

ASX & Media Release

13 July 2021

ASX Symbol

ARL

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Issued Capital

Fully Paid Ordinary Shares
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Directors/Employee
Performance Rights
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Nickel Sulphide Exploration Update – Emu Lake

- Recent Mise a la Masse and downhole magneto-metric resistivity geophysical surveys at Emu Lake around the basal nickel sulphide occurrence in AELD0002¹:
 - 1.1m @ 4.78% Ni, 0.16% Cu, 0.47g/t Pt, 0.20g/t Pd** from 366.9m downhole **consisting of semi-massive and matrix-style nickel sulphides**, within a broader zone of;
 - 4.8m @ 1.44% Ni and 0.09% Cu, 0.20g/t Pt, 0.09g/t Pd** from **365.9m depth**

have confirmed the presence of an 80m long conductive body extending to within 150m of the surface and plunging steeply to the northeast.
- The coincident geophysical anomalies provide a drill target that can be initially tested with a relatively shallow reverse circulation hole.
- In the broader Kalpini Project area, surface geochemical programs have commenced to follow-up MLEM anomalies generated in the recent round of surveys. The two anomalies are immediately west of the mapped Wellington East Eastern Ultramafic and have little or no drilling or surface geochemistry coverage, opening up a new nickel sulphide target zone.

Ardea Resources Limited (**Ardea** or the **Company**) is pleased to provide an update on nickel sulphide exploration within its extensive Kalpini Project near Kalgoorlie, Western Australia (**WA**). In particular, the recent Mise a la Masse (**MALM**) and downhole magnetometric resistivity (**DHMMR**) surveys at the Emu Lake project, 70km northeast of Kalgoorlie have highlighted a conductive zone that is modelled to extend up-dip from the nickel sulphide occurrence intersected in drillhole AELD0002, to within 150m of the surface. The ribbon-like nature of the geophysical response is similar to that modelled at the Silver Swan nickel sulphide mine (owned by Poseidon Nickel Ltd) located 35km to the west of Kalpini (Figure 1). Silver Swan has a strike length near surface of less than 50m, but a plunge extent over 1,000m.

Comments from Managing Director Andrew Penkethman:

"Nickel sulphide exploration is challenging, and discovery success historically is rare. With this context in mind, it is exciting to see new geophysical techniques being trialled by Ardea and successfully highlighting a potential nickel sulphide channel at Emu Lake which corresponds with the nickel sulphide intersected in drill hole, AELD0002. Using a Silver Swan exploration model, nickel sulphide targets tend to have a short strike length, but as we know from Silver Swan can extend down plunge for over 1,000 metres. The Mise a la Masse technique was trialled successfully at Silver Swan by the same consulting group who is undertaking this work for Ardea at Emu Lake.

The Ardea team are confident that a significant nickel sulphide target has been defined with the completion of the recent geophysical surveys, which provides the Company with the opportunity to confirm a discovery has been made. Follow-up drilling is being planned to test this compelling target."

¹ Ardea ASX release 10 June 2021.

Background and Company Strategy

Ardea's key focus continues to be the Kalgoorlie Nickel Project (**KNP**) accelerated feasibility study work streams (ASX release 31 May 2021), to ensure ethical and sustainable nickel-cobalt and scandium production for the rapidly expanding lithium-ion battery supply chain. However, Ardea's strategic tenure in the heart of the Eastern Goldfields of Western Australia is also highly prospective for both nickel sulphide and Critical Minerals with their active exploration complementing the development of the KNP.

It is important to note that any nickel sulphide discovery, as well as processing as a conventional sulphide flotation concentrate, has the potential to be processed through the High Pressure Acid Leach (**HPAL**) autoclave planned for Ardea's Goongarrie Hub (Figure 1) and has the added benefit of helping control autoclave oxidising potential and typically improving recoveries. As such, the nickel sulphide exploration strategy complements Ardea's nickel laterite development plans.

