ASX & Media Release

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ASX Symbol

ARL

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Emu Lake Nickel Sulphide Exploration Update

- Seven exploration diamond drill holes and four extensions to historic diamond drill holes for a total of 5,122.3m were completed over two programs between March and September 2022
- Six of the diamond holes and all four extension holes were drilled at the Binti prospect to test DHEM (down-hole electromagnetic) and geological targets, where high-grade nickel sulphide mineralisation was recently discovered at Binti South (i.e. AELD0003: 2.72m at 5.42% Ni and 0.85% Cu from 391.04m – ASX release 14 January 2022)
- Drilling from the first program resulted in the discovery of the Binti Central prospect 300m northwest of Binti South, with drill holes intersecting massive nickel sulphide mineralisation in both the Central and Western Ultramafics (i.e. AELD0006: 0.3m at 5% Ni from 409.74m) and disseminated/blebby mineralisation in the Western Ultramafic (i.e. ELD023: 10.44m at 0.52% Ni from 423.56m)
- Drill holes completed in the second program intersected nickel sulphides at both Binti Central (i.e. AELD0007: 0.19m of massive sulphide and 19.4m of disseminated sulphides; AELD0008: 0.55m of matrix sulphides and 3.6m of blebby sulphides) and at Binti South (i.e. AELD0009: 8m of blebby and stringer sulphides) with assays pending
- DHEM surveys of the recent drill holes at the Binti prospect identified seven offhole anomalies (3 still untested) with conductivities consistent with massive sulphide mineralisation and aligned with mineralised channel positions that are open up and down plunge
- An additional diamond hole was drilled targeting a magnetic anomaly with favourable geochemical anomalism 6km southeast of the Binti prospect, with the drill hole intersecting very thick (578m) ultramafic stratigraphy with some fine to moderately disseminated nickel sulphides, indicating the ultramafics in this new search area, which have multiple untested MLEM (moving-loop electromagnetic) anomalies, are also fertile
- Next steps include planning further exploration of the open mineralised channels at the Binti prospect and regional technical assessment to generate a pipeline of nickel sulphide exploration targets over the largely unexplored Emu Lake project

Ardea Resources Limited (**Ardea** or the **Company**) is pleased to provide an update on nickel sulphide exploration at its Emu Lake prospect at the Kalpini Project located 70km northeast of Kalgoorlie, Western Australia (Figure 1).

Ardea's Managing Director, Andrew Penkethman said:

"The drilling completed by Ardea at Emu Lake since the AELD0003 discovery hole (ASX release 14th January 2022: High-grade Nickel Sulphide Discovery at Emu Lake) has comprised 11 diamond core holes drilled for 5,122.3 metres. All drill holes have intersected nickel sulphide mineralisation and demonstrated the potential for both high grade massive nickel sulphides and disseminated nickel sulphides and reinforced the prospectivity of the underexplored ultramafic sequences within Ardea's tenure in the Kurnalpi terrane.

The recently received visual, assay and DHEM results will be used to update the geological model and plan follow-up exploration both at the Binti prospect and within the 20km strike of prospective stratigraphy controlled by Ardea. With such a large search space, additional discoveries are expected to be made."

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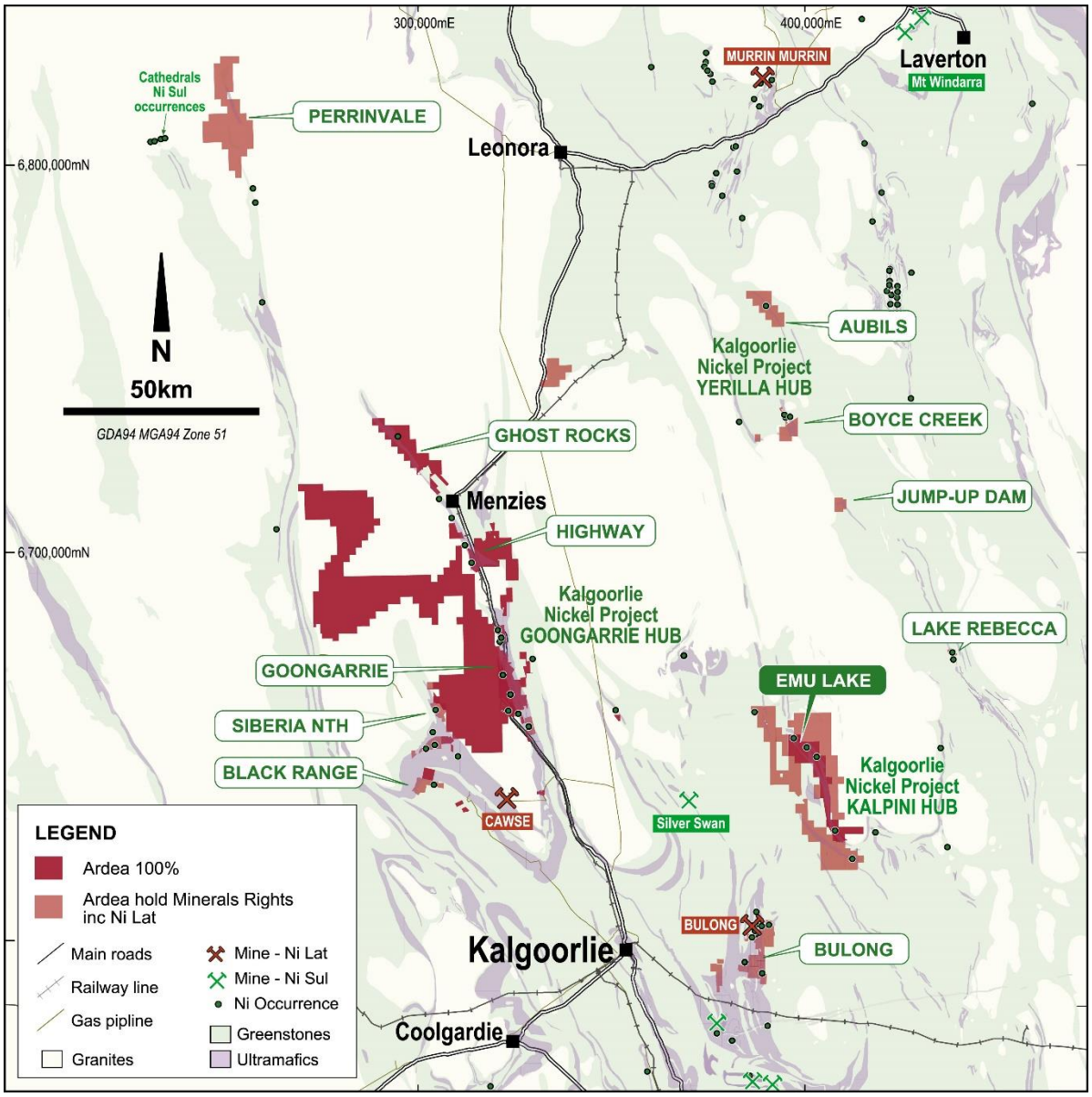

Figure 1: Location of the Emu Lake project in the Kalpini Hub northeast of Kalgoorlie. Projection GDA94 Zone 51.

