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ASX Symbol ARL

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#### Directors

Katina Law *Chair* 

Brett Clark Managing Director and CEO

Ian Buchhorn Technical Executive Director

Wayne Bramwell Non-Executive Director

#### Issued Capital

*Fully Paid Ordinary Shares* 95,699,048

Unlisted options exercisable at \$0.25 12,310,022

Unlisted Loyalty options exercisable at \$0.77 11,982,807

Directors/Employee Performance Rights 2,990,000

## QUARTERLY OPERATIONS REPORT

For the Quarter ended 31 March 2018

# Ardea Resources Limited (Ardea or the Company) is pleased to announce the following highlights for the Quarter:

#### Corporate

- Brett Clark appointed as Managing Director to lead Ardea through feasibility, financing, development and into operations. Matt Painter transitions to GM Gold to advance Ardea's suite of prospective WA and NSW gold assets.
- Early conversion of loyalty options raises \$8.4M to the end of the March Quarter.
- Cash position at end of quarter of \$15.3M.
- Strategic Investor Process The intense market competiton seen amongst large European, Korean, Chinese and Japanese EV or battery manufacturers to secure long term, reliable battery mineral supply has generated much interest in Ardea's project - as such the Company is now commencing a strategic investor process to assist in the financing and development of the Goongarrie Nickel Cobalt Project.

#### Development – Goongarrie Nickel Cobalt Project (GNCP)

 Pre-Feasibility Study (PFS) highlights strong base case for initial mining at Goongarrie. The PFS reviewed a base case of 1.0 Mtpa and a 1.5 Mtpa option.

Case	Pre-tax NPV <sub>8</sub>	Post-tax NPV <sub>8</sub>	IRR	Payback
1.0 Mtpa	A\$1.43 billion	A\$1.04 billion	25 %	5.3 years
1.5 Mtpa	A\$1.93 billion	A\$1.40 billion	25 %	5.6 years

- Upside studies on a 2.25 Mtpa option at Goongarrie are underway as the GNCP is readily scalable and increased scale significantly enhances project economics and shareholder returns.
- Definitive Feasibility Study drilling and metallurgical programmes commenced.

#### Exploration

- Aeromagnetic and gravity survey at Mt Zephyr Gold Project (WA).
- Exploration and resource updates to follow this quarter.



### March 2018 Quarter

Ardea is pleased to provide this update of the Company's progress during the March 2018 Quarter.

### 1. Corporate

#### Leadership transition

On 3 April 2018 Ardea announced the appointment of Mr Brett Clark as Managing Director and CEO to lead the Company through its transition from explorer, through project development to operations.

Mr Clark is a senior executive and engineer with 25 years' experience in operations, development and funding with corporate and operational expertise in nickel, gold and copper. Mr Clark has domestic and international project development and operations expertise through senior management roles with WMC Resources, Tethyan Copper, Rio Tinto, Doonberg Capital and Ernst and Young, complemented with extensive expertise in project finance and the capital markets in the US, Asia and Europe. Mr Clark has significant Board and Executive experience with key Strategic Investor groups in Asia and the US.

Founding Managing Director Dr Matt Painter will now transition to the role of General Manager Gold where his new focus will be advancing the Company's gold assets. Dr Painter has been pivotal in the establishment of the Company and guiding Ardea through the pre-feasibility study on the Goongarrie Nickel Cobalt Project. With this expansion of the management team, he can now apply his exploration skills to drive the advancement of Ardea's non-GNCP assets, particularly the 100% owned Mt Zephyr Gold Project in WA and Lewis Ponds Zinc Project in NSW.

This transition is critical as it expands the Company's internal resources and facilitates a stronger focus on the advancement of the Goongarrie Nickel Cobalt Project towards a development decision and the possible parallel advancement of earlier stage yet key exploration opportunities within Ardea's suite of prospective Australian gold and base metal assets.

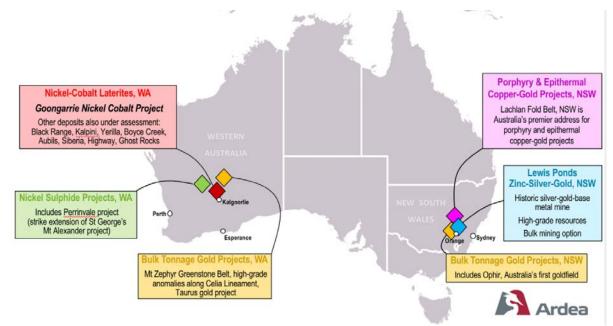


Figure 1 - Ardea Resources project portfolio



#### Finance

During the quarter (up to 31 March 2018) Ardea's shareholders converted 4.1M Loyalty Options, raising an additional \$3.2M (total raised from Loyalty Options \$8.4M), taking the company's cash position to \$15.3M at quarter end.

Issued capital at 31 March 2018 was 93,146,021.

Ardea Loyalty Options can be converted up to 31 May 2018 and if the outstanding balance (as of 31/3/18) is converted and additional \$11.2M may be available to the company by quarter end.

### 2. Development

During the quarter the focus was upon the completion of the Pre-Feasibility Study (PFS) for the Goongarrie Nickel Cobalt Project (GNCP) in Western Australia. Goongarrie and the encompassing Kalgoolie Nickel Project (KNP) is a strategically valuable asset that has historically had >\$50M spent on it to date by multiple significant resource companies.

The Ardea GNCP opportunity is underpinned by:

- the recently released PFS- it covers only 5% of the KNP resource with generations of mine life untapped and available,
- the simplest flowsheet with premium goethite ore,
- a scaleable flowsheet that can process up to a 2.25 Mtpa scale utilising a single train,
- extremely short residence time in pressure vessels in comparison to other laterite ore types,
- low risk fifth generation Pressure Acid Leach (PAL) process proven and operating robustly and successfully in other jurisdictions,
- significant infrastructure advantages with a major highway, railway line, high pressure gas pipeline and power transmission lines running adjacent to Goongarrie tenements,
- the highest cobalt grades from a non-conflict jurisdiction,
- the largest bulk resource cobalt project outside of Democratic Republic of Congo,
- intense competition amongst EV manufacturers and battery makers to secure long term, reliable supply of "ethical" battery metals, and
- abundance of opex-reducing feedstocks notably PAL discharge neutraliser within Goongarrie leases, negating the need to import high-cost neutraliser.

#### Goongarrie Nickel Cobalt Project PFS completed

The Pre-Feasibility Study for the Goongarrie Nickel Cobalt Project (released to ASX on 28 March 2018) highlighted an exceptional business case for a simple 1 Mtpa or 1.5 Mtpa throughput option. These thoughputs were chosen to reflect the current financing capacity of the Company and could be expanded to support a higher throughput / higher capital solution more appealing to large strategic investors looking for a long life supply source.

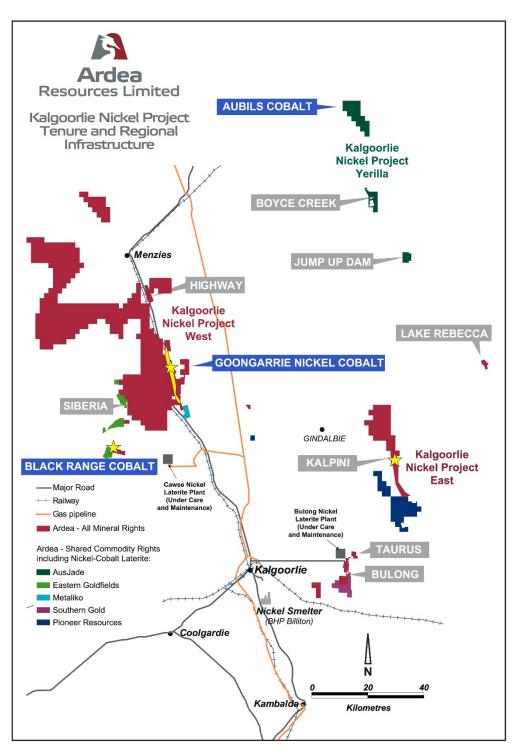


Figure 2 – The Kalgoorlie Nickel Project (KNP) Regional Infrastructure, showing project areas.

#### Location

A key advantage of the Goongarrie project is its prime location. Less than an hour's drive from Kalgoorlie in Western Australia, the project offers world-class infrastructure in an established regional hub with 125 years of mining history. Kalgoorlie has been built to support all scales of mining operations over the last century, providing infrastructure, logistical and personnel support, and is considered to be Australia's key mining capital.



Strategically, Ardea holds nickel-cobalt laterite projects covering 1,738 km<sup>2</sup> near Kalgoorlie. Goongarrie makes up only 142 km<sup>2</sup> of this total area. The project is in a prime location on the main highway and railway line 80 km north of Kalgoorlie, adjacent to gas pipelines and power transmission lines.

#### Key metrics of the Goongarrie Nickel Cobalt Project

The Goongarrie PFS examined various operational scenarios that considered capital outlay, autoclave throughput and outsourcing various operational processes.

The 1.0 Mtpa scenario base case is estimated to generate pre-tax real discounted cash flows totalling A\$1.43 billion based on a discount rate of 8 % and post-tax real discounted cash flows totalling A\$1.04 billion. The pre-tax and post-tax, ungeared Internal Rate of Return (IRR) of the project is forecast to be 29 % and 25 % respectively. The 1.0 Mtpa base case option for the project has an estimated payback period of a short 5.3 years.

