

EM GEOPHYSICAL SURVEYS CONFIRM NICKEL SULPHIDE TARGET

Hayes Hill Lithium - Nickel Project

Investment Highlights

- Ground based electromagnetic (EM) geophysical surveys confirm nickel sulphide targets at the Hayes
 Hill Lithium Nickel Project in Western Australia.
- EM surveys have defined two nickel sulphide drill targets adjacent to the well-defined surface geochemical targets at Green Bananas.
- One discrete, strong (up to 20,000 siemens) bedrock conductor located immediately west of the geochemical target and another conductor located immediately south. Both are robust sub-surface nickel sulphide drill targets.
- Drill permitting is in progress.

Zenith Minerals (ASX:ZNC) ("Zenith", or the "Company") is pleased to provide an update on nickel exploration activities at the Hayes Hill Lithium – Nickel Project, located in the Norseman – Widgiemooltha area of Western Australia (Figure 1). Zenith holds an option to acquire 100% of the Hayes Hill project (ASX Release 19-Jan-23). The project was secured as it is considered prospective for lithium. Ongoing geochemical screening is in progress to test that potential. Supplementary to the lithium work, the Company is also aware that the area is in a nickel district and is therefore conducting complementary exploration work to assess its nickel sulphide upside.

Both moving loop and fixed loop time domain electromagnetic (MLTEM /FLTEM) surveys have now defined two strong (up to 20,000 siemens) bedrock conductors, considered to be sub-surface, nickel sulphide drill targets.

The EM conductors lie adjacent to the well-defined surface geochemical targets at Green Bananas where recent hand auger geochemical sampling (ASX Release 4-July-23) returned peak assay results of 0.43% Ni, 0.44%Cu, 0.53% Co and 203ppm Pt.

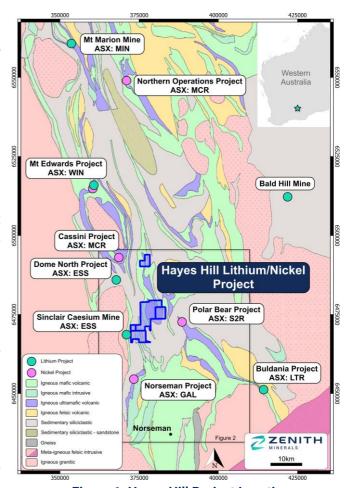


Figure 1: Hayes Hill Project Location

Managing Director Michael Clifford said: "I am pleased to advise that complementary to our Hayes Hill lithium exploration programs, EM geophysical surveying has defined two EM conductors associated with strong surface geochemical anomalies at the Green Bananas, that are considered high priority nickel sulphide drill targets. We have commenced the process for drill permitting these compelling targets and hope to get these targets tested in the near term."

Technical Details

Nickel prospective ultramafic rocks extend 18km north along strike from Galileo's (ASX:GAL) Calisto nickel-PGE discovery and 11km northwest from S2 Resources' (ASX:S2R) Polar Bear nickel sulphide

prospects (Gwardar, Taipan & Halls Knoll)

- Refer to Figure 2.

Two conductors have been identified at Green Bananas HH1_A in the south and HH1_B in the west.

The southern target (HH1_A) FLTEM models varied from sub-vertical to 40° N/NNW dip, conductance ~1250-6000S+, with an areal size likely >200m x 200m. There appears to be an offset of the FLTEM models from those defined by MLTEM. The modelled conductor lies close to the inferred southern limb of a north plunging fold, at the contact between mafic and ultramafic rocks (Figures 3 – 5).

The western drill target (HH1_B) is best modelled as a plunging, short strike length conductor of high conductance (>20,000S) with dimensions ~75m x 250m+, occurring at an estimated depth of 50-75m to the top of the body. The conductor is modelled at the contact between mafic and ultramafic rocks (Figures 3, 4 & 6).

