

31 January 2019

## Quarterly Activities Report For the Period Ended 31 December 2018

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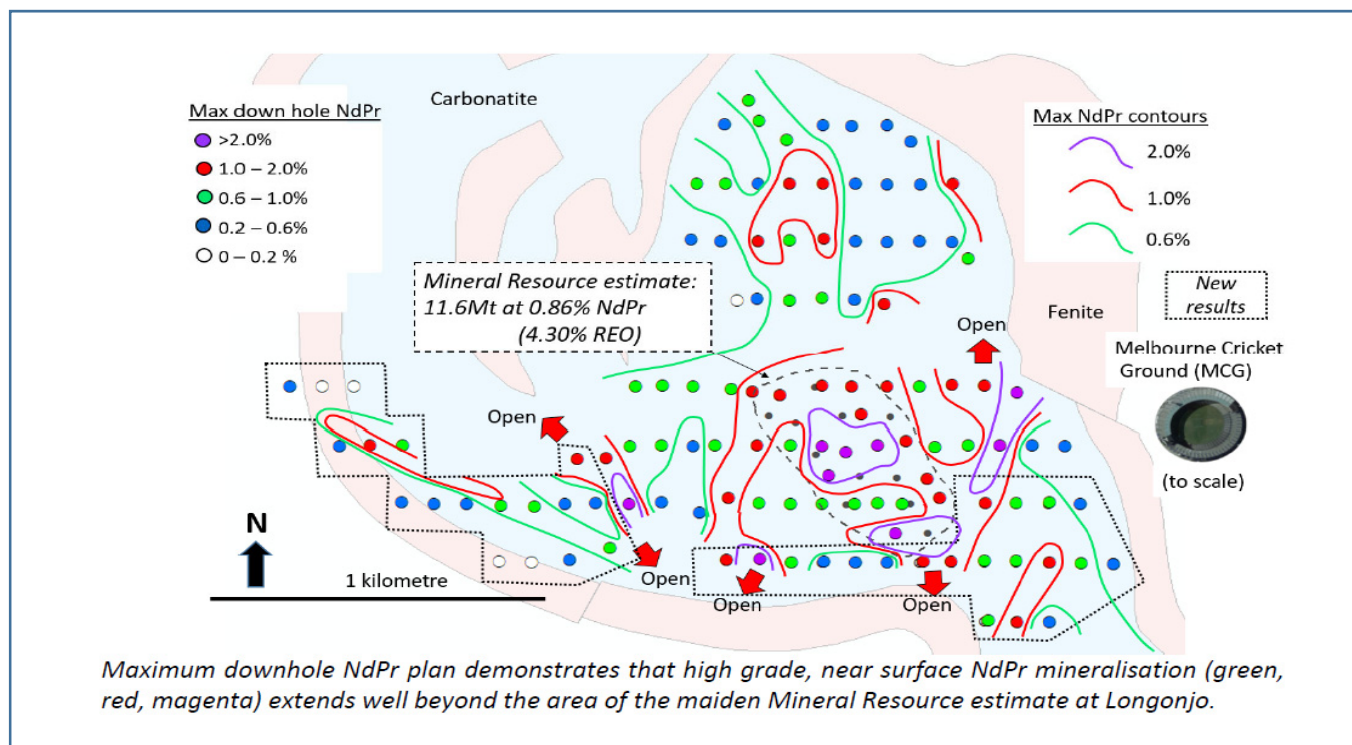
### Highlights

- Following the successful completion of the 108-hole drill programme at the Longonjo Project in Angola an upgraded Mineral Resource estimate is expected to confirm a substantial increase in the size of the blanket of high-grade NdPr mineralisation across the surface of the 5 km<sup>2</sup> carbonatite.
- The previously issued Scoping study by WOOD highlighted the benefits of the well-established road, rail and hydro-power infrastructure.
- A key advantage is Longonjo is located adjacent to the Chinese-funded US\$1.8 billion Benguela rail line linking it directly with the Atlantic deep-water port of Lobito and onto customers in China.
- WOOD has been asked to undertake a study on a 1.5 mtpa flotation operation producing 95,000 tonnes of NdPr concentrate for export to China based on the forthcoming upgraded Mineral Resource estimate and the encouraging early metallurgical testwork to date.
- The proposed high-margin NdPr concentrate export strategy avoids the excessive capital cost of downstream processing and potentially accelerates the project into production.
- Highlights of the drill programme include the following high-grade intersections from surface. A feature is the thickness of the intersections, many of which are from surface and the higher proportion of the NdPr in some of the lower REO grade material:
  - *10 metres at 8.50% REO including 1.50% NdPr*
  - *10 metres at 8.03% REO including 1.98% NdPr from surface*
  - *30 metres at 7.72% REO including 1.21% NdPr from surface*
  - *14 metres at 7.33% REO including 1.86% NdPr*
  - *50 metres at 5.63% REO including 1.00%NdPr from surface to end of hole*
  - *33 metres at 5.42% REO including 0.88% NdPr from surface*
  - *42 metres at 3.98% REO including 0.85% NdPr from surface*
  - *26 metres at 2.57% REO including 0.92% NdPr*
  - *15 metres at 2.88% REO including 1.03% NdPr*
  - *65 metres at 2.61% REO including 0.71% NdPr from surface to end of hole*
- The Company's direct interest in the project increased to 84% with the acquisition of a 14% minority interest during the quarter.