Parameter		Units	Assumption	Assumption
Autoclave Throughput			1.0 Mtpa	1.5 Mtpa
Life Of Mine			25 years	25 years
Autoclave Feed Grade LOM	Nickel	%	1.00	0.89
	Cobalt	%	0.12	0.10
Production LOM average	Nickel sulphate	Тра	41,500	55,300
	Cobalt sulphate	Тра	5,500	6,900
	Contained nickel	Тра	9,300	12,350
	Contained cobalt	Тра	1,180	1,450
Recovery LOM average	Nickel	%	94.5	94.5
	Cobalt	%	95.5	95.5
Nickel sulphate price#		US\$/lb	8.84	8.84
Cobalt sulphate price <sup>#</sup>		US\$/lb	41.63	41.63
Exchange Rate		A\$:US\$	0.788	0.788
Initial Capital		A\$ M	599	746
C1 Cash Cost* (per pound contain Ni metal)	before Co credits	US\$/lb	5.59	5.32
	after Co credits	US\$/lb	0.42	0.45
AISC <sup>†</sup> (per pound contained nickel metal)	before Co credits	US\$/lb	6.17	5.86
	after Co credits	US\$/lb	1.00	0.99
Pre-Tax NPV @ 30 Jun 20, 8.0% (real)		A\$ billion	1.43	1.93
Pre Tax IRR (real)		%	29 %	29 %
Post-Tax NPV @ 30 Jun 20, 8.0% (real)		A\$ billion	1.04	1.40
Post-Tax IRR (real)		%	25%	25%
Payback		Years	5.3 years	5.6 years

Table 1 – 2018 Goongarrie Nickel Cobalt Project – PFS Key parameters summary

\*Nickel sulphate and cobalt sulphate prices are average recorded transaction prices for February 2018 in the People's Republic of China, the world's largest consumer of these products (Source: SMM, see PFS announcement Section 13). Note: production tonnages are rounded to reflect degree of certainty.

Mine and processing life is limited to 25 years for the purposes of financial modelling. With conversion of resources mine life could be extended for many decades beyond 25 years, with only half of the defined pits at Goongarrie being incorporated into the current 1.0 Mtpa mining model.

<sup>\*</sup> C1 Cash costs are defined as mining, processing, administration costs less by-product credits divided by pounds of contained nickel produced (within the nickel sulphate). † All in Sustaining costs (AISC) are defined as C1 plus royalties and sustaining capital expenditure divided by pounds of contained nickel produced (within the nickel sulphate).



The PFS represents only 5% of the available KNP resources and does not consider the other JORCcompliant resources in the remainder of the KNP, several of which are known to host significant cobaltrich nickel laterite drill intercepts (Ardea Second Supplementary Prospectus 6 January 2017). Additionally, Ardea drilling at Goongarrie, as well as intersected very high cobalt levels (ASX announcement 14 February 2018), and has confirmed the presence of other potentially payable metals including scandium, manganese, vanadium and aluminium (as high purity kaolin).

Assumptions used for both throughput scenarios modelled in the PFS, and the subsequent results calculations, are included in Table 1 (for full details refer ASX release of 28 March 2018).

#### The High Value Battery Metal Sulphate Market

Ardea's strategy is to produce both cobalt sulphate and nickel sulphate at Goongarrie for the battery industry. PFS bench-scale sulphate production with the largest laboratory autoclave in the southern hemisphere confirms that Ardea has the flowsheet to deliver highest-purity cobalt sulphate and nickel sulphate products at Goongarrie.

Purity of the sulphate product is key to the production of high-quality batteries.

In the 1.0 Mtpa base case, approximately 5,500 t of cobalt sulphate and 41,500 t of nickel sulphate would be produced each year over a 25 year mine life.Cobalt and nickel are critical components of lithium ion batteries ensuring high energy density and chargeability. Higher cobalt and nickel levels in lithium ion batteries provide Electric Vehicles a greater range and faster recharge times, so substitution potential is limited within the premium sector of the EV market.

Table 2 – Pricing of sulphate used for the PFS shown in Chinese yuan (source – Shanghai Metals Market). Payability is on contained metal so conversion to contained metal equivalent for comparison to more commonly used metal values is shown both in US dollars per tonne and in US\$ per pound.

Battery metal sulphate		Price date	Units	CNY / t	USD / t	USD / Ib
	PFS	Feb 2018 (avg)	Sulphate	¥121,600	\$19,241	\$8.73
Cobalt sulphate			Contained metal equiv.		\$91,771	\$41.63
(contains 20.97% cobalt)	Spot	4 Apr 2018	Sulphate	¥142,000	\$22,469	\$10.19
			Contained metal equiv.		\$107,167	\$48.61
	PFS	Feb 2018 (avg)	Sulphate	¥27,500	\$4,351	\$1.97
Nickel sulphate			Contained metal equiv.		\$19,486	\$8.84
(contains 22.33% nickel)	Spot	4 Apr 2018	Sulphate	¥28,500	\$4,510	\$2.05
			Contained metal equiv.		\$21,509	\$9.76

Goongarrie has a competitive advantage over many other deposits as it is a goethite laterite deposit that will produce ore which dissolves very efficiently in sulphuric acid. This, combined with high metal recoveries, and low penalty elements mean that Goongarrie is particularly amenable to high-purity sulphate production.

Cobalt sulphate and nickel sulphate products attract a price premium relative to their native metals, based on contained metal content (Table 2). Premiums are presently around 5 % for cobalt and 30 % for nickel. The hydrated cobalt sulphate product contains 20.97 % cobalt and the hydrated nickel sulphate product contains 22.33 % nickel, so it is on these sulphate values that revenue forecasts have been based.



Pricing defined for the PFS (Table 2) was established on the February 2018 average pricing in China (source: Shanghai Metals Market – metal.com), which is at a significant discount to current spot values (Table 2). East Asia is the major consumer of these sulphates, manufacturing most of the world's lithium ion batteries.

#### Resource Upgrade for Goongarrie

During the quarter, resources at Goongarrie were re-estimated to reflect the focus of mining blocks defined by nickel or cobalt value. Previous resources were based on cobalt cut-off alone. The effect of the remodelling was to define a substantially increased "Cobalt Zone" resource at Goongarrie of 83.1 Mt at 0.10 % cobalt and 0.81 % nickel, for 81,700 t of contained cobalt metal and 672,300 t of contained nickel metal<sup>‡</sup>.

Camp	Domains	Cut-off	Resource	Size	Cobalt	Nickel	Contair	
		%	category	(Mt)	(%)	(%)	Co (t)	Ni (t)
Goongarrie Hill	Ni & Co	<u>&gt;</u> 0.5% Ni or > 0.08% Co	Inferred	52.5	0.04	0.65	21,600	340,400
			Subtotal	52.5	0.04	0.65	21,600	340,400
Goongarrie South	Ni & Co	<u>&gt;</u> 0.5%Ni or > 0.08% Co	Measured	10.3	0.10	0.98	10,200	101,200
-			Indicated	56.2	0.07	0.72	37,200	407,000
			Inferred	32.2	0.06	0.69	20,300	221,200
			Subtotal	<i>98.</i> 7	0.07	0.74	67,700	729,300
Big Four	Ni & Co	<u>&gt;</u> 0.5%Ni or > 0.08% Co	Indicated	45.5	0.06	0.71	28,200	320,700
5			Inferred	9.9	0.06	0.63	6,100	61,900
			Subtotal	55.4	0.06	0.69	34,300	382,700
Scotia Dam	Ni & Co	<u>&gt;</u> 0.5% Ni or > 0.08% Co	Indicated	3.3	0.09	0.81	3,000	26,900
			Inferred	5.7	0.07	0.76	4,100	43,300
			Subtotal	9.0	0.08	0.78	7,100	70,200
Total	All	<u>&gt;</u> 0.5% Ni or > 0.08% Co	Measured	10.3	0.10	0.98	10,200	101,200
			Indicated	105.0	0.07	0.72	68,400	754,600
			Inferred	100.3	0.05	0.67	52,100	666,900
Goongarrie Resour	TOTAL	215.6	0.06	0.71	130,700	1,522,700		

Table 3 – Summary of total mineral resources within the Goongarrie Nickel Cobalt Project area, comprising resources at Goongarrie Hill, Goongarrie South, Big Four, and Scotia Dam (14 March 2018).

Note: All nickel and cobalt domains are included, and are encapsulated by an envelope defined by nickel grades equal to or greater than 0.5%. Note that figures are rounded to reflect degree of certainty and may not tally.

Previously by using cobalt cutoffs only it was apparent that significant high-nickel, low-cobalt mineralisation was not being captured, particularly where it occurs above the cobalt rich zones. In many cases, this omitted mineralisation carried similar value to or more than the cobalt-rich mineralisation mined when valued by the total recoverable metals within a cubic metre.

<sup>&</sup>lt;sup>‡</sup> Brief mineral resource breakdown within the Cobalt Zone portion of the Goongarrie Nickel Cobalt Project area at Goongarrie, comprising resources at Goongarrie South, Big Four, and Scotia Dam. For further detail see ASX announcement dated 14 March 2018.

Deposit(s)	Resource category	Size(Mt)	Cobalt(%)	Nickel(%)	Contained Co (t)	Contained Ni (t)	Note: Cobalt Zone domains comprise cobalt domains and cobalt bearing areas of the nickel domain. The cobalt domains (blue areas,
Goongarrie South	Total	53.1	0.10	0.82	52,000	436,600	Figure 1) are defined where 1) Co > 0.08% and 2) Co< 0.08% and Ni
Big Four	Total	25.0	0.10	0.77	24,000	192,100	$\geq$ 0.5%. From the nickel domain (grey areas, Figure 1), only areas
Scotia Dam	Total	5.0	0.11	0.87	5,600	43,600	where Co>0.08% are included. Note that figures are rounded as appropriate to reflect degree of certainty and may not tally exactly.
Goongarrie Cobalt 2	Zone TOTAL	83.1	0.10	0.81	81,700	672,300	See announcement dated 14 March 2018 for full details.



