ASX Announcement

Quarterly Activities Report and Appendix 5B

31 December 2018

Highlights

- **Arafura to build Separation Plant at Nolans, minimising operational and sovereign risk with whole of project domiciled in Australia**
- **Nolans Definitive Feasibility Study on target for release in early February 2019**
- **Rare Earth Processing piloting successfully completed, producing NdPr-enriched and cerium-free rare earth chloride**
- **NdPr Oxide and Phosphoric Acid offtake MoUs signed with key partners**
- **Significant activities completed during the quarter to improve cash position including receipt of $2.1 million R&D rebate, and successful completion of $3 million Share Purchase Place and $1 million private placement**
- **Cash position $9.045 million at 31 December 2018.**

Nolans NdPr Project

Separation Plant to be built at Nolans – 100%-owned Nolans NdPr Project now 100% Australian domiciled

The Separation Plant, which hosts the final stages of rare earth processing, takes a mixed rare earth intermediate (chloride) product and refines it into high-value NdPr oxide and other rare earth products. The process of selecting a site for the location of the plant involved a detailed assessment that considered environmental, economic and operational factors and options in South Korea and the Northern Territory.

Arafura had previously planned for the Separation Plant to be located offshore. However, process and configuration efficiencies identified through the project's Definitive Feasibility Study (DFS) and Arafura's extensive test work and flowsheet piloting programs have made the relocation of the Separation Plant to the Nolans site more feasible. The decision will also mitigate some of the project's operational risks.

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Risk assessments completed by the Company and its environmental consultants also indicate that these changes pose no additional environmental impact outside the current envelope defined in the project's Environmental Impact Statement (EIS).

Arafura met recently with Northern Territory regulators, including the Northern Territory Environment Protection Authority (NT EPA), to report the findings of its risk assessments and to discuss additional work the Company intends to undertake in advance of submitting any variation to the EIS. No significant issues were identified.

The decision to locate the Separation Plant at Nolans (Figure 1: Nolans Project Configuration makes the Project 100% Australian domiciled and unlocks significant product value prior to export. Engagement with NdFeB magnet manufacturers and end users indicates a growing focus on the traceability of NdPr supply being sustainable and providing waste management certainty. Construction of the Separation Plant at Nolans ensures an even greater percentage of project capital will be spent in Australia and will bring additional benefits to the Northern Territory and the Central Australian region.