Pensana Metals Ltd (ASX: PM8) (the Company or Pensana) is pleased to present its quarterly activities report for the period ended 31 December 2018. Also included in this report are details of subsequent events that have occurred up to the date of this release.

## Longonjo NdPr Exploration Programmes

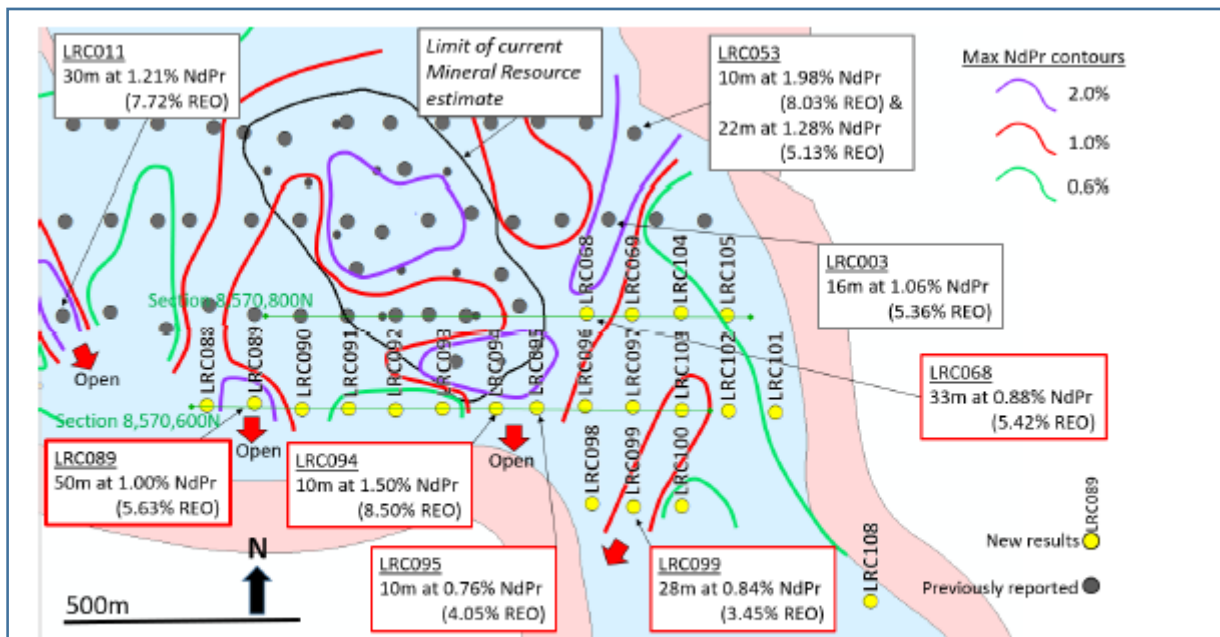
During the quarter the Company completed a 108 hole RC drilling programme designed to significantly extend the current JORC 2012 Mineral Resource estimate of **11.6mt at 4.3% REO containing up to 100,000 tonnes of contained NdPr**.



