



**ASX & Media Release**

15 March 2023

**ASX Symbol**

ARL

**Ardea Resources Limited**

Suite 2 / 45 Ord St  
West Perth WA 6005

PO Box 1433  
West Perth WA 6872

**Telephone**

+61 8 6244 5136

**Email**

ardea@ardearesources.com.au

**Website**

www.ardearesources.com.au

**Directors**

Mat Longworth  
Non-Executive Chair

Andrew Penkethman  
Managing Director & CEO

Ian Buchhorn  
Executive Director

**Executive Management**

Sam Middlemas  
Company Secretary

Rebecca Moylan  
Chief Financial Officer

Matt Read  
Project Director

Alex Mukherji  
General Manager Land Access  
& Compliance

Mike Miller  
General Manager Technical  
Services

Matthew McCarthy  
General Manager Exploration

**Issued Capital**

Fully Paid Ordinary Shares  
171,502,772

Performance Rights  
6,793,000

Options  
4,000,000

ABN 30 614 289 342

## Eastern Goldfields Projects Exploration Update

Ardea Resources Limited (**Ardea** or the **Company**) is pleased to provide an update on exploration activities within its Kalgoorlie Nickel Project (**KNP**) and Perrinvale Project in the Eastern Goldfields of Western Australia.

The Company tenement portfolio covers over 4,100km<sup>2</sup> and is one of the largest land holdings over nickel prospective ultramafic stratigraphy in Australia. The significant land holding is also prospective for other Battery and Critical Minerals such as Lithium-Caesium-Tantalum (**LCT**) elements and Rare Earth Elements (**REE**).

The ongoing KNP Goongarrie Hub feasibility work streams continue to be the Company priority and include office studies such as detailed open pit mining production schedules, bench-scale metallurgy, environmental and engineering studies, and field based water exploration drilling at the Siberia prospect. Fifty water exploration holes have been planned, with results to form part of the current Prefeasibility Study (PFS).

In addition to the PFS work programs, compelling Battery and Critical Mineral exploration opportunities continue to be evaluated over Ardea's Eastern Goldfields of Western Australia land holding.

Managing Director and CEO Andrew Penkethman noted:

*"The Ardea Team's priority is completing the in progress KNP Goongarrie Hub 3.5Mtpa Prefeasibility Study to demonstrate that the project is a major source of sustainable and ethical nickel-cobalt Battery Mineral supply. The main deliverables will be an updated nickel-cobalt Ore Reserve, Financial Model, and detailed report.*

*However, Ardea's strategic tenement portfolio in the Eastern Goldfields of Western Australia remains underexplored for Battery and Critical Minerals, due to the historic focus on the globally significant KNP nickel-cobalt laterite resource. To help realise maximum value from Ardea's unique tenement portfolio, cost effective Battery and Critical Minerals desk-top target generation and exploration follow-up will continue to be undertaken.*

*Exploration success has been achieved from magmatic sulphide exploration at Emu Lake<sup>1</sup>, Ionic Adsorption Clay Rare Earth Elements drilling at Goongarrie West<sup>2</sup> and more recently early-stage positive Lithium-Caesium-Tantalum pegmatite indicators at Ghost Rocks and Perrinvale.*

*As work programs are completed and results received and interpreted, Ardea look forward to providing further updates."*

<sup>1</sup> ASX Release 14 October 2022.

<sup>2</sup> ASX Release 30 January 2023.