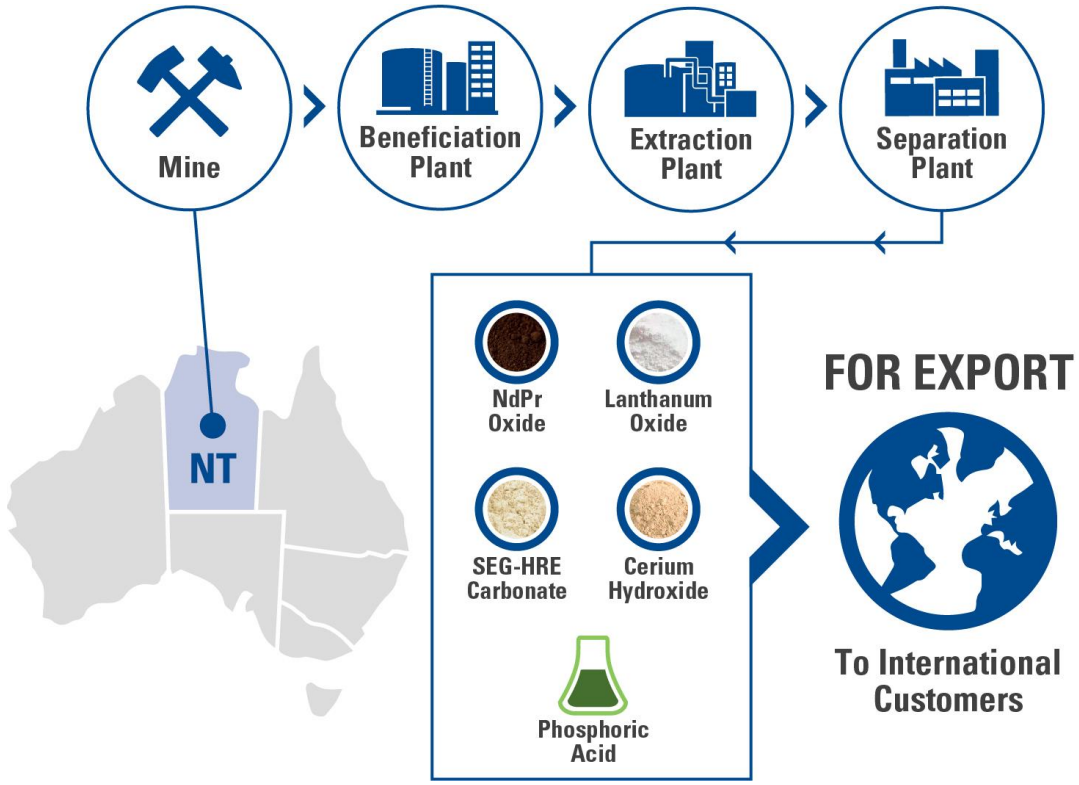

Figure 1: Nolans Project Configuration

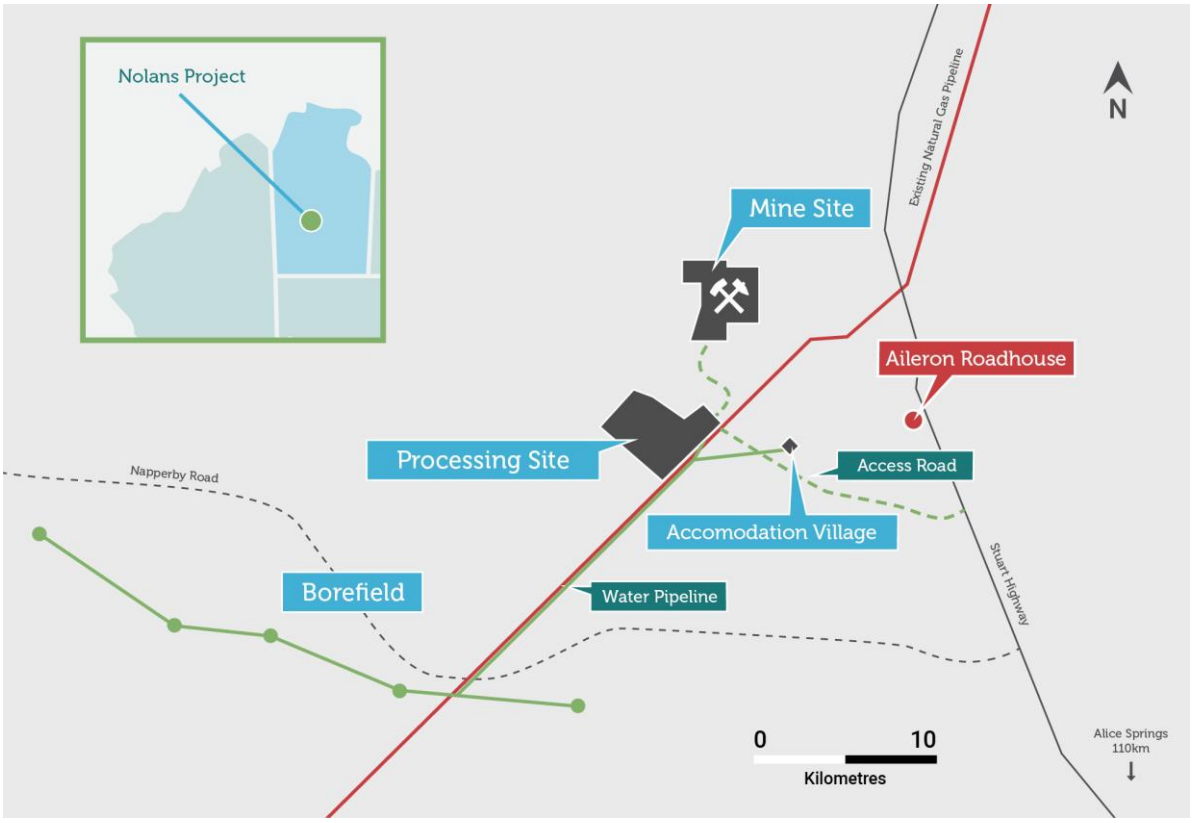

Figure 2: General Site Layout

Engineering Update

At the date of this report key activities required to deliver the results of the Definitive Feasibility Study (DFS) are nearing completion, with the results on target for reporting in early February. A delay in the initial reporting target of December 2018 was necessary to allow time to undertake additional engineering studies and other optimisation programs to address preliminary capital and operating cost estimates being materially higher than internal targets and estimates *(refer ASX announcement 5 December 2018)*. During December and January, the Company completed work on reagent pricing and a capital versus operating expenditure trade-off study, and incorporated reagent consumption data from its Rare Earth Processing pilot plant. The Company is pleased to report there has been significant progress made with these work programs and looks forward to reporting the DFS results shortly.

Rare Earth Processing Pilot Plant

Operation of the Company's Rare Earth Processing pilot plant – comprising Phase 5 Rare Earth Purification and Precipitation, and Phase 6 Rare Earth Dissolution and Evaporation – is now complete.

Phase 5, which operated continuously over a five-day period at ALS Metallurgical Services (ALS) in Perth, processed rare earth sulphate material from the Company's Acid Bake pilot to produce rare earth hydroxide.