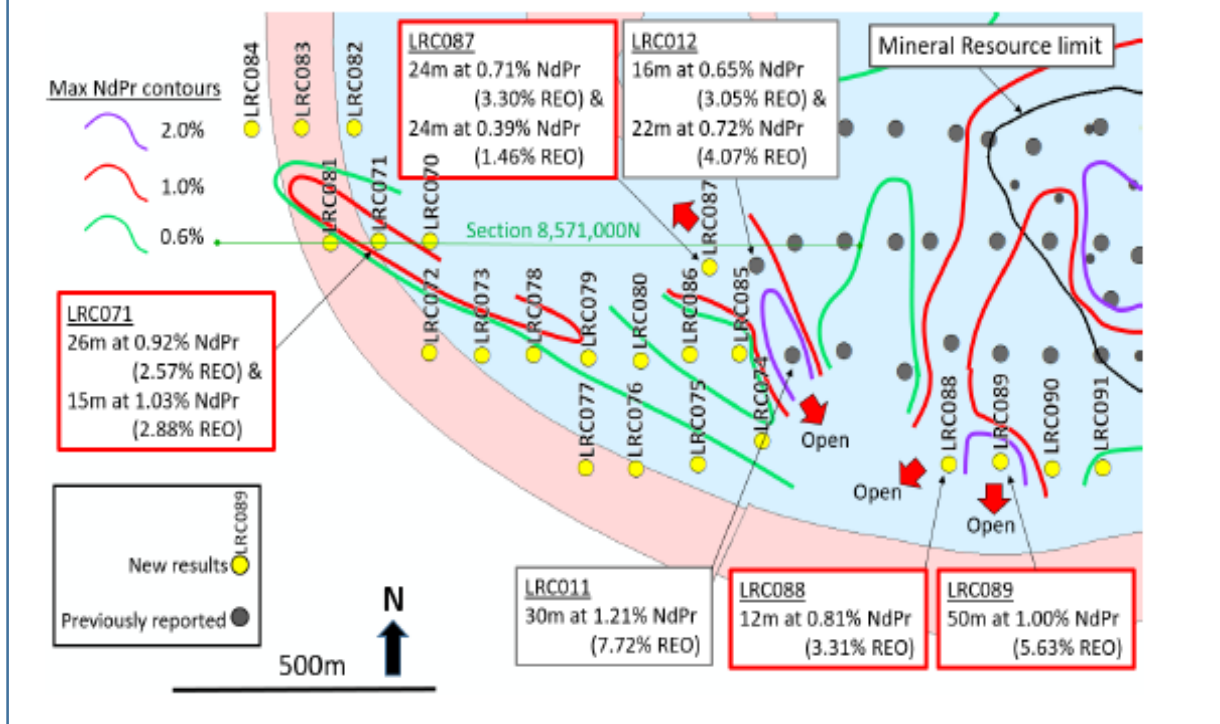
Assay results from the 108 RC drill holes received during the quarter and early in the new year intersected further shallow high grade NdPr mineralisation with the majority of holes reporting mineralisation from the surface.

Several new zones of deep weathering, up to sixty-five metres in thickness, have been intersected across the highly weathered carbonatite compared to the average twenty metres of thickness in the area of the Mineral Resource estimate.

The new mineralisation intersected in the north is particularly enriched in NdPr, which can comprise around 27% of the total rare earths compared with around 20% in the Mineral Resource estimate area.



Plan of intersection highlights from the new drilling results (red labels, yellow drill hole collars) in the southeastern (above) and south western (below) area of the project. Together with previously reported intersections (grey labels, grey collars) identify broad zones of NdPr mineralisation outside of the current Mineral Resource estimate.



The first fourteen holes and the following 23 holes drilled during the quarter all intersected mineralisation, the majority of them returning mineralisation starting from surface and extending up to fifty metres in depth.

A further 31 holes also returned particularly high-grade mineralisation from surface up to **10 metres at 8.03% REO including 1.98% NdPr from surface and 14 metres at 7.33% REO including 1.86% NdPr from 20 metres** in the same drill hole, LRC053.

As well as extending the continuous zone of high-grade mineralisation in the maiden Mineral Resource estimate area several hundred metres to both the east and west, results received to date have identified a new high-grade zone in the west and another along the eastern margin of the carbonatite.

Broad intersections from surface were also encountered from the northern area which may add further tonnes to the mineral resource.

Subsequent to quarter end the remaining 41 drill holes returned some of the thickest and highest-grade results received to date including:

**50 metres at 5.63% REO including 1.00% NdPr from surface to end of hole in drill hole LRC089.**

Located outside of the current Mineral Resource area, they extend the zone of high-grade mineralisation to the east and south.

The results also identified a new zone of particularly NdPr rich mineralisation in the west, 1,200 metres from the current Mineral Resource estimate boundary.

### **Woods 2017 Scoping Study (formally AMEC Foster Wheeler)**

Initial results from the Study (ASX:6.12.2017) were very encouraging and justified further exploration and development work which has now been mostly undertaken or scheduled to commence in the January 2019 quarter.