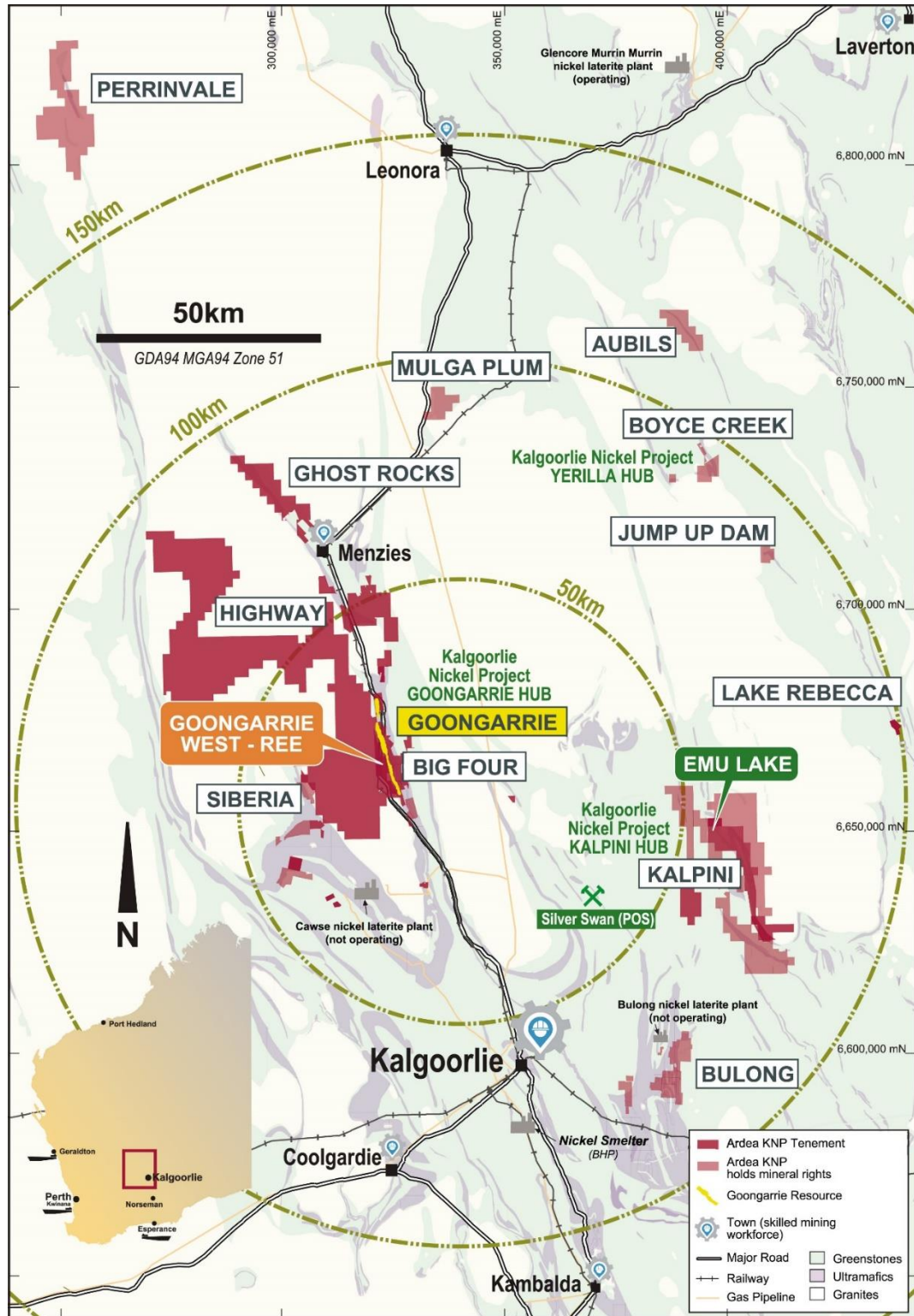


Figure 1. Location of Ardea's projects in the Eastern Goldfields

## 1 Critical Minerals

Ardea's strategic Eastern Goldfields Western Australia tenement package, focussed on ultramafic komatiite belts, is shown in Figure 1.

In late 2022 (ASX release 22 November 2022), Ardea conducted an assessment of pegmatite hosted LCT potential across all the Company's Eastern Goldfields and KNP tenements using consulting firm CSA Global.



The assessment of the tenement package included a ranking for Lithium-Caesium-Tantalum (LCT) pegmatite potential based on geological setting and known pegmatites. The highest ranked target was the Perrinvale Project (Figure 1), where multiple pegmatites have also been mapped. The Ghost Rocks Project directly northwest of Menzies (Figure 1) was also identified as a priority area.

At Ghost Rocks assay results have been returned from the first rock chip sampling program (12 samples), with six samples having elevated tantalum (up to 373ppm Ta; Figure 2) which is indicative of LCT pegmatites, as these are often zoned, and are interpreted as important first-pass results. Also, positive geochemical ratios indicating prospective pegmatites (including  $K/Rb < 100$ ) occur in five of the six samples collected (Figure 2).

The mapping and sampling has identified pegmatites >10m thick with variable mineral species at multiple sites over a 6km strike, with additional pegmatite swarms recently identified on the east and west side of the internal granite. Another 20 rock chip samples have recently been taken and submitted for assay (Figure 2). The positive indicators to date warrant further lithium exploration at Ghost Rocks which the Company is pursuing. In addition, one sample had elevated V-Ti-Fe (0.32%  $V_2O_5$ ) in a possible weathered ultramafic (Figure 2) which will be followed-up.

Exploration has continued at the Perrinvale Project, which has had no previous exploration for LCT pegmatites or komatiite-hosted nickel sulphides. Assay results were returned from the first round rock chip sampling program (30 samples), with no significant LCT results. The northern portion of the tenement with previously mapped pegmatites (Figure 3) has just recently been assessed with a four-day field sampling and mapping program, with assays pending. Extensive outcropping prospective fractionated pegmatites were identified (25 pegmatites sampled), the largest extending >200m along strike and up to 20m thick. Most of the pegmatites occur at the contact between different geological units (Figure 3). Field sampling of the untested komatiite ultramafic that extends for ~10km strike was also completed, with assay results to assist in determining any prospective nickel sulphide basal contact. A possible extensive gossanous unit was also identified (Figure 3) which has been sampled to determine any associated nickel sulphide prospectivity.

A half-day site visit was also completed to the Mulga Plum project 40km northeast of Menzies (Figure 1), which comprises two tenements (E40/350 and E40/357) that Ardea have non-gold rights to. There were multiple pegmatites identified on the contact with basaltic flows that were sampled in several areas, with assays pending.

Exploration for REE at the Goongarrie Hub and other projects is ongoing. As per ASX release 30 January 2023 (Kalgoorlie Nickel Project - Goongarrie West Drilling Ionic Clay Rare Earth Discovery), initial interpretation indicates the REE anomalous domain is a horizontal regolith sheet that extends 300m in width and 3.5km in strike length and is open in every direction. Representative samples from drillhole AGSA0225 (Figure 4) have been despatched for bench-scale metallurgical testwork at Bureau Veritas to assess REE extraction from the clay host.