The EM conductors lie adjacent to the well-defined surface

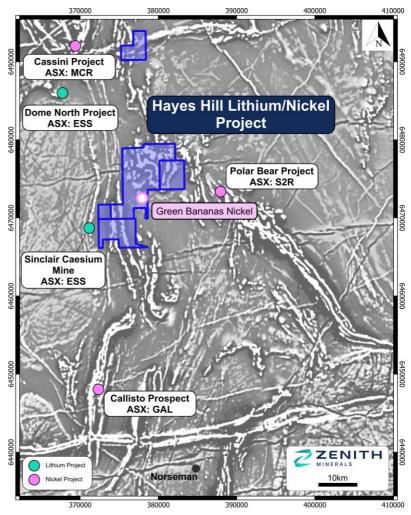


Figure 2: Hayes Hill Project Relative to Nearby Nickel & Lithium Projects

geochemical targets at Green Bananas. The geochemical anomaly is consistent with nickel-sulphide geochemical fertility ratios (Ni/Cr ratio, Kambalda ratio and Ni-MgO residuals) developed by researchers based on published studies of Western Australian nickel sulphide deposits^{1,2,3}.

HH1_B is a clear direct drill target, whilst HH1_A will need drilling and downhole EM (DHTEM) to define potential bedrock conductors given the variability/less confidence in the MLTEM/FLTEM modelling.

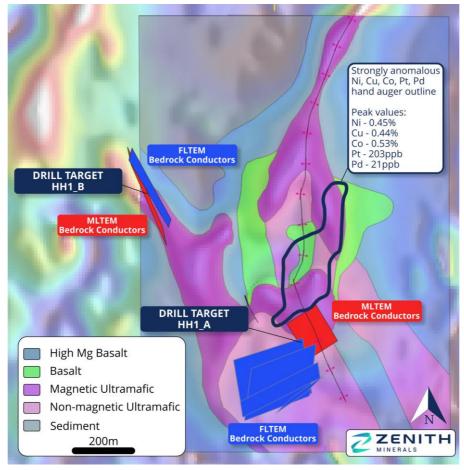


Figure 3: Plan Showing Green Bananas Nickel Sulphide Targets

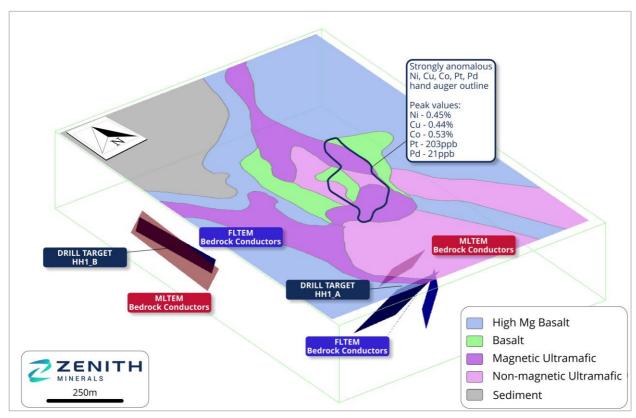


Figure 4: 3D Model of Green Bananas Nickel Sulphide Targets (view looking northeast)

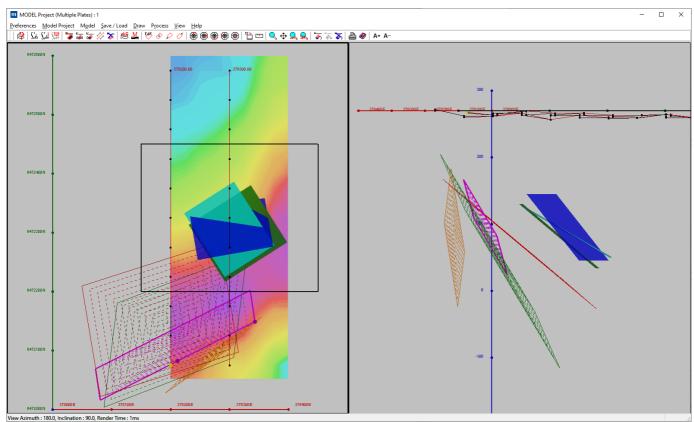


Figure 5: FLTEM & MLTEM - Green Bananas - Conductor HH1_A Models (PLAN VIEW (CH30BZ Imagery) Cross Section ENE View (Model scenarios MLTEM plates in solid colours blue/green, FLTEM as hatched polygons)

