



Highlights

- **Nolans Definitive Feasibility Study delivers robust project economics**
- **DFS positions Nolans as a globally significant and strategic NdPr project, 100%-domiciled in Australia with low political risk**
- **DFS includes fully costed permanent disposal of mine and process plant waste residues at Nolans**
- **Substantial progress with Nolans rare earth products offtake agreements**
- **Nolans marketing strategy targets groups seeking NdPr supply diversification, product traceability and sustainable operations**
- **Nolans progressing discussions for financial support from the Australian Government's Northern Australia Infrastructure Facility**
- **Arafura commences community engagement for development of an Indigenous Engagement Strategy for Nolans**
- **Cash position \$4.941 million at 31 March 2019, further strengthened by \$3 million placement completed in April.**

Nolans NdPr Project

Nolans DFS Delivers Robust Project Economics

The Definitive Feasibility Study (DFS) for the Nolans Neodymium-Praseodymium (NdPr) Project (**the Project**) was released during the quarter (*refer to ASX announcement 7 February 2019*). The DFS demonstrates the Project is sufficiently robust from a financial and technical viewpoint and will support a long-life operation.

The Project will encompass a mine, process plant and related infrastructure to be constructed and located at the Nolans site, 100%-domiciled in Australia's Northern Territory, a jurisdiction with low political risk. The Project is underpinned by a low risk mineral resource that has the potential to supply a significant proportion of the world's NdPr demand. The DFS confirms Nolans as a globally significant



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and strategic NdPr project which, once developed, will become a major supplier of these critical raw materials to the high-performance permanent magnet market.

The DFS discounted cashflow analysis shows a post-tax NPV of A\$729 million (US\$497 million) at a 10% discount rate and an IRR of 17.43% calculated over the life of mine with a payback return of capital in year 5. On an incentive price basis, the Project requires an NdPr oxide price of US\$75.50/kg to achieve an IRR of 15%, or US\$59/kg to achieve a 10% IRR.

The Project by industry standards has a low operating cost which is driven by Nolans endowment in NdPr with over 85% of revenue forecast to be sourced from annual production of 4,357 tonnes of NdPr oxide. A large proportion of the rare earths at Nolans are hosted in phosphate minerals (primarily apatite) and in contrast to other rare earth producers, the Project produces phosphoric acid as a by-product. After offsetting this by-product against operating costs, the Project is well placed in the cost curve at US\$25.94/kg of NdPr oxide.

The DFS confirms Nolans as a world class NdPr project. The key project information is set out in Table 1 below and includes the following key information:

- Annual NdPr 4,357 tonnes production, 21% higher than previously estimated
- Ultra-low cost producer at US\$25.94/kg of NdPr
- Robust economics – average EBITDA A\$377m p.a., NPV₁₀ A\$729m, IRR 17.43%
- Highly leveraged to NdPr (85% of revenue) – US\$5/kg increases NPV by A\$130m
- Pre-production capital expenditure of \$1,006m (US\$726m), which includes A\$110.4m of contingency
- Long-life asset – 23-year mine life based on Ore Reserves only with potential to extend production
- Globally strategic asset – 100% Australian-domiciled mine and processing operation with environmental approval
- Well positioned to feed into forecast NdPr supply shortfall – targeting project commissioning in 2022 (see Table 4 Indicative Production Timeline).

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Table 1 Key Project Information from the DFS

Mining & Processing		
Mine Life (years)	23	
Concentrate (tpa)	293,000	
Production		
TREO equivalent (tpa)	13,343	
NdPr Oxide (tpa)	4,357	
Cerium Hydroxide (tpa TREO basis)	8,383	
SEG-HRE Carbonate (tpa TREO basis)	603	
Phosphoric Acid (tpa 54% P ₂ O ₅ MGA)	135,808	
Financial	US\$	A\$
Capital Cost (\$m)	726	1,006
Rare Earth Sales Revenue (\$m pa)	379	539
Phosphoric Acid Sales Revenue (\$m pa)	35	50
Mining Costs (\$m pa)	(30)	(43)
Processing Costs (\$m pa)	(103)	(148)
General & Administration Costs (\$m pa)	(15)	(21)
EBITDA (\$m pa)	266	377
KPI Analysis	US\$	A\$
Operating Cost \$/kg NdPr	34.07	48.40
Operating Cost \$/kg NdPr with MGA credit	25.94	36.85
NPV ₁₀ after tax (\$m)	497	729
IRR after tax (%)	17.43%	
After tax payback	Year 5	
IRR 15% @ US\$/kg NdPr	76	
IRR 10% @ US\$/kg NdPr	59	

* Production and financial data is calculated as the annual average following a three year ramp-up and excluding the partial final year production

Refer ASX announcement 7 February 2019: Nolans Project Definitive Feasibility Study

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DFS Summary and Ore Reserves

The DFS incorporated an estimate of Ore Reserves for the Project based on the Project's Mineral Resources (*refer to ASX announcement 7 June 2017*) and consistent with the requirements of the JORC 2012 Code.

