Zenith Defines Two EM Conductors

Ni-Cu-PGE Drill Target Confirmed at Waratah Well

Investment Highlights

- Two nickel-copper-platinum group element (Ni-Cu-PGE) drill targets
- Modelling of electro-magnetic (EM) geophysical data defines two bedrock conductors
- Coincident Ni-Cu-PGE surface soil anomaly
- Layered mafic-ultramafic intrusive host rocks
- Drill testing now scheduled for late October 2022

Zenith Minerals Limited (ASX:ZNC) ("Zenith" or "the Company") is pleased to provide a further update on the Waratah Well Ni-Cu-PGE drill target in Western Australia. The project is part of the Zenith Lithium Joint Venture with EV Metals Group.

Robust Ni-Cu-PGE Target Defined During Lithium Exploration Program

As previously announced (ASX Release 6-Sep-22) new Ni-Cu-PGE drill targets have been identified by Zenith's technical team as part of a holistic approach to exploration on the Waratah Well project area (Figure 1). The targets are defined by a strong Ni-Cu-PGE surface soil anomaly with two EM bedrock conductors now modelled as drill targets. The host sequence is a large mafic-ultramafic intrusion. The intrusion is also the host to lithium rich pegmatites that are the focus of exploration at Waratah Well.

Zenith's Managing Director Michael Clifford said: "I'm pleased to provide an update on detailed modelling by our geophysical consultants NewGen Geo. Their work has resolved two bedrock EM conductors at Waratah Well that are worthy of drilling follow-up. The EM conductors occur within a layered mafic-ultramafic intrusion lying below a Ni-Cu-PGE surface soil geochemical anomaly. It is planned to drill test these Ni-Cu-PGE targets at the same time as the upcoming lithium drilling campaign at Waratah Well."

Technical Details

The Waratah Well Project is located approximately 20km northwest of the regional town of Yalgoo in the Murchison Region of Western Australia and is being explored as part of the Zenith Lithium Joint Venture with EV Metals Group (ASX Release 13-Jan-22). Ni and Cu form part of the battery minerals suite that are included in the joint venture, with PGE's being retained 100% by Zenith.

The Waratah Well project area lies immediately adjacent to the West Yilgarn Ni-Cu-PGE province that is host to Chalice Mining Ltd (ASX:CHN) Gonneville PGE-Ni-Cu-Co-PGE deposit (Figure 1).