The Company successfully completed in the December quarter an extensive RC drilling program that has potentially expanded the defined mineralisation. Infill RC and diamond drilling programs are planned to commence in February 2019 designed to upgrade the Mineral Resource estimate being calculated by SRK Consulting to an Indicated Mineral Resource estimate.

The Initial results of the study indicated that the weathered zone mineral resources may be mined by conventional shallow open pit with “free dig” material and a very low waste to resource strip ratio.

The Project is most importantly proximate to established major infrastructure, being located less than five kilometres from a sealed National highway and rail line to the port at Benguela and 38km from a hydroelectricity power transmission line.

A conceptual process flowsheet has been developed to produce final high purity rare earth concentrate.

Demand for the magnet metal elements particularly NdPr is widely predicted to surge driven by the electrification of motor vehicles, wind turbine energy generation and the vast array of modern technological applications.

## Mining operation

Pit optimisations is based on the weathered MRE were completed by Woods (AMEC Foster Wheeler). The mining operation is envisaged to consist of grade control, load and haul to a run of mine ("**ROM**") pad.

The friable, flat lying mineralisation occurring from surface makes the weathered zone at the Project amenable to free-dig, open pit mining using conventional load and haul methods. No drill and blast is contemplated at this stage and waste to mill feed resource ratios are very low.

Operations would utilise a mining fleet consisting of 65 t rigid body dump trucks (Caterpillar 775G or similar) being loaded by a 140 t excavator (Caterpillar 6015 or similar). A 50 t front end loader (FEL) (Caterpillar 988K or similar) which is capable of loading the 65 t dump trucks will be available as back-up for the primary loading unit and also to make up shortfalls in periods where additional material movement is required.

Both resource and waste will be excavated in 2.5 m flitches (5m benches) following mark-out by grade control. Mill feed mineralisation will be hauled to either:

- The ROM pad and tipped onto a designated finger, or
- A designated low-grade stockpile.

Grade control activities could be completed using an Atlas Copco D65 with an RC unit and splitter installed. A grade control pattern of a 10 m x 10 m to a depth of 10 m, with samples taken at 2.5 m intervals is proposed.