Phase 6 of the program also operated at ALS and ran continuously for seven days. It processed rare earth hydroxide precipitate from the Phase 5 pilot to produce rare earth chloride liquor for use in the final phase of flowsheet piloting, Rare Earth Separation. A key feature of the Phase 6 program was the near total rejection (99.5% during steady state operation) of cerium from the rare earth chloride to produce a marketable cerium hydroxide product. This reduces the volume of material that feeds into rare earth separation resulting in a smaller and more efficient Separation Plant that will focus on the production of high-value rare earth products such as NdPr oxide.

Figure 3: Phase 5 Pilot Plant (L) and Rare Earth Hydroxide Precipitate being removed from filter unit (R)

Figure 4: Phase 6 Pilot Plant Rare Earth Hydroxide Dissolution Circuit (L) and NdPr-enriched Rare Earth Chloride Liquor (R)

Planning Advanced for Rare Earth Separation Piloting

The design of the final phase of flowsheet piloting – Phase 7 Rare Earth Separation – has been advanced and responses to vendor equipment enquiries and preparation of service agreements have also commenced.

Arafura completed substantial test work for rare earth separation at ANSTO during 2008-2010 and pilot plant trials for the continuous testing of solvent extraction circuits were completed at ANSTO in 2012. Data from the 2012 trials has been used as the basis for the Separation Plant capital and operating cost estimates for the DFS and as a result, the Company has decided to defer operating the Phase 7 Rare Earth Separation pilot plant. The next critical timing for the completion of Phase 7 piloting is prior to front end engineering and design (FEED) such that any minor changes can be included in the final design. A decision on its timing will be made when there is greater certainty on scheduling FEED and project commitment.