The effect of the resource redefinition is that tonnages have increased substantially, with a slight decrease in cobalt grade and little change in the nickel grade. Contained tonnages of the cobalt and nickel have increased substantially.

The Cobalt Zone Goongarrie resource (Table 3) is part of the overall Goongarrie resource, which better represents Ardea's methodology to extract optimal nickel and/or cobalt value from the deposit. This global Goongarrie resource is 215.6 Mt at 0.06 % cobalt and 0.71 % nickel, and includes 130,700 t of contained cobalt metal, and 1,522,700 t contained nickel metal.

For clarity, this resource includes all of the Cobalt Zone resource and additionally the greater tonnes of lower grade material outside of the Cobalt Zone. It was this overall resource that was used to fully define the plant feed and hence reserves for Goongarrie.

Goongarrie encompasses four discrete but adjoining deposits of laterite mineralisation hosted in the regolith above ultramafic cumulate rocks of the Walter Williams Formation (WWF). Updated estimates of the nickel and cobalt Mineral Resources for the project which includes the Goongarrie Hill (GH), Goongarrie South (GS), Big Four (BF) and Scotia Dam (SD) areas. Independent estimation was completed by HGMC in early 2018 and inform the Mining Study component of the Ardea 2018 PFS.

#### Definition of JORC Reserves at Goongarrie

Mine scheduling was done to PFS level on both the 1.0 Mtpa and 1.5 Mtpa scenarios, Ore Reserves were estimated on the basis of the 1.5 Mtpa mining schedule for 25-year mine life (i.e. a nominal 37.5 Mt). The 1.0 Mtpa case is therefore a subset of this reserve. The Reserve is estimated at 40.1 Mt at 0.09% cobalt and 0.82% nickel (Table 4). As ongoing studies are completed for higher plant throughputs, larger components of the Mineral Resource are expected to be converted to Ore Reserves.

See the Goongarrie Nickel Cobalt Project PFS announcement (28 March 2018) for a full breakdown and description of the reserves.

Deposits	Class	Size (Mt)	Cobalt (%)	Nickel (%)
Goongarrie South	Proven	8.95	0.10%	0.96%
	Probable	17.26	0.09%	0.79%
	Total	26.22	0.10%	0.85%
Big Four	Proven	_	_	_
	Probable	13.92	0.09%	0.77%
	Total	13.92	0.09%	0.77%
TOTAL	Proven	8.95	0.10%	0.96%
	Probable	31.18	0.09%	0.78%
	Total	40.13	0.09%	0.82%

Table 4 – Goongarrie Nickel Cobalt Project, Ore Reserves based on 25 year mine life at 1.5 Mtpa.

Using a nickel equivalent cut of >0.81 %, which used inputs of A\$18,900/t nickel and A\$120,750/t cobalt. (US\$15,120/t Ni and US\$96,600/t Co, 0.8 exchange rate) as listed in the ASX PFS announcement, 14 February 2018, JORC Table 1. See footnote 3 page 13.

#### Commencement of DFS drilling and metallurgical programs

The Company's confidence in the project is illustrated by the commencement of the Definitive Feasibility Study (DFS) drilling programs, with over 16,000 m of drilling already underway. Samples from the drill

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programs are being utilised for the current variability studies as well as for cobalt sulphate and nickel sulphate marketing samples which are in demand from potential Strategic partners.

A single RC drill rig completed 8,829m of an 80x40 m infill program to support an upcoming resource update across the GNCP. The approved infill program currently sits at 43% completion, with drilling scheduled to continue in the upcoming reporting period.

Diamond drilling utilising a single, double-shifted rig continued during the quarter. The focus of the diamond programme is to twin existing RC holes for quality validation across the full extent of the current GNCP resource area. A total of 1,307.3 metres were drilled for the quarter, representing of 53% of the planned drilling.



Figure 3 – Diamond rig Big Four, facing south, core for metallurgical variability program at Simulus (left). RC drill chip logging undeway at the RC drill rig, Elsie North drill out and bulk sampling (right)

A sonic rig was also mobilised to site at quarter's end, to generate bulk samples for future DFS metallurgical programs..

Results continue being received for the work completed, with updates on these results planned for the upcoming reporting period.

The key outcomes of the March 2018 quarter drilling are:

- The 40m infill of historic RC drilling has returned very good consistency of cobalt and nickel grade between multiple drilling phases since 1998. This is most significant, in view of third party due diligence when considering project funding.
- Importantly, the Ardea regolith interepretations have proved to be precise which allows confident
  modelling of material types for plant feed (whereas the historic data lacked the requisite suite of
  assayed elements).
- With Ardea's systematic assay of scandium, vanadium and chromium for the first time, substantial
  mineralisation has been discovered above and within the known cobalt-nickel mineralisation.
  Metallurgical programs have been scoped to further assess low opex recovery options for
  aluminium, vanadium and chromium (these are totally separate from the sulphuric acid PAL/MS
  cobalt-nickel(-scandium) circuit).



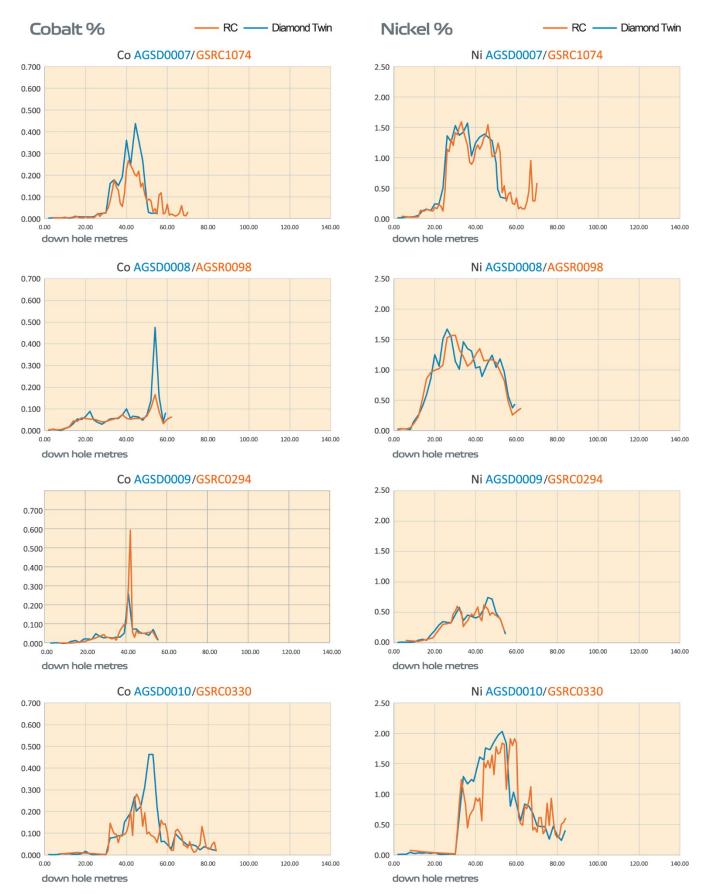


Figure 4– Comparison of cobalt and nickel grades between RC drill-hole original and confirmatory diamond drill-hole twin.

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- The Ardea diamond drilling has validated both the historic and Ardea RC drilling to a high level of precision (Figure 4).
- Dolomite and magnesite Neutraliser resources have been identified within Tertiary-aged palaeochannels overlying the cobalt-nickel ore zones. Metallurgical programs are underway to settle a flowsheet for upgrading the neutraliser to hydrometallurgical grade. The discoveries were made by the Ardea Kalgoorlie team through precise geometallurgical programs, and had previously remained undiscovered despite pattern drilling at Goongarrie since the 1970s.
- Very pure kaolin has been discovered as palaeo-channel overbank deposits, with lateral continuity not yet quantified. In core logging, the material approaches "coating-grade kaolin" and appears from logging to be a potential feedstock for High Purity Alumina (HPA). Metallurgical programs are being scoped.

### 3. Exploration

Ardea has a significant number of additional projects outside of the Goongarrie Nickel Cobalt Project, many in locations with geological structures that host significant world class gold or nickel discoveries.

As we build Ardea into a larger organisation, we recognise the importance of building the internal capability and redesigning our organisation to suit the expanding portfolio of development projects. Part of this process also includes prioritising our efforts and although the Goongarrie project remains our highest priority, our organisation redesign allows us to parallel process other opportunities in WA and NSW and remain Australia-focussed.

#### The bigger picture – bringing in the resources of the KNP (WA)

As previously stated and importantly, JORC reserves defined for the Goongarrie Nickel Cobalt Project constitute less than 5% of the larger, encompassing KNP resources. These provide considerable upside for increased production and ongoing mine life and as such Ardea is focussing on a targeted plan of ongoing work to prove up and upgrade the resources at the following deposits:

- Siberia/Highway/Ghost Rocks
- Black Range
- Aubils/Boyce Creek/Jump-up Dam
- Kalpini/Bulong/Lake Rebecca

All of these deposits are within road haulage range of the proposed Goongarrie plant. These other deposits may provide potential satellite feed options for the Goongarrie plant or the possibility of additional processing hubs or have the potential to provide feed for local third party processors of lateritic nickel.

In order to support the regional strategy of building resources including water across the KNP, a program of aggressive lease acquisition was undertaken during the quarter. A total of 18 leases were acquired with a combined land area of 2,281km<sup>2</sup> including:

- Kalpini, KNP East High grade, good continuity mineralisation has been identified in resource reviews. Accordingly, a Mining Lease application was lodged at Wellington East at Kalpini.
- Lake Rebecca, KNP East High grade, good continuity mineralisation has been identified in Ardea tenure at Lake Rebecca which has no published resource. Accordingly, a Mining Lease application was lodged.



