

## Delivering power to the people

ASX RELEASE ASX:AFR

27th April 2017

## QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31st MARCH 2017

## **HIGHLIGHTS**

- Botswana's Ministry of Mineral Resources, Green Technology and Energy Security granted a 25-year Mining License (ML) to the Sese Joint Venture. The ML covers an area of 51.47km2 and contains 650Mt of raw coal in Measured and Indicated resources.
- The Ministry of Finance and Economic Development approved several fiscal incentives for the project as requested under a Manufacturing Development Approval Order. The principal incentives are that the power generation business will be granted a five-year tax holiday from its first year of commercial operation, followed by a preferential 15% tax rate for the life of the project.
- Technical programs continued under First Quantum Minerals Ltd management at the Sese Joint Venture Project during the quarter:
  - WSP Parsons Brinckerhoff issued a report detailing preliminary design and layout plans for a 450MW power station and prepared a Minimum Functional Specification document to be used to obtain quotes from Original Equipment Manufacturers (OEM's) and Engineering, Procurement and Construction companies (EPC's).
  - Test-work on Sese coal has determined that it is suitable for use in both circulating fluidized bed (CFB) and pulverized coal (PC) boiler technology. Fuel specifications have been derived for each boiler technology.
  - Assays of the limestone from Foley North have shown that it can be used to reduce sulphur emissions from CFB boilers, but is not of a sufficient quality to be used in PC boilers.
- Project development programs continued at the wholly owned Mmamabula West coal project:
  - o Fuel specifications for both the A-Seam and K-Seam have been finalised and confirm that Mmamabula West can produce power station fuel suitable for use in either CFB or PC boilers.
  - Results of coal quality analyses from the infill drilling completed in December 2016 have been received and will be used to upgrade a portion of the indicated resource to the Measured Resource category.
  - An application for Land Rights over the SE corner of the prospecting licence was submitted. This
    contains most the existing Indicated Resource and will form the basis for a Mining Licence
    application in due course.
- 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.
  - o Land Rights application for Mmamantswe was submitted during the quarter.



- AFR executed a binding agreement to sell its Zambian uranium portfolio to TSX-V listed GoviEx Uranium Inc. for consideration of 3.0M GoviEx shares and 1.6M common share purchase warrants.
- The sale of African Energy's uranium projects to GoviEx is subject to various regulatory approvals and is expected to close before the second half of July 2017
- At 31 March 2017, the Company had cash reserves of AU\$3.9M.

## **OUTLOOK FOR NEXT QUARTER**

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

- Finalise work programs to advance the Sese Project including;
  - o An update to the Block-C measured resource will be undertaken in Q2 2017.
  - o Update the Environmental Approvals to allow up to 450MW of power generation.
  - Update the mining study to meet the requirements of a 450MW power project.
- Finalise documentation to apply for a Generation and Export License.
- Commence documentation of formal Tax Agreement with the Government of Botswana to recognise the fiscal incentives granted under the Manufacturing Development Approval Order.
- FQM are required to commit a further A\$7.5M 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.
- Evaluate the results of the infill drilling and establish a measured resource in the proposed mining area for an initial 600MW power station fuel supply.

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

- Infill core drilling to upgrade central part of the resource to JORC 2012/SAMREC Measured Resource category.
- Continue Phase 2 of the feasibility study for the proposed coal mine and CHPP.
- Commence detailed power station design studies.

## Corporate

Complete sale of Zambian uranium portfolio to GoviEx Uranium Inc.



## **PROJECTS**

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

#### Overview 1.1

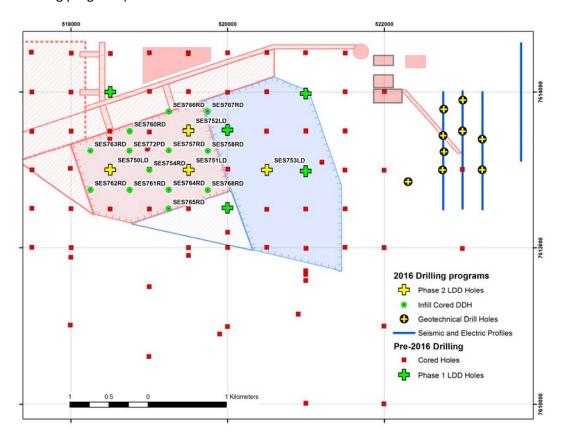
- FQM acquired a 51% interest in the Sese Project in January 2015 and can increase their interest in to 75% by investing a further A\$7.52M by 12 July 2017.
- Once FQM has reached a 75% project interest, AFR's ongoing 25% interest in all projects undertaken in the Sese JV will be loan carried through to commercial operation.
- FQM spent A\$0.96M in the quarter and has spent A\$4.48M 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)

Results from previously completed large diameter drilling and a thirteen-hole infill core drilling program in the proposed mining area have now all been received (see Figure below for location of drilling programs).