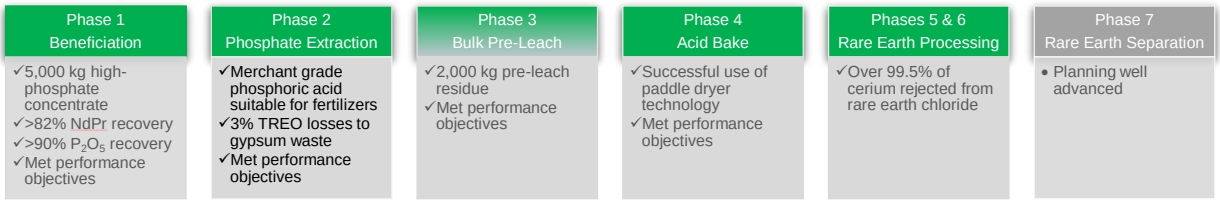

Figure 5: Nolans Flowsheet Piloting Program Phases

Exploration

Bonya Joint Venture (Base and Precious Metals; Tungsten; Vanadium)

The Bonya project (EL 29701) is located 280 kilometres north-east of Alice Springs in the Northern Territory. Arafura holds a 60% interest in the project. As previously reported Rox Resources Limited (Rox) agreed to sell its 40% interest to Thor Mining Plc (Thor). Settlement and completion of the acquisition by Thor from Rox is now complete with Thor receiving ministerial consent from the Northern Territory Department of Primary Industry and Resources (DPIR) regarding the transfer *(refer to THR: ASX announcement 25 September 2018)*. The Deed of Assignment for Thor to assume Rox's rights and obligations has also been executed by all parties.

The joint venturers anticipate field work commencing in H1 CY2019 following the completion of heritage surveys by the Aboriginal Areas Protection Authority and planned work programs being authorised by DPIR.

Corporate

NdPr Oxide and Phosphoric Acid Offtake Negotiations

The Company is in the process of negotiating offtake arrangements with various parties for the supply of NdPr oxide as well as other rare earth products and merchant grade phosphoric acid (MGA). In October 2018 the Company announced that it had signed a non-binding Memorandum of Understanding (MoU) with JingCi Material Science Co. Ltd for the supply of 900 tonnes per annum of NdPr oxide. JingCi is a Tier 1 Chinese manufacturer of Neodymium Iron Boron (NdFeB) permanent

magnets and produces approximately 6,500 tonnes per annum. On completion of the DFS the Company will escalate its efforts to advance additional rare earth product offtake arrangements, and this will include increased engagement with potential customers in Japan, Korea, Europe and China.

A recent phosphoric acid market study prepared by CRU Consulting for Arafura noted phosphoric acid demand is a function of phosphate fertiliser demand. Key drivers for phosphate fertiliser demand include population growth, rising income levels and resource constraints which impact the need for increased agricultural productivity. Population growth and rising income levels in China and India will be significant drivers for increased food consumption and a flow-on demand increase for phosphate fertilisers. India currently imports over 50% of its phosphoric acid requirements and is a logical target market for Arafura's MGA by-product.

Arafura has for some months been engaged with several Indian fertiliser groups from the private and government sectors with the objective of establishing offtake arrangements for MGA. In January 2019 the Company entered a non-binding MoU with a majority-owned subsidiary of a large Indian conglomerate which has diverse business interests including agribusiness. The MoU provides a framework for the process of negotiating a long-term offtake agreement.

NdPr Drivers

NdPr policy changes in China combined with supply chain reform in the U.S. continue to dominate the future demand and supply drivers for the NdPr market.

EV Manufacturing Investment

A report published by *Reuters* in January 2019 shows that the world's major automotive manufacturers are planning to spend US$300 billion over the next 10 years to develop and procure batteries and other electric vehicle (EV) components. *Reuters* reports automaker plans are motivated by environmental considerations, government policy and advances in technology. German automakers account for US$140 billion and China is planning US$57 billion of the planned US$300 billion investment. Interestingly US$136 billion of the reported EV investment will be spent in China. Foreign investment in China's EV industry is aligned with China's 2025 strategy of downstream value-adding. The need for China to attract multinational companies from the auto industry and other sectors might be the catalyst for China to open its markets to foreign groups, promote a level playing field and encourage IP protection.

