

# **DECEMBER 2016 QUARTERLY REPORT**

Sovereign Metals Limited ("the Company" or "Sovereign") is pleased to present its quarterly report for the period ending 31 December 2016. The Company is primarily focused on its Malingunde saprolite hosted graphite project in Malawi. Soft saprolite-hosted flake graphite deposits generally have significantly lower capital and operational costs compared with hard rock operations. This is due to their free-dig nature, very low stripping ratios and simple processing that doesn't require expensive crushing or primary milling circuits.

# Highlights:

# > Diamond and aircore drilling intersected thick zones of high grade saprolite at Malingunde:

A drilling program comprising a total of 5,517m in 180 aircore holes and 488m in 13 largediameter PQ diamond holes was completed at Malingunde during the quarter. Assays for the first 22 aircore and 5 diamond holes have been received to date and show thick, high-grade zones of saprolite-hosted graphite mineralisation including intercepts of up to 30m downhole. Results include:

> MGAC0019: 13m @ 17.8% TGC MGAC0020: 23m @ 16.1% TGC MGAC0030: 30m @ 15.3% TGC inc. 10m @ 20.8% TGC MGAC0017: 31m @ 10.8% TGC inc. 6m @ 25.3% TGC MGDD0007: 25m @ 15.1% TGC inc. 15m @ 19.7% TGC MGDD0006: 20m @ 13.7% TGC inc. 12m @ 17.1% TGC

# > Continued metallurgy improvements:

Continued bench-scale metallurgical test-work with refinements showed improvements in grade and flake size distribution. Results show combined concentrate grade across all flake size fractions increased from 97.3% C(t) to 98.2% C(t) and the percentage of concentrate in +149µm medium, large & jumbo flake categories increased from ~49% to ~55%.

### > Upcoming activity and news flow for H1 2017 - Malingunde

- Reporting of Aircore & Diamond Drilling Results: Assays for a further 163 holes are pending. These are expected over the coming weeks and will be reported when received.
- Metallurgy: Ongoing flowsheet optimisation and variability test-work continues. Work includes production of larger quantities of concentrates for evaluation by potential offtake partners.
- > Downstream Test-work: Program focused on Li-ion battery suitability and expandable graphite applications commenced at a renowned German industrial minerals laboratory.
- > Maiden Resource Estimate: Targeted for Q1 2017.
- Scoping Study: Targeted for early Q2 2017.
- > Offtake: Discussions with potential offtake and strategic partners are ongoing.

# Enquiries: Dr Julian Stephens - Managing Director +618 9322 6322



## Malingunde Saprolite-Hosted Deposit

In 2015, Sovereign's in-country geological team made a new and significant graphite discovery using hand auger drilling techniques in an area of no outcrop. The new deposit is located at Malingunde, just 15km SW of Lilongwe, Malawi's capital city, and has access to enviable infrastructure; being 25km from rail access, 15km from high-capacity Lilongwe power sub-station and with plentiful fresh water.

Malingunde is particularly significant for Sovereign as it is hosted within weathered, soft saprolite (clay) material. Saprolite-hosted flake graphite mining operations, similar to those in China and Madagascar, usually have significant cost and environmental advantages over hard rock mining operations due to:

- The free-dig nature and very low strip ratios of the near surface mineralised material;
- Simple processing, generally with no primary crushing and grinding circuit, resulting in large capital and operating cost advantages;
- The preservation of coarse flakes in the weathering profile due to graphite's chemically inert properties; and
- The absence of sulphides offers substantial tailings and waste management advantages.

Recently reported results for a saprolite-hosted graphite mining operation in Madagascar processing material grading 4-5% TGC, suggest mine-gate operating costs significantly lower than those of similar hard rock operations.

#### <u>Geology</u>

Saprolite is the very soft, graphite-bearing, clay-rich oxide material that is formed from intense weathering of the original underlying bedrock. Sovereign's Malingunde saprolite-hosted flake graphite deposit is located on the Lilongwe Plain which is underlain by a paragneiss basement rock package containing extensive graphitic units. This area has a largely preserved, deep tropical weathering profile containing significant thicknesses of saprolite. Because graphite is inert during the weathering process, it is preserved whilst most of the silicate gangue minerals are altered to clays.