- Analyses of the results from the large diameter core drilling have been used to prepare detailed fuel specifications for both CFB and PC boilers.
- These results plus the washing test work from the infill drilling have been used in a prefeasibility study to evaluate a coal processing and handling plant (CHPP) by JHDA. This study will be concluded in the next quarter and will provide capital costs estimates, operating cost estimates, process flowsheet and preliminary engineering drawings for a ~550tph CHPP.
- Selected samples from the large diameter core were sent to an Eskom facility in South Africa for combustion testing to evaluate how this coal will perform in a pulverised coal boiler. Results from this test work were highly encouraging, indicating the Sese coal is suitable for PC boilers.
- WSP Parsons Brinckerhoff completed an evaluation on the preliminary design and layout plans for a 450MW power station, including a comparative assessment of CFB vs PC boiler technology. Both technologies are suitable for consideration for Sese coal, and both produce power at a similar cost (within error), indicating that final technology selection will be down to best availability and pricing from individual original equipment manufacturers (OEM's)
- WSP Parsons Brinckerhoff completed preparation of a minimum functional specification to be used to obtain EPC quotes on costing for major project components from OEM's (e.g. boilers, steam turbines, generators, transformers).

## Sese West (PL197/2007)

Analytical data from infill core drilling has been used to commence an updated resource estimate for a small proportion of the Sese West Inferred Resource. This work will be completed in Q2 2017.

## Foley North (PL004/2013)

- No field programs were undertaken during the quarter.
- Analyses from carbonate samples collected from drilling completed in 2016 have indicated that the local dolomitic marbles at Foley North may be suitable for sulphur emissions mitigation if used in CFB boilers, but that the quality of the marble is not suitable for use in a PC boiler.



#### 1.3 **Permitting**

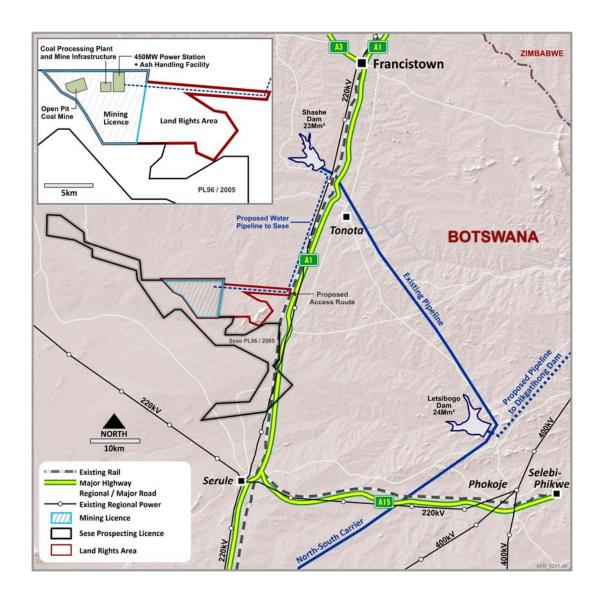
Botswana's Ministry of Mineral Resources, Green Technology and Energy Security granted a Mining License (ML) to the Sese Joint Venture effective 31 January 2017. The ML covers an area of 51.47km2 and contains ~650Mt of raw coal in Measured and Indicated resources (see table and diagram below):

Sese ML							
Resources	Tonnes	CV	Thickness	Sulphur	Ash	Volatiles	Moisture
		MJ/kg	М	%	%	%	%
<u>Measured</u>							
SS Seam	221,645,944	18.21	11.63	2.29	28.27	20.65	8.06
SST Seam	17,219,414	13.23	1.23	0.76	42.34	19.74	6.82
SSU Seam	13,141,724	15.01	1.58	1.9	38.79	21.19	6.81
	252,007,082	17.70	14.44	2.17	29.78	20.62	7.91
<u>Indicated</u>							
SS Seam	249,548,161	15.48	10.25	1.99	37.45	18.49	7.14
SST Seam	108,074,948	11.83	5.51	1.06	48	17.25	6.06
SSU Seam	39,619,518	12.83	2.7	1.85	47.05	16.7	5.53
	397,242,627	14.22	18.46	1.72	41.28	17.97	6.69
TOTAL	649,249,709	15.57	18.24	1.89	36.81	19.00	7.16

- The approved ML contains more than enough coal in the higher quality SS Seam for the currently contemplated 450MW power project at Sese plus multiple expansions.
- The Mining License is valid for 25 years. This can be extended by a further period of up to 25 years on written application to the Minister not less than 12 months before expiry of the license.
- In conjunction with the previously approved Land Rights and Environmental Approval, the ML gives the owner the right to erect all buildings and infrastructure required to implement the project.
- The Ministry of Finance and Economic Development has approved several fiscal incentives for the project as requested under a Manufacturing Development Approval Order. The principal incentives are that the power generation business will be granted a five-year tax holiday from its first year of commercial operation, followed by a preferential 15% tax rate for the life of the project.
- Sese Power will formalize this approval through a Tax Agreement to be approved by Botswana's National Assembly, following which the Tax Agreement will become a Statutory Instrument that will form part of the Subsidiary Legislation under the Income Tax Act.
- 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 approved 300MW Environmental and Social Impact Assessment for the Sese Integrated Power Project will ultimately be updated to seek supplementary approvals for up to 450MW of power generation (staged development of 2 x 225MW units) and the associated minor increase in volumes of coal mining and processing and airborne emissions.