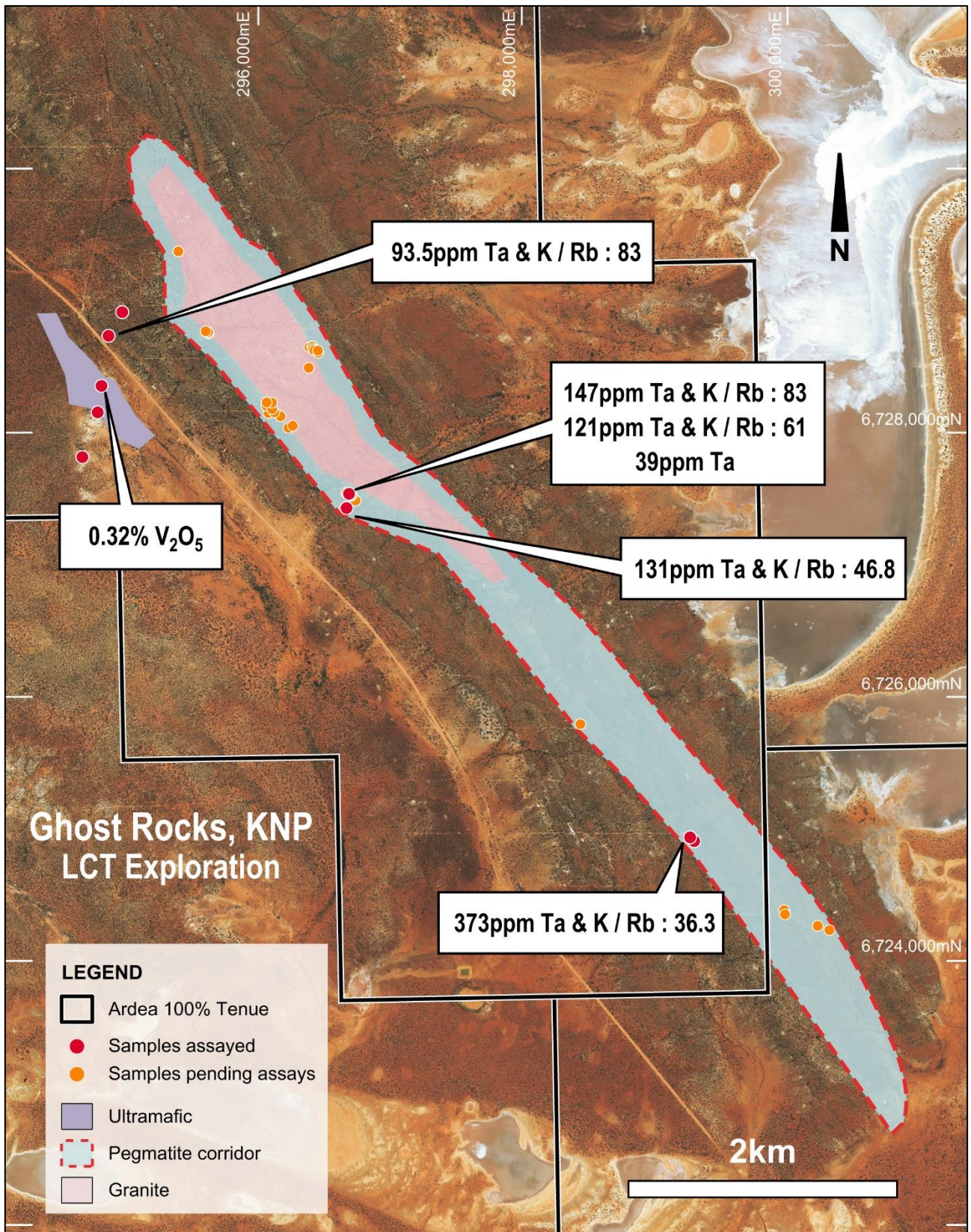


Figure 2: Ghost Rocks LCT pegmatite and ultramafic sampling map with preliminary geological interpretation.  
Projection: MGA94 Zone 51.