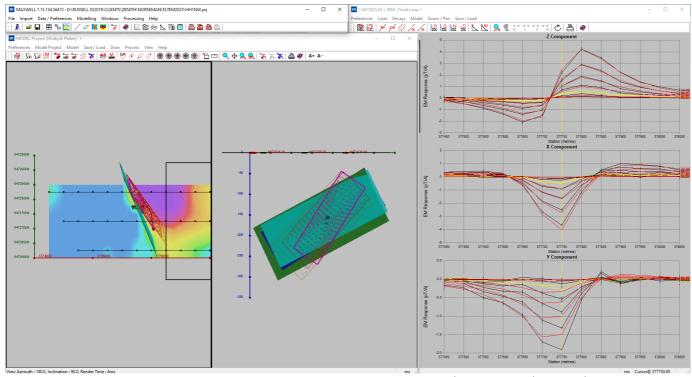


Figure 6: FLTEM & MLTEM – Green Bananas - Conductor HH1_B Models (PLAN VIEW (CH40BZ) Cross Section – West View (Model scenarios - MLTEM plates in solid colours blue/green, FLTEM as hatched polygons)

MLTEM surveys were also completed at HH2 and Plat X targets (Figure 7) generating several strike extensive conductors, but at this stage, those EM conductors are not considered significant as they are adequately explained by sedimentary rock packages.

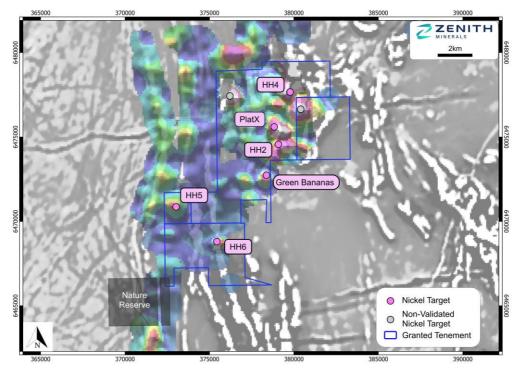


Figure 7: Hayes Hill Nickel Targets

Coloured Image of Ni/Cr Ratios1 overlying B&W Image of Aeromagnetics

(Grey dots = anomalies yet to be infill sampled and validated. They are not currently considered significant as they are derived from one or two isolated samples and lie at the edge of the current sample grid)

Next Steps

- Complete project wide surface soil sampling and mechanised auger sampling to assess both nickel and lithium potential.
- Drill permitting to test nickel sulphide targets at Green Bananas

Background on Hayes Hill Project

The Hayes Hill project consists of 4 granted exploration licences in a highly mineral prospective corridor with significant untested **lithium and nickel potential**. The project is situated 10 – 14km to the east and southeast of the Dome North lithium pegmatite deposit and immediately east of the Sinclair caesium pegmatite mine both owned by Essential Metals Limited (ASX:ESS). Liontown's (ASX:LTR) Buldania lithium deposits are located a further 43km to the southeast of the Hayes Hill project area (Figure 2).

Nickel prospective ultramafic rocks extend 18km north along strike from Galileo's (ASX:GAL) Calisto nickel-PGE discovery and 11km northwest along strike from S2 Resources' (ASX:S2R) Polar Bear nickel prospects (Gwardar, Taipan & Halls Knoll) – Refer to Figures 1 & 2.