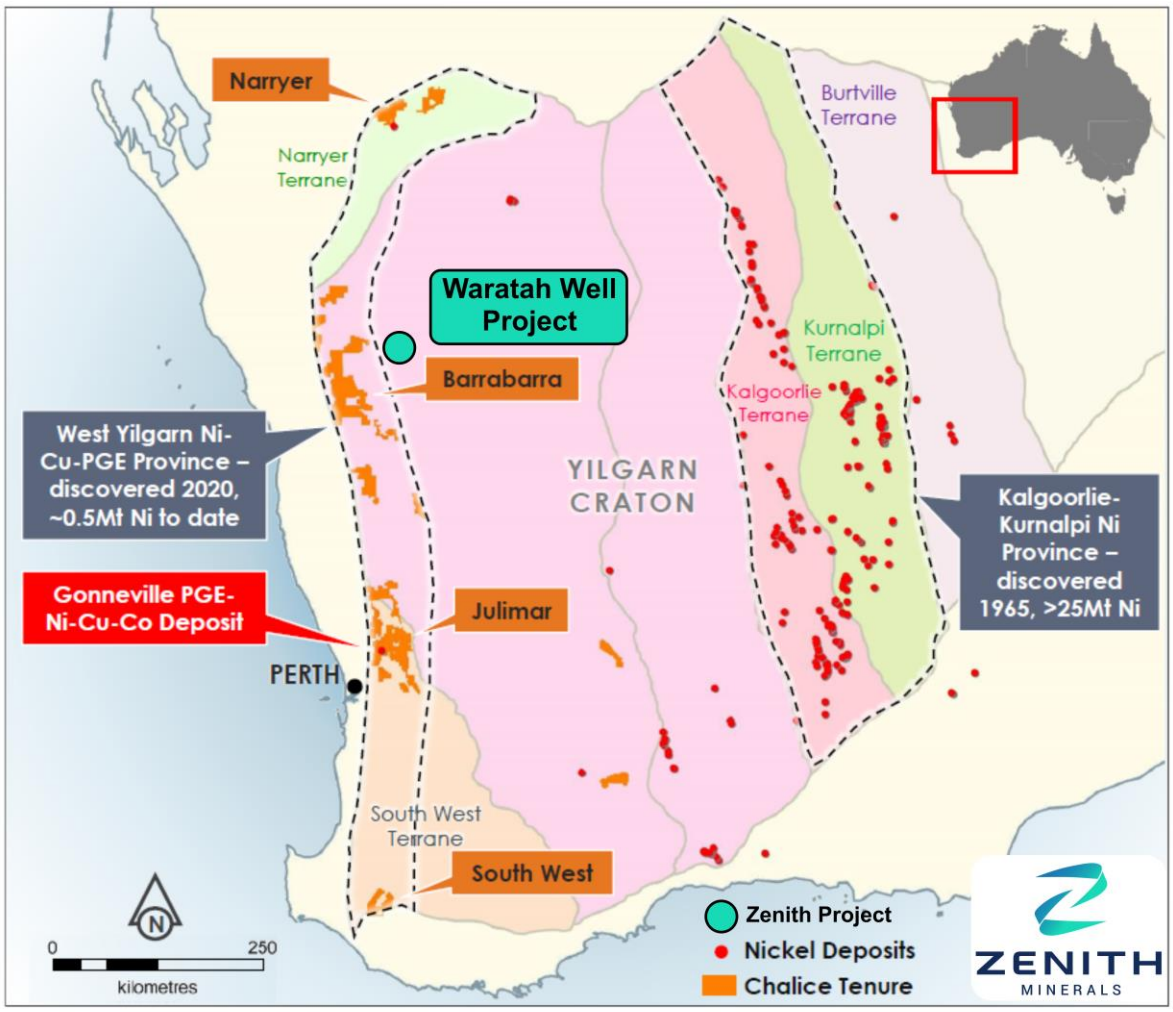

Figure 1: Waratah Well Project Area with Respect to the West Yilgarn Ni-Cu-PGE Province

At Waratah Well a layered mafic – ultramafic intrusive (comprising leucogabbro-norite grading into gabbronorite, anorthosite and leuconorite as well gabbro and minor pyroxenite, basalt and ultramafic schists) crops out over an area approximately 10km x 4.5km, extending under alluvial cover to the northeast and southwest. Primary igneous layering in the prospect area dips shallowly to the south. The layered intrusion is host to lithium pegmatites that are the focus of exploration at Waratah Well (Figure 2).

Soil geochemical samples, originally collected for lithium exploration, were re-analysed for Ni-Cu and PGE's. This work defined a strong soil geochemical anomaly at the western end of the mafic-ultramafic intrusive outcrop, before being obscured to the west by alluvium cover. The anomaly has broad Ni anomalism (>100ppm Ni) extending over an area 1km x 0.5km with a peak value of 186ppm Ni. The Cu anomaly extends over an area 1km x 0.25km

(>100ppm Cu) peak value 290 ppm Cu, whilst PGE anomaly is 1km x 0.1 to 0.2km in width defined by the >50ppb Pt+Pd with a 112ppb Pt+Pd peak.