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

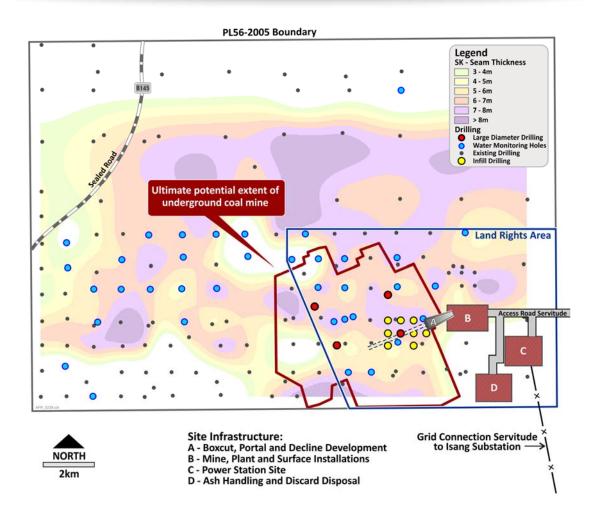
#### 2.1 Overview

- In April 2106, South Africa gazetted an updated notice amending it coal-fired, baseload, crossborder 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 previous quarter (see diagram below).
- The outputs from these programs have been used to prepare a preliminary fuel specification.
- This work has demonstrated that the coals from either coal seam are suitable for use in either CFB or PC boilers. The suitability for pulverised coal combustion is further strengthened by the high volatile matter content in the coal from both seams.
- The fuel specifications developed above are suitable to initiate a process with a Power Plant developer for the initial design of a power station.
- 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 infill core drilling program comprising eight vertical cored holes for a total of 1104.2m on a nominal 500m x 500m grid was completed in December 2016.
- Proximate analyses and washing test work analyses for the coal samples were received during the quarter and will be used to update the resource estimate in the next quarter. It is expected that a portion of the resource will be reclassified into Measured Resource.





#### 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 in January.
- An amendment to the environmental and social impact assessment (ESIA) to include 600MW of power generation plus grid connection to BPC's Isang sub-station has been submitted to the Department of Environmental Affairs. It is expected that a Reference Group Meeting to discuss these amendments will be held in the next quarter.



#### 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 several technical consultants to implement a program of work designed to:
  - o 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 previous quarter, Sedgman delivered a report highlighting gaps to progress the project to a full bankable feasibility study.
- The bankable feasibility study (BFS) will commence in the next quarter.
  - This will comprise an infill drilling program of approximately 20 holes to provide more detailed information on coal quality for the upgrade of the resource to JORC/SAMREC 2012 standard.
  - Results from this drilling plus previously drilled holes will form the basis for the bankable feasibility study into coal mining and coal handling and preparation.
  - An updated fuel specification for power generation will be derived from these studies and used prepare a prefeasibility study on power station design and layout.
- An application for a further two-year extension of the Mmamantswe Prospecting Licence PL69/2007 to 31st December 2018 has been approved by the Department of Mines.
- An application for Land Rights over the project area, project access corridor and grid connection corridor has been submitted.



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

Sese Pro	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 84+	-							

TOTAL 2,517 Mt

Sese West 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%	\$ %
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%	\$ %
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)	Ash %	IM%	VM%	FC%	S %
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							

<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

1,243 Mt

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.

**TOTAL** 



## 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> Mmamantswe subject to conditional sale agreement to TM Consulting

## **Dr. Frazer Tabeart**

**Managing Director** 

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

<sup>\*\*</sup> Chirundu ML, Chirundu PL and Kariba Valley subject to binding sale agreement to GoviEx Uranium Inc.



# **Appendix 5B**

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

## Name of entity

African Energy Resources Limited	
ABN	Quarter ended ("current quarter")
45 123 316 781	31 March 2017

Con	solidated statement of cash flows	Current quarter \$US'000	Year to date (9 months) \$US'000
1.	Cash flows from operating activities		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	(223)	(334)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(55)	(341)
	(e) administration and corporate costs	(109)	(355)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	3	75
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	(384)	(955)
2.	Cash flows from investing activities		

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	-	-



Conso	olidated statement of cash flows	Current quarter \$US'000	Year to date (9 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	3,221	3,943
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(384)	(955)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	-
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-
4.5	Effect of movement in exchange rates on cash held	127	(24)
4.6	Cash and cash equivalents at end of period	2,964	2,964

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$US'000	Previous quarter \$US'000
5.1	Bank balances	946	1,326
5.2	Call deposits	2,018	1,895
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	2,964	3,221



# 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 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

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

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	30
9.2	Development	-
9.3	Production	-
9.4	Staff costs	187
9.5	Administration and corporate costs	111
9.6	Other (provide details if material)	-
9.7	Total estimated cash outflows	328



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**

- 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.

## **Daniel Davis**

Company Secretary Date: 27 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.