Kalpini Project

The Type 1 massive nickel-copper-PGE sulphides recently discovered at the Binti prospect at Emu Lake occur in the Kurnalpi terrane which is significant given there are only a few other Type 1 nickel sulphide deposits in this terrane (e.g. Windarra). Ardea hold approximately 20km strike of the prospective ultramafic sequence (mostly on granted mining leases) that is largely unexplored for primary magmatic nickel sulphide mineralisation, and in areas additional nickel-cobalt laterite mineralisation. Given this largely unexplored ultramafic sequence Ardea believe there is significant potential to make additional high-grade nickel-copper-PGE discoveries in the Kalpini Project.

Exploration Update

Three diamond drill holes and extensions of four historic diamond drill holes for 2,753.8m were drilled from March to May 2022, followed by four diamond drill holes for 2368.5m drilled from July to September 2022 for a total of 5,122.7m. The drill holes were largely following up targets at the Binti prospect where Type 1 massive nickel

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sulphide mineralisation was recently discovered on an intact basal contact of the steeply east dipping overturned Western Ultramafic flow (i.e. AELD0003: 2.72m at 5.42% Ni and 0.85% Cu from 391.04m). An additional diamond hole was drilled testing a regional target 6km to the southeast of Binti.

A summary of significant results from the diamond drill holes completed in 2022 are shown below, including results from the DHEM surveys (see also Appendix 1). All drill holes excluding AELD0010 were drilled at the Binti prospect (Figure 5).

- AELD0004: The DHEM survey in AELD0003 was unable to generate an off-hole conductor likely due to the high in hole conductivity of the massive nickel sulphides intersected. Therefore, AELD0004 was drilled as a stratigraphic test underneath AELD0003 (Figure 6). The hole intersected minor nickel sulphide mineralisation on the basal contact (0.6m at 0.6% Ni from 449.2m), interpreted as only intersecting the edge of the target channel. The DHEM survey provided an off-hole plate later tested by AELD0009. This drill hole is also partly funded (50% of drilling costs) by the Geological Survey of Western Australia's Exploration Incentive Scheme.
- ELD023: was a historic hole that was extended to 520m depth (Figure 5, 7). The hole intersected thin primary massive nickel sulphide at the base of the Western Ultramafic unit and thicker disseminated/blebby nickel sulphides (10.44m at 0.52% Ni from 423.56m including 0.3m at 2.39% Ni from 423.56m; Figure 2). This drillhole (and AELD0006) both extended the known mineralised Western Ultramafic 300m northwest from Binti South.
- ELD015, ELD034 and ELD036: were all extensions of historic holes (Figure 5) aimed to test and define the Western Ultramafic unit at depth and provide platforms for DHEM surveys. Results from the drilling indicate that the Western Ultramafic unit pinches out near AELD0005 and none of these holes drilled north of AELD0005 intersected this unit, but still provided valuable geological information and DHEM coverage.
- AELD0005: was designed to continue testing between Binti South and Binti Gossan (Figure 5) following the success of ELD023. However, it is now known the Western Ultramafic pinches out here and the Central Ultramafic is displaced with many intermediate porphyritic intrusions. Interestingly, the Central Ultramafic had some nickel sulphide intersections near these intrusions.
- AELD0006: tested the Western Ultramafic 110m down dip of ELD023 (Figure 5, 7) and intersected massive nickel sulphide at the base of this unit (0.3m at 3.35% Ni from 519.39m). In addition, massive nickel sulphide was intersected on the Central Ultramafic (0.3m at 5% Ni from 409.74m) that hosts nickel sulphide mineralisation at Binti Gossan.
- AELD0007: targeted a 100m x 60m offhole DHEM plate (10,000 siemens) modelled near the basal contact of the Western Ultramafic. The drill hole intersected 0.19m of massive sulphide from 491.94m (5% Ni with portable XRF; Figure 3) and 19.4m of weak-moderate disseminated sulphides from 500m (Figure 7). Results from the DHEM survey have now identified the peak of the target conductor to be just offhole to the south (124m x 30m; 6,000 siemens). This drill hole is also partly funded (50% of drilling costs) by the Geological Survey of Western Australia's Exploration Incentive Scheme.
- AELD0008: targeted a 280m area with minimal previous drilling, between drillholes AELD0002/AELD0003 (Binti South) and AELD0006 (Binti Central) shown in Figure 5. The drill hole intersected 0.55m of matrix sulphides from 511.86m (Figure 4) and 3.6m of blebby nickel sulphides from 512.41m. Blebby sulphides were also intersected from 486-500m in the dacite footwall unit. This drill hole was also planned as a platform hole for DHEM surveys and has detected a new off-hole conductor (82m x 50m; 5,000 siemens) mostly below and north of the hole (Figure 5).
- AELD0009: targeted a 30m x 30m offhole DHEM plate above and south of AELD0004 (Figure 5). The drill hole intersected 8m of blebby and stringer nickel sulphides from 446m (Figure 3) with the lithological sequence consistent with previous interpretation (Figure 6). The DHEM survey detected two plates (4,130 siemens each), with northern plate consistent with the modelled basal ultramafic contact and the southern plate associated with remobilised stringer nickel sulphides 15m above the Western Ultramafic contact.

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- AELD0010: targeted a regional magnetic anomaly 6km southeast of the Binti prospect where previous drilling identified broad zones with >100ppb Pd and >200ppm Cu (up to 1,070ppm Cu) in ultramafics (i.e. KPDD0001). The drill hole intersected very thick ultramafic stratigraphy (578m in total, open at end of hole) with some high-MgO ultramafics (i.e. meso-adcumulates) intersected. Importantly weak-moderately disseminated nickel sulphides were intersected from 132-136m (Figure 4) and also very fine 'cloud' disseminated sulphides from 633-660m, indicating the ultramafics in this new search area are also fertile (Figure 8). Review of the DHEM has not identified any priority targets, however, there are multiple MLEM anomalies north and south of AELD0010 proximal to interpreted ultramafic units that require priority follow-up.