The Malingunde deposit appears to be large and high grade, with visually coarse and jumbo flake graphite identified throughout. Saprolite-hosted mineralisation has been identified in diamond, aircore and hand auger drilling over 3.4km of strike with cumulative across strike widths locally exceeding 200m and averaging about 120m.



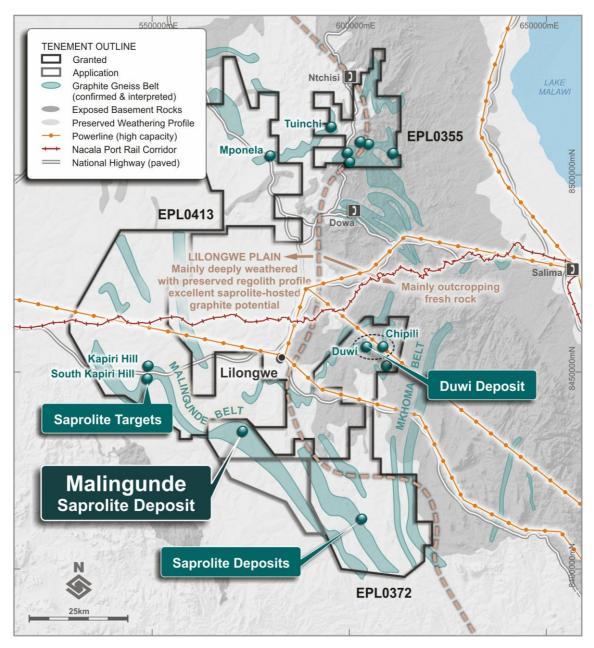


Figure 1. Map showing Sovereign's large 3,788km<sup>2</sup> ground package in Central Malawi with the major flake graphite deposits and target areas shown

## Drilling

Hand auger drilling

Results received during the Quarter from the final hand auger program at Malingunde continued to show excellent grades and continuity of the saprolite-hosted flake graphite mineralisation, including the two highest grade intercepts to date and a potential new zone of very high grade mineralisation along strike some 2km SE of the main deposit:

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MGHA0548: 7m @ 21.2% TGC inc. 3m @ 30.5% TGC (ended in mineralisation; main deposit) MGHA0564: 7m @ 24.5% TGC inc. 2m @ 35.5% TGC (ended in mineralisation; new zone ~2km to SE)

#### Diamond drilling

A diamond drilling program was designed to test the vertical thicknesses of mineralised saprolite, as well as provide substantial volumes of core for ongoing metallurgical test-work. A total of 13 large diameter PQ diamond holes were completed in August and September 2016 for a combined 488m. These showed that the vast majority of saprolite-hosted graphite mineralisation has vertical thicknesses of between 20m and 30m.

The first batch of diamond drilling assays from Malingunde were reported during the Quarter and returned thick and very high-grade zones of saprolite-hosted graphite mineralisation, including:

MGDD0007: 25m @ 15.1% TGC inc. 15m @ 19.7% TGC MGDD0006: 20m @ 13.7% TGC inc. 12m @ 17.1% TGC MGDD0003: 25m @ 8.5% TGC inc. 13m @ 10.7% TGC

### Aircore drilling

Resource drilling of a total of 5,517m in 180 aircore holes was completed at Malingunde in November and December 2016. Assays for the first batch of aircore samples (22 holes) show the thickest zones of high-grade saprolite-hosted graphite mineralisation received to date, and include intercepts of up to 30m downhole. Assay results from the first 22 holes received in January 2017 include:

### MGAC0019: 13m @ 17.8% TGC

MGAC0020: 23m @ 16.1% TGC

MGAC0030: 30m @ 15.3% TGC inc. 10m @ 20.8% TGC

MGAC0006: 20m @ 10.1% TGC inc. 7m @ 17.6% TGC

MGAC0016: 20m @ 10.4% TGC inc. 10m @ 12.9% TGC

MGAC0017: 31m @ 10.8% TGC inc. 6m @ 25.3% TGC

Results for the remaining 158 aircore and 5 diamond drill-holes are expected to be received over the coming weeks and will be announced as they become available. Sovereign is targeting a maiden JORC resource estimate at Malingunde for March.

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#### Regional exploration potential

Numerous and significant additional saprolite-hosted prospects have been identified along strike to the south-east of Malingunde. Further, Sovereign controls a very large ground holding to the north of Malingunde, interpreted to have the same paragneiss basement rock package containing substantial graphitic units. This area has yet to be tested by any modern exploration for saprolite-hosted deposits and provides immense additional exploration potential.

