analysis, ultimate analysis, hardness testing and abrasion testing was completed during the quarter. A detailed fuel specification will be finalized in Q1 2017.
- Hydrogeological (aquifer) modelling for preliminary ESIA baseline studies continued. Field measurements of standing water levels and water chemistry are being collected on a regular basis to establish the baselines for aquifer positions and aquifer chemistry.
- An application for Land Rights over the project area, project access corridor and grid connection corridor has been submitted.
- An infill core drilling program comprising eight vertical cored holes for a total of 1104.2m was completed during the quarter.
- These holes were drilled on a nominal 500m x 500m grid in the shallowest part of the resource along the axis of the decline position identified in the pre-feasibility study completed in March 2014.
- The infill program was designed to collect coal quality data from both the K-Seam and A-Seam in preparation for an updated resource estimate to upgrade this portion of the resource to the Measured category. Drilling was completed in late December and samples submitted to the laboratory in South Africa in late January.





## 2.3 Permitting

- An application for a further two-year extension to the term of Mmamabula West Prospecting Licence PL56/2005 was submitted to the Department of Mines in late November.
- An application for Land Rights over the project area and grid connection corridor was submitted during the quarter.
- Amendment to the ESIA/EMP documentation to include 600MW of power generation plus grid connection to BPC's Isang sub-station were completed. Submission of the final ESIA/EMP document is scheduled for early Q1 2017.

#### 3 Mmamantswe Integrated Power Project, Botswana (AFR 100%)

- The Mmamantswe project is 20km from the border with South Africa and has been previously evaluated by Eskom for integration into the South African grid.
- In December 2015 the Company executed a binding Share Sale Agreement under which it will sell the Mmamantswe Coal and Power project to TM Consulting (TMC) for US\$20 million, subject to certain conditions being met, principally the financial close of a 600MW integrated power project.
- TMC has engaged a number of technical consultants to implement a program of work designed to:



- Provide all required information to enable the Company to apply for a mining licence over the coal deposit, and
- o Provide all required information to allow TM Consulting to enter into negotiations with South Africa's IPP office for a power purchase agreement under the auspices of the 3,750MW crossborder coal fired IPP procurement program.
- During the quarter, Sedgman delivered the following:
  - Identification of gaps to progress the project from its current status to a full bankable feasibility status. This analysis was carried out by VBKOM on the geology and mining components while Sedgman evaluated the coal handling and preparation plant (CHPP);
  - o A mining strategy and associated capital and operating cost estimate to execute the proposed mining strategy;
  - A process description for the proposed coal handling and processing plant (CHPP);
  - An estimated capital and operating cost for the proposed CHPP;
  - A detailed proposal for Phase 2 to close out outstanding deliverables identified to fulfil the requirements for a full bankable feasibility study.
- Phase 2 of the study will commence in the next quarter.
- An application for a further two-year extension to the term of Mmamantswe Prospecting Licence PL69/2007 was approved by the Department of Mines in late November.
- An application for Land Rights over the project area, project access corridor and grid connection corridor was submitted during the quarter.



## 4 Global Resources for African Energy's Coal Projects in Botswana

Sese Project: Resource Summary (Raw coal ADB, 55% FQM, 45% AFR)										
Resource Zone	In-Situ Tonnes*	CV (MJ/kg)	CV (kcal/kg)	Ash %	IM%	VM%	FC%	S %		
MEASURED (Bk-C)	333 Mt	17.6	4,200	30.2	7.9	20.6	41.4	2.1		
MEASURED (Bk-B)	318 Mt	16.0	3,820	34.8	7.4	20.4	37.4	1.7		
INDICATED	1,714 Mt	15.3	3,650	38.9	6.6	18.7	35.8	2.0		
INFERRED	152 Mt	15.0	3,600	39.1	6.4	19.5	34.9	2.2		
TOTAL	2.517 Mt		_							

Sese West Project: Resource Summary (Raw coal ADB, 55% FQM, 45% AFR)									
Resource Zone	CV (MJ/kg)	CV (kcal/kg)	Ash %	IM%	VM%	FC%	S %		
INFERRED	2,501 Mt	14.6	3,500	40.2	6.1	19.8	31.9	2.0	
TOTAL	2,501 Mt								

Mmamabula West Project: Resource Summary (Raw coal ADB, 100% AFR)										
Resource Zone	In-Situ Tonnes*	CV (MJ/kg)	CV (kcal/kg)	Ash %	IM%	VM%	FC%	S %		
INDICATED	892 Mt	20.2	4,825	25.5	6.0	26.0	41.0	1.5		
INFERRED	1,541 Mt	20.0	4,775	25.5	5.7	25.9	41.2	1.7		
TOTAL	2.433 Mt									

Mmamantswe Project: Resource Summary (Raw coal ADB, 100% AFR)										
Resource Zone	In-Situ Tonnes*	CV (MJ/kg)	CV (kcal/kg)	_	IM%	VM%	FC%	\$ %		
MEASURED	978 Mt	9.5	2,270	56.5	3.9	15.8	21.8	2.0		
INDICATED	265 Mt	7.9	1,890	62.3	3.3	14.2	18.1	2.1		
INFERRED	N/A									
TOTAL	1,243 Mt									

<sup>\*</sup> In-Situ tonnes have been derived by removing volumes for modelled intrusions, burnt coal and weathered coal and then applying geological loss factors to the remaining Gross In-Situ Tonnes

The Coal Resources quoted for the Sese, Mmamabula West and Mmamantswe Projects in the table above have been defined in accordance with the practices recommended by the Joint Ore Reserves Committee (2004 edition of the JORC Code). Sese West is reported as per the 2012 edition. There have been no material changes to any of the resources since they were first announced.