- Boyce Creek, KNP Yerilla High grade, good continuity cobalt-dominant mineralisation has been identified in resource reviews. A Mining Lease application was lodged at Boyce Creek, which consolidates Ardea Mining Lease tenure at Boyce Creek.
- Aubils, KNP Yerilla Mineralisation interpretations commenced, to facilitate site design and consequent Mining Lease application.

Further details are contained in the attached Appendix 5B.

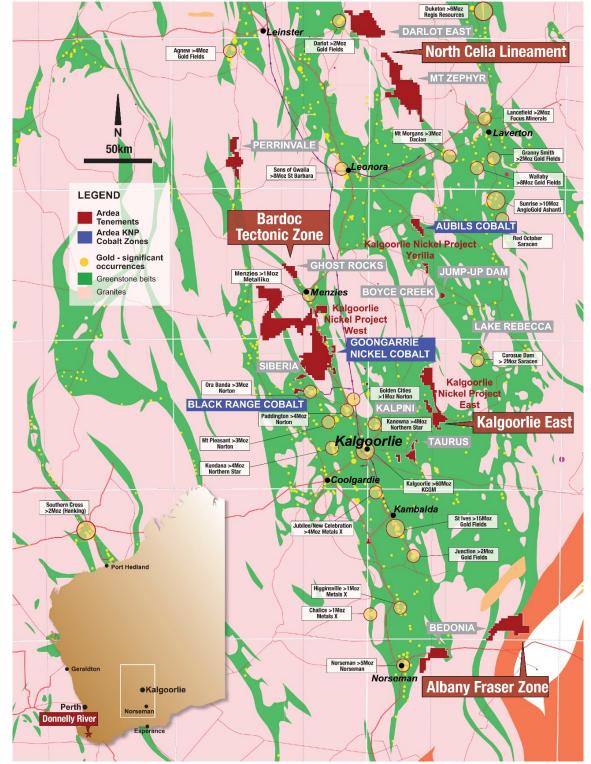


Figure 5 – Ardea's Western Australian projects

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### Mount Zephyr and Darlot East gold projects, Eastern Goldfields, WA (100% ARL)

Two preliminary programs were undertaken on the company's Mount Zephyr and Darlot East gold projects in WA during the quarter.

- 1. Regional aeromagnetic survey at 100 m line spacing to provide high resolution data for interpretation and gold targeting.
- 2. Regional gravity survey with simultaneous soil sampling program.

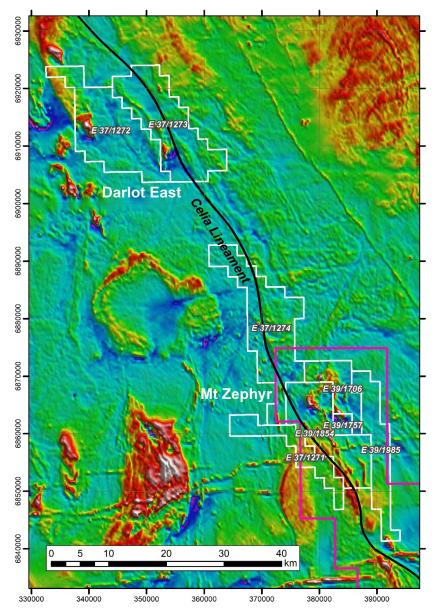


Figure 6– Regional scale aeromagnetic imagery over the Mount Zephyr and Darlot East projects along the gold- fertile Celia Lineament. Existing 100m line-spaced aeromagnetic data (pink outline, data not shown) is being augmented by similarly dense data (data not shown) over the remainder of the Company's tenement package in the region.

Both surveys are complete, and the Company is awaiting the final results. Initial review indicates multiple new high priority exploration targets defined for follow-up soil geochemical survey.

Regional low-resolution data shows the Celia Lineament as a regionally important, through-going, eastdipping crustal-scale structure that is genetically associated with a series of gold plays including the Mount Morgans and Lake Roe gold deposits. Mount Zephyr is located north of these deposits, with the Darlot East areas located further north again. High-level analysis distinct demagnetisation shows zones in the Mount Zephyr-Darlot East areas that likely reflect the destruction of magnetic minerals due to hydrothermal activity, and which regionally are commonly associated with gold mineralisation.

Gale is a 273ppb Au soil anomaly which Aurora Gold<sup>§</sup> RAB drilled in the 1990s and intersected consistent >0.25g/t Au from surface to RAB refusal with intercepts of 6-18m at 0.5g/t Au and peak 6m at 1.3g/t Au. The anomaly is clearly a sub-horizontal geometry and <u>not</u> the narrow sub-vertical interpretation of

<sup>&</sup>lt;sup>§</sup> Aurora Gold has not consented to the use of the historical geological report reference in this announcement. The potential quantity and grade of any mineralisation is conceptual in nature, there has been insufficient exploration to estimate a mineral resource and it is uncertain if further exploration will result in the estimation of a mineral resource.



previous explorers. This will be confirmed in detail through detailed structural analysis and mapping prior to drilling.

The Gale RAB gold anomaly at a 0.25g/t Au cutoff grade defines an open sub-horizontal sheet with 700m N-S strike, 100m E-W width with up to 18m thick (corresponding to RAB refusal depths).

A site visit confirmed the anomaly has not been followed up with previous RC drilling, apart from a very limited program at the extreme northwest corner of the soil anomaly. Old RAB chips mixed with aeolian sand located at the old RAB collars returned consistent 0.1-0.4g/t Au. RAB chips included silica-pyrite-sericite alteration, which have the appearance of a "late stage mineraliser". The geological expression of Gale is felt to be closely analogous to the Dacian Gold Jupiter syenite-hosted gold discovery, located 50km southeast along strike on the Celia Lineament.

The RAB chip anomalism is supported by up to 1.4 g/t Au in an "unaltered" granite float composite south of the RAB-drilled area, and 1.2-1.5g/t Au in gossanous limonite-white quartz vein float to the east of the RAB-drilled area.

Ardea plans to follow up the Gale RAB anomaly with systematic RC drill traverses.

## Bardoc Tectonic Zone gold project, Eastern Goldfields, WA (100% ARL)

The Company's Bardoc Tectonic Zone (BTZ) gold project comprises a string of gold deposits and prospects stretching more than 40 km parallel to and immediately east of the Goongarrie Nickel Cobalt Project. Gold occurrences are located within a distinct corridor and have been mined historically along shearparallel structures, with the site of the historic township of Goongarrie (located north of the proposed nickel and cobalt operations) originally being a gold mining centre in the early twentieth century.

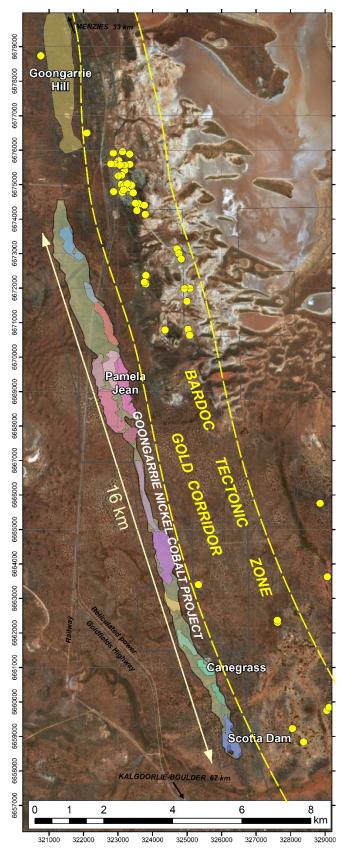


Figure 7 – The Gold Corridor of the Bardoc Tectonic Zone and its relationship to the Goongarrie Nickel Cobalt Project. Yellow dots represent historic gold occurrences and workings (from the state Minedex database).

## Ardea Resources Limited

The strike extent of the BTZ parallels Goongarrie but there is very little exposure, with minor historic workings at the Big Four gold mine within GNCP tenure and several other localities. Sterilisation drilling for the Goongarrie project will cover some of this area, and gold anomalies are present locally throughout historic and current drilling.

Interpretation of geophysical data over the BTZ during the quarter shows several potential target areas along the strike length of the Goongarrie Nickel Cobalt Project. These will be investigated further through detailed analysis of geophysical data and will, as far as practicable, be investigated via first-pass drilling as part of the planned sterilisation programs at Goongarrie.

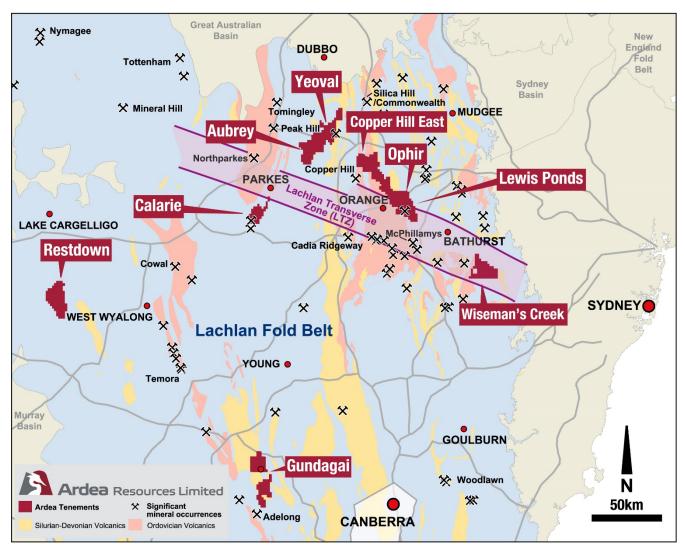


Figure 8 – Ardea's projects in the highly prospective Lachlan Fold Belt of NSW

#### Lewis Ponds zinc-gold-silver-copper deposit, NSW (100% ARL)

Relogging and resampling of the historic drill core continued during the quarter. Results are pending for several drill holes and a new resource will be generated upon receipt of all data.