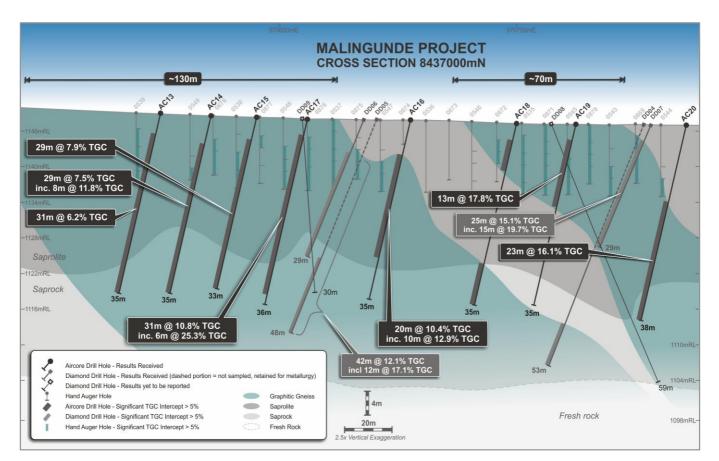


Figure 2. Cross-section showing high-grade, saprolite-hosted graphite mineralisation with recent aircore and previously reported diamond-drilling and hand auger holes.



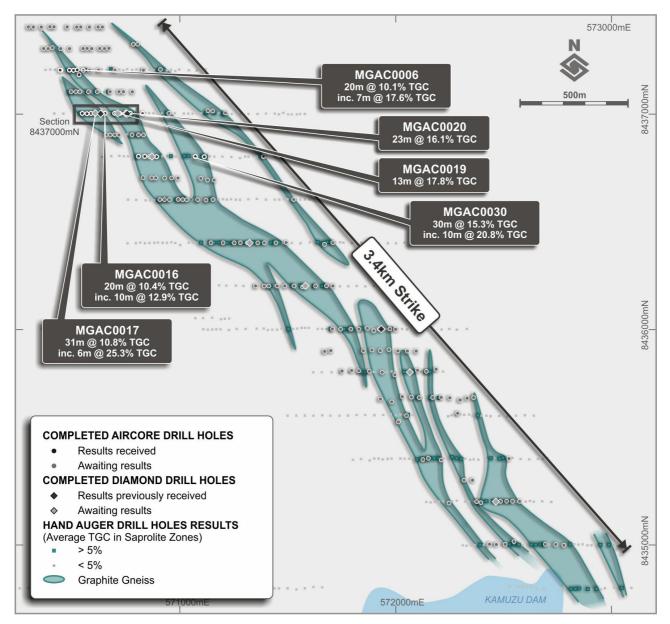


Figure 3. Map of the mineralised saprolite-hosted graphite zones, hand auger, diamond drill and aircore holes at Malingunde. Recently received selected aircore results are shown.



## **Metallurgy**

Sovereign's independent bench-scale metallurgical test-work program for the Malingunde saprolite-hosted flake graphite deposit was conducted at SGS Lakefield Canada under the supervision of Mr Oliver Peters (MSc, P.Eng, MBA).

The primary objectives of the initial bench-scale test work program were two-fold:

- 1) To test whether high-grade flake graphite concentrates with large proportions of jumbo and coarse flake can be obtained from Malingunde saprolite material.
- 2) To establish whether marketable concentrates can be obtained with an operational flowsheet that relies solely on media assisted scrubbing to liberate the graphite from the ore, as opposed to primary crushing and rod milling processes used for hard-rock deposits.

The test-work was performed on a saprolite composite sample obtained through hand auger sampling with a head grade of 11.3% TGC (Holes MGHA0894-MGHA0898).

Initial disaggregation of the saprolite composite was conducted under conditions representative of a scrubber with ceramic media. This was followed by standard rougher flotation, polishing grind, cleaner flotation stages and a final gentle attritioning and cleaner flotation stage.

The initial test results reported in September 2016 showed high grade concentrates with excellent flake distribution could be produced with a simple process flowsheet. Further bench-scale metallurgical test-work was undertaken during the Quarter, with refinements to the flowsheet showing further improvements in grade and flake size distribution (Table 1).