Table 2 Ore Reserves

RESERVES	TONNES (m)	RARE EARTHS TREO %	PHOSPHATE P ₂ O ₅ %	NdPr Enrichment %
Proved	4.3	3.1	13	26.1
Probable	14.9	2.9	13	26.5
TOTAL	19.2	3.0	13	26.4

Numbers may not compute exactly due to rounding. 'NdPr Enrichment' is the proportion of TREO comprising Nd₂O₃ and Pr₆O₁₁

Refer ASX announcement 7 February 2019: Nolans Project Definitive Feasibility Study

A range of independent consultants contributed to the DFS including Hatch (Lead Engineer), Mining Plus, AMC Consultants, Knight Piésold Consulting, Simulus, GHD, JRHC Enterprises, Ride Consulting, Strategic Human Resources, Roskill, CRU and Qube Bulk. The Nolans Project DFS Summary Report can also be accessed from the Company's [website](#).

Environment

The Nolans Project has been subject to Northern Territory and Australian environmental assessment processes administered by the Northern Territory Environment Protection Authority (NT EPA) and the Australian Government Department of the Environment and Energy (DoEE). The Company received environmental approval from the NT EPA in December 2017 and from the DoEE in May 2018. These rigorous and lengthy processes included an assessment of the Company's ability to manage mine and process plant waste residues and to progressively rehabilitate the site. The permanent disposal of mine and process plant waste residues has been fully costed into the DFS.

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Mining Licence

The grant of the Project's Mineral Leases (MLs) by the Northern Territory Government will provide Arafura tenure over the Nolans asset for 25 years and a licence to operate (subject to annual compliance reviews) for the same period.

The Company applied to the Northern Territory Department of Primary Industry and Resources (DPIR) for its primary ML over the Nolans mine site area in 2008 and for its ancillary MLs over other elements of the Project in 2015. Prior to granting the MLs DPIR requires the completion of a mining agreement between Arafura, the Native Title holders and the Central Land Council (CLC). The mining agreement negotiation is a standard practice; however, timeframes can vary between projects. Arafura provided a draft mining agreement to the counterparties in October 2018 and expects to complete negotiations in the coming months. In the unlikely event the parties are unable to reach agreement the Company can seek a legal determination from the National Native Title Tribunal.

Early Works and Front-End Engineering and Design

The DFS goes some way to advancing the Project; however, production of final designs and detailed engineering to enable construction to commence as early as possible post project commitment represents a substantial body of work. Preparation for this work will continue through 2019 to enable efficient transition from feasibility to engineering design and construction.

Subject to project funding the indicative schedule for the Project to production are shown in Table 3 and Table 4.

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Table 3 Indicative Project Timeline