Metallurgical testwork for the scoping study into bulk mining and recovery of metals from the Lewis Ponds deposit is near completion, with a report underway. The study has focused on producing two separate concentrates at bench scale – a zinc concentrate and a lead-copper-silver-gold concentrate.



The final flotation report is expected shortly after which a detailed geo-metallurgical assessment will be completed as part of a more detailed scoping study assessment.

#### Lachlan Fold Belt copper-gold, NSW (100%ARL)

#### Copper Hill East copper-gold project – EL8556

An epithermal gold-silver prospect was generated for the Lewis Ponds area based on sampling old workings associated with the Godolphin Fault, a shallow east-dipping domain boundary structure separating the Ordovician Macquarie Arc in the west from the Silurian Hill End Trough in the east. From southeast to northwest, the structure hosts gold mining centres and targets from McPhillamys, Springfield, Mt Shorter, Calula and Copper Hill East. This Godolphin Fault trend is held within Ardea's tenement package, a 50km strike of continuous tenure in proximity to the McPhillamys deposit in the south and the Commonwealth (Silica Hill) deposit in the north.

#### Yeoval Porphyry copper-gold-molybdenum-rhenium project - EL8538

Yeoval is located within the Macquarie Arc, 60km northeast of the Northparkes copper-gold mine. The tenement covers an area of 138km<sup>2</sup> and is intensely mineralised with more than 60 historic copper workings trending in a north-easterly direction, along a 20km strike. The project area encompasses the eastern section of the Early Devonian Yeoval Complex, with the major host being the Devonian-aged Naringla Granodiorite including gabbro-diorite and quartz monzo-diorites. The co-magmatic Canowindra Volcanics of the Cudal Group occur to the east and south. The Ardea exploration target is a large tonnage porphyry copper-gold-molybdenum-rhenium system.

This report section contains exploration results and estimates reported by ASX-listed Augur Resources Limited on 17 September 2012 under the JORC Code 2004<sup>\*\*</sup>. The information has not been updated to comply with the JORC Code 2012, and it is uncertain whether following evaluation or further exploration work that the estimate will be able to be reported in accordance with the JORC Code 2012.

The known Yeoval deposit comprises two main near-surface zones of bornite-chalcopyrite mineralisation. Initial drilling in 1972 produced best intercepts of 42.7m at 0.93% Cu and 18m at 0.8g/t Au. Drilling in 2008 by Augur Resources produced best intercepts of 90m at 0.90% Cu and 0.14g/t Au and 50m at 0.54% Cu and 0.48g/t Au.

#### Mt Aubrey epithermal gold-silver project – EL8532

Mt Aubrey is located at the east contact of the highly mineralised Macquarie Arc Ordovician andesites some 30km northeast of Parkes and 30km southeast of Peak Hill.

The property was acquired by Ardea as an epithermal gold system hosted in Upper Silurian to Lower Devonian-aged Dulladerry Volcanics, a bimodal subaerial suite of quartz eye porphyry with rhyolitic ashflow lapilli tuff, pyroclastic and breccia and amygdaloidal basalt. Gold mineralisation is typically hosted by 0.5-3m thick chalcedonic epithermal quartz veins and stockworks. All assays reported in Table 5 below are from open file reports and are not able to be verified by Ardea.

<sup>&</sup>lt;sup>\*\*</sup> Augur Resources has not consented to the use of the historical geological report reference in this announcement. This section contains exploration results and estimates reported by Augur Resources Limited on 17 September 2012 under the JORC Code 2004. The information has not been updated to comply with the JORC Code 2012, and it is uncertain whether following evaluation and or further exploration work that the estimate will be able to be reported in accordance with the JORC Code 2012.



Although an epithermal-style of gold mineralisation, the Mt Aubrey mineralisation isn't refractory, with the published run-of-mine grade (3.73g/t Au) returning 95.7% recovery in historic metallurgical test work.

Gold mineralisation at the Mt Aubrey vein system remains open at depth and along strike, as the historical drilling done by BHP Gold was only designed to define shallow oxide resources. The Mount Aubrey deposit was mined by BHP Gold in 1990 and 1991 as shallow open-pit satellite operations to the Parkes Gold Mine. It is estimated that up to 120,000 tonnes of ore at 3.3g/t Au was trucked to Parkes for processing. As part of the operating agreement with the landowner all three of the small open-pits were back filled.

It is presumed that the shallower of the drill intercepts as reported below were mined in the BHP openpits. Historic pit pick-ups will be sought to quantify the status ore positions beneath the historic pit floors.

In 2007, Aurelia Metals Limited<sup>††</sup> completed three diamond core holes beneath the former Mt Aubrey Gold Mine for a total of 916.6m. The holes were designed to test the down dip extension of high grade epithermal quartz veining mined in the Mt Aubrey open-pits. Holes MAD002 and MAD003 each intersected broad zones of epithermal quartz-carbonate vein stockworks associated with epidote, sericite and bleaching alteration and minor sulphides.

	Grid E	Grid N	EOH	Declin / azimuth	From	То	Width	Au
Hole ID	(m)	(m)	(m)		(m)	(m)	(m)	(g/t)
MAR016	5161	10136	71	-60/018	38	44	6	6.65
MAR025	5201	10135	56	-60/024	30	32	2	6.04
MAR030	5291	10066	61	-60/018	45	49	4	2.17
					52	59	7	1.33
MAR034	5743	10111	61	-60/355	49	55	6	6.21
MAR038	5774	10142	56	-60/355	6	11	5	3.18
					16	25	9	1.26
MAR046	5161	10116	121	-60/018	64	73	9	4.12
MAR051	4881	10249	76	-60/018	26	29	3	7.99
MAR065	5201	10145	25	-60/018	14	17	3	7.68
MAR066	5739	10152	51	-69/175	4	11	7	3.10
					24	27	3	1.85
					32	40	8	1.85
MAR070	5140	10160	69	-60/017	15	27	7	17.78
MAR072	5180	10151	33	-60/019	6	16	10	8.52
MAR077	4923	10251	33	-60/018	5	10	5	8.10
MAR079	5694	10120	55	-60/355	6	14	8	2.87
MAR083	5821	10157	51	-60/019	23	24	1	6.10
					37	48	11	2.95
MAR084	5821	10172	51	-60/018	17	20	3	4.57
MAR085	5862	10179	75	-60/018	12	16	5	3.97
MAR086	5861	10160	75	-60/020	18	27	9	2.45
MAR089	5662	10173	60	-60/018	18	21	3	5.66

Table 5 -	Mt Aubrey historic RC drill results.	
1 4010 0	increase of motorie ree and recaller	

It is yet to be determined through historic pit surveys which of these intercepts have been extracted in previous mining operations. Anecdotal reporting suggests very shallow open-pits, being some 20-30m deep as determined by stripping ratios. Their inclusion in this Report is solely to demonstrate that the Mt Aubrey system is gold-endowed and warrants further evaluation.

At the **Mt Aubrey South prospect** Aurelia drill hole MAD004 intersected a broad zone hosting abundant mineralised crustiform textured quartz-carbonate-pyrite veining with a gold intersection of 88m at 0.22g/t

<sup>&</sup>lt;sup>++</sup> Aurelia Metals Limited has not consented to the use of the historical geological report reference in this announcement



Au from 2m. The gold mineralisation in MAD004 represents an un-mined new gold-bearing structure to the south of the main Mt Aubrey vein system.

The **Blue Hills prospect** is an area of outcropping, gold bearing veins and minor workings 2km along strike to the northwest of Mount Aubrey. Rock chip samples of up to 13.4g/t Au have been recorded and two costeans returned results of 2m at 1.35g/t Au and 6.5m at 1.40g/t Au. The area between Mt Aubrey and Blue Hills is mainly covered by modern alluvium but is also thought to contain quartz veining.

The **Emu Swamp prospect** is located 3km to the east of Mt Aubrey and contains outcropping veining with rock chip gold values to 3.3 g/t Au associated with pyritic alteration. The 6km Blue Hills – Mt Aubrey – Emu Swamp trend represents a significant epithermal vein system target.

Mt Aubrey along with the adjoining Yeoval tenure is interpreted by Ardea as the manifestation of a major NE-trending zoned porphyry copper-gold-molybdenum-rhenium to epithermal gold-silver intrusive centre.

Land access discussions were undertaken to allow on-ground exploration work to commence. Several agreements were finalised to allow reconnaissance work to commence in the upcoming reporting period.

#### Wiseman's Creek gold-copper project - EL8554

Wiseman's Creek is located 35km southeast of Bathurst, NSW. Epithermal gold mineralisation within the tenure is hosted largely within Late-Silurian – Early Devonian-aged slates, shales and sediments of the Kildrummie and Campbell's Groups, with geology through the centre of the tenure comprising the andesitic Ordovician-aged Rockley Volcanics.

Mineralisation has been reported as predominantly associated with silicified zones with epithermal textures such as open-space filling in quartz veins, quartz vein breccias, chalcedonic silicification and colloform banding. The units strike NNW and dip steeply eastwards.