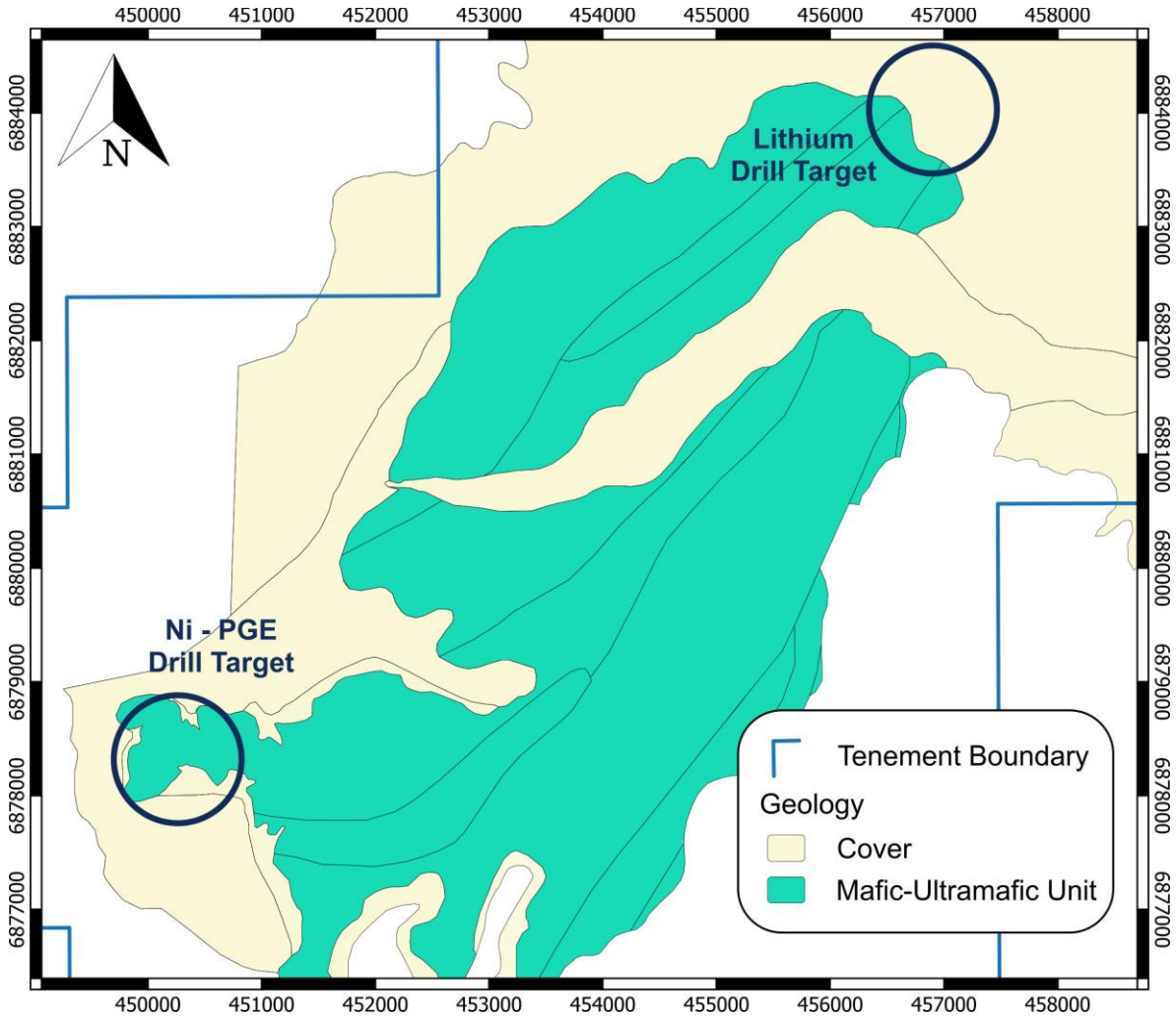

Figure 2: Waratah Well – Ni-Cu-PGE Drill Target and Lithium Prospect

Moving loop EM geophysical surveying was chosen as an appropriate tool to assess the geochemical anomaly area, for bedrock EM conductors, that may indicate subsurface accumulations of Ni-Cu sulphides (ASX Release 6-Sep-22). Final geophysical data processing and interpretation has now been completed defining two EM conductors (NE and SW) of interest that are likely of bedrock origin and worthy of drilling follow-up (Figures 3 and 4). The south dipping EM conductors are compatible with the shallow south dip of primary igneous layering within the mafic – ultramafic intrusive body.

The NE moving loop electromagnetic (MLEM) anomaly has an estimated time constant of 28ms and is best modelled using two EM plates, namely a flat lying 155m x 75m plate at 75m depth with a conductance of 1,150 S underlain by a shallow south dipping 460m x 220m plate at 95m depth with a conductance of 1,350 S.