Initial interpretation is the massive sulphide mineralisation at the Binti prospect may be defined by tight folding around primary lava pathways, with mineralisation on or close to primary basal contact positions. These lava pathway positions are currently interpreted as moderate-steeply south plunging (Figure 5), but more structural and geophysical data is being collected and assessed to confirm this. The mineralised channel positions are open up and down plunge (Figure 5). Previous nickel sulphide intersections at the Binti Gossan occur in the Central Ultramafic whereas thicker intersections at Binti South occur in the Western Ultramafic which is absent at the Binti Gossan prospect.

While the width of these potential lava channels may appear limited (i.e. 100m), they can have significant continuation down plunge. An example is the high-grade Silver Swan mine located 35km to the west, that has a shallow strike length of <100m but a down plunge extent of over 1,000m.

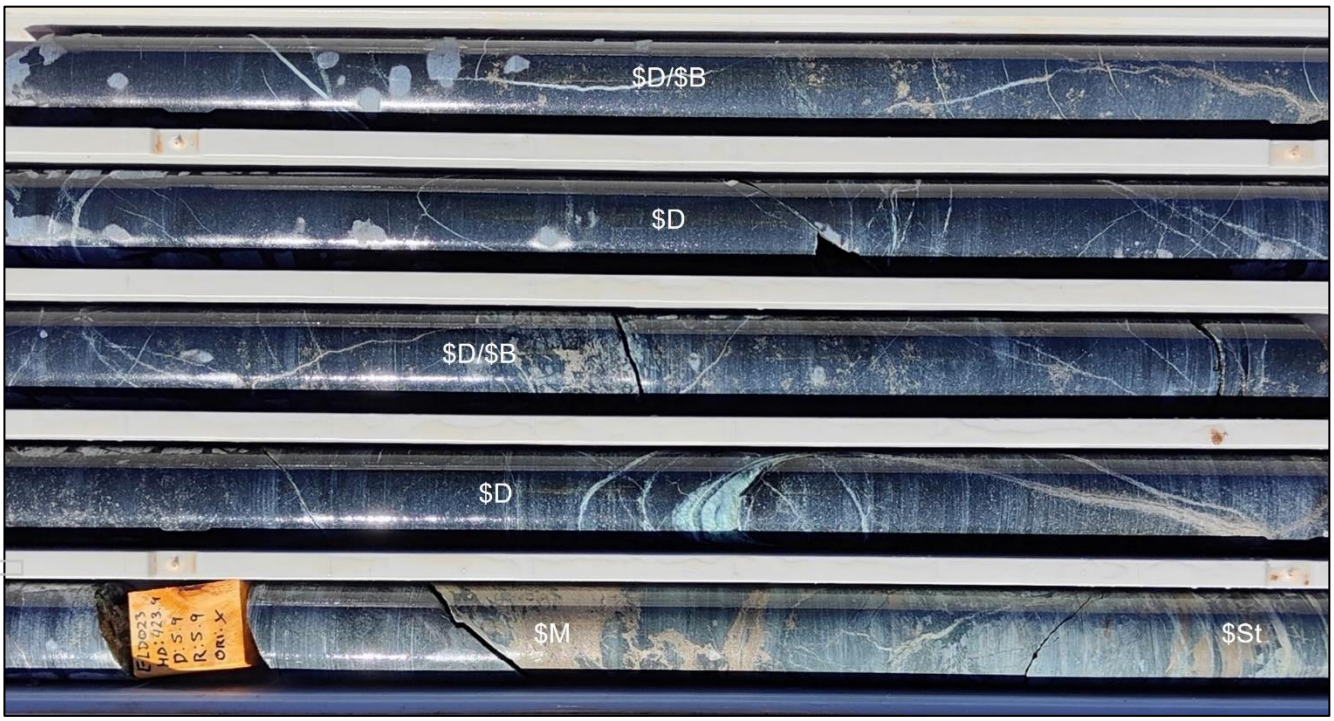

Figure 2: ELD023 (extension) significant intersection from 423.56m with massive ($M), stringer ($St), disseminated-blebby ($D/$B) and disseminated ($D) nickel sulphide mineralisation (10.44m at 0.52% Ni from 423.56m including 0.3m at 2.39% Ni from 423.56m)

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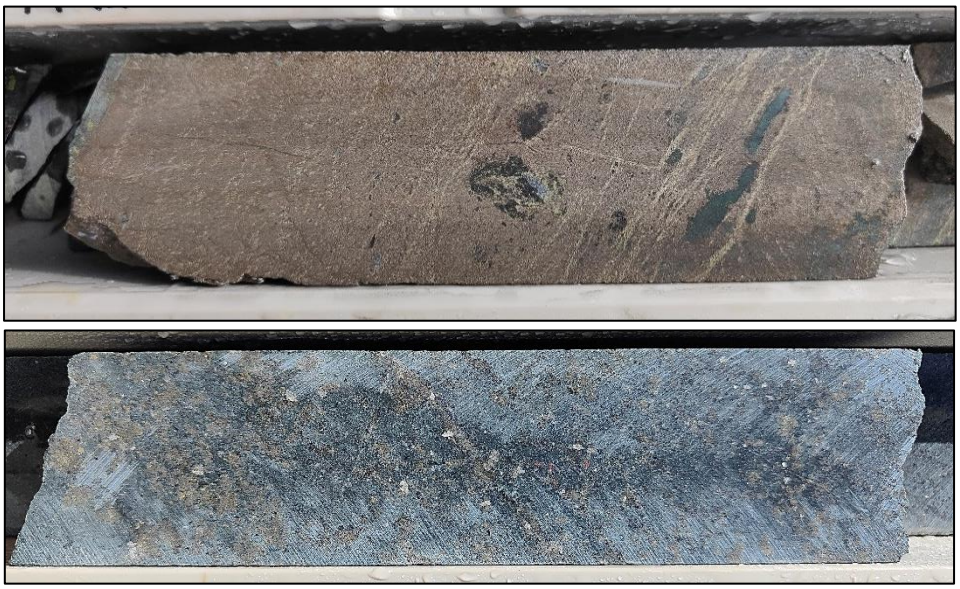