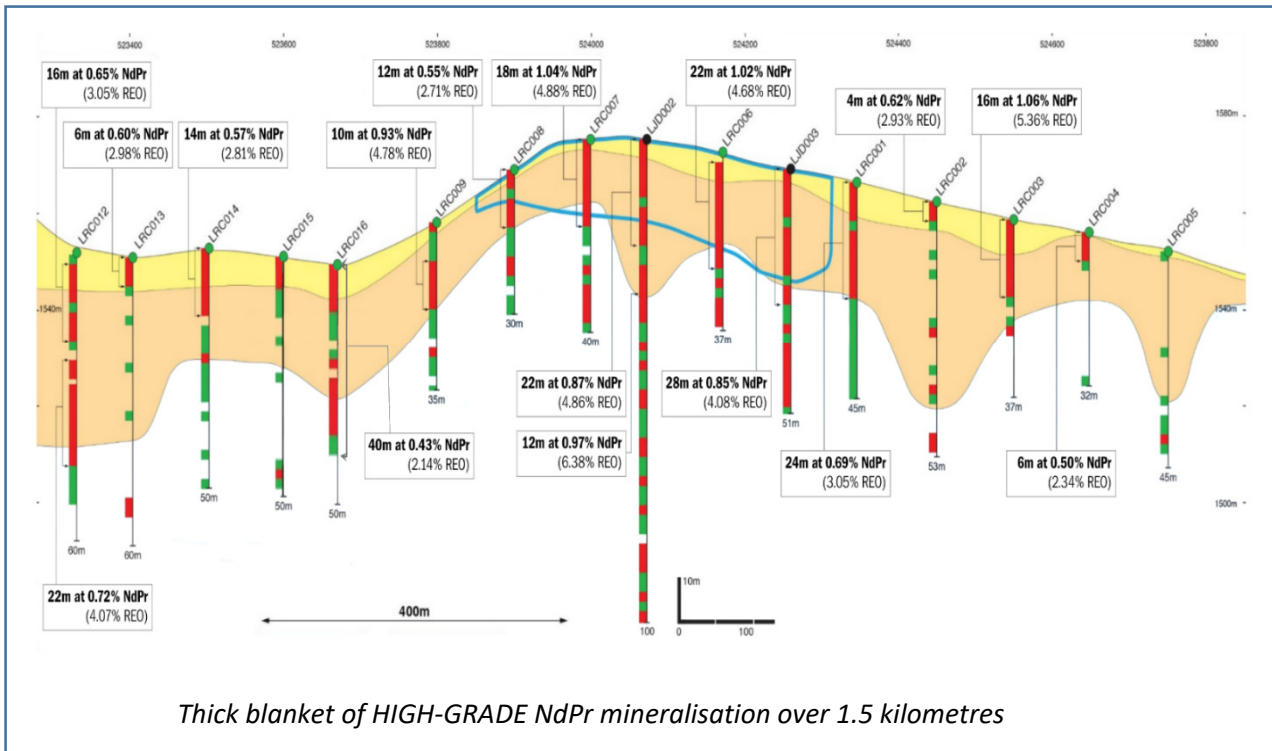
## Summary

The 4,206 metre reverse circulation programme tested the extents of the maiden Mineral Resource estimate (11.6 million tonnes at 4.30% REO including 0.86% NdPr, ASX announcement 26 September 2017), with a view to generating a significantly upgraded Mineral Resource estimate. The Company has a clear and focussed strategy to realise a highly valuable asset at Longonjo.

With all 2018 RC drill results now received, the Company has appointed SRK Consulting Perth to complete an updated Inferred Mineral Resource estimate for Longonjo. Work has already commenced and is scheduled for completion in February 2019.

Infill RC and Diamond drilling is set to commence in mid-February 2019, mineralogy and metallurgical studies are currently underway to support an indicated resource.

The successful delineation of a very large expanded NdPr Mineral Resource estimate will lead to engaging a world class engineering company to identify and select the most favourable highest quality mineralisation for the future development of the project.



## Pensana Metals Ltd moves to 84% ownership of Angolan Project

During the December quarter, the Company acquired an additional 14% equity in Angolan subsidiary company Ozango Minerai SA (Ozango) for US\$500,000, which holds title to the Longonjo NdPr project.

For further information please contact:

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Chairman

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## **Competent Persons Statement**

The information in this report that relates to Geology and Exploration results is based on information compiled and/or reviewed by David Hammond, who is a Member of The Australian Institute of Mining and Metallurgy. David Hammond is the Chief Operating Officer and a Director of the Company. He has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity which he is undertaking to qualify as a Competent Person in terms of the 2012 Edition of the Australian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves. David Hammond consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **Competent Persons Statement**

The information in this report that relates to the Mineral Resource estimate for the Longonjo Project is based on information compiled by Dr Heather King who is a member of a 'Recognised Professional Organisation' (RPO) included in a list posted on the ASX website from time to time, specifically the South African Council for Natural Scientific Professions, and Dr King is registered as a Professional Natural Scientist (Pr. Sci. Nat.). Dr King is a full-time employee of Deloitte, consulting to Pensana Metals Ltd. Dr King 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". Dr King consents to the inclusion in the report of matters based on her information in the form and context in which it appears.

## Summary of Tenement Information as at 31 December 2018

Country	Project Name	License Name	License no.	% Held at 30 Sept 2018	Change	% Held at 31 December 2018
Angola	Ozango	Ozango Minerais SA	Nº013/03/09/T.P/ANG-MGM/2015	70%	14%	84%
Tanzania	Kitongo	Ugambilo East	PL11175/2017	100%		100%
	Kitongo	Kitongo West	PL10655/2015	100%		100%
	Kitongo	Mwamazengo SE (2)	PL6543/2010	100%	-	100%
	Kitongo	Mwamazengo South	PL6631/2010	100%	-	100%
	Kitongo	Ugambilo	PL10067/2014	100%	-	100%
	Kitongo	Kitongo	PL10068/2014	100%	-	100%
	Kitongo	Mwamazengo	PL10069/2014	100%	-	100%
	Kitongo	Isengwa Hills North	PL10060/2014	100%	-	100%
	kitongo	Busongo Northeast	PL10065/2014	100%	-	100%
	Kitongo	Gulumungu	PL10656/2015	100%	-	100%
	Kitongo	Ntalebujika	PL10660.2015	100%	-	100%
	Miyabi	Miyabi Dyke	PL8933/2013	100%	-	100%
	Miyabi	Miyabi South New	PL10149/2014	100%	-	100%
	Miyabi	Miyabi North	PL10908/2016	100%	-	100%
	Miyabi	Miyabi Airport New	PL10556/2015	100%	-	100%
	Miyabi	Mwabombo	PL10836/2016	100%	-	100%
	Mtemi G	Kitongo	PL8148/2013	100%	-	100%
Canuck	Canuck North	PL11016/2017	100%	-	100%	
Canuck	Canuck South	PL11017/2017	100%	-	100%	