Kalpini Project - Emu Lake Prospect

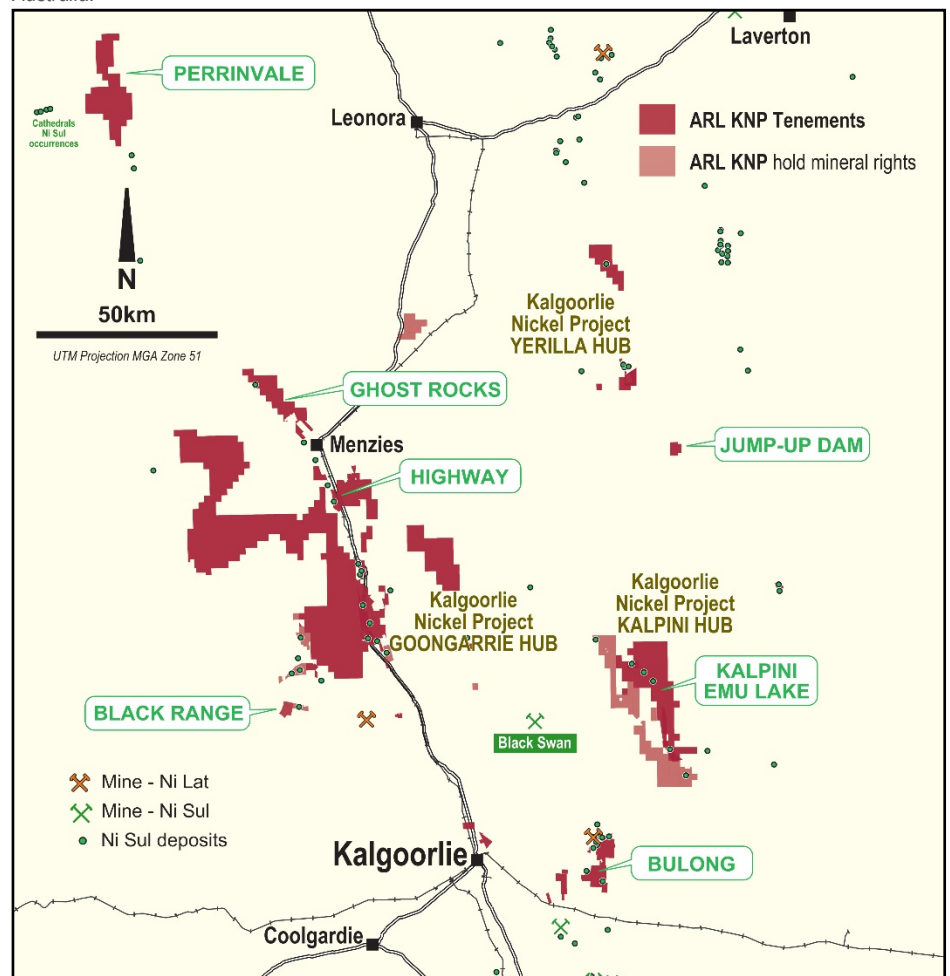
The Kalpini Project extends over 240km², with the leading nickel sulphide target, Emu Lake, located 70km north-east of Kalgoorlie (Figure 1). This strategic tenement package contains 20km strike of prospective ultramafic stratigraphy held 100% by Ardea and mostly within granted mining leases. The project is 35km east of the Black Swan Nickel Project (Silver Swan), operated by Poseidon Nickel Ltd, within a parallel komatiite volcanic belt.

Recent Ardea drilling has intersected a basal nickel sulphide occurrence in diamond drillhole AELD0002 and returned assays of:

- **1.1m @ 4.78% Ni, 0.16% Cu, 0.47g/t Pt, 0.20g/t Pd from 366.9m downhole consisting of semi-massive and matrix-style nickel sulphides, within a broader zone of:**
- **4.8m @ 1.44% Ni and 0.09% Cu, 0.20g/t Pt, 0.09g/t Pd from 365.9m depth.²**

This represents one of the better nickel sulphide intercepts historically at Emu Lake and demonstrates the prospectivity of the Western Ultramafic position that has received little attention in the past. Most drilling has been concentrated on the Binti Main zone to the north and has intersected often remobilised stringers of nickel sulphide.