Figure 3: Top: 0.19m of massive sulphides in AELD0007 from 491.94m (5% Ni with portable XRF). Bottom: representative blebby and stringer sulphides in AELD0009 from 446m

Figure 4: Left: matrix sulphides in AELD0008 (511.86m). Right: AELD0010 ultramafic with fine disseminated sulphides (132m)

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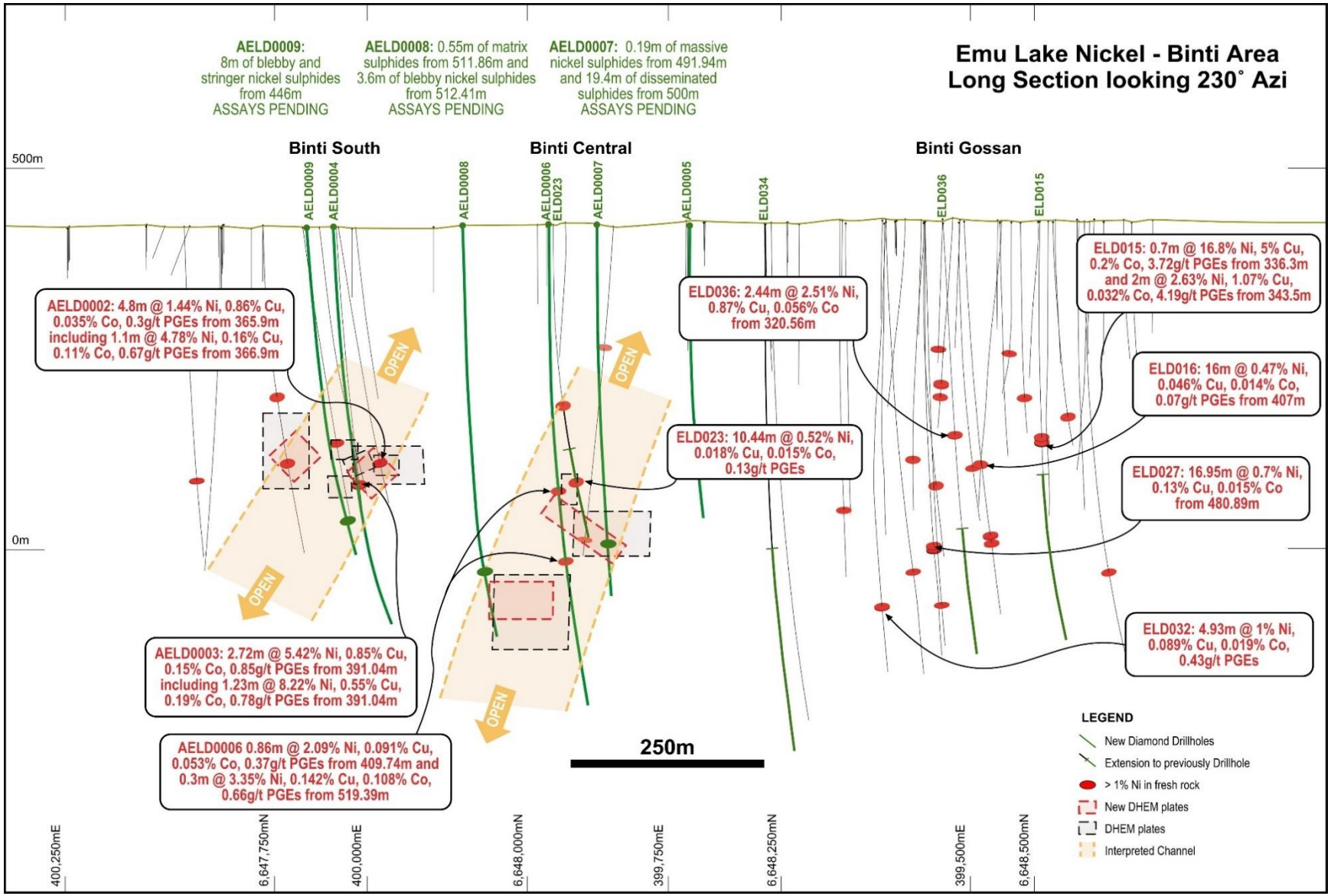

Figure 5: Long section of the Binti prospect showing significant nickel sulphide intersections (>5 Ni%m) from historic and recent drilling (green) and interpreted mineralised channels. Projection GDA94 Zone 51.