The results highlight that high-grade flake graphite concentrates of excellent flake size distribution can be produced with a flowsheet that **does not require any primary crushing or grinding**. Rather, the upfront treatment of the material is accomplished with a scrubber. This process also assists in the removal of fine (slimes) fractions, as well as oversize unmineralised material.

MALINGUNDE 2016 FLOTATION RESULTS							
		TEST #1 (INITIAL) TEST #6 (NEW)					
PARTICLE SIZE		С	Distribution	С	Distribution	Elako Catogony	
Tyler Mesh	(µm)	(%)	(wt. %)	(%)	(wt. %)	Flake Category	
+ 48	+ 297	96.8	20.4	98.4	21.9	Extra Large (Jumbo)	
-48 + 100	- 297 + 149	97.8	28.3	98.1	33.3	Large-Medium	
-100 + 200	- 149 + 74	97.6	27.6	98.4	28.6	Small	
-200	- 74	96.4	23.7	97.7	16.2	Amorphous	
TOTAL		97.3	100.0	98.2	100.0		

Table 1. Results of further flotation testing on Malingunde saprolite hosted graphite mineralisation.

# Malingunde Summary

Substantial, high-grade saprolite-hosted flake graphite mineralisation has been discovered at Malingunde, with metallurgy showing that graphite products of excellent quality and flake size distribution can be produced with a simple process flowsheet that does not require primary crushing or grinding. Combined with the free-dig nature of the deposit, very low life-of-mine stripping ratios and proximity to infrastructure, Malingunde has the potential for significantly reduced development costs and very low ongoing operating costs when compared to similar-sized hard rock operations.

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Upcoming activities at Malingunde include:

- **Reporting of Aircore & Diamond Drilling Results:** Assays for a further 158 aircore and 5 diamond holes are pending. These are expected over the coming weeks and will be reported when received.
- **Metallurgy**: Ongoing flowsheet optimisation and variability test-work continues. Work in H1 2017 will include production of larger quantities of concentrates for evaluation by potential offtake partners.
- **Downstream Test-work:** A program of downstream test-work focused on Li-ion battery suitability and expandable graphite applications has commenced at a renowned German industrial minerals laboratory.
- Initial Resource Estimate: Targeted for Q1 2017.
- Scoping Study: Targeted for early Q2 2017.
- **Offtake:** Discussions with potential offtake and strategic partners are ongoing.

### **Carpentaria Joint Venture**

Mount Isa Mines (MIM), a Glencore Company, continues to manage and sole fund exploration on all tenements comprising the Carpentaria Joint Venture ("CJV"). Sovereign currently holds a ~30% diluting interest in the tenements.

### Corporate

In October 2016, the Company completed a placement of 10 million ordinary shares at \$0.11 each to raise \$1.1 million (before costs). The placement included \$1.0 million to a prominent Australian institutional investor.

The Company's cash balance at 31 December 2016 ~A\$3.7M.



#### Forward Looking Statement

This release may include forward-looking statements, which may be identified by words such as "expects", "anticipates", "believes", "projects", "plans", and similar expressions. These forward-looking statements are based on Sovereign's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Sovereign, which could cause actual results to differ materially from such statements. There can be no assurance that forward-looking statements will prove to be correct. Sovereign makes no undertaking to subsequently update or revise the forward-looking statements made in this release, to reflect the circumstances or events after the date of that release.

#### **Competent Person Statement**

The information in this announcement that relates to Exploration Results is extracted from announcements dated 29 August 2016, 5 September 2016, 12 October 2016, 26 October 2016 and 18 January 2017. These announcements are available to view on <u>www.sovereignmetals.com.au</u>. The information in the original announcements that related to Exploration Results were based on, and fairly represents, information compiled by Dr Julian Stephens, a Competent Person who is a member of the Australasian Institute of Geoscientists (AIG). Dr Stephens is the Managing Director of Sovereign Metals Limited and is also a substantial holder of shares and performance rights in Sovereign Metals Limited. Dr Stephens has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements. 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 announcements.

The information in this report that relates to Metallurgical Test-work Results, is extracted from announcements dated 7 September 2016 and 23 November 2016. These reports are available to view on <u>www.sovereignmetals.com.au</u>. The information in the original ASX Announcement that related to Metallurgical Test work Results was based on, and fairly represents, information compiled by Mr Oliver Peters, M.Sc., P.Eng., MBA, who is a Member of the Professional Engineers of Ontario (PEO), a 'Recognised Professional Organisation' (RPO) included in a list promulgated by the ASX from time to time. Mr Peters is a consultant of SGS Canada Inc. ("SGS"). SGS is engaged as a consultant by Sovereign Metals Limited. Mr Peters 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 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. 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.