Figure 1: Location of the Emu Lake prospect with other Ardea KNP prospects near Kalgoorlie, Western Australia.



² Ardea ASX Release, 10 June 2021: Semi-massive Nickel Sulphide Intercept at Emu Lake.

Mise a la Masse and Downhole Magnetometric Resistivity Geophysical Surveys

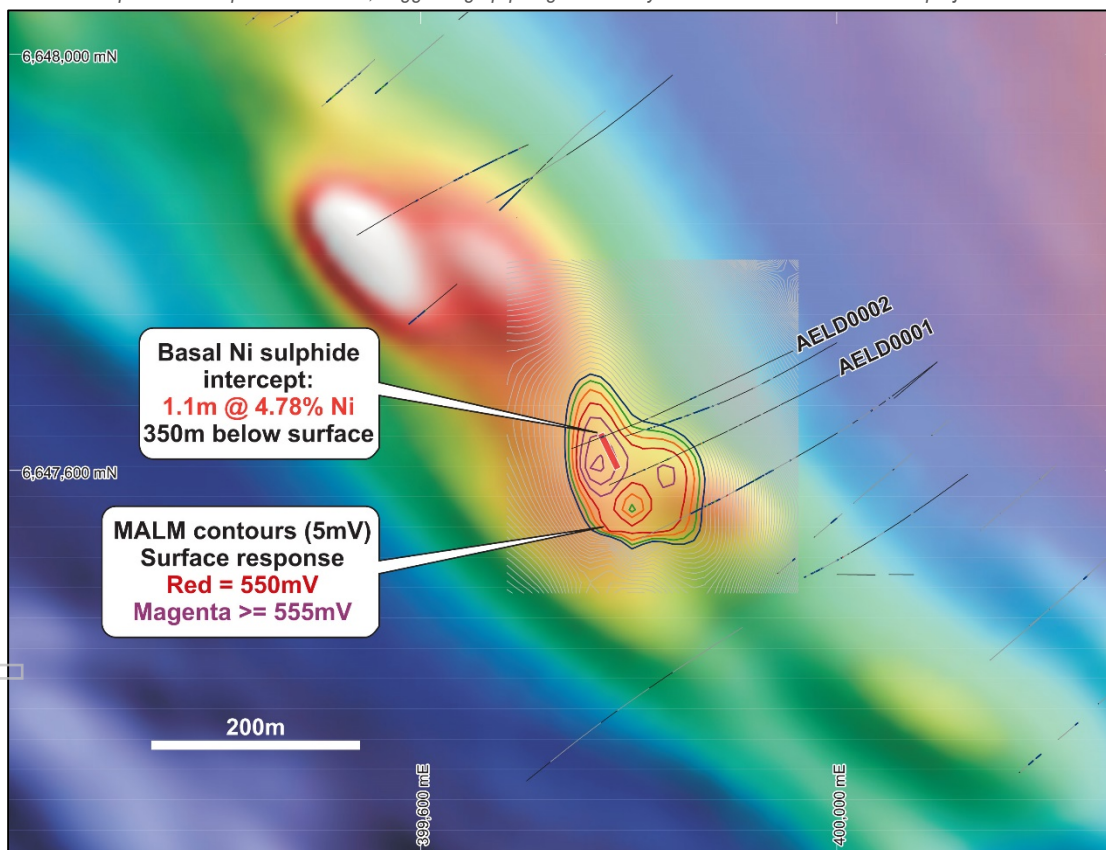
DHEM surveys on AELD0002 generated a strong off-hole response directly south and below the nickel sulphide intercept, however, it was unclear from the DHEM the up-dip extent of the sulphide horizon.

Ardea's geophysical consultants, therefore, designed a Mise a la Masse (**MALM**) and downhole magnetometric resistivity (**DHMMR**) survey to better define the conductive horizon. The survey was undertaken in mid-June and results recently processed and interpreted.