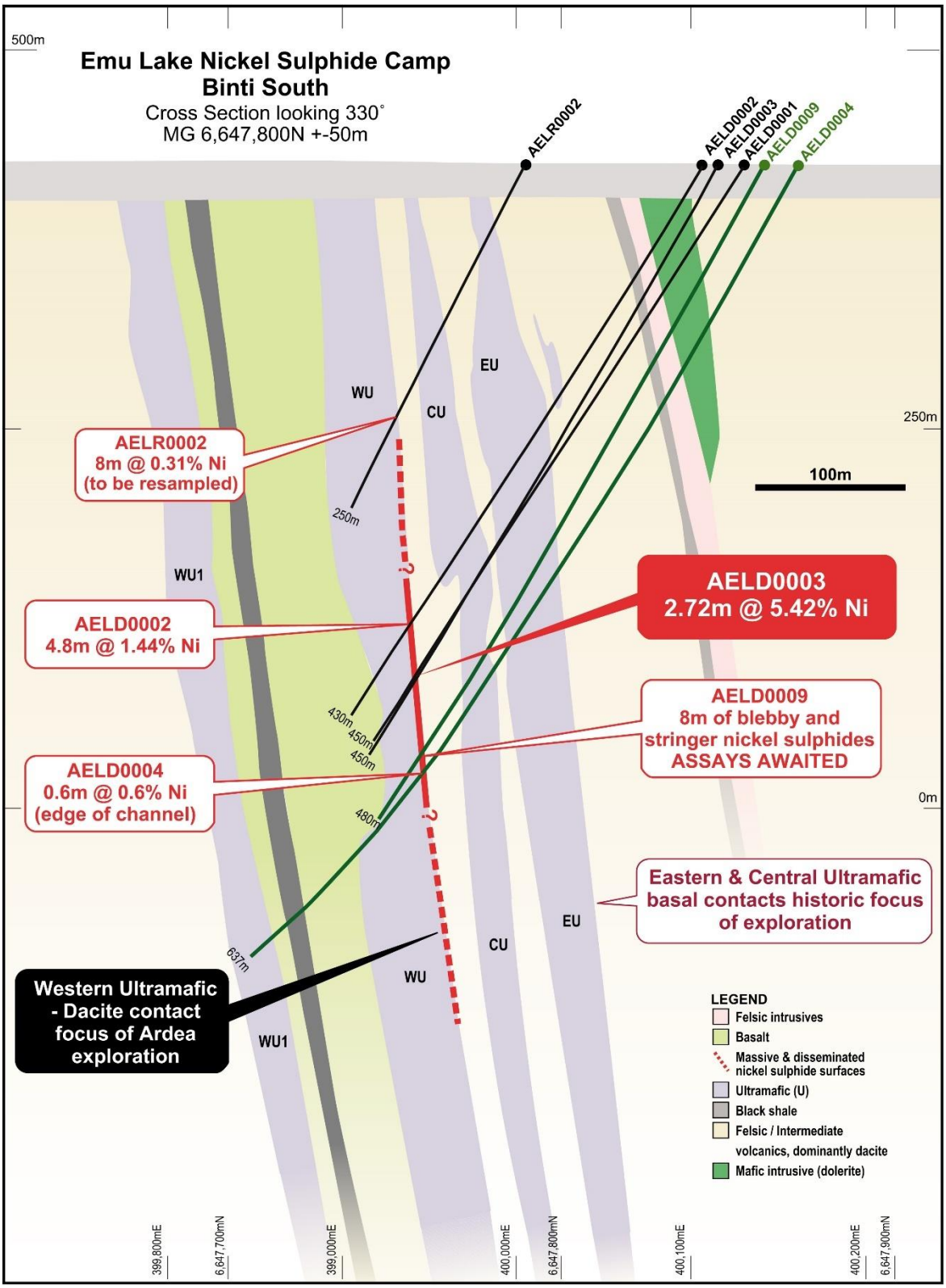

Figure 6: Cross-section of the Binti South target showing nickel sulphide intersections and interpreted geology. At Binti South the nickel sulphide mineralisation to date occurs on the Western orthocumulate ultramafic flow (WU). Projection GDA94 Zone 51.

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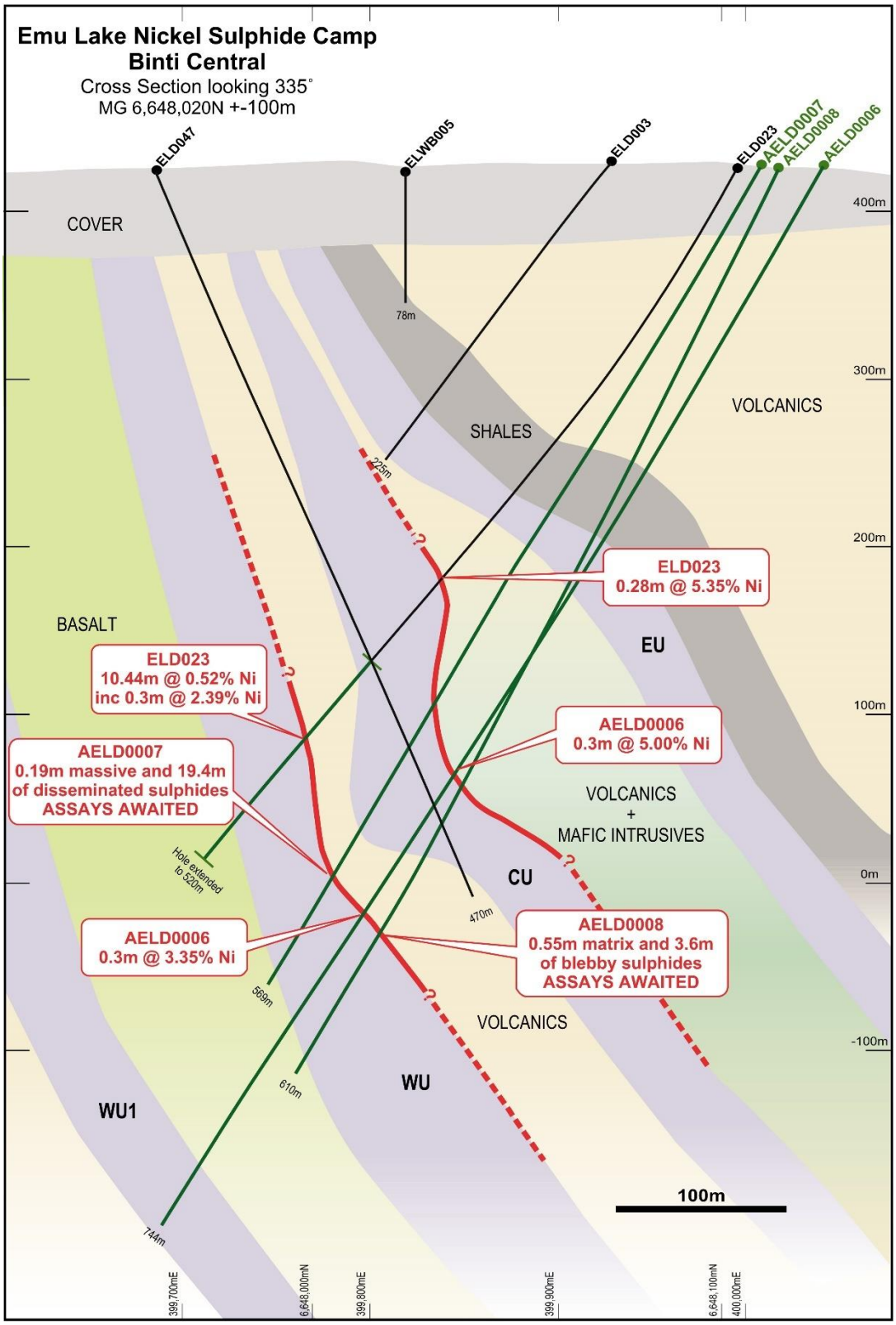

Figure 7: Cross-section of the Binti Central target showing nickel sulphide intersections and interpreted geology. The nickel sulphide mineralisation occurs on both the Western (WU) and Central (CU) ultramafic flows. Projection GDA94 Zone 51.