References:

¹Ni/Cr ratio - Brand, N (1999) Element ratios in nickel sulphide exploration: Vectoring towards ore environments. Journal of Geochemical Exploration. Vol 67, Issues 1-3, December 1999, pages 145-165.

²Kambalda ratio - Brand, N (1999) Element ratios in nickel sulphide exploration: Vectoring towards ore environments. Journal of Geochemical Exploration. Vol 67, Issues 1-3, December 1999, pages 145-165.

³Ni/MgO residual exploration index - Brand, N (2004) Geochemical Expressions of Nickel Sulphide Deposits; AIG Seminar; "Advances and Innovations in the Exploration for Nickel Sulphide Deposits"; Perth, WA; 12th Nov 2004.

About Zenith Minerals

Zenith Minerals Limited (ASX:ZNC) is an Australian-based minerals exploration company leveraged to the increasing global demand for metals critical to the production processes of new energy industrial sectors.

The Company currently has four lithium projects all located in Western Australia. Split Rocks covers landholdings of approximately 600 km² in the Forrestania greenstone belt immediately north of the established Mt Holland lithium deposit. Waratah Well, located approximately 20km northwest of the regional town of Yalgoo in the Murchison Region holds a lithium pegmatite with ongoing exploration required.

In January 2022, Zenith granted EV Metals Group (EVM) the exclusive right, but not the obligation, to earn a 60% project interest in the Split Rocks and Waratah Well projects, by sole funding the completion of a feasibility study before January 2024. Under the relevant agreement:

- The feasibility study must have a Mineral Resource of a minimum of 35Mt @ 1.2% Li₂O and be capable of producing 330,000 tonnes of spodumene concentrate with a grade of not less than 6%Li₂O for a minimum of a 10-year period: and
- If EVM fails to complete the feasibility study prior to 6 January 2024, then it will be deemed to have withdrawn from the earn-in and the agreement will terminate on 6 January 2024.

As far as Zenith is aware the feasibility study has not yet commenced. Zenith does not believe that EVM will be able to complete the feasibility study within the earn-in period and is preparing to reassume full control of a 100% interest in the Split Rocks and Waratah Well lithium projects in early January 2024. Upon full control of these projects being regained, Zenith intends to update the market on its plans to advance these assets towards development and deliver enhanced value for its shareholders.

Zenith has an additional two lithium projects. In January 2023, Zenith secured an option to acquire 100% of the Hayes Hill lithium – nickel project, located in the Norseman – Widgiemooltha area of Western Australia. A further project Yilmia, covers an 8 km long lithium prospective area in the Coolgardie district, some 13 km southeast of the recent Kangaroo Hills lithium discovery by ASX:FBM. Zenith may earn up to a 100% interest in the lithium rights at the Yilmia project.

In addition to its battery metal assets Zenith owns a portfolio of gold and base metal projects. It retains a 25% free carried interest (to end bankable feasibility study) on the Earaheedy Zinc discovery, in Western Australia, with Rumble Resources Limited (ASX:RTR) and two main gold projects – Red Mountain in Queensland and Split Rocks in Western Australia.

To learn more, please visit www.zenithminerals.com.au

This ASX announcement has been authorised by the Board of Zenith Minerals Limited.

Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and a full-time employee of Zenith Minerals Limited. Mr Clifford 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 Clifford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information presented herein that relates to Exploration Results from the MLTEM and FLTEM surveying is based on information compiled and reviewed by the Russell Mortimer, a Competent Person who is a Member of The Australian Institute of Geoscientists and fairly represents this information. Mr Mortimer has sufficient experience 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 Mortimer is an independent Consultant Geophysicist at Southern Geoscience Consultants Pty Ltd and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Material ASX Releases Previously Released

The Company has released all material information that relates to Exploration Results, Mineral Resources and Reserves, Economic Studies and Production for the Company's Projects on a continuous basis to the ASX and in compliance with JORC 2012. The Company confirms that it is not aware of any new information that materially affects the content of this ASX release and that the material assumptions and technical parameters remain unchanged.