The MALM survey measured the surface potential generated from a downhole electrode over an area of 400m x 300m (Figure 2) and produced a broad 550mV anomaly above and slightly south-west of the known nickel sulphide mineralisation. The data are interpreted to indicate the sulphide body is steeply dipping to the east with a relatively short strike length (approximately 80m) and potentially comes to within 150m of surface. The strike of the body is northwest to southeast and is interpreted to extend to the southeast beyond AELD0001.

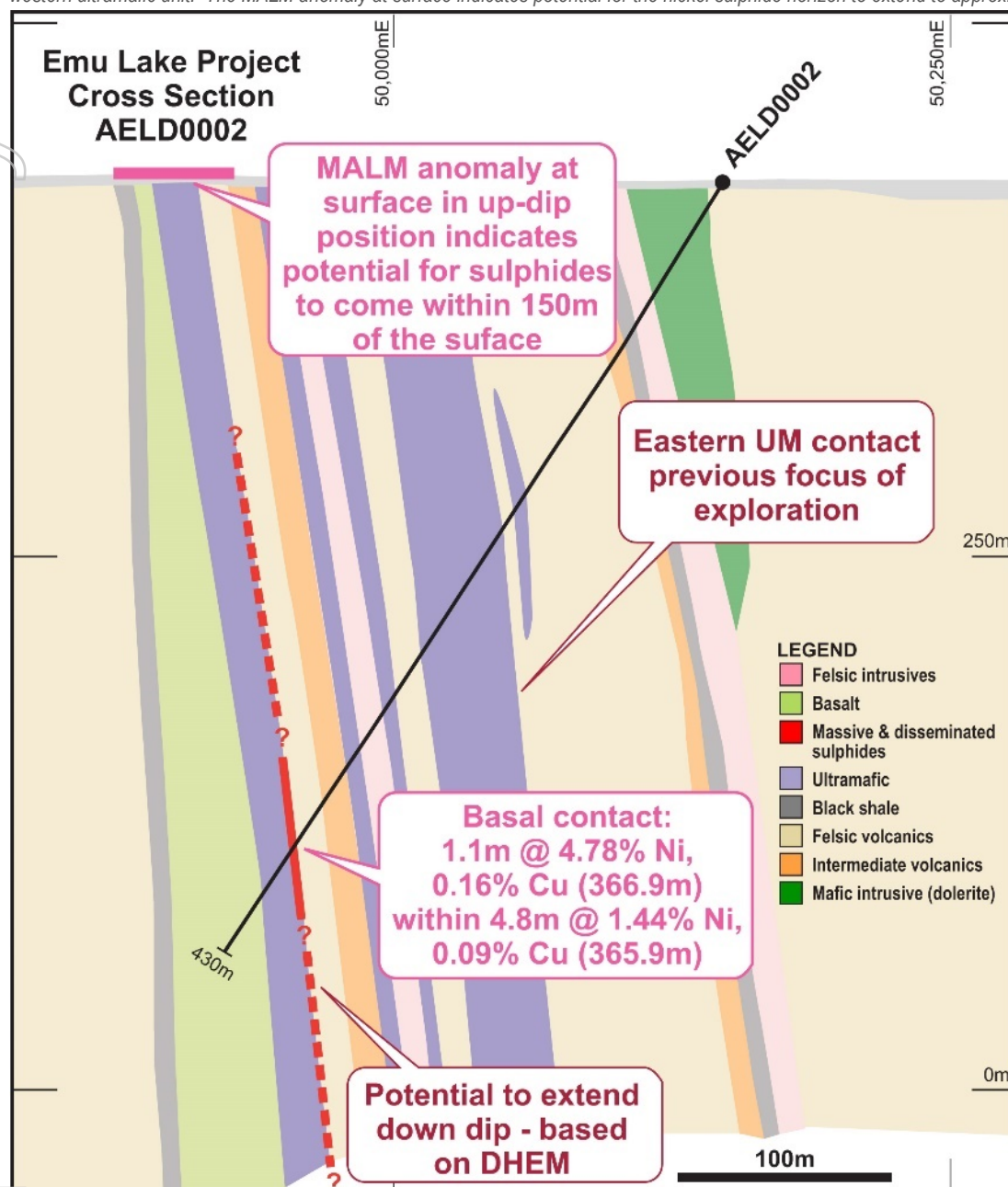
The DHMMR data supported the MALM interpretation with currents flowing in a NW-SE direction along at least four different pathways creating a more complex situation to model reliably. However, the source has been interpreted as a north plunging and steeply dipping sulphide lens with a rectangular shape consistent with a lava channel morphology as distinct from a more extensive interflow sediment.