**Dr. Frazer Tabeart** 

**Managing Director** 



## 5 Mining tenements held at the end of the quarter and their location

	Interest at beginning of quarter	Interest at end of quarter	Location	Commodity
PL096/2005 (Sese)	45%	45%	Botswana	Coal, U
PL197/2007 (Sese West)	45%	45%	Botswana	Coal, U
PL004/2013 (Foley North)	45%	45%	Botswana	Industrial
PL069/2007 (Mmamantswe)	100%	100%	Botswana	Coal
PL056/2005 (Mmamabula West)	100%	100%	Botswana	Coal
12634-HQ-LML (Chirundu ML)	100%	100%	Zambia	U
13265-HQ-LPL (Chirundu PL)*	-%	-%	Zambia	U
19800-HQ-LPL (Kariba Valley)	100%	100%	Zambia	U
20612-HQ-LPL (Sinazongwe)	100%	100%	Zambia	Coal
16566-HQ-LPL (Sinazongwe Central)	100%	100%	Zambia	Coal

<sup>\*</sup> Chirundu prospecting licence is under application for renewal

Full details for all projects including location maps, tenement schedules and technical descriptions may be found on the African Energy Resources website at: www.africanenergyresources.com

The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves. The information contained in this announcement was prepared under the JORC Code 2012. References to "Measured, Indicated and Inferred Resources" are to those terms as defined in the JORC Code (2012 edition).

Information in this report relating to Exploration results, Mineral Resources or Ore Reserves is based on information compiled by Dr Frazer Tabeart (an employee and the Managing Director of African Energy Resources Limited) who is a member of The Australian Institute of Geoscientists. Dr Tabeart has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person under the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Tabeart consents to the inclusion of the data in the form and context in which it appears.

For any queries please contact the Company Secretary, Mr Daniel Davis on +61 8 6465 5500



# **Appendix 5B**

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

# Name of entity African Energy Resources Limited Quarter ended ("current quarter")

31 December 2016

Consolidated statement of cash flows		Current quarter \$US'000	Year to date (6 months) \$US'000
1.	Cash flows from operating activities		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	(63)	(110)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(183)	(285)
	(e) administration and corporate costs	(140)	(247)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	22	72
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Research and development refunds	-	-
1.8	Other (provide details if material)	-	
1.9	Net cash from / (used in) operating activities	(364)	(570)

2.	Cash flows from investing activities	
2.1	Payments to acquire:	
	(a) property, plant and equipment	
	(b) tenements (see item 10)	
	(c) investments	
	(d) other non-current assets	-
2.2	Proceeds from the disposal of:	
	(a) property, plant and equipment	-
	(b) tenements (see item 10)	-
	(c) investments	
	(d) other non-current assets	
2.3	Cash flows from loans to other entities	-   -
2.4	Dividends received (see note 3)	-
2.5	Other (provide details if material)	
2.6	Net cash from / (used in) investing activities	-

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Consolidated statement of cash flows		Current quarter \$US'000	Year to date (6 months) \$US'000
3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares	-	
3.2	Proceeds from issue of convertible notes	-	
3.3	Proceeds from exercise of share options	-	
3.4	Transaction costs related to issues of shares, convertible notes or options	-	
3.5	Proceeds from borrowings	-	
3.6	Repayment of borrowings	-	
3.7	Transaction costs related to loans and borrowings	-	
3.8	Dividends paid	-	
3.9	Other (provide details if material)	-	
3.10	Net cash from / (used in) financing activities	-	

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	3,824	3,943
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(364)	(570)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	<del>-</del>	-
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-
4.5	Effect of movement in exchange rates on cash held	(239)	(152)
4.6	Cash and cash equivalents at end of period	3,221	3,221

5.	Reconciliation of cash and cash equivalents	Current quarter	Previous quarter
	at the end of the quarter (as shown in the consolidated	\$US'000	\$US'000
	statement of cash flows) to the related items in the accounts		
5.1	Bank balances	1,326	982
5.2	Call deposits	1,895	2,842
5.3	Bank overdrafts	-	_
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal	2 224	2 024
	item 4.6 above)	3,221	3,824

6.	Payments to directors of the entity and their associates	Current quarter \$US'000
6.1	Aggregate amount of payments to these parties included in item 1.2	144
6.2	Aggregate amount of cash flow from loans to these parties included in item 2.3	-
		6.4 1.6.5

6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

Payment of director fees	 	 	
,			



# 7. Payments to related entities of the entity and their associates Current quarter \$US'000 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

Payment for administration and technical staff and provision of a fully serviced office

8.	Financing facilities available  Add notes as necessary for an understanding of the position	Total facility amount at quarter end \$US'000	Amount drawn at quarter end \$US'000
8.1	Loan facilities	-	-
8.2	Credit standby arrangements	-	-
8.3	Other (please specify)	-	-

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.

9.	Estimated cash outflows for next quarter	\$US'000
9.1	Exploration and evaluation	183
9.2	Development	-
9.3	Production	<del>-</del>
9.4	Staff costs	187
9.5	Administration and corporate costs	98
9.6	Other (provide details if material)	-
9.7	Total estimated cash outflows	468

10.	Changes in tenements (items 2.1(b) and 2.2(b) above)	Tenement reference and location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
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**

- 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.



Company Secretary
Date: 31 January 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.