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Appendix 1: Hayes Hill Project - JORC Table 1

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. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse	All reported historic surface sampling is assumed to have been completed to industry standard. New Zenith soil, hand auger and mechanised auger sampling is being used to validate previous sampling.
		Plat-X soil samples were collected on a 200 x 400m spaced grid. The soil samples were sieved to -2mm. Multi element analyses of samples were undertaken by Quantum Laboratories by Aqua Regia ICP MS and OES method (A85513/14; A89065).
		Gascoyne auger drilling samples were drilled on 200m spaced lines with holes at 100m spacings along the lines. Samples were collected around 0.5m – 1m below the surface. Multi element analyses of the samples were undertaken by MinAnalytical Laboratory by Aqua Regia ICP-MS and OES method with pulps re-assayed for additional elements of interest by Jinning Laboratory (Fire Assay and ICP-MS/OES after peroxide fusion) and SGS (ICP-MS/OES after peroxide fusion) (A99274)
	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 (eg submarine nodules) may warrant disclosure of detailed information.	Hand auger samples were completed by Zenith at Green Bananas, infilling the Gascoyne Ni Anomaly; samples were collected from a depth between 0.2-0.75m below surface. Samples were analysed for Au, Pt, Pd, As, Co, Cr, Cu, Mg, Ni, Ti, Zn by Jinning laboratory by Aqua Regia ICP-MS method.
		In April 2023, Zenith geologists collected 33 rock chip samples across the Hayes Hill tenure, with 6 occurring within the Green Bananas project area. Samples were analysed by Jinning Laboratory for a 48-element suite (4AD/ICP-MS) in addition to Au, Pt, Pd by Fire-Assay

Criteria	JORC Code explanation	Commentary
		(FA50I)
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	No drilling results reported in this announcement.
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.	No drilling reported in this announcement.
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.	All Zenith soil samples and hand auger samples were geologically described. Samples collected by Gascoyne Resources were re-assayed for additional elements of interest by Jinning Laboratory (Fire Assay and ICP-MS/OES after peroxide fusion) and SGS (ICP-MS/OES after peroxide fusion). Zenith Minerals samples were assayed with a full-suite multi-element analysis (48 elements by 4AD/ICP-MS). The results were used to geochemically litho-type samples using the ioGAS software package, and were then compared to the visual logging for appropriate correlations and/or significant divergences in results. Where possible, associated recent rock chip samples were further used to correlate lithogeochemistry (quantitative) data with visual logging (qualitative data).
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.	No drilling results reported in this announcement. Plat X samples were analysed by Quantum Laboratories Perth by Aqua

Criteria	JORC Code explanation	Commentary
	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.	Regia ICP MS and OES method. Gascoyne Resources mechanised auger and Green Bananas hand auger samples were analysed by MinAnalytical Laboratory Perth by Aqua Regia and ICP MS and OES method, then re-assayed for additional elements of interest by Jinning Laboratory (Fire Assay and ICP-MS/OES after peroxide fusion) and SGS (ICP-MS/OES after peroxide fusion). Zenith samples were analysed by
		Jinning Laboratory in Perth for a 48- element suite by 4 -acid digest ICP- MS (4AD/ICP-MS), and by Fire Assay for Au, Pt and Pd (FA50I)
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	The assay techniques are industry standard and considered near total digestions for the elements reported. No geophysical tools used. QAQC for Zenith sample collection is industry standard with the use of matrix-matched CRM and blank material to ensure accuracy and precision from laboratory results.
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.	An independent 3 rd party consultant with significant experience in nickel-sulphide deposits of the Widgiemooltha area was engaged to assess the data and the interpretation of Zenith geologists.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in	No drilling results reported in this announcement. Grid system used to compile data was MGA94 Zone 51

Criteria	JORC Code explanation	Commentary
	Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	Open-source data was converted from AMG84 to MGA94 Zone 51 where the original grid was specified and where no prior conversion had taken place.
		Soil and Auger samples were taken on a 200m x 100m grid.
		Rock chip samples were selective sampling of available outcrop.
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.	No drilling undertaken
Sample security	The measures taken to ensure sample security.	Not known for historic sampling. Industry standard chain of custody was employed for all Zenith Minerals sample collection and dispatch.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sampling techniques consistent with industry standards.