China Rare Earth Concentrate Imports

BAIINFO and *Shanghai Metals Markets* have recently highlighted the dramatic growth in Chinese rare earth concentrate imports in the period since the crackdown on illegal and unsustainable production in China. It is estimated that 81% of rare earth concentrate traded in China in 2017 was imported material. As illegal material has been removed by Chinese authorities the gap between legal supply and demand has been satisfied with imported material. The increased reliance on imported

concentrate has placed greater emphasis and scrutiny on waste disposal from imported materials that have high impurities including elevated radioactivity due to the presence of uranium and thorium.

In December the Chinese Ministry of Industry and Information Technology issued a notice announcing an order strengthening supervision for a sustainable rare earth industry. Key elements of the order were aimed at developing improved systems for traceability including for the processing of monazite (for rare earth recovery) and imported ore. A key objective of the order is to promote:

- The orderly utilisation of overseas resources;
- Standardising the procurement and processing of imported rare earth minerals; and
- Implementing controls for environmental protection and maintaining the integrity of the resource tax system.

BAIINFO reported restrictions on rare earth concentrate imports resulted in ore supply from Myanmar contracting. In further developments, it was reported in January 2019 that Chinese rare earth producer Shenghe Resources (Shenghe) and China National Nuclear Corporation (CNNC) had formed a joint venture for the import and processing of rare earth concentrates containing uranium and thorium. The Shenghe-CNNC joint venture will have regulatory authorisation for the import and trading of rare earth materials with elevated radionuclides within China. Rare earth concentrate imports will continue to be an important part of China maintaining its separation capacity but the recently implemented measures will bring material from these sources back to a more level playing field with locally sourced legal concentrates, leading to supply becoming less reactive.

NdPr Price

NdPr oxide prices remained flat in Q4 CY2018. Supply concerns from the new restrictions for concentrate imports combined with the December shutdown of the Lynas Malaysian operation were expected to create some price volatility during the period. The impact of any reduction in supply during the period appears to have been countered by reduced sentiment and the impact of China's trade war with the U.S.

US Supply Chain

U.S. legislation passed under the *John S. McCain National Defense Authorization Act* has been widely reported. The aim of the Act is to reduce U.S. reliance on foreign-sourced critical minerals and materials. Section 871 of this bill prevents the purchase of NdFeB and Samarium Cobalt (SmCo) magnets from prohibited countries, including China, by the U.S. Department of Defense (DoD).

As Washington seeks to diversify its sources of supply for NdPr and other critical materials, in December 2018 Australia's Minister for Resources and Northern Australia, Senator Matt Canavan, announced Australia is set to sign a preliminary deal with the U.S. to support joint research and development of minerals deemed critical to the American economy. Included in the list of critical materials is NdPr for use in NdFeB magnets.

Further evidence of increased U.S. focus on the NdPr supply chain was the December acquisition of TSX-listed and Toronto headquartered Neo Performance Materials (Neo) by NYSE-listed Luxfer Holdings (Luxfer). Neo has a rare earths supply chain for rare earth processing and metal and magnet alloy powders, and operates from several Asian locations including China, so the acquisition gives Luxfer increased capability in these technology materials markets. Luxfer noted the acquisition is a strong fit with its strategic filters specifically referencing growth in the range of 6-12% for magnetic powders. Luxfer is also an existing strategic supplier of magnesium-based powders to the DoD.

Cash Position and Timetable

Arafura had $9.045 million in cash reserves at 31 December 2018 and continues to be in a strong position to advance its 100% owned and Australian domiciled Nolans NdPr Project. The strong cash position in this quarter was achieved through the receipt of funds from the following activities:

- $2.1 million R&D tax refund received in October 2018 for eligible research and development expenditure spent on the design and operation of flowsheet piloting for the year ended 30 June 2018; and
- $4.04 million raised through a Share Purchase Plan and private placement in December 2018.