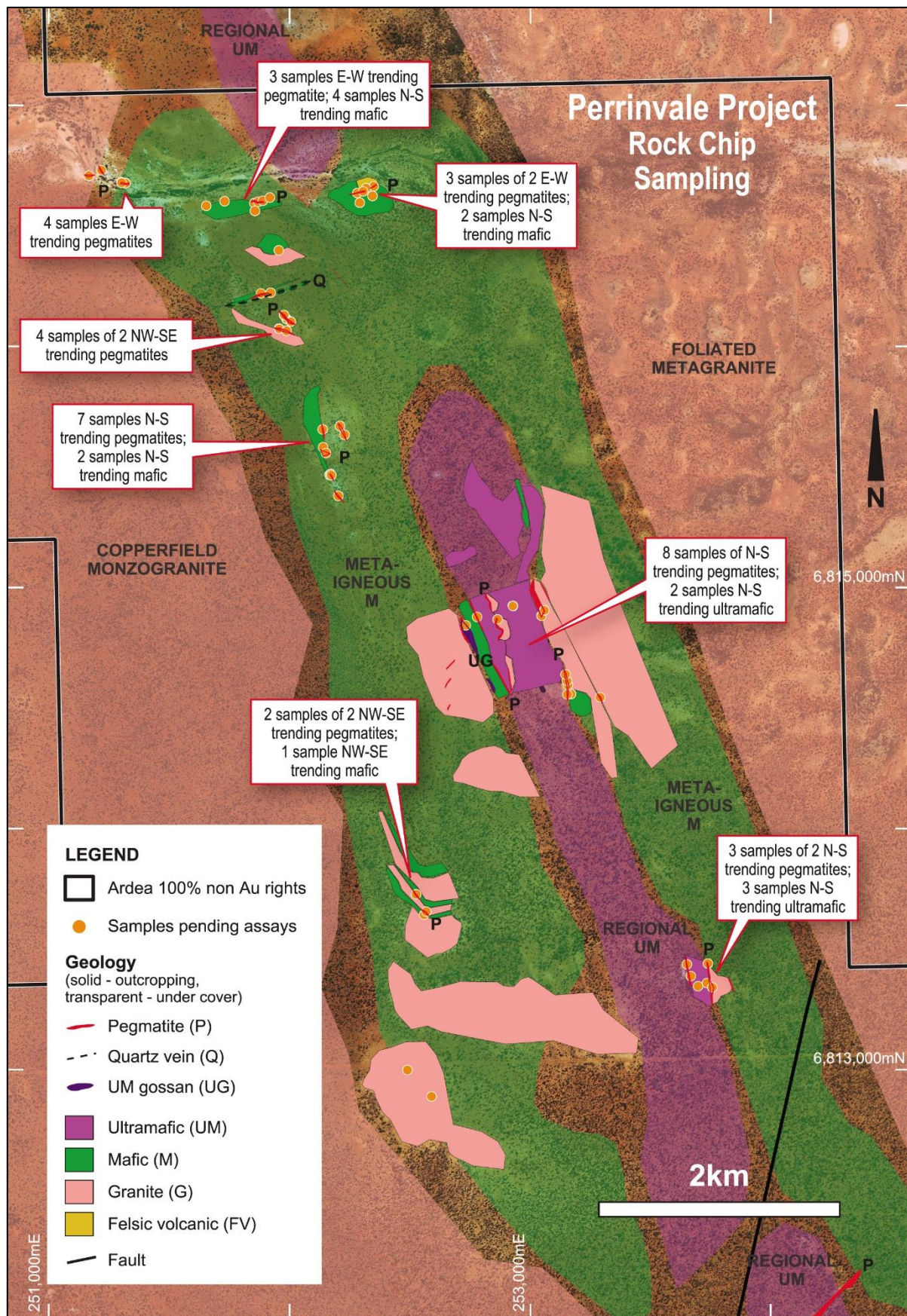


Figure 3: Perrinvale map showing recent field sampling program and preliminary geological interpretation.  
Projection: MGA94 Zone 51.

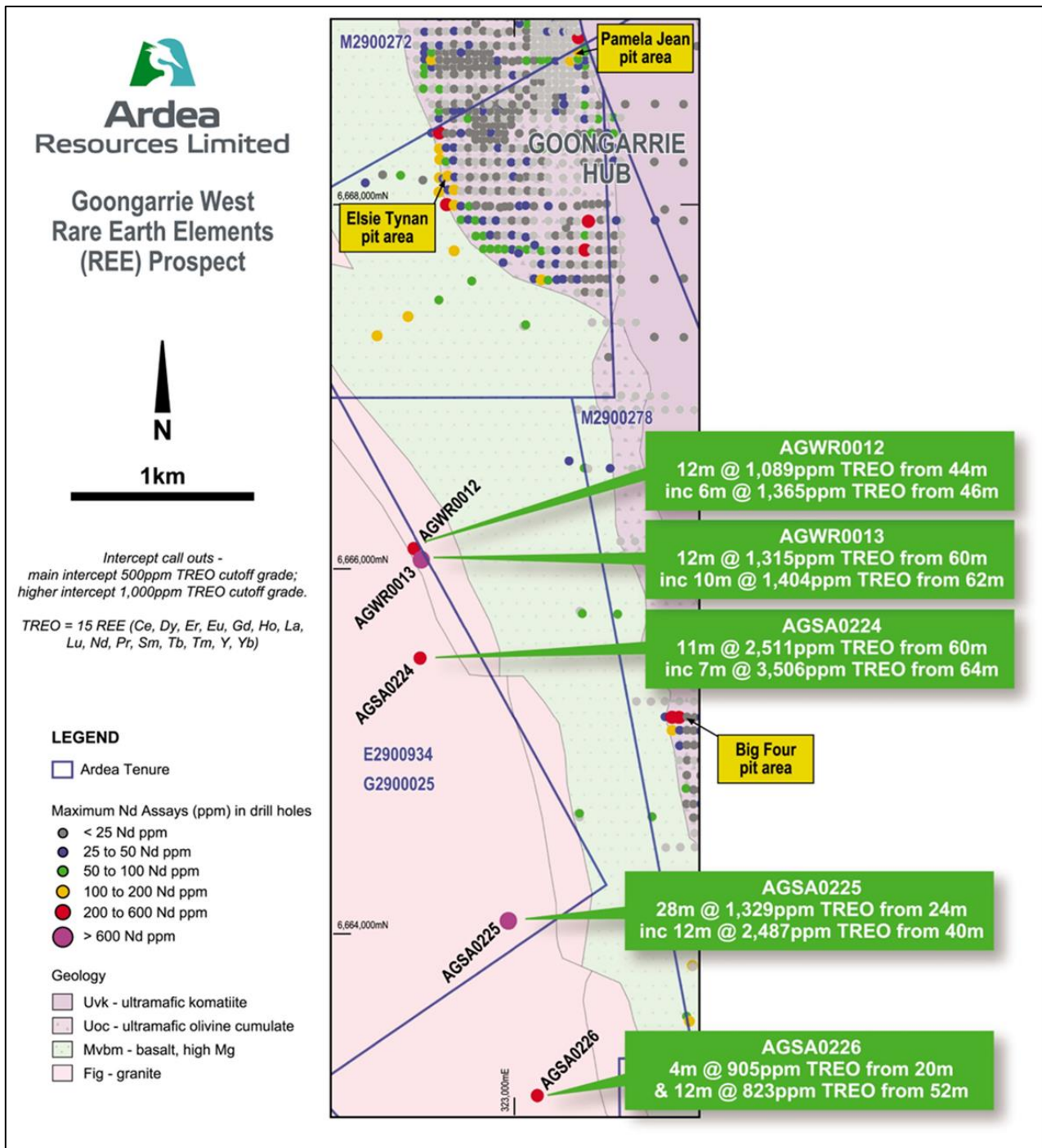


Figure 4: Goongarrarie West Rare Earth Element Prospect, drill hole location plan and intercept summary.  
Projection: MGA94 Zone 51.



## 2 Nickel Sulphides

The current focus for nickel sulphide exploration is the Kalpini Hub where Type 1 massive nickel-copper-PGE sulphides (Figure 5) were discovered by Ardea at the Binti Prospect, with follow-up drilling intersecting additional magmatic nickel sulphides (ASX release 14 October 2022). The significance of this discovery is that it occurs in the Kurnalpi Terrane in which there are only a few other Type 1 nickel sulphide deposits. At the Kalpini Project Ardea hold approximately 20km strike of the prospective Western Komatiite Belt which is largely unexplored for primary magmatic nickel sulphide mineralisation. Ardea believe there is significant potential to make additional high-grade nickel-copper-PGE discoveries in the Kalpini Project.