	Grid E	Grid N	EOH	Declin / azimuth	From	То	Width	Au
Hole ID	(m)		(m)	(°)	(m)		(m)	(g/t)
PWC-11	2100	1160	93	-60/270	0	16	16	0.62
PWC-14	2789	2200	99	-60/270	16	50	34	1.00
incl.					30	44	14	2.25
incl.					36	42	6	3.60
incl.					60	66	6	0.64
PWC-17	2673.5	2174	87	-60/090	10	30	20	0.22
PWC-18	2482	2070	105	-60/270	8	34	26	0.20
PWC-19	2437	2170	105	-60/270	6	16	10	0.25
Incl.					22	28	6	0.48
PWC-21	2604	1276	104	-60/270	74	100	26	1.56
incl.					74	86	12	3.10
PWC-25	2597	1387	82	-60/175	60	76	16	0.48
incl.					60	62	2	1.04
PWC-28	2900	2128	82	-60/090	66	82	16	0.3
PWC-29	1950	1990	51	-60/090	6	18	12	0.6
PWC-33	2650	1269	45	-60/270	16	28	12	1.5
PWC-34	2755	2195	75	-60/270	30	42	12	0.7

The above table represents historic data from GS1988\_277 Windsor Resources report, recorded as a statutory requirement, for the NSW government department. The quality of the data has yet to be ascertained as historic QAQC work was poorly reported, but is included to establish that the Wiseman's Creek prospect is gold-endowed and warrants further investigation.



The Wiseman's Creek area was held as EL2098 by Windsor Resources<sup>‡‡</sup> during the 1980s and was part of a JV arrangement, which saw a total of 80 RC and three diamond holes drilled between the years 1985-1989. In Windsor's 1988 Annual Operations report, the major historic gold mine production was noted as being from **Black Bullock Mine**, reporting production of some 40,000oz of silver and 2,098oz of gold from 4,700 tonnes of ore (at an average grade of 14g/t gold). Three main areas of interest were identified, some within State Forest and some on freehold land.

Table 6 lists only some of the more significant gold intercepts recorded in the Windsor Annual Report. An additional 23 RC and 3 diamond drill holes (not listed in Table 6) contained significant intercepts at or above 0.5g/t Au. In 2006 Central West Gold<sup>§§</sup> completed an IP survey and drilled follow up RC holes based on modelling of the earlier historic drilling and which reportedly contained a best result of 3m at 0.36g/t Au from 9m.

From 2012 to 2014 part of the tenement area now held by Ardea was held by Resmetco Ltd<sup>\*\*\*</sup> who explored for **tungsten** within a prospect known as "**Duckmaloi**" hosted within skarn style mineralisation. The prospect itself was estimated in an open file report to have an Exploration Target<sup>1</sup> of approximately 375,000 tonnes at 0.2% WO<sub>3</sub> The potential quantity and grade is conceptual in nature and there is insufficient information to estimate a Mineral Resource and it remains uncertain if further exploration will result in the estimation of a Mineral Resource in this area of drilling.

The existence of this deposit style as well as the nearby epithermal occurrences does suggest evidence for a larger mineralizing system and also warrants further investigation.

#### Gundagai gold-copper project – EL8061 & 8586

The Gundagai tenements are located 315km southwest of Sydney. Several old gold workings hosted by mineralized porphyry units exist in the Ardea tenement area with mining dating back to 1842, however prior to Ardea's involvement there has been little or no modern exploration.

The **Big Ben gold prospect** is located 7km south of Gundagai and contains a sequence of metasandstones and conglomerates intruded by multiple north-south trending mineralised porphyry dykes.

The porphyry contains a stockwork and sheeted veins of quartz(-pyrolusite-limonite) that were historically mined and yielded several high-grade gold lodes. The Ardea exploration target is a bulk tonnage gold stockworks hosted in a brittle porphyry intrusive.

A 15 hole RC drilling program for 1,609 metres was completed by previous tenement holder Heron Resources Limited in 2013. Several intervals had panned visible gold indicating coarse gold in the system. Results include **20 metres at 1.58g/t gold** from 27metres in drill-hole BBRC007

The system is open to the south, under alluvial cover. Additionally, highly anomalous soil gold geochemical targets remain untested immediately east of Big Ben.

*<sup>&</sup>lt;sup>‡‡</sup>* Windsor Resources has not consented to the use of the historical geological report reference in this announcement.

<sup>&</sup>lt;sup>§§</sup> Central West Gold has not consented to the use of the historical geological report reference in this announcement.

<sup>&</sup>quot; Resmetco Ltd has not consented to the use of the historical geological report reference in this announcement.



### 4. Looking Forward

During the next quarter Ardea will focus upon the following programs.

#### **GNCP (WA)**

#### Ongoing Definitive Feasibility Study drill programs

Focussed upon upgrading of resources and reserves and provide samples for variability testwork and marketing sample production of cobalt and nickel sulphate.

#### Scoping Study for 2.25Mtpa Flowsheet

The economies of scale offered from a project of the size and potential of Goongarrie is likely to be better realised at higher throughput and production volumes.

To this end, the Company is presently focussing on defining a 2.25 Mtpa throughput scoping study for Goongarrie from a single processing train. The design would be based on modular off-the- shelf components offering the possibility of multiple parallel 2.25 Mtpa trains.



Figure 9 – Core processing facility, Ardea West Kalgoorlie office. The geological team examines drill hole AGSD0022 and selects drill core samples for Simulus Engineering piloting bulk samples. The other racks are taken up by hole AGSD0015 which contains almost 100m of mineralisation, well suited to producing marketing sulphate samples

#### Resource Upgrades

As the initial programs of the DFS on the Goongarrie Nickel Cobalt Project, ongoing RC drill programs will continue with current rig numbers whilst resource upgrades will continue to be refined for the areas covering the Goongarrie South and Big Four optimised pits.

Upon receipt of final assays for the current 80x40 m infill RC drilling of proposed pit areas, a full GNCP resource upgrade will be completed. Once pit schedules are finalised, mining areas will be further infilled at 40x40 m.



One of the expansion cases presently being assessed is an increase of throughput which will require additional feed. The plant feed for a 2.25 Mtpa single train or multiple trains will likely include material from the Highway deposit 20 km north of Goongarrie and possibly a small area at Siberia North 20 km southwest of Goongarrie. Accordingly, initial geometallurgical and continuity studies were commenced on these deposits and will continue during subsequent quarters.

#### **GNCP** Flowsheet Enhancements

With the 773 Mt KNP resource inventory, discrete high grade cobalt zones and the 2018 scandium and neutraliser discoveries, further project upside is expected at Goongarrie with studies underway to define business cases for:

- Scandium and manganese sulphate production from the PAL/MS sulphate circuit,
- Palaeochannel and mineralised saprock neutraliser optimisation.
- High Purity Alumina opportunities from kaolin in the under-size reject from the neutraliser preparation circuit.
- Scandium-vanadium-aluminium in surface laterite overlying and separate from the nickel-cobalt mineralised sheet.

Potential co-products include scandium and manganese sulphate from PAL/MS circuit, or High Purity Alumina (kaolin precursor), scandium and vanadium, from an independent circuit. All potential co-production is after or independent from nickel-cobalt, meaning such options don't impact on nickel-cobalt.

Results will be released in the coming months and may well provide significant upside to the Goongarrie business case.

#### Strategic Partner Process

Outside of the GNCP's key nickel-cobalt attributes and its large upside resource potential, its scalability, enhanced project economics at a larger throughput and possible valuable co-production of payable metals are attracting considerable strategic investor interest.

The intense competiton seen amongst large European, US, Korean, Japanese and Chinese EV and battery maufacturers has generated much interest in Ardea's project and as such the Company will embark on a strategic investor process to assist in the financing and development of the GNCP.

#### WA and NSW Exploration / Development

#### Mt Zephyr (WA)

Heritage surveys have been requested to facilitate an RC drill program at Gale.

Targets generated form the recent gravity/magnetic surveys will initially be assessed with soil augur geochemistry.

#### Lewis Ponds (NSW)

Once all assay data is available, resource estimation will commence. A considerable amount of historic data requires validation and integration into the data base



For and on behalf of the Board,

Mr Brett Clark - Managing Director and CEO, Ardea Resources Limited Tel +61 8 6244 5136

#### For further information regarding Ardea, please visit www.ardearesources.com.au or contact:

#### COMPLIANCE STATEMENT (JORC 2012)

A competent person's statement for the purposes of Listing Rule 5.22 has previously been announced by the Company for:

- 1. Kalgoorlie Nickel Project on 21 October 2013 and 31 July 2014, October 2016, 2016 Heron Resources Annual Report and Ardea Second Supplementary Prospectus, 6 January 2017;
- 2. KNP Cobalt Zone Study on 7 August 2017.

The Company confirms that it is not aware of any new information or data that materially affects information included in previous announcements, and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. All projects are subject to new work programs, notably drilling, metallurgy and JORC Code 2012 resource estimation as applicable.

The information in this report that relates to Exploration Results for the Goongarrie Nickel Cobalt Project is based on information originally compiled by previous and current full time employees of Heron Resources Limited. The Exploration Results and data collection processes have been reviewed, verified and re-interpreted by Mr Ian Buchhorn who is a Member of the Australasian Institute of Mining and Metallurgy and currently a director of Ardea Resources Limited. Mr Buchhorn has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the exploration activities 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'. Mr Buchhorn consents to the inclusion in this report of the matters based on his information in the form and context that it appears.

The exploration and industry benchmarking summaries are based on information reviewed by Dr Matthew Painter, who is a Member of the Australian Institute of Geoscientists. Dr Painter is a full-time employee and a director of Ardea Resources Limited and 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'. Dr Painter has reviewed this press release and consents to the inclusion in this report of the information in the form and context in which it appears.