For the quarter ended 31 December 2018 average monthly cash expenditure was $1.74 million compared with $1.35 million for the September 2018 quarter. In the December quarter, flowsheet piloting and engineering activities ran concurrently on an intensive basis resulting in increased cash demand. As flowsheet piloting and DFS engineering workstreams are being closed out in January, expenditure is expected to reduce significantly in February and March. The Company forecasts the average monthly cash expenditure for the March 2019 quarter to be lower at $1.3 million per month.

Immediate targets for 2019 (Figure 6) include:

- Completing the DFS and release of the results in February;
- Securing the project's mineral lease (following the execution of a Native Title agreement) and water extraction licence are also targeted for completion during the year;
- Advancing offtake arrangements for NdPr oxide, other rare earths and MGA products; and
- Engaging with strategic partners for capital equipment procurement and project funding.

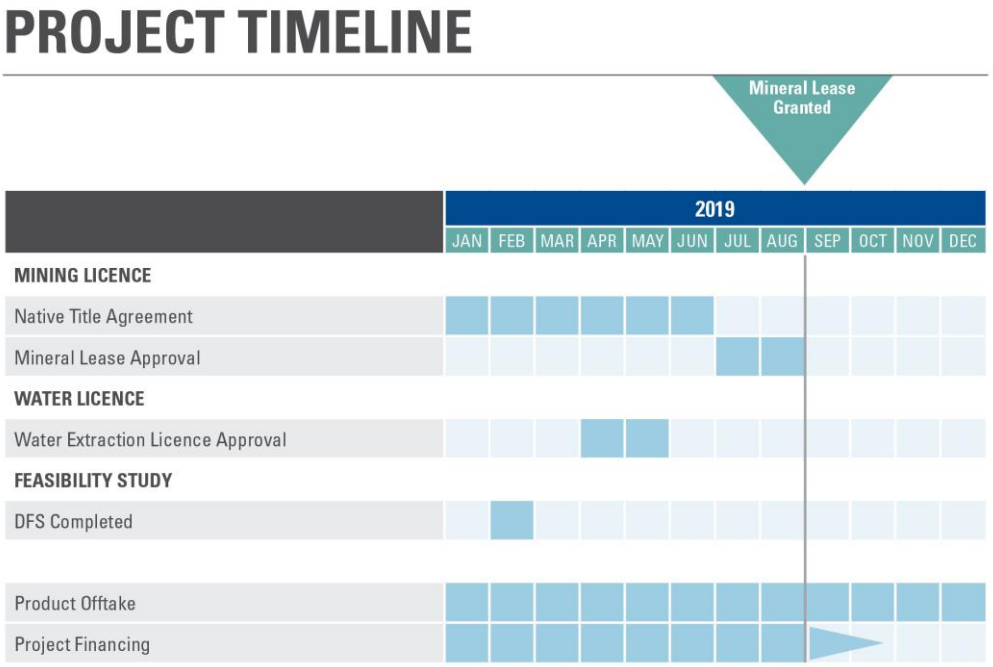

Figure 6: Target Dates for Key Activities

Annual General Meeting

The Company held its Annual General Meeting on 22 November 2018 and noted that all resolutions were passed by way of a poll, except Resolution 3 which was withdrawn as a result of the retirement of Mr Terry Grose as a Director of the Company.

Nameplate Production

Measured and Indicated Mineral Resources at Nolans support the project's nameplate production target of 14,000 tonnes per annum of TREO equivalent. The Mineral Resources were estimated and reported by the Company *(refer to ARU announcement 7 June 2017)* following the guidelines of the JORC Code 2012. Classification of Total Mineral Resources at Nolans into Measured, Indicated and Inferred Resources, using a 1.0% TREO cut-off grade, is shown below.