The work schedule for the Kalpini Project is:

- Updated 3D modelling at Binti Prospect based on results from the recent drilling and DHEM now complete, with current interpretation indicating prospective mineralised channels are still open (Figure 6) and geochemistry indicating the 'hottest' ultramafic flows are at Binti Central at depth. A diamond drill program has been planned comprising five holes for 2,900m mostly in the Binti area (Figure 6) which could be executed once current Goongarrie Hub feasibility programs are completed
- Regional technical targeting using detailed geochemical ratios, geophysical data, geological and structural interpretation to generate a pipeline of nickel sulphide exploration targets in the ~20km strike Western Komatiite sequence is now complete. The review identified twelve (12) target areas (Figure 7), with exploration programs to be planned.

Assay results were returned from AELD0010 which was drilled 6km south/southeast of the Binti prospect targeting a regional magnetic anomaly where previous drilling identified broad zones with >100ppb Pd and >200ppm Cu (up to 1,070ppm Cu) in ultramafics (historic drill hole KPDD0001). Results showed no obvious nickel sulphide mineralisation but >50ppb Pt+Pd in ultramafics from 119-125m, 132-138m and 232-242m downhole, the latter two intersections with possible fine disseminated sulphides. Follow-up work at this target area will be reviewed with other exploration targets.

During 2023 Ardea will continue assessment for nickel sulphide potential at other projects including at the Goongarrie Hub, Yerilla Hub, Bulong and Perrinvale. All projects comprise significant volumes of komatiite ultramafic flows that are either underexplored or unexplored for magmatic nickel sulphides, providing a long-term exploration strategy for the Company. Any additional external project opportunities will also be reviewed.

In late-March a week-long **technical exploration workshop** will be undertaken in Kalgoorlie with key Directors, Executive Management and technical team attending. The results of the workshop will provide an exploration workflow for the Company moving forward.

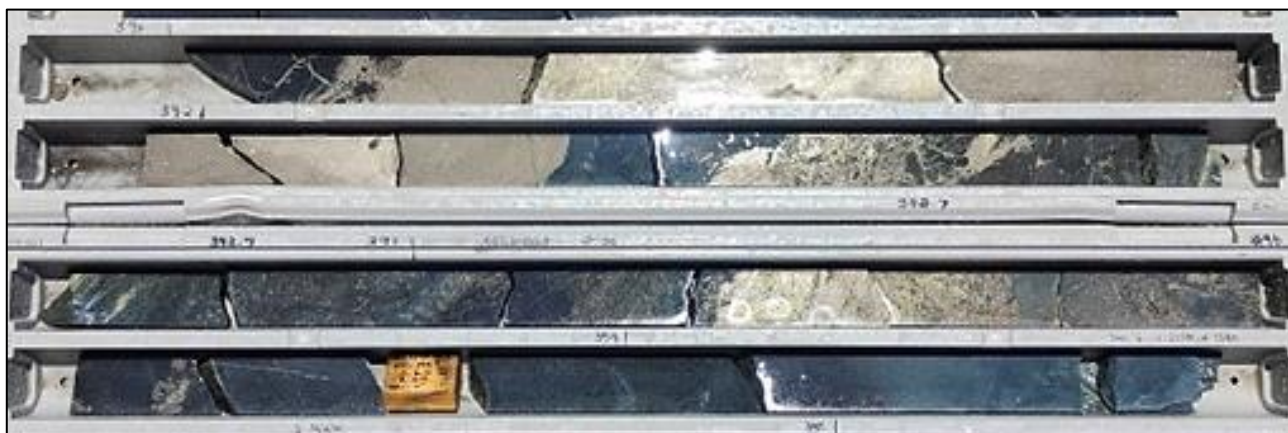


Figure 5: Nickel sulphide mineralisation intersected in AELD0003 (2.72m @ 5.42% Ni, 0.85% Co, 0.15% Co, 0.85g/t PGEs from 391.04m)