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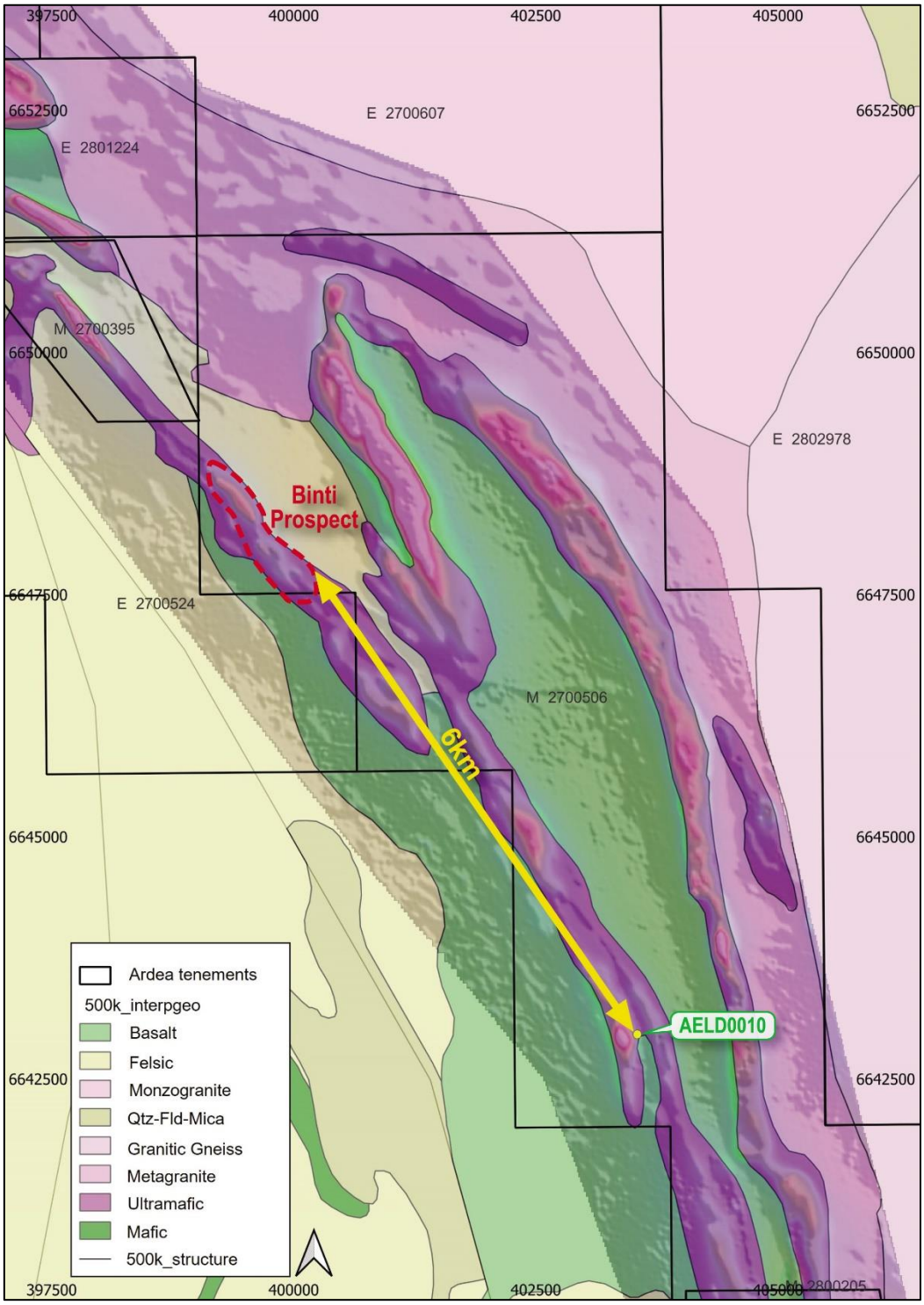

Figure 8: Location of recent drill hole AELD0010 that intersected nickel sulphide fertile ultramafics 6km southeast of the Binti Area. Projection GDA94 Zone 51.

Assay results received

Assay results have now been received for the drill holes from the first program in 2022 at the Binti prospect, with significant intersections shown below in Table 1.

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Table 1: Significant intersections from recent assay results received for drilling at the Binti prospect

Hole ID	Prospect	Sulphide Type	From (m)	To (m)	Width (m)	Ni (%)	Cu (%)	Co (%)	Total PGEs (g/t)
AELD0004	Binti South	Minor stringer	449.2	449.8	0.6	0.6	0.036	0.019	0.08
AELD0004	Binti South	Disseminated	453	455	2	0.4	0.006	0.013	0.1
AELD0005	Binti Central	Disseminated, stringer	346	348	2	0.5	0.013	0.014	0.23
AELD0005	Binti Central	Disseminated, stringer	350	358	8	0.41	0.013	0.009	0.11
Including		Minor stringer	353.2	354	0.8	0.92	0.047	0.014	0.23
AELD0006	Binti Central	Massive, disseminated	409.74	410.6	0.86	2.09	0.091	0.053	0.37
Including		Massive	409.74	410.04	0.3	5	0.074	0.118	0.44
AELD0006	Binti Central	Massive	519.39	519.69	0.3	3.35	0.142	0.108	0.66
ELD023	Binti Central	Massive	292.79	293.07	0.28	5.35	0.4	0.065	NA
ELD023	Binti Central	Disseminated, stringer	423.56	434	10.44	0.52	0.018	0.015	0.13
Including		Stringer	423.56	423.86	0.3	2.39	0.128	0.067	0.57

Two thin intersections of massive nickel sulphide were intersected in AELD0006 at Binti Central, the first 0.3m at 5% Ni from 409.74m in the Central Ultramafic and the second 0.3m at 3.35% Ni from 519.39m in the Western Ultramafic. Historic drill hole ELD023 was extended to 520m depth with recent drilling and intersected thin massive sulphides in the Central Ultramafic (0.28m at 5.35% Ni from 292.79m) and in the Western Ultramafic (0.3m at 2.39% Ni from 423.56m).

Two thicker intersections of disseminated-blebby nickel sulphides were intersected at Binti Central in ELD023 (10.44m at 0.52% Ni from 423.56m) and in AELD0005 (8m at 0.41% Ni from 350m). Disseminated-blebby sulphides occur at all three prospects, with the more notable intersections at Binti Central (as above) and Binti Gossan (i.e. ELD027: 16.95m at 0.7%Ni, 0.13%Cu, 0.015% Co from 480.89m).