Mineral Resources	Tonnes (Millions)	Rare Earths (% TREO)	Phosphate (% P_2O_5)	NdPr Enrichment (%)
Measured	4.9	3.2	13	26.1
Indicated	30	2.7	12	26.4
Inferred	21	2.3	10	26.5
Total	**56**	**2.6**	**11**	**26.4**

Note: Numbers may not compute due to rounding. "NdPr Enrichment" is the proportion of TREO comprising Nd_2O_3 and Pr_6O_{11}.

Competent Persons Statement

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Kelvin Hussey, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Hussey is a full-time employee of Arafura Resources Limited. Mr Hussey 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 (JORC Code 2012). Mr Hussey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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	
Arafura Resources Ltd	
ABN	**Quarter ended ("current quarter")**
22 080 933 455	31 December 2018

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	(3,866)	(6,652)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(412)	(829)
	(e) administration and corporate costs	(603)	(1,226)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	31	83
1.5	Interest and other costs of finance paid	(2)	(3)
1.6	Income taxes paid	-	-
1.7	R&D refund - Non Capitalised Portion	446	446
1.8	Other (provide details if material)	-	-
1.9	**Net cash from / (used in) operating activities**	**(4,406)**	**(8,181)**

2.	**Cash flows from investing activities**		
2.1	Payments to acquire:		
	(a) property, plant and equipment	-	(4)
	(b) tenements (see item 10)	-	-
	(c) investments	-	-
	(d) other non-current assets	-	-

Consolidated 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) security deposits on 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 (R&D Refund – Capitalised Portion)	1,662	1,662
2.6	**Net cash from / (used in) investing activities**	**1,662**	**1,658**

3.	**Cash flows from financing activities**		
3.1	Proceeds from issues of shares	4,040	8,347
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	(364)	(653)
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**	**3,676**	**7,694**

4.	**Net increase / (decrease) in cash and cash equivalents for the period**		
4.1	Cash and cash equivalents at beginning of period	8,113	7,874
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(4,406)	(8,181)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	1,662	1,658
4.4	Net cash from / (used in) financing activities (item 3.10 above)	3,676	7,694

Consolidated statement of cash flows		**Current quarter $A'000**	**Year to date (6 months) $A'000**
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	**Cash and cash equivalents at end of period**	**9,045**	**9,045**

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	2,363	1,224
5.2	Call deposits	5,750	6,650
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)**	**8,113**	**7,874**

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	(216)
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

Salaries, fees and superannuation of Directors of the Company.

7.	**Payments to related entities of the entity and their associates**	**Current quarter $A'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

N/A.

8.	**Financing facilities available** *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 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.

N/A

9.	**Estimated cash outflows for next quarter**	**$A'000**
9.1	Exploration and evaluation	2,970
9.2	Development	-
9.3	Production	-
9.4	Staff costs	400
9.5	Administration and corporate costs	600
9.6	Other (provide details if material)	-
9.7	**Total estimated cash outflows**	**3,970**

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	See Appendix A below.			
10.2	Interests in mining tenements and petroleum tenements acquired or increased	See Appendix A Below.			

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.

Sign here: ..... Date: 29 January 2019.
(Company secretary)

Print name: Peter Sherrington

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.

Appendix A – Mining Tenements Held as at 31 December 2018

Tenement reference	Project	Holder	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter	Notes
ML 26659	Nolans, NT	Arafura Rare Earths Pty Ltd	Mineral Lease	100%	100%	Application Lodged
ML 30702				100%	100%	Application Lodged
ML 30703				100%	100%	Application Lodged
ML 30704				100%	100%	Application Lodged
EL 28473	Aileron–Reynolds, NT	Arafura Resources Ltd	Exploration Licence	100%	100%	
EL 28498				100%	100%	
EL 29509				100%	100%	
EL 31224				100%	100%	
EL 31284				100%	100%	
EL 31957				100%	100%	Application Lodged
EL 29701	Bonya, NT	Arafura Resources Ltd	Exploration Licence	60%	60%	Thor Mining Plc 40%, Arafura Resources Limited 60%