The information in this report that relates to Mineral Resources for the Goongarrie Hill, Goongarrie South, Big Four and Scotia Dam deposits of the Goongarrie Nickel Cobalt Project is based on information compiled by Mr Stephen Hyland who is a Fellow of the Australasian Institute of Mining and Metallurgy and who has provided expert guidance on resource modelling and resource estimation. Mr Hyland is a Principal Consultant Geologist with Hyland Geological and Mining Consultants and has sufficient experience 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. Mr Hyland consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Ore Reserves for the Goongarrie South and Big deposits of the Goongarrie Nickel Cobalt Project is based on information compiled by Mr Steve Lampron who is a Member of the Australasian Institute of Mining and Metallurgy and who has provided expert guidance on mine planning and Ore Reserve estimation. Mr Lampron is a director of Auralia Mining Consulting and has sufficient **experience** 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. Mr Lampron consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

#### ASX CHAPTER 5 COMPLIANCE AND PFS CAUTIONARY STATEMENT

The Company has concluded that it has a reasonable basis for providing the forward-looking statements and forecast financial information included in this announcement. The detailed reasons for that conclusion are outlined throughout this announcement and all material assumptions, including the JORC modifying factors, upon which the forecast financial information is based are disclosed in this announcement. This announcement has been prepared in accordance with the JORC Code (2012) and the ASX Listing Rules.

The actual results could differ materially from a conclusion, forecast or projection in the forward-looking information. Certain material factors were applied in drawing a conclusion or making a forecast or projection as reflected in the forward-looking information.



The Goongarrie Nickel Cobalt Project is at the PFS phase and although reasonable care has been taken to ensure that the facts are accurate and/or that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results and developments of projects and the scandium market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. A key conclusion of the PFS, which is based on forward looking statements, is that the Goongarrie Project is considered to have positive economic potential.

The Mineral Resource used for the PFS was classified under JORC 2012 Guidelines and announced by the Company on 14 March 2018. The cut-off grades adapted for the PFS and reported in Table 3.1 are the basis of the production target assumed for the PFS.

The Company believes it has a reasonable basis to expect to be able to fund and further develop the Goongarrie Project. However, there is no certainty that the Company can raise funding when required.

#### CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

This news release contains forward-looking statements and forward-looking information within the meaning of applicable Australian securities laws, which are based on expectations, estimates and projections as of the date of this news release.

This forward-looking information includes, or may be based upon, without limitation, estimates, forecasts and statements as to management's expectations with respect to, among other things, the timing and amount of funding required to execute the Company's programs, development and business plans, capital and exploration expenditures, the effect on the Company of any changes to existing legislation or policy, government regulation of mining operations, the length of time required to obtain permits, certifications and approvals, the success of exploration, development and mining activities, the geology of the Company's properties, environmental risks, the availability of labour, the focus of the Company in the future, demand and market outlook for precious metals and the prices thereof, progress in development of mineral properties, the Company's ability to raise funding privately or on a public market in the future, the Company's future growth, results of operations, performance, and business prospects and opportunities. Wherever possible, words such as "anticipate", "believe", "expect", "intend", "may" and similar expressions have been used to identify such forward-looking information. Forward-looking information is based on the opinions and estimates of management at the date the information is given, and on information available to management at such time. Forward-looking information involves significant risks, uncertainties, assumptions and other factors that could cause actual results, performance or achievements to differ materially from the results discussed or implied in the forward-looking information. These factors, including, but not limited to, fluctuations in currency markets, fluctuations in commodity prices, the ability of the Company to access sufficient capital on favourable terms or at all, changes in national and local government legislation, taxation, controls, regulations, political or economic developments in Australia or other countries in which the Company does business or may carry on business in the future, operational or technical difficulties in connection with exploration or development activities, employee relations, the speculative nature of mineral exploration and development, obtaining necessary licenses and permits, diminishing quantities and grades of mineral reserves, contests over title to properties, especially title to undeveloped properties, the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drill results and other geological data, environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins and flooding, limitations of insurance coverage and the possibility of project cost overruns or unanticipated costs and expenses, and should be considered carefully. Many of these uncertainties and contingencies can affect the Company's actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, the Company. Prospective investors should not place undue reliance on any forward-looking information.

Although the forward-looking information contained in this news release is based upon what management believes, or believed at the time, to be reasonable assumptions, the Company cannot assure prospective purchasers that actual results will be consistent with such forward-looking information, as there may be other factors that cause results not to be as anticipated, estimated or intended, and neither the Company nor any other person assumes responsibility for the accuracy and completeness of any such forward-looking information. The Company does not undertake, and assumes no obligation, to update or revise any such forward-looking statements or forward-looking information contained herein to reflect new events or circumstances, except as may be required by law.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.

+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

Ardea Resources Limited

#### ABN

Quarter ended ("current quarter")

30 614 289 342

31 March 2018

Con	solidated 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	(450)	(1,409)
	(b) feasibility & development	(1,825)	(3,266)
	(c) production	-	-
	(d) staff costs	(133)	(325)
	(e) administration and corporate costs	(216)	(575)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	41	60
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Research and development refunds	-	-
1.8	Other	-	-
1.9	Net cash from / (used in) operating activities	(2,583)	(5,515)

2.	Cash flows from investing activities		
2.1	Payments to acquire:		
	(a) property, plant and equipment	(121)	(233)
	(b) tenements (see item 10)	15	(222)
	(c) investments	-	-
	(d) other non-current assets	-	-

+ See chapter 19 for defined terms

1 September 2016

Con	solidated 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) tenements (see item 10)	-	200
	(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	(106)	(255)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares	-	9,976
3.2	Proceeds from issue of convertible notes	-	-
3.3	Proceeds from exercise of share options	3,156	8,427
3.4	Transaction costs related to issues of shares, convertible notes or options	(45)	(363)
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	3,111	18,040

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	14,910	3,062
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(2,583)	(5,515)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(106)	(255)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	3,111	18,040
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	15,332	15,332

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	2,332	4,910
5.2	Call deposits	13,000	10,000
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)	15,332	14,910

6.	Payments to directors of the entity and their associates
6.1	Aggregate amount of payments to these parties included in item 1.2

- 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, Directors fees and consulting fees paid to Directors - \$167,755 Payment for Kalgoorlie office to a Director related entity for the quarter - \$26,704 Payment for HR Services to a Director related entity for the quarter - \$39,236

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

**Current quarter** \$A'000 233

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 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	\$A'000
9.1	Exploration and evaluation	(817)
9.2	Feasibility and Development	(4,444)
9.3	Production	-
9.4	Staff costs	(283)
9.5	Administration and corporate costs	(299)
9.6	Other (provide details if material)	-
9.7	Total estimated cash outflows	(5,843)

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 Attached Schedule			
10.2	Interests in mining tenements and petroleum tenements acquired or increased	See Attached Schedule			

#### 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.

Jam Middlena

Sam Middlemas Company Secretary

30 April 2018

#### 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.

#### 10.1

Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced

Ardea NSW Tenements					
Tenement Location Nature of Interest Ardea Interest at beginning of quarter Ardea Interest at end of quar					
0	0	0	0	0	
		A	Ardea WA Tenements		
Tenement	Location	Nature of Interest	Ardea Interest at beginning of quarter	Ardea Interest at end of quarter	
0	0	0	0	0	

#### 10.2

Interests in mining tenements and petroleum tenements acquired or increased

Ardea NSW Tenements						
Tenement	Tenement         Location         Nature of Interest (current)         Ardea Interest at beginning of quarter         Ardea Interest at end of quarter					
0	0	0	0	0		

Ardea WA Tenements					
Tenement	Location	Nature of Interest (current)	Ardea Interest at beginning of quarter (%)	Ardea Interest at end of quarter (%)	
E24/00211	60km NNW of Kalgoorlie	Pending	0	100	
E25/00576	40km E of Kalgoorlie	Pending	0	100	
E27/00606	68km NE of Kalgoorlie	Pending	0	100	
E27/00607	69km NE of Kalgoorlie	Pending	0	100	
E29/01038	90km NNW of Kalgoorlie	Pending	0	100	
E29/01039	75km NNW of Kalgoorlie	Pending	0	100	
E29/01045	105km NNW of Kalgoorlie	Pending	0	100	
E30/00500	125 km NW of Kalgoorlie	Pending	0	100	
E30/00501	114 km NW of Kalgoorlie	Pending	0	100	
E30/00502	106 km NW of Kalgoorlie	Pending	0	100	
G29/00024	70km NNW of Kalgoorlie	Pending	0	100	
L24/00239	60km NNW of Kalgoorlie	Pending	0	100	
L29/00134	67km NNW of Kalgoorlie	Pending	0	100	
L29/00135	97km NNW of Kalgoorlie	Pending	0	100	
L30/00067	122 km NW of Kalgoorlie	Pending	0	100	
L30/00068	106 km NW of Kalgoorlie	Pending	0	100	
P24/05260	67km NNW of Kalgoorlie	Pending	0	100	
P24/05265	60km N of Kalgoorlie	Pending	0	100	

#### Ardea Resources Ltd Tenement Schedule (NSW) as at 31st March 2018.

	Ardea NSW Tenements								
Tenement	Location	Ardea Interest (%)	Status	Note	Tenement	Location	Ardea Interest (%)	Status	Note
EL5583	15km E of Orange	100	Live	5	EL8555	5km N of Forbes	100	Live	
EL8061	Gundagai	100	Live		EL8556	19km NE of Orange	100	Live	
EL8323	10km NE of Orange	100	Live		EL8557	62km W of West Wyalong	100	Live	
EL8532	30km NE of Parkes	100	Live		EL8580	10km N of Forbes	100	Live	
EL8538	22km SW of Wellington	100	Live		EL8586	5km N of Gundagai	100	Live	
EL8554	27km SE of Bathurst	100	Live		ML0739	10km N of Forbes	100	Live	