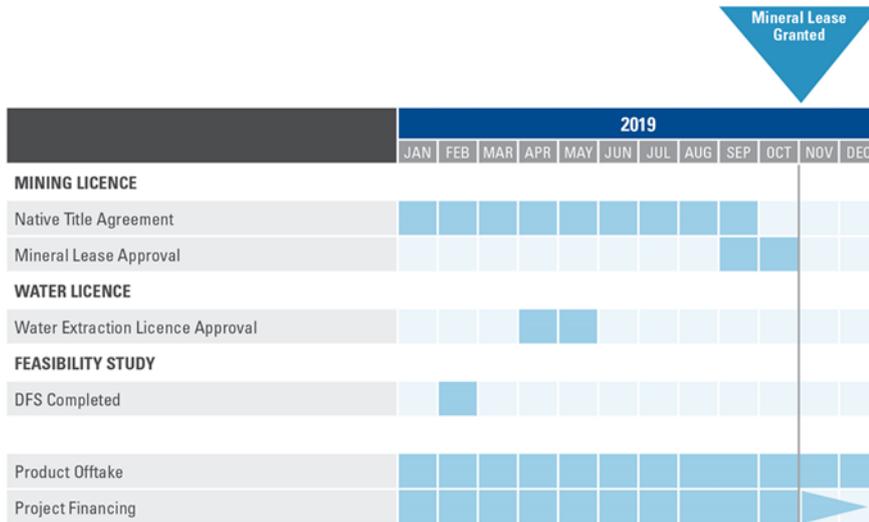
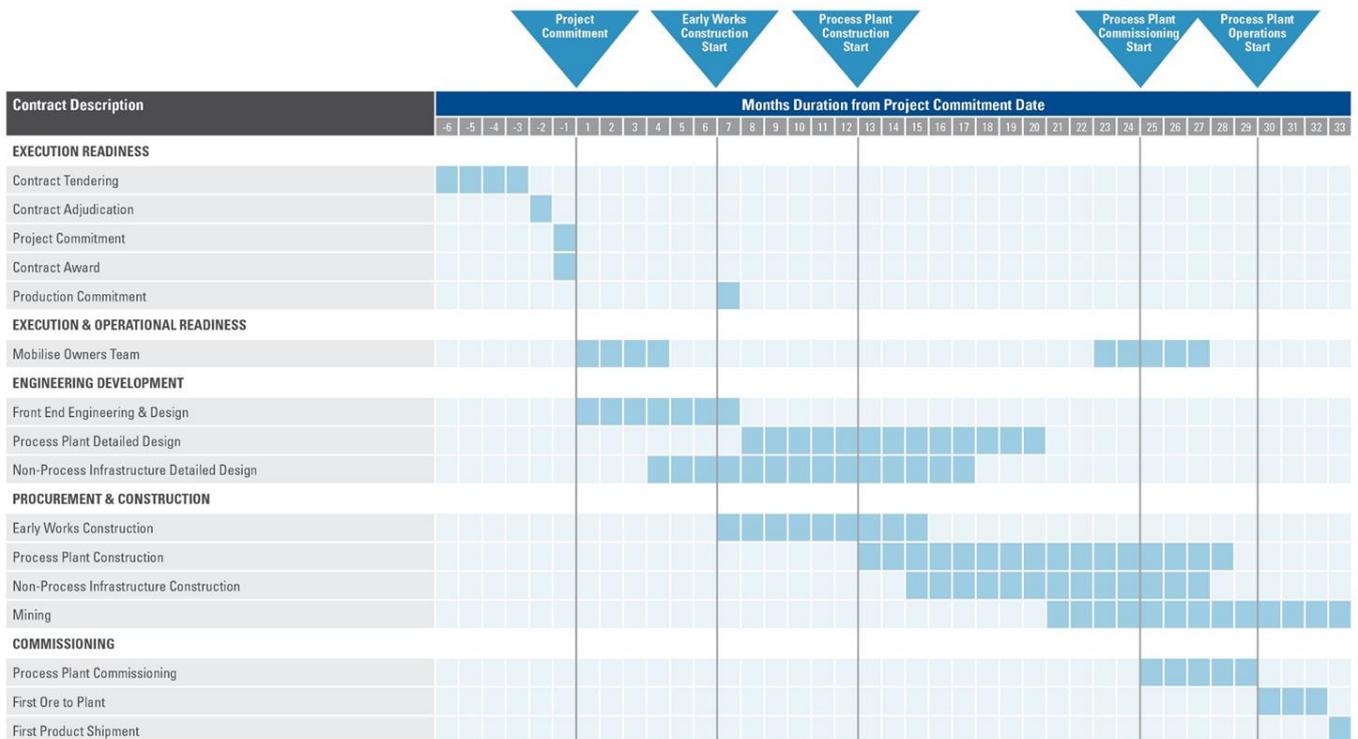


Table 4 Indicative Production Timeline



Estimate of times for Project and Production are indicative only and are subject to change

NdPr Oxide and Other Products – Offtake Negotiations

The release of DFS for the Nolans Project has been a catalyst for the Company to escalate its engagement with potential offtake and financing partners. In February and March negotiations centred on product offtake were a key focus for the Company's team in support of efforts to secure project funding. Arafura's NdPr oxide marketing strategy is underpinned by targeting customers in the high growth neodymium iron boron (NdFeB) permanent magnet supply chain for e-mobility, clean energy and factory automation. The potential for NdPr supply imbalance will be more pronounced for supply chain stakeholders not aligned with the *Made in China 2025* strategy. Marketing efforts are focused on customers incentivised to reduce their Chinese NdPr supply risk. Target customers include:

- Japan – NdFeB magnet manufacturers and trading houses for eventual use in the Japanese automotive sector and in factory automation.
- Europe and South Korea – Automotive, OEMs, wind turbine and consumer electronics makers diversifying NdPr supply risk and seeking product traceability.
- China – Tier one NdFeB magnet manufacturers that have significant export sales to Europe, Japan and the USA.