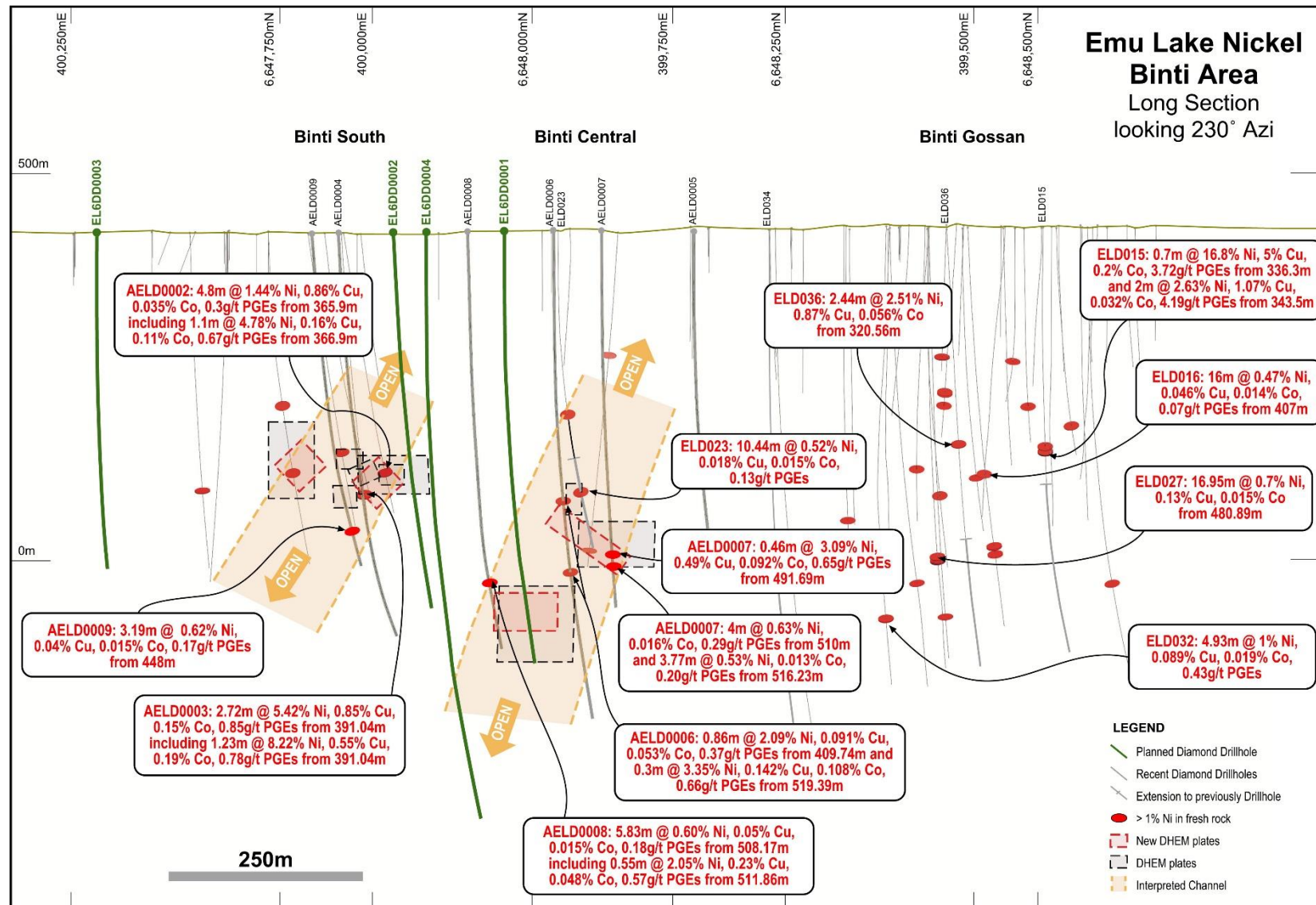


Figure 6: Long section of the Binti prospect showing significant nickel sulphide intersections from previous drilling, interpreted mineralised channels and associated DHEM plates. Proposed drill holes shown in green. Projection GDA94 Zone 51.

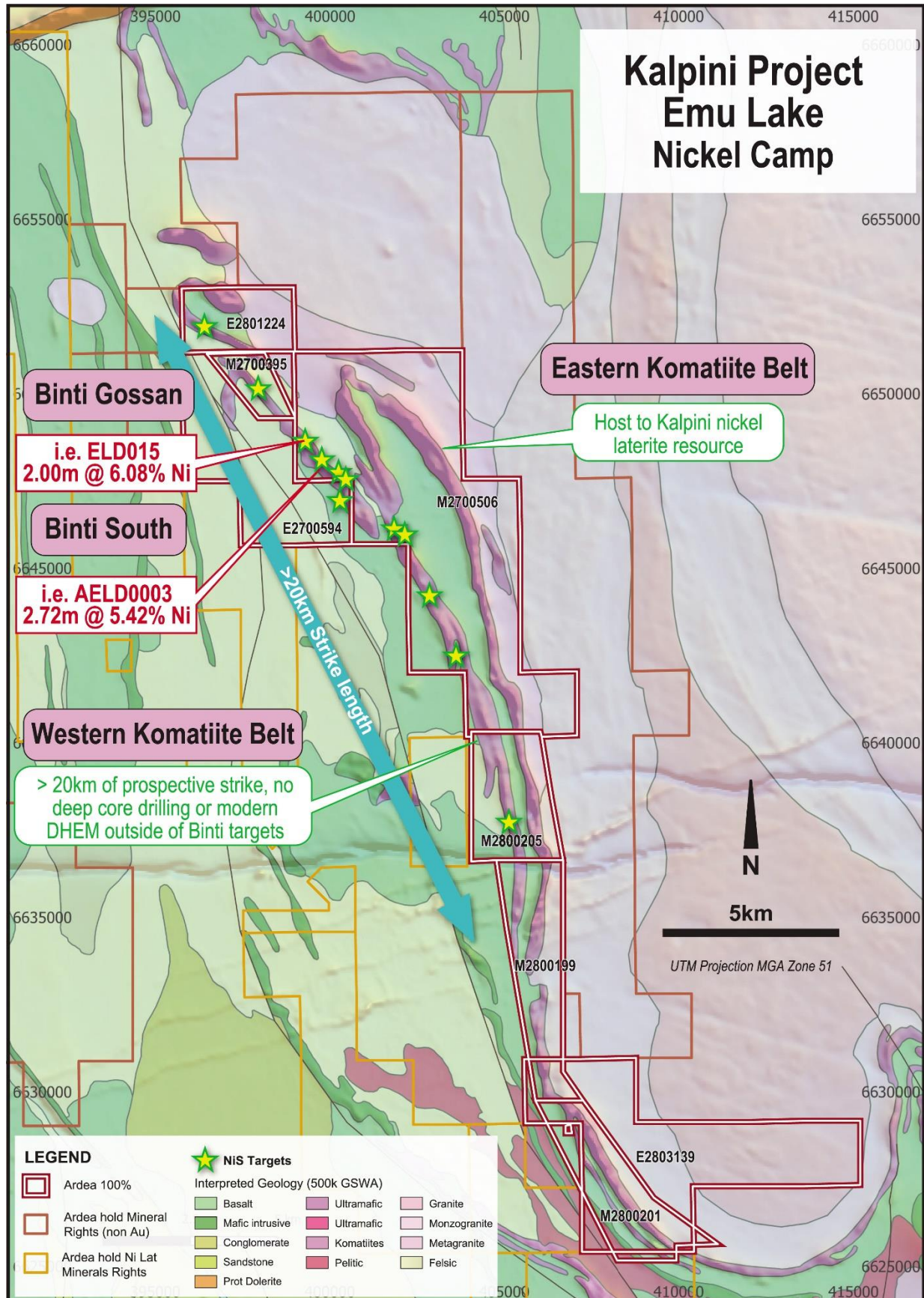


Figure 7. Map of the Kalpini Nickel project showing tenements over interpreted geology and nickel sulphide (NiS) targets (stars). Projection GDA94 Zone 51.