The SW MLEM anomaly has an estimated time constant of 48ms and is also best modelled using two shallow SSE dipping EM plates, namely a 450m x 260m plate at 165m depth with

a conductance of 1,100 S underlain by an 880m x 680m plate at 215m depth with a conductance of 820 S.

Drill testing of the Ni-Cu-PGE target is scheduled for late October this year along with deeper RC drilling to follow-up the thick lithium pegmatites detailed in the Company's ASX Release dated 6-Jul-22.

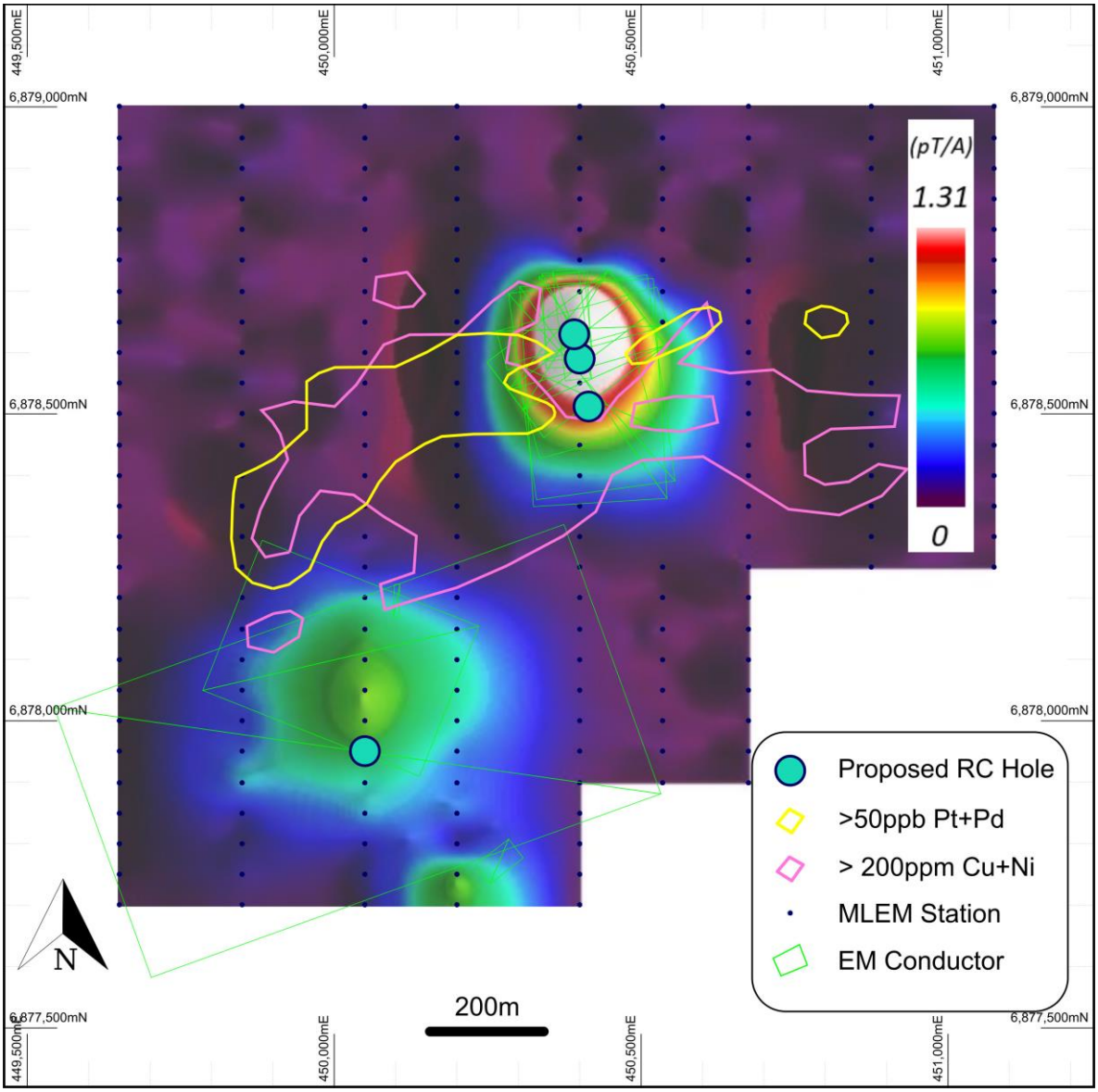

Figure 3: Waratah Well – Ni-Cu-PGE Drill Target (Modelled EM plates and proposed drill holes over MLEM Total Field (ch26) image)