Forward work

- Plan further exploration at the Binti prospect based on results from the recent drilling, DHEM (3 untested plates) and updated 3D geological modelling to test prospective mineralised channels that are open up and down plunge
- Regional technical assessment using detailed geochemical ratios, geophysical data, geological and structural interpretation to generate a pipeline of nickel sulphide exploration targets over the underexplored Emu Lake project
- Recommence on-ground exploration in Q1 2023

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:

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About Ardea Resources

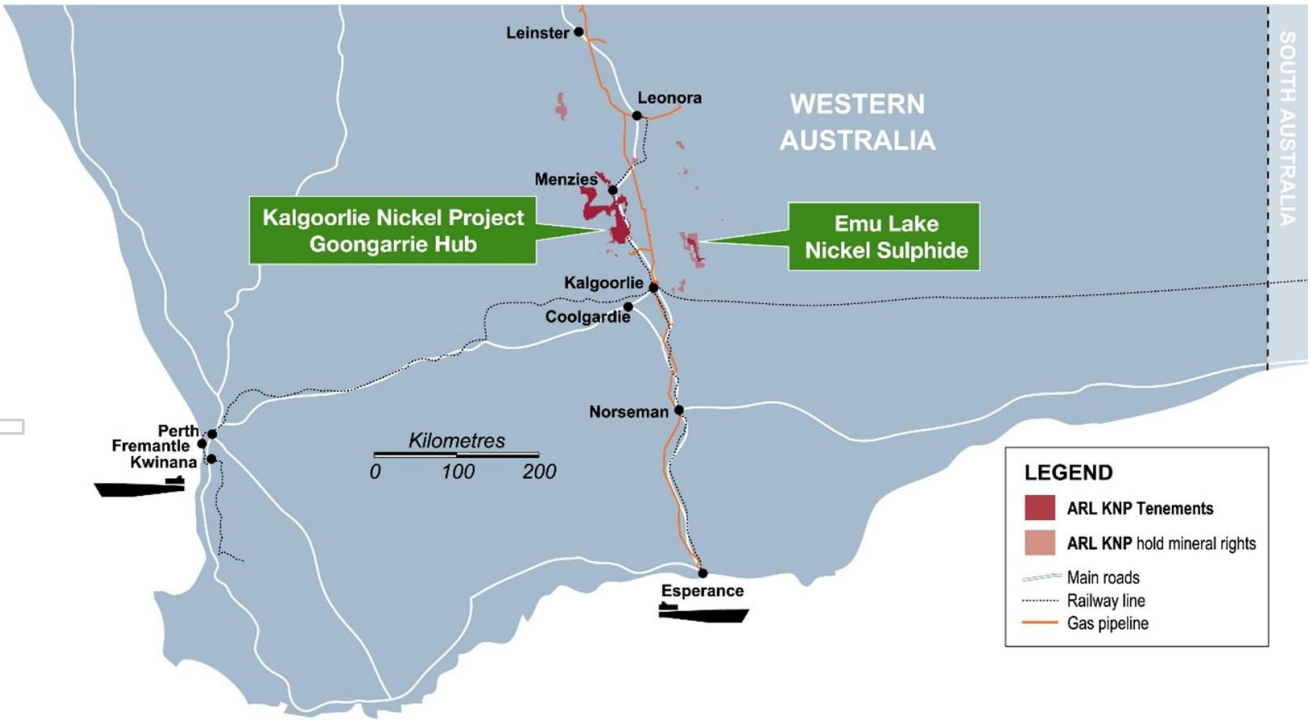
Ardea Resources Limited (ASX:ARL) is an ASX-listed nickel resources company, with a large portfolio of 100%-controlled West Australian-based projects, focussed on:

- 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.



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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.

Compliance Statement (JORC Code 2012)

The exploration and industry benchmarking summaries are based on information reviewed or compiled by Mr. 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 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 McCarthy 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.

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Appendix 1 – DHEM attributes from anomalies in drill holes in 2022

Plate Name	Easting	Northing	RL	Dip	Dip Dir	Plunge	Length	Height	Siemens	Status
AELD0004_420	399963.5	6647762.8	96.4	68.3	40.9	0	30	30	5000	Tested
AELD0006-ELD023	399762	6648054.3	50.3	78.4	59.4	0	100	60	10000	Tested
AELD0006_midtime_580	399809.3	6647960.2	-33.4	79	61.9	0	100	100	1000	Untested
AELD0008	399825.9	6647955.3	-42	78.2	59.14	0	81.8	50	5000	Untested
AELD0009_410	399911.9	6647798.4	117.2	68.7	52.1	-44.59	50	49.8	4129.7	Partly tested
AELD0009_350	400006.1	6647748.9	138.9	68.7	52.1	-44.59	50	49.8	4129.7	Partly tested
AELD0007_AS	399783.4	6647960.9	60	73.9	246.3	-123.9	29.7	123.7	6000	Untested

Appendix 2 – Drill hole information

Drill hole	Type	Depth (m)	Tenure	Grid	Easting	Northing	RL (mASL)	Dip (°)	Azimuth (°)
AELR0001	RC	377	E27/524	MGA94_51	400292.14	6646917.0	413.0	-60.4	228.8
AELR0002	RC	250	M27/506	MGA94_51	399993.3	6647811.6	425.0	-62.5	239.0
ELD015	DD(ext.)	657.6	M27/506	MGA94_51	399655.71	6648684.0	430.1	-60.0	229.0
ELD023	DD(ext.)	520	M27/506	MGA94_51	399980	6648137.9	425.9	-60.7	229.2
ELD034	DD(ext.)	792.5	M27/506	MGA94_51	399837.89	6648374.8	427.5	-60.2	230.3
ELD036	DD(ext.)	650.9	M27/506	MGA94_51	399700.32	6648558.8	427.8	-60.4	235.2
AELD0001	DD	450	M27/506	MGA94_51	400139.0	6647849.0	426.0	-57.5	242.6
AELD0002	DD	430	M27/506	MGA94_51	400097.0	6647875.0	426.0	-58.3	242.5
AELD0003	DD	450	M27/506	MGA94_51	400105.0	6647878.0	427.0	-60.2	235.9
AELD0004	DD	637	M27/506	MGA94_51	400150.0	6647907.0	422.7	-60.3	235.0
AELD0005	DD	453.3	M27/506	MGA94_51	399795.7	6648212.9	425.0	-60.4	230.0
AELD0006	DD	743.5	M27/506	MGA94_51	400022.4	6648166.2	426.8	-59.9	230.1
AELD0007	DD	569.3	M27/506	MGA94_51	399966.0	6648201.9	426.1	-60.3	229.4
AELD0008	DD	610	M27/506	MGA94_51	400048.2	6648043.6	424.7	-64.3	234.4
AELD0009	DD	500	M27/506	MGA94_51	400146.7	6647862.3	422.6	-60.5	239.3
AELD0010	DD	689.2	M27/506	MGA94_51	403549.7	6642959.0	408.7	-60	263.6