Arafura has signed two non-binding offtake Memoranda of Understanding (MoUs) for its three rare earth products to date, which it now aims to convert to contracts. Recent engagement with participants at various points in the NdPr supply chain (*i.e.* separators, metal converters, magnet manufacturers, OEMs, end users) in Japan, South Korea, China and Europe has been very encouraging, underpinned by forecast rising demand-side pressure for NdFeB magnets. The Company is also making solid progress in marketing its other rare earth products, and its phosphoric acid product to fertiliser companies in India.

Table 5 below shows an overview of Arafura's rare earths product distribution plan and the status of its negotiations.

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Table 5 Rare Earths Product Distribution Plan

Customer / Target Region	Amount (tonnes p.a.)	Offtake Status	Proportion of Revenue ¹
NdPr Oxide – targeting contracts with NdFeB magnet companies &/or end users			
JingCi Material Science Co. 	900	MoU	96%
China 	3,457	In progress	
Japan 			
South Korea 			
Europe 			
SEG-HRE Carbonate – targeting contracts with rare earth processors			
China 	606 (TREO equivalent)	In progress	1%
Japan 			
Cerium Hydroxide – targeting contracts with rare earth processors			
Baotou Xinyuan Rare Earth Hi-tech 	8,383 (TREO equivalent)	MoU	3%

1. From rare earth products only

Project Funding

Potential capital sources for project funding include equity, debt, joint venture and project sell-down with a strategic investor. Completion of the Nolans DFS, issue of environmental approvals and advancement of offtake agreements have been significant enablers for engagement with potential project funding partners. Pivotal to project funding will be the advancement of the offtake agreements. The engagement with potential funding partners is linked with long term strategic offtake into the NdFeB supply chain along with the procurement of high value specialist equipment. These activities are ongoing and running in parallel with offtake discussions for NdPr.

During the quarter the Northern Australia Infrastructure Facility (NAIF) completed a strategic assessment of Nolans and has determined that the Project will transition to the Due Diligence (DD) stage of the NAIF assessment process. NAIF is a key initiative of the Australian Government to provide access to up to A\$5 billion of debt finance, which may be on concessional terms, to support and encourage infrastructure development that generates public benefit for northern Australia. Arafura will now commence developing a comprehensive Investment Proposal as the basis for DD that will involve, but not be limited to, offtake, project, credit risk, environmental and social analysis by NAIF.

NAIF has not made any decision to offer finance or made any commitment to provide any financial accommodation and there is no certainty that an agreement will be reached between the parties. Arafura will continue to assist NAIF with its required DD regarding whether or not to participate in the debt facilities required to fund the project capital expenditure necessary to develop Nolans.

Community

The Nolans Project is expected to deliver substantial social and economic benefits to local, regional and national stakeholders. These will include indigenous and local employment opportunities, small and medium enterprise business opportunities, royalties and potentially shared infrastructure.

The Company estimates the peak construction workforce will be 650 people with a steady state operating workforce of 280. During steady state operations, most of the workforce will reside at site. The Project does however have the potential to accommodate community friendly rosters considering its proximity to the communities of Alice Springs, Ti Tree and Laramba.

The Company has recently commenced a process for the development of an Indigenous Engagement Strategy (IES) for the Project. This strategy will build on the Company's already established networks and the opportunities already identified in the Project's Social Impact Study. Arafura recognises the long life of the Project and the downstream processing completed at site has the potential to be an enabler and to provide generational change for indigenous communities in Central Australia. The objective of the strategy is to identify and maximise opportunities for Indigenous communities. Work on the IES commenced with a consultation workshop in Alice Springs with local stakeholders. This work will be ongoing, and a key deliverable will be a co-ordinated Employment and Training Strategy.

Exploration

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

EL 29701 (the Bonya project) is located 280 kilometres north-east of Alice Springs. Arafura holds a 60% joint venture (JV) interest in the Bonya project and Thor Mining Plc (AIM,ASX: THR) holds 40%. The Bonya project is located adjacent to THR's Molyhil Tungsten development project. THR completed an updated feasibility study on Molyhil in 2018.

In March heritage clearance was received from the Aboriginal Areas Protection Authority for a proposed drilling and costeaning program at Bonya. This is the JV's first substantive exploration program on the project, to be funded by the JV parties in proportion to their project equity. The program is scheduled to commence in April and includes reverse circulation (RC) drilling of approximately 2,500 metres on outcropping tungsten deposits at the Samarkand, Jericho, White Violet and Tashkent prospects. The program also includes excavating costeans (sampling trenches) into the Marrakesh tungsten deposit. Drilling is expected to take approximately 2 weeks, with preliminary XRF analysis to be conducted onsite, followed by laboratory geochemical assays.