Part 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 Hayes Hill Project tenements (E15/1588, E63/1773, ELA15/1668, ELA15/1957, ELA15/1919 and ELA63/2103) are 100% owned by Loded Dog Pty Ltd. The tenements are located on Crown Land. Zenith has an option to acquire 100% equity in the project via terms set out in ASX Release dated 19-Jan-23. Currently all the tenements are in good standing. There are no known

Criteria	JORC Code explanation	Commentary
		impediments to obtaining licences to operate in the area. The project is located within the
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Exploration and mining by other parties has been reviewed from open file reports available on WAMEX and has been used as a guide to Zenith's exploration activities. Previous exploration includes: • WMC (1994-2000) - A42071 / 46153 / 61650 • Resolute (1998) -A56776 • Pioneer Nickel (2004) -A69786 • Gold Field's Australia (2004) - A68106 • Pindon Explor (2008) -A69786 • Plat X Limited (2008) - A85513/14; A89065 • Avoca Resources (2011) - A106817 • Alacer Gold (2012) -A99048 • Gascoyne Resources (2012) - A99274 • Metals-X (2016) -A109579 • Argonaut (2016) -A114771 • Essential Metals (2021) - A127374 • Karora Resources (2021) - A127374 The reports and associated data packages were reviewed by Zenith geologists using both QGIS and ioGAS software packages.
Geology	Deposit type, geological setting and style of mineralisation.	The targeted mineralisation is "Kambalda Style" and/or "layered intrusion style" nickel sulphide mineralisation, and LCT type lithium pegmatites, with the target being the lithium mineral spodumene.
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 	No drilling reported in this announcement.

Criteria	JORC Code explanation	Commentary
	 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. 	
Data aggregation methods	 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. 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. 	No drilling reported in this announcement.
Relationship between mineralisatio n 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 (eg 'down hole length, true width not known'). 	No drilling reported in this announcement
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	Refer to Figures in the body of this announcement.

Criteria	JORC Code explanation	Commentary
Balanced reporting	 appropriate sectional views. 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. 	No drilling reported in this announcement.
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 Moving Loop Transient Electromagnetic (MLTEM) ground survey completed over 3 prospect areas. The MLTEM surveys were completed during August/September 2023. MLTEM configuration: • EMIT SMARTem24 receiver • JESSY DEEP HT SQUID B-field sensor • DRTX Transmitter • Loop size – 200x200m • 100-300m line spacing, primarily 200m • 100m station spacing. • 0.25-0.5Hz low base frequency • 42-53A current • ~1msec ramp time • Multiple readings at 32-48 stacks A Fixed Loop Transient Electromagnetic (FLTEM) ground survey completed over 2 high-interest targets. The survey was initiated over selected high priority targets, initially identified from a previous MLTEM surveying. The FLTEM surveys were completed during November 2023.

Criteria	JORC Code explanation	Commentary
Criteria	JORC Code explanation	FLTEM configuration: • EMIT SMARTem24 receiver • EMIT Fluxgate B-field sensor • DRTX Transmitter • Loop sizes – 300x250m up to 300x400m • 100m line spacing • 50m station spacing. • 0.25Hz low base frequency • 50A current • ~1msec ramp time • Multiple readings at 32 stacks
Further 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. 	Refer to body of this announcement. Drill testing of nickel sulphide targets is planned.