This announcement is authorised for release 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

Tel +61 8 6244 5136

**About Ardea Resources**

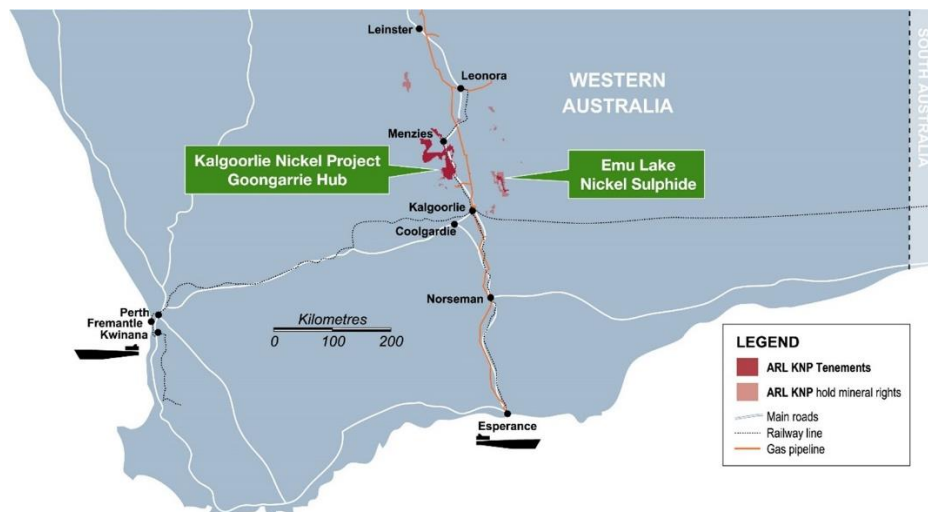
Ardea Resources Limited (ASX:ARL) is an ASX-listed nickel resources company, with a large portfolio of 100%-controlled West Australian-based projects, focussed on:

- 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** (Ardea ASX releases 15 February, 16 June 2021), located in a jurisdiction with exemplary Environmental Social and Governance (**ESG**) credentials, notably environment.
- Advanced-stage exploration at compelling nickel sulphide targets, such as Emu Lake, and Critical Minerals targets including scandium and Rare Earth Elements throughout the KNP Eastern Goldfields world-class nickel-gold province, with all exploration targets aimed at complementing the KNP nickel development strategy.

Ardea's KNP development with its 5.9 million tonnes of contained nickel is the foundation of the Company, with the nickel sulphide exploration, such as Emu Lake, as an evolving contribution to Ardea's building of a green, forward-facing integrated nickel company.

Put simply, in the Lithium Ion Battery sector, the Electric Vehicle and Energy Storage System battery customers demand an ESG-compliant, sustainable, and ethical supply chain for nickel and other inputs. In the wet tropics, with their signature HPAL submarine tailings disposal and rain forest habitat destruction, an acceptable ESG regime is problematic. In contrast, the world-class semi-arid, temperate KNP Great Western Woodlands with its benign environmental setting is likely the single greatest asset of the KNP.

The KNP is located in a well established mining jurisdiction with absolute geopolitical acceptance and none of the land-use and societal conflicts that commonly characterise nickel laterite proposals elsewhere. All KNP Goongarrie Hub production tenure is on granted Mining Leases with Native Title Agreement in place.



Follow Ardea on social media





## **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 Persons statement**

*The information in this report that relates to planning and results for nickel sulphide and LCT pegmatite exploration is based on information reviewed or compiled by Matthew McCarthy, who is a Member of the Australian Institute of Geoscientists. Mr McCarthy is a full-time employee 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 activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr McCarthy 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 planning and results for REE exploration is based on information reviewed or compiled by Ian Buchhorn, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Buchhorn is a full-time employee 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 activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Buchhorn consents to the inclusion in this report of the information in the form and context in which it appears.*



## JORC Code, 2012 Edition, Table 1 report

### Section 1 - Sampling Techniques and Data

(Criteria in this section applies to all succeeding sections)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Rock chip samples were collected based on geological determination</li> <li>Samples were between 1-5kg in calico bags, were individually labelled and documented</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>No drilling methods were used for sample collection</li> <li>Any drill holes mentioned have been described in previous referred to ASX releases</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling methods were used for sample collection</li> <li>Any drill holes mentioned have been described in previous referred to ASX releases</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Geology of rock chip samples was recorded</li> </ul>