#### Ardea Resources Ltd Tenement Schedule (WA) as at 31st March 2018.

Ardea WA Tenements*									
Tenement	Location	Ardea Interest (%)	Status	Note	Tenement	Location	Ardea Interest (%)	Status	Note
E24/00203	78km NW of Kalgoorlie	100% non gold rights	Pend	6	M24/00772	71km NW of Kalgoorlie	100% non gold rights	Live	6
E24/00211	60km NNW of Kalgoorlie	100	Pend		M24/00778	70km NNW of Kalgoorlie	100	Live	3
E25/00576	40km E of Kalgoorlie	100	Pend		M24/00797	78km NW of Kalgoorlie	100% non gold rights	Live	6
E27/00278	61km NE of Kalgoorlie	100% Ni Laterite	Live	10	M24/00915	78km NW of Kalgoorlie	100% non gold rights	Live	6
E27/00300	48km N of Kalgoorlie	100% Ni Laterite	Live	12	M24/00916	78km NW of Kalgoorlie	100% non gold rights	Live	6
E27/00524	67km NE of Kalgoorlie	100	Live		M24/00919	63km NNW of Kalgoorlie	100% Ni Laterite	Live	11
E27/00606	68km NE of Kalgoorlie	100	Pend		M24/00959	55km NNW of Kalgoorlie	100% Ni Laterite	Live	11



#### Ardea Resources Ltd Tenement Schedule (WA) as at 31st March 2018.

Tenement	Location	Ardea Interest (%)	Status	Note	Tenement	Location	Ardea Interest (%)	Status	
E27/00607	69km NE of Kalgoorlie	100	Pend		M24/00973	66km NW of Kalgoorlie	100% non gold		-
E28/01224	•	100			M25/00059	9	rights 100% Ni Laterite	Live	
E28/01224 E28/01746	63km NE of Kalgoorlie 62m NE of Kalgoorlie	100% Ni	Live Live	10	M25/00059 M25/00134	35km ENE of Kalgoorlie 35km E of Kalgoorlie	100% Ni Laterite	Live	
E28/02483	52km ENE of Kalgoorlie	Laterite 100% Ni	Live	10	M25/00145	35km E of Kalgoorlie	100% Ni Laterite	Live	
E29/00889	78km NW of Kalgoorlie	Laterite 100% non gold	Live	6	M25/00151	38km E of Kalgoorlie	100	Live	+
	5	rights		Ů					┢
E29/00934 E29/00941	67km NNW of Kalgoorlie 140km NNW of Kalgoorlie	<u>100</u> 100	Pend Live		M25/00161 M25/00171	30km E of Kalgoorlie 35km ENE of Kalgoorlie	100% Ni Laterite 100% Ni Laterite	Live Live	
E29/01006	83 km E of Leonora	100	Pend		M25/00187	40km E of Kalgoorlie	100 /8 101 Latente	Live	+
E29/01028	67km NNW of Kalgoorlie	100	Pend		M25/00209	32km E of Kalgoorlie	100% Ni Laterite	Live	
E29/01038	90km NNW of Kalgoorlie	100	Pend		M27/00395	68km NE of Kalgoorlie	100	Live	1
E29/01039	75km NNW of Kalgoorlie	100	Pend		M28/00199	65km NE of Kalgoorlie	100	Live	1
E29/01045	105km NNW of Kalgoorlie	100	Pend		M28/00201	65km NE of Kalgoorlie	100	Live	
E30/00500	125 km NW of Kalgoorlie	100	Pend		M28/00205	66km NE of Kalgoorlie	100	Live	
E30/00501	114 km NW of Kalgoorlie	100	Pend		M29/00167	87km NNW of Kalgoorlie	100	Live	
E30/00502	106 km NW of Kalgoorlie	100	Pend		M29/00202	86km NNW of Kalgoorlie	100	Live	
E31/01092	140km NNE of Kalgoorlie	100% non gem rights	Pend	7	M29/00214	100km NNW of Kalgoorlie	100	Live	
E31/01169	129km NE of Kalgoorlie	100	Pend		M29/00272	77km NNW of Kalgoorlie	100	Live	
E37/01271	60km NW of Laverton	100	Pend		M29/00278	74km NNW of Kalgoorlie	100	Live	
E37/01272	100km N of Leonora	100	Live		M29/00423	76km NNW of Kalgoorlie	100	Live	
E37/01273	100km N of Leonora	100	Live		M29/00424	86km NNW of Kalgoorlie	100	Pend	
E37/01274	75km NW of Laverton	100	Pend		M29/00426	80km NNW of Kalgoorlie	100	Pend	
E39/01706	70km NW of Leonora	100	Live		M31/00475	129km NE of Kalgoorlie	100% non gem rights	Live	
E39/01757	70km NW of Leonora	100	Live		M31/00477	129km NE of Kalgoorlie	100% non gem rights	Live	
E39/01854	70km NW of Leonora	100	Pend		M31/00479	129km NE of Kalgoorlie	100% non gem rights	Live	
E39/01954	170km NE of Kalgoorlie	100% non gem	Pend	8	M31/00483	146km NNE of Kalgoorlie	100% non gem rights	Live	
E39/01985	60km NW of Laverton	rights 100	Pend		M31/00488	113km NE of Kalgoorlie	100	Pend	+
E63/01827	10km W of Norseman	100	Live		P24/04395	70km NW of Kalgoorlie	100% non gold	Live	T
E63/01828	60km ENE of Norseman	100	Live		P24/04396	70km NW of Kalgoorlie	rights 100% non gold	Live	╈
E63/01856	87km NE of Norseman	100	Pend		P24/04400	70km NW of Kalgoorlie	rights 100% non gold	Live	╈
							rights 100% non gold		+
E63/01857	80km NE of Norseman	100	Pend		P24/04401	70km NW of Kalgoorlie	rights 100% non gold	Live	_
E70/04804	18km W of Manjimup	100	Pend		P24/04402	70km NW of Kalgoorlie	rights 100% non gold	Live	_
G29/00024	70km NNW of Kalgoorlie	100	Pend		P24/04403	70km NW of Kalgoorlie	rights	Live	
L24/00239	60km NNW of Kalgoorlie	100	Pend		P24/05235	70km NW of Kalgoorlie	100	Pend	T
L29/00134	67km NNW of Kalgoorlie	100	Pend		P24/05236	70km NW of Kalgoorlie	100	Pend	
L29/00135	97km NNW of Kalgoorlie	100	Pend		P24/05260	67km NNW of Kalgoorlie	100	Pend	
L30/00067	122 km NW of Kalgoorlie	100	Pend		P24/05265	60km N of Kalgoorlie	100	Pend	
L30/00068	106 km NW of Kalgoorlie	100 100% Ni	Pend		P25/02256	35km E of Kalgoorlie	100% Ni Laterite	Live	+
M15/01101	65km S of Kalgoorlie	Laterite 100% Ni	Live	12	P25/02257	35km E of Kalgoorlie	100% Ni Laterite	Live	_
M15/01263	65km S of Kalgoorlie	Laterite	Live	12	P25/02258	35km E of Kalgoorlie	100% Ni Laterite	Live	
M15/01264	65km S of Kalgoorlie	100% Ni Laterite	Live	12	P25/02454	32km E of Kalgoorlie	100	Pend	
M15/01323	65km S of Kalgoorlie	100% Ni Laterite	Live	12	P25/02455	33km E of Kalgoorlie	100	Pend	
M15/01338	65km S of Kalgoorlie	100% Ni Laterite	Live	12	P25/02456	34km E of Kalgoorlie	100	Pend	
M24/00541	67km NNW of Kalgoorlie	100	Live		P25/02457	35km E of Kalgoorlie	100	Pend	J
M24/00634	78km NW of Kalgoorlie	100% non gold rights	Live	1,6	P25/02458	32km E of Kalgoorlie	100	Pend	T
M24/00660	75km NW of Kalgoorlie	100% non gold	Live	6	P25/02459	33km E of Kalgoorlie	100	Pend	t
M24/00663	75km NW of Kalgoorlie	rights 100% non gold	Live	6	P25/02460	34km E of Kalgoorlie	100	Pend	╋
		rights 100% non gold	-			5	l	-	+



#### Ardea Resources Ltd Tenement Schedule (WA) as at 31st March 2018.

M24/00665	75km NW of Kalgoorlie	100% non gold rights	Live	2,6	P25/02482	33km E of Kalgoorlie	100	Pend	
M24/00683	78km NW of Kalgoorlie	100% non gold rights	Live	6	P25/02483	33km E of Kalgoorlie	100	Pend	
M24/00686	75km NW of Kalgoorlie	100% non gold rights	Live	6	P25/02484	34km E of Kalgoorlie	100	Pend	
M24/00731	70km NNW of Kalgoorlie	100	Live	3,8	P29/02265	90km NNW of Kalgoorlie	100	Pend	
M24/00732	70km NNW of Kalgoorlie	100	Live	3,8	P31/02038	113km NE of Kalgoorlie	100	Live	
M24/00744	75km NNW of Kalgoorlie	100	Live	8	P31/02039	113km NE of Kalgoorlie	100	Live	
M24/00757	63km NW of Kalgoorlie	100% non gold rights	Live	6	P31/02040	113km NE of Kalgoorlie	100	Live	

\*Non-gold rights defined as non gold or silver.

ght to earn a 70% interest in the Yerilla
metal rights including PGEs.
nts.
ts to Ni laterite