Figure 2: MALM survey contours over drillhole traces and aeromagnetic image background. The peak of the MALM contours occurs in the up-dip position of the nickel sulphide intercept in AELD0002, suggesting up-plunge continuity of the horizon. MGA Zone 51 projection.



As shown in Figure 3, the stratigraphy is dipping steeply east and has been slightly overturned with the way-up to the west. The MALM anomaly at surface is indicating potential for the sulphide horizon to project to within approximately 150m of surface. Drilling will be planned to test this up-dip position once a suitable RC rig is available.

Figure 3: Emu Lake cross section looking north showing trace of drill hole, AELD0002, and interpreted geology with the new nickel sulphide zone on the western ultramafic unit. The MALM anomaly at surface indicates potential for the nickel sulphide horizon to extend to approximately 150m of the surface.



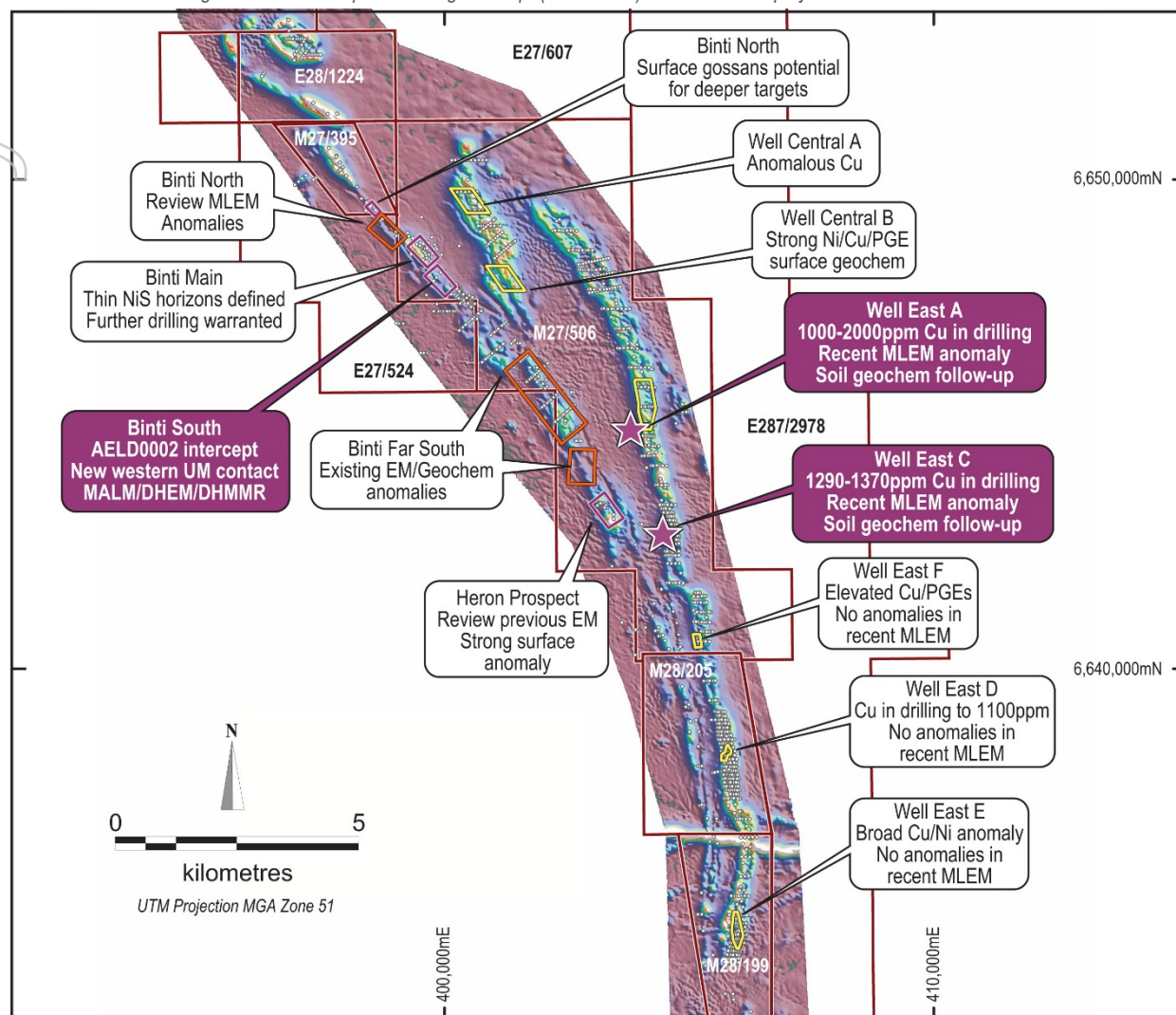
MLEM Surveys

Two anomalies associated with recent surface moving loop electromagnetic (**MLEM**) surveys are being followed up on the Eastern Ultramafic unit at Kalpini (see Figure 4 for location). These anomalies have been geophysically modelled as relatively short strike length conductive plates directly west of the nickel laterite drilling where little surface data exists.

The southern anomaly is associated with a strong copper anomaly in the nickel laterite drilling in this area with results up to 0.13% copper over 2m in two drillholes, 80m apart along strike. Other nickel sulphide targets in the broader Kalpini area are also shown in Figure 4.

Surface geochemical soil programs have been completed over both areas with results pending. Surface reconnaissance indicates the anomalies are directly west or just on the contact with the ultramafic units and are not necessarily related to Kambalda style nickel sulphide occurrences. Follow-up exploration will continue.

Figure 4: Nickel sulphide targets in the Emu Lake and broader Kalpini project area. Showing the two recent MLEM targets on the Eastern Ultramafic and the location of the recent significant nickel sulphide drilling intercept (AELD0002). MGA Zone 51 projection.



Exploration Strategy

With Ardea's Kalgoorlie Nickel Project tenement package covering one of the largest areas of ultramafic stratigraphy in Australia, the Company is well positioned to make nickel sulphide and Critical Mineral discoveries. Ardea will continue to rank and prioritise fit-for-purpose exploration for nickel sulphides on its high-quality portfolio of Eastern Goldfields of Western Australia tenements. Any drilling as part of the nickel sulphide programs will also assess nickel-cobalt laterite, Critical Minerals and gold mineralisation, but the over-riding priority continues to be nickel.

Authorised for lodgement by the Board of Ardea Resources Limited.

For further information regarding Ardea, please visit <https://ardearesources.com.au/> or contact:

Andrew Penkethman

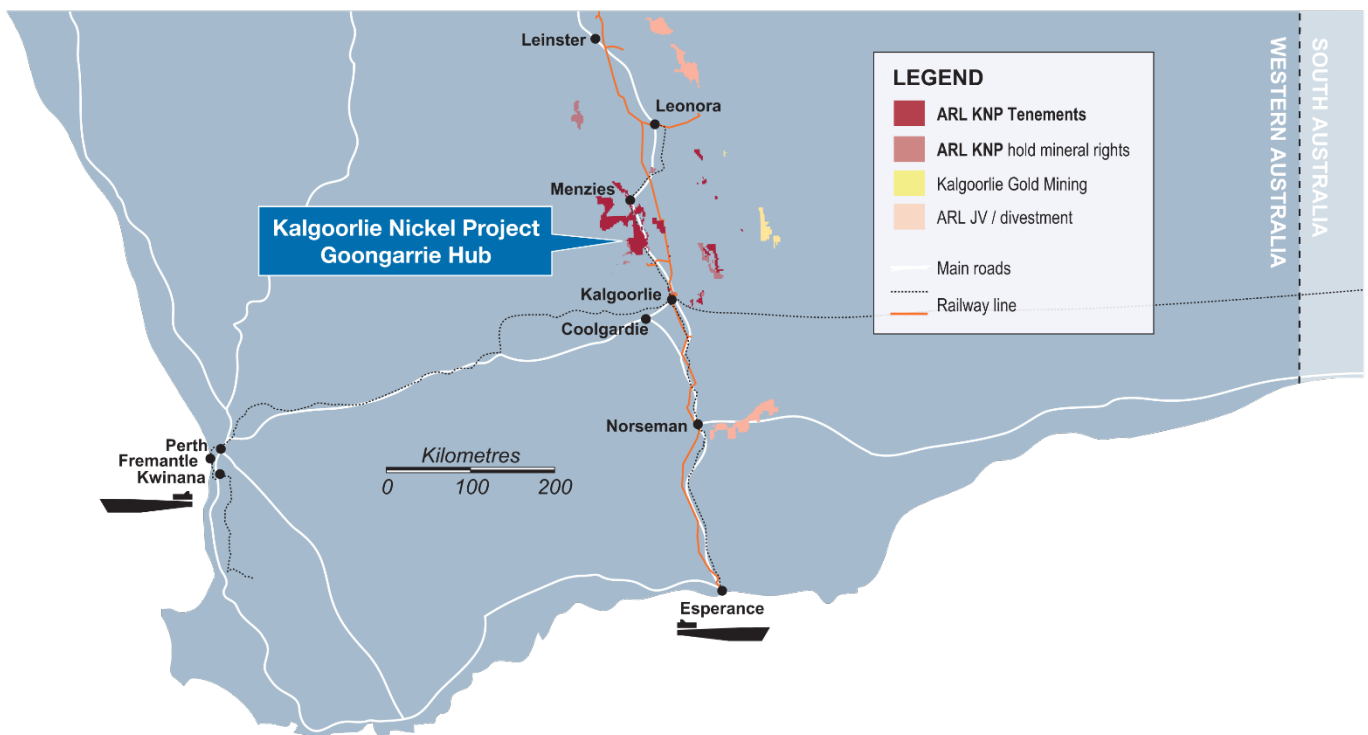
Managing Director and Chief Executive Officer

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About Ardea Resources

Ardea Resources Limited (ASX:ARL) is an ASX-listed resources company, with a portfolio of 100% controlled West Australian-based projects, focussed on:

- Development of the Kalgoorlie Nickel Project (**KNP**) and its sub-set the Goongarrie Hub, a globally significant series of nickel-cobalt and Critical Mineral deposits which host the largest nickel-cobalt resource in the developed world at **830Mt at 0.71% nickel and 0.046% cobalt for 5.9Mt of contained nickel and 380kt of contained cobalt** (ARL ASX announcement 16 June 2021) located in a jurisdiction with exemplary ESG credentials.
- Advanced-stage exploration at compelling nickel sulphide, Critical Minerals, and gold targets within the KNP Eastern Goldfields world-class nickel-gold province, with all exploration targets complementing the KNP nickel development strategy.



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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 exploration, 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, the ability to create and spin-out a gold focussed Company, 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.

Competent Person Statement

The technical information in this report relating to Exploration Results is based on information compiled by Mr David von Perger, who is a Member of the Australian Institute of Mining and Metallurgy (Chartered Professional – Geology). Mr von Perger is an independent geological consultant providing services to Ardea 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. Mr von Perger consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr von Perger owns shares in Ardea.