Corporate

Retirement of Ian Kowalick AM

In February the Company announced the retirement of non-executive Chairman Ian Kowalick and the appointment of non-executive Director Mark Southey as the new Chairman.

Ian was a founding director of Arafura and a seed investor in its 2003 initial public offering. He was also instrumental in early management and development of the exploration and development phases of the Nolans Project that has culminated in the recent release of the first DFS for the project.

Mark joined the Arafura Board in February 2018 and has previously held senior executive positions with Honeywell and ABB both in Australia and internationally, and more recently was part of the global executive leadership team within WorleyParsons, a leader in the engineering, procurement and construction of projects in the energy and resources sector where he held the position of Group Managing Director for the Minerals, Metals and Chemicals Sector.

Cash Position and Timetable

Arafura had \$4.9 million in cash reserves at 31 March 2019. In April the Company also completed a placement of \$3.0 million to institutions and sophisticated investors. The Company continues to be in a strong position to advance its 100%-owned and Australian-domiciled Nolans NdPr Project.

For the quarter ended 31 March 2019 average monthly cash expenditure was \$1.03 million compared with \$1.74 million for the December 2018 quarter. Flowsheet piloting and DFS engineering workstreams were closed out in February, and some reporting and data validation for the pilot programs will flow through to the June 2019 quarter. The Company forecasts the average monthly cash expenditure for the June 2019 quarter to be \$1.0 million per month.

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Mineral Resources and Ore Reserves

The information in this report that relates to Mineral Resources was released in an ASX announcement dated 7 June 2017 (Detailed Resource Assessment Completed) and was completed in accordance with the guidelines of the JORC Code (2012). The information in this report that relates to Ore Reserves was released in an ASX announcement dated 7 February 2019 (Nolans Project Definitive Feasibility Study) and was completed in accordance with the guidelines of the JORC Code (2012).

Arafura Resources confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the original market announcements continue to apply and have not materially changed. Arafura Resources confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original market announcement.

RESOURCES	TONNES (m)	RARE EARTHS TREO %	PHOSPHATE P ₂ O 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

As announced on 7 June 2017. 1.0% TREO cut-off grade. Numbers may not compute exactly due to rounding. "NdPr enrichment" is the proportion of TREO comprising Nd₂O₃ and Pr₆O₁₁

RESERVES	TONNES (m)	RARE EARTHS TREO %	PHOSPHATE P ₂ O ₅ %	NdPr Enrichment %
Proved	4.3	3.1	13	26.1
Probable	14.9	2.9	13	26.5
TOTAL	19.2	3.0	13	26.4

As announced on 7 February 2019. Numbers may not compute exactly due to rounding. "NdPr enrichment" is the proportion of TREO comprising Nd₂O₃ and Pr₆O₁₁.

Production Targets and Financial Information

Information in relation to production targets and financial information included in this report is extracted from an ASX announcement dated 7 February 2019 (Nolans Project Definitive Feasibility Study). Arafura Resources confirms that all material assumptions underpinning the production target and financial information set out in the announcement released on 7 February 2019 continue to apply and have not materially changed.

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 March 2019

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (9 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	(3,368)	(10,020)
(b) development	-	-
(c) production	-	-
(d) staff costs	(381)	(1,210)
(e) administration and corporate costs	(372)	(1,598)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	32	115
1.5 Interest and other costs of finance paid	(1)	(4)
1.6 Income taxes paid	-	-
1.7 R&D refund - Non Capitalised Portion	-	446
1.8 Other (provide details if material)	-	-
1.9 Net cash from / (used in) operating activities	(4,090)	(12,271)
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	-	-

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Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 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
2.6	Net cash from / (used in) investing activities	-	1,658
3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares	-	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	(14)	(667)
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	(14)	7,680
4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	9,045	7,874
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(4,090)	(12,271)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	1,658
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(14)	7,680

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Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	4,941	4,941

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	1,941	3,045
5.2	Call deposits	3,000	6,000
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)	4,941	9,045

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	(184)
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.

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8. Financing facilities available <i>Add notes as necessary for an understanding of the position</i>	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	2,000
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	3,000

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.			

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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:
 (Company secretary)

Date: 29 April 2019.

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 March 2019

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 EL 28498 EL 29509 EL 31224 EL 31284 EL 31957	Aileron–Reynolds, NT	Arafura Resources Ltd	Exploration Licence	100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100%	
EL 29701	Bonya JV, NT	Arafura Resources Ltd	Exploration Licence	60%	60%	Thor Mining Plc 40%, Arafura Resources Limited 60%