# Appendix 1: Summary of Mining Tenements

As at 31 December 2016, the Company had an interest in the following tenements:

Project Name	Permit Number	Percentage Interest	Joint Venture Partner	Status
<u>Malawi</u>				
Central Malawi Graphite Project	EPL 0413	100%	-	Granted
	EPL 0372	100%	-	Granted
	EPL 0355	100%	-	Granted
Queensland, Australia:				
Mt Marathon	EPM 8586	30.2%	Mount Isa Mines	Granted
Mt Avarice	EPM 8588	30.2%	Mount Isa Mines	Granted
Fountain Range	EPM 12561	30.2%	Mount Isa Mines	Granted
Corella River	EPM 12597	30.2%	Mount Isa Mines	Granted
Saint Andrews Extended	EPM 12180	30.2%	Mount Isa Mines	Granted

Beneficial percentage interests in Farm-out agreements disposed during the quarter ending 31 December 2016:

Project Name	Permit Number	Type of change	Interest at beginning of quarter	Interest disposed of during quarter	Interest at end of quarter
Carpentaria JV:					
At Marathon	EPM 8586	Farm out	30.53%	0.33%	30.2%
It Avarice	EPM 8588	Farm out	30.53%	0.33%	30.2%
Fountain Range	EPM 12561	Farm out	30.53%	0.33%	30.2%
Corella River	EPM 12597	Farm out	30.53%	0.33%	30.2%
Saint Andrews Ext.	EPM 12180	Farm out	30.53%	0.33%	30.2%

+Rule 5.5

# 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

SOVEREIGN METALS LIMTED

#### ABN

71 120 833 427

Quarter ended ("current quarter")

31 DECEMBER 2016

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000	
1.	Cash flows from operating activities			
1.1	Receipts from customers	-	-	
1.2	Payments for			
	(a) exploration & evaluation	(668)	(1,079)	
	(b) development	-	-	
	(c) production	-	-	
	(d) staff costs	(92)	(182)	
	(e) administration and corporate costs	(152)	(307)	
1.3	Dividends received (see note 3)	-	-	
1.4	Interest received	18	27	
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):			
	- Business development	(29)	(61)	
1.9	Net cash from / (used in) operating activities	(923)	(1,602)	
2.	Cash flows from investing activities			
2.1	Payments to acquire:			
	(a) property, plant and equipment	(4)	(8)	
	(b) tenements (see item 10)	-	-	
	(c) investments	-	-	
	(d) other non-current assets	-	-	

+ See chapter 19 for defined terms

1 September 2016

Cons	solidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
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	(4)	(8)
3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares	1,100	2,850
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	(88)	(323)
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	1,012	2,527
4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	3,626	2,794
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(923)	(1,602)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(4)	(8)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	1,012	2,527
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	3,711	3,711

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 \$A'000	Previous quarter \$A'000
5.1	Bank balances	71	36
5.2	Call deposits	3,640	3,590
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)	3,711	3,626

6.	Payments to directors of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to these parties included in item 1.2	114
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

Payments include director fees, consulting fees, superannuation and provision of a fully serviced office.

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

Not applicable

8.	<b>Financing facilities available</b> Add notes as necessary for an understanding of the position	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1	Loan facilities	-	-
8.2	Credit standby arrangements	-	-
8.3	Other (please specify)	-	-
8.4	Include below a description of each facility at whether it is secured or unsecured. If any ad proposed to be entered into after quarter end	ditional facilities have bee	n entered into or are

#### Not applicable

Current quarter \$A'000

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Appendix 5B Mining exploration entity and oil and gas exploration entity quarterly report

9.	Estimated cash outflows for next quarter	\$A'000
9.1	Exploration and evaluation	570
9.2	Development	-
9.3	Production	-
9.4	Staff costs	90
9.5	Administration and corporate costs	100
9.6	Other (provide details if material)	-
9.7	Total estimated cash outflows	760

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	EPM 8586 EPM 8588 EPM 12561 EPM 12597 EPM 12180	Reduction of interest in accordance with terms of joint venture agreement.	30.53%	30.2%
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.

Date: 30 January 2017

Print name: .Clint McGhie.....

#### 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.