Appendix 1

JORC 2012 Table 1
Section 1 Sampling Techniques and Data

(Criteria in this section applies to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	- Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. - Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. - Aspects of the determination of mineralisation that are Material to the Public Report.	No new drilling or sampling is being reported in this ASX release.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details.	No new drilling or sampling is being reported in this ASX release.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	No new drilling or sampling is being reported in this ASX release.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	No new drilling or sampling is being reported in this ASX release.
Sub-sampling techniques and sample preparation	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	No new drilling or sampling is being reported in this ASX release.
Quality of assay data and laboratory tests	- The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. - Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory	No new drilling or sampling is being reported in this ASX release.

Criteria	JORC Code explanation	Commentary
	<i>checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i>	
Verification of sampling and assaying	- The verification of significant intersections by either independent or alternative company personnel. - Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. - Discuss any adjustment to assay data.	No new drilling or sampling is being reported in this ASX release.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	No new drilling or sampling is being reported in this ASX release.
Data spacing and distribution	- Data spacing for reporting of Exploration Results. - Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. - Whether sample compositing has been applied.	No new drilling or sampling is being reported in this ASX release.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	No new drilling or sampling is being reported in this ASX release.
Sample security	The measures taken to ensure sample security.	No new drilling or sampling is being reported in this ASX release.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Given the early stage of the exploration results, no audits or reviews have been undertaken or considered necessary at this stage.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures,	- The project area locations are shown on Figure 1 of this report and described in the body of the report. - The tenure is considered to be secure and held

Criteria	JORC Code explanation	Commentary
land tenure status	<i>partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i> <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i>	100% by Ardea under a granted Mining Lease. Given the early stage of the exploration no mining specific applications have been made, but there are no known impediments (eg <i>overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings</i>) to mining in the tenure.
Exploration done by other parties	<i>Acknowledgment and appraisal of exploration by other parties.</i>	The Emu Lake project has been explored for nickel sulphides since 2003 by Image Resources, Skryne Hill, Jubilee Mines, Emu Nickel, Xstrata – the majority of the drilling in the area was undertaken by these companies.
Geology	<i>Deposit type, geological setting and style of mineralization.</i>	The Company is seeking Archaean dunite hosted massive and disseminated nickel sulphide and related deposits at the Kalpini project.
Drill hole Information	<i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i>	No new drilling is being reported in this ASX release.
Data aggregation methods	<i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i> <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i>	No reporting of new assays has been undertaken in this release.
Relationship between mineralization widths and intercept lengths	<i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	No mineralisation has been reported.
Diagrams	<i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i>	Where relevant, a diagram showing the hole positions relevant for current phase of exploration is included in the release.

Criteria	JORC Code explanation	Commentary
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Results.	The reporting is considered to be balanced taking into account the early stage of the exploration and the summary nature of this ASX report.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	- A Mise al la Masse (MALM) and down-hole magneto-metric resistivity (DHMMR) survey was undertaken at the Emu Lake prospect area attempting to better define the nickel sulphide intercept in AELD0002. - The MALM survey was carried out by injecting current into an electrode located in AELD002 (same as MMR) placed 25m above the NiS intersection at 340m down hole and a current electrode located at 400600mE 6648300mN for 2.00 amperes Potentials were measured on the surface using an oscilloscope and a reference at 399370mE 6648500mN. The results ranged between 15mV and 600mV. - For the DHMMR, 2 amperes current were injected 25m above the known mineralisation in AELD002. The return current electrode was placed in ELD045 located SE of the hole. The circuit was completed with a wire between hole collars. The magnetic field was recorded in AELD001 from 200m to the end of hole in 5m and 10m stations using an Atlantis bore hole system. Interpretation has been carried out using the program Maxwell 7.11 and thin linear current filaments to approximate the measured response. - Further details of these surveys and the results generated are provided in the body of the report.
Future work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further drilling is warranted to test the geophysical anomalies generated around the Ni Sulphide intercept in ALED0002.