<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• No drilling methods were used for sample collection</li> <li>• Any drill holes mentioned have been described in previous referred to ASX releases</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>• All Ardea samples were submitted to Kalgoorlie BV laboratories and transported to BV Perth, where they were pulverised.</li> <li>• The samples were sorted, wet weighed, dried then weighed again. Primary preparation has been by crushing and splitting the sample with a riffle splitter where necessary to obtain a sub-fraction which has then been pulverised in a vibrating pulveriser. All coarse residues have been retained.</li> <li>• Analysis at BV Perth was by Mixed acid digest Full ICP-AES and ICP-MS utilising a 50g charge (ARL02 Suite) to define: Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, P, Pb, Pr, Rb, Re, S, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr</li> <li>• For PGM suite elements (Au, Pt, Pd) 40g lead collection fire assay ICP-MS was used.</li> <li>• No geophysical tools were used to determine any element concentrations</li> <li>• BV routinely inserts analytical blanks, standards and duplicates into the client sample batches for laboratory QAQC performance monitoring.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• No drilling methods were used for sample collection</li> <li>• Data was collected and documented by Ardea geologists in the field</li> <li>• Primary sampling data is collected in a set of standard company templates. The information is managed by Ardea's Database Manager and compiled into the central database.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• Rock chip locations were surveyed using handheld Garmin GPS</li> <li>• The grid used was MGA Zone 51 Datum GDA94</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• Data spacing for reporting of Exploration Results.</li> <li>• 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.</li> <li>• Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>• Data spacing between rock chip samples sites vary, affected by availability of outcrop/subcrop</li> <li>• Data spacing not sufficient to establish geological and grade continuity</li> <li>• Sampling was reconnaissance, no compositing of samples or results was applied</li> </ul>



<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling methods were used for sample collection</li> <li>Any drill holes mentioned have been described in previous referred to ASX releases</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>All samples were collected and accounted for by Ardea employees. All samples were bagged into calico plastic bags and closed with cable ties. Samples were transported to Kalgoorlie from site by Ardea employees and submitted directly to BV Kalgoorlie.</li> <li>The appropriate manifest of sample numbers and a sample submission form containing laboratory instructions were submitted to the laboratory.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>ARL has periodically conducted internal reviews of sampling techniques relating to resultant exploration datasets, and larger scale reviews capturing the data from multiple programmes within the KNP.</li> </ul>

## Section 2 - Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments</li> </ul>	<ul style="list-style-type: none"> <li>The tenements on which the rock chip sampling and mapping was undertaken are E29/941, E29/981, E40/350, E40/357, E29/1006 and E29/1078. Ardea or its' subsidiaries are the sole holder of the tenements, except for E40/350 and E40/357 which Ardea hold the non-gold rights in through joint venture. The tenements are in good standing.</li> <li>The tenements are located in the in Ardea's Kalgoorlie Nickel Project (Ghost Rocks), to the northwest of Menzies (Mulga Plum JV) and at the Perrinvale project ~85km west of Leonora</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>No known LCT Pegmatite exploration has previously been completed by other parties at the Ghost Rocks, Perrinvale or Mulga Plum projects</li> <li>Exploration at Goongarrie for nickel-cobalt laterite mineralisation was initially completed by Heron Resources Ltd and subsequently drilled by Vale Inco Limited in a Joint Venture. These parties did not evaluate REEs. Recent recognition of REE potential has arisen from Ardea's intensive R&amp;D programs, notably with the FBICRC based at Curtin University, Perth and CSIRO.</li> <li>The Emu Lake project has had minor exploration for nickel sulphides since 2003 by Image Resources, Skryne Hill, Jubilee Mines, Emu Nickel and Xstrata. Data collected by these companies has been reviewed by Ardea</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The LCT pegmatite model targets pegmatites of interest for lithium and tantalum mineralisation that belong to the rare-element class of pegmatites. Of most interest are the large complex or albite-spodumene pegmatites hosting dominant lithium bearing minerals spodumene, petalite and lepidolite and tantalum bearing minerals</li> <li>The Goongarrie REE development model is Ionic Adsorption Clay (IAC), being a clay weathering product upon which loosely held REE metals are adsorbed within the clay mineral sheeted lattice</li> <li>The Nickel sulphide model is Archaean komatiite hosted nickel sulphide and related deposits, commonly referred to as Kambalda-style; and nickel-cobalt laterite deposits</li> </ul>



<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>No drilling methods were used for sample collection</li> <li>Any drill holes mentioned have been described in previous referred to ASX releases</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>All REE intercepts were calculated at two separate cut-offs using a minimum 500ppm and including 1000ppm TREO (Total Rare Earth Element) cut-off over either 2m or 4m sample intervals.</li> <li>Primary assay data has been converted to oxide data as reported to calculate a TREO component. The elements used to calculate this are Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Tm, Y, Yb</li> <li>Significant intercepts from the Emu Lake drilling have been provided by Ardea in previous ASX reports. Exploration results have been reported using the weighted average of each sample result by its corresponding interval length, as is industry standard practice</li> <li>Grades &gt;0.3% Ni are used to identify nickel sulphide mineralisation in fresh rock samples</li> <li>Top cuts were not deemed applicable considering the style of nickel mineralisation</li> <li>No metal equivalent calculations have been used in this assessment</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>The REE mineralisation at Goongarrie is interpreted to be flat-lying</li> <li>All Aircore drill holes are vertical, hence intersect the mineralisation at approximately 90° to its orientation and approximate true width</li> <li>True width of the reported nickel sulphide zones has not been attempted during this early stage of reporting. Drill holes are oriented orthogonal to the trend of stratigraphy</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Maps and photos relevant to the target mineralisation styles are shown within the report</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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 Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable to this report. All results are reported either in the text or in the associated appendices</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No other data are, at this stage, known to be either beneficial or deleterious to recovery of the metals reported. All results considered to be significant are reported.</li> </ul>



<p><b>Further work</b></p>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul> <ul style="list-style-type: none"> <li>• Given the LCT pegmatite results to date, further sampling and mapping will be undertaken at the Ghost Rocks project. Further work at the Perrinvale and Mulga Plum projects is pending assay results.</li> <li>• Further exploration at Goongarrie West to follow-up the REE anomalism is pending assessment of metallurgical results</li> <li>• At the Kalpini project, drill programs and electromagnetic surveys have been designed at the Binti prospect and later at regional exploration targets</li> </ul>
----------------------------	--