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Appendix 3 - 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
Sampling techniques	• *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.* • *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.*	• Samples from NQ sized drill core were sampled taking into account geological contacts and nickel sulphide mineralised zones, with a minimum of 0.1m and a maximum of 2m length • The core samples were cut in half with one half remaining in the trays as a reference and the other half taken as the laboratory sample DHEM Parameters: Contractor: Vortex Geophysics Configuration: Down-hole EM (DHEM) Tx Loop size: 300x600m Figure 8 and 600x600m Transmitter: VTX100 Receiver: Smartem Standard Sensor: DigiAtlantis Station spacing: 5m to 40m Base Freq: 0.25 Hz Current: ~95 Amp Stacks: Minimum 32 Readings: Minimum 3 repeatable readings per station
Drilling techniques	• *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).*	• Diamond core drilling commencing with HQ size and then reducing to NQ size when fresh rock was encountered • Diamond core drilling was undertaken by DDH1 • Core is oriented and retrieved via double or triple tube methods
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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*	• Drill sample recovery was recorded from diamond drilling core blocks by Ardea staff. No material issues were reported and apart from some zones of broken ground, recoveries were consistently greater than 90%. • No relationship between sample recovery and grade has been yet observed and no sample bias is believed to have occurred
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• The diamond core was geologically logged by qualified geologists and recorded in the Ardea database • Logging is qualitative, recording rock type and mineral abundance • Geological logging data collected to date is sufficiently detailed. At this stage detailed geotechnical logging is not required • Historic drill holes were geologically logged by previous operators and this data is available to Ardea Resources

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Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Diamond core is sawn in half, with half used for sampling and the other half retained for future reference • Samples were prepared and assayed in industry standard laboratories and significant results reported to JORC (2012) standards. • Samples were crushed and ground to nominal 75-micron size • The samples were split into a pulp fraction for analysis and a pulp-reject for storage.
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.* • *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.* • *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.*	• Samples were assayed in an industry standard laboratory (Bureau Veritas) and significant results reported to JORC (2012) standards • The multielement method used is a mixed-acid digest for full ICP-AES and ICP-MS scan. Lead collection fire assay ICP-MS used for Au, Pt, Pd. • Certified reference material (CRM's) and blank material are inserted as per company QAQC procedures. Accuracy and performance of CRM's and blanks are considered after results are received • A handheld Niton XRF unit was used as a guide to geochemical composition of different geological units and confirmation of visually observed and logged mineralisation.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No independent verification of historic results has been undertaken at this stage • Drill holes have not been twinned • All field and laboratory data has been entered into an industry standard database managed at the Company head office • No adjustment to assay data was done
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.* • *Specification of the grid system used* • *Quality and adequacy of topographic control*	• The drill collars were surveyed by a Differential GPS (+-0.1m accuracy) in GDA94/MGA Zone 51 • Ardea has needed to locate historic holes from DHEM resurvey and in all cases such holes were located within the database positions
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.*	• Drilling is of an exploration nature and no resource style drilling requiring specific drill spacing was undertaken

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Criteria	JORC Code explanation	Commentary
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.* • *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*	• The drilling orientation was designed to intersect the mineralised lenses at a close to perpendicular angle. The stratigraphy is dipping steeply to the east and the drilling is approximately at -60 degrees towards the west • The Emu Lake stratigraphy based on Eastern Goldfields nickel sulphide ore genesis models is overturned
Sample security	• *The measures taken to ensure sample security.*	• Sampling was undertaken by Ardea personnel with diamond core samples dispatched once all cutting and sampling is complete to a reputable laboratory. Drill core is stored in a secure facility in Kalgoorlie
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	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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.* • *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.*	• The project area locations are described and shown in the body of the report • The tenure is secure and held 100% by Ardea under granted Mining Lease 27/506 • Given the early stage of the exploration no mining specific applications have been made and there are no known impediments (e.g. overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings) to mining in the tenure
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• 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
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Company is exploring for Archaean komatiite hosted nickel sulphide and related deposits in the project areas, commonly referred to as Kambalda-style; and nickel-cobalt laterite deposits

Drill hole Information	• *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:*
	  • *easting and northing of the drill hole collar*
	  • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  • *dip and azimuth of the hole*
	  • *down hole length and interception depth*
	  • *hole length*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case*
		• Relevant drill hole information is included in this announcement

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Criteria	JORC Code explanation	Commentary
Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Significant intercepts from the Emu Lake drilling have been provided by Ardea in this release and 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 • The previous owner of Emu Lake reported JORC2012 compliant results to ASX from 2013 to 2016 • Grades >0.3% Ni are used to identify nickel sulphide mineralisation in fresh rock samples • Top cuts were not deemed applicable considering the style of nickel mineralisation • Metal equivalent values have not been used
Relationship between mineralization widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• True width of the reported sulphide zones has not been attempted during this early stage of reporting. Drill holes are oriented orthogonal to the trend of stratigraphy
Diagrams	• *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.*	• Where relevant diagrams showing the hole positions is included within the announcement
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 balanced taking into account the early stage of the exploration, and all results related to relevant mineralisation at Emu Lake have been previously reported
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.*	• Historical and more recent surface and down-hole electromagnetic surveys have been undertaken with the surveys designed by Newexco geophysical consultants. The results have been discussed with Newexco.

Future work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*
	• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*
		• Ardea is seeking Archaean komatiite hosted nickel sulphide deposits on its extensive ultramafic tenement holding in the Eastern Goldfields of Western Australia
		• Future work at Emu Lake will include:
		  • Planning further exploration at the Binti prospect based on results from recent drilling, DHEM and updated 3D geological modelling
		  • Technical assessment using detailed geochemical ratios, available geophysical

Criteria	JORC Code explanation	Commentary
		data and geological/structural interpretation to generate a pipeline of nickel sulphide exploration targets over the Emu Lake project

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