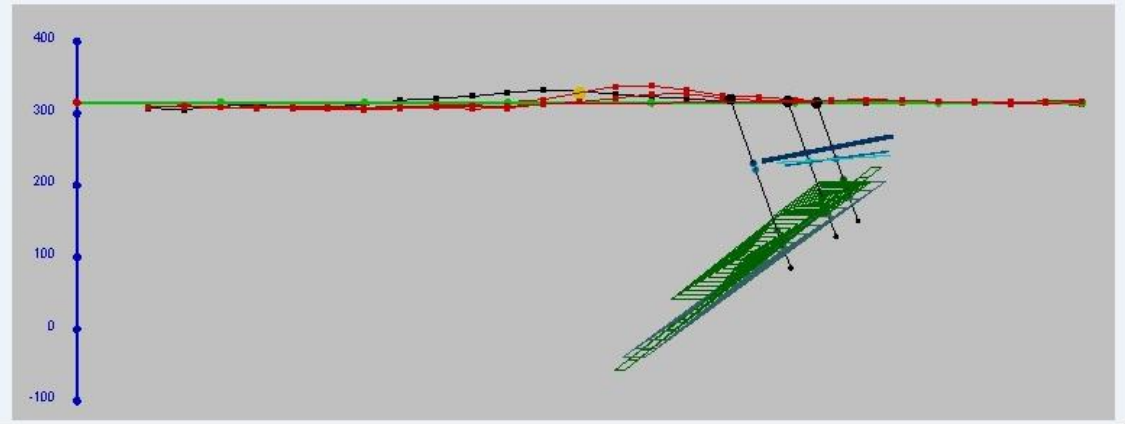

Figure 4: Modelled EM plates at the NE Target and Proposed Drillholes Viewed from East

Competent Persons Statement

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an 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.

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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About Zenith Minerals

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

The Company currently has three lithium projects all located in Western Australia. Split Rocks, located within the Southern Cross region mid-way between Perth and Kalgoorlie, is now being systematically explored under the terms of the joint venture between Zenith and EV Metals Group (EVM). It covers landholdings of approximately 660km^2 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-caesium-tantalum pegmatite target with ongoing exploration. More recently, Zenith acquired a third lithium prospect, the Mt Ida North Project, located approximately 95km west of the regional town of Leonora in WA's Goldfields Region.

In January 2022, Zenith entered into a joint venture with EVM, a global battery materials and technology company focussed on the production of high purity chemicals and battery materials required in rechargeable batteries for electric vehicles and renewable energy storage. EVM can earn a 60% interest in the lithium rights in these projects, with Zenith retaining a 40% project share, under terms that sees Zenith funded through to bankable feasibility on any of the project developments. Any lithium concentrate produced from these projects will provide critical raw material supply for EVM's Battery Chemical Complex in Yanbu, Saudi Arabia as part of an integrated global supply chain currently being developed by EVM. This will contribute to meeting the growing demand for stable, long-term supplies of critical raw materials, high purity chemicals and cathode active materials. The number of Australian-based lithium/EV metal projects currently in the JV could be further expanded over time if appropriate acquisition opportunities present themselves.

Zenith Minerals also holds an extensive portfolio of gold and base metal projects that includes 100% interest in Split Rocks Gold adjacent to the lithium site, 100% of the Develin Creek copper/zinc project in northern Queensland, 100% of the Red Mountain gold project in Queensland and a 25% interest in the Earaheedy zinc/lead project in Western Australia. It is proposed that these assets will be transferred into a separate ASX-listed company called Mackerel Metals Ltd.

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

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

JORC Tables

Section 1 Sampling Techniques and Data

(Criteria in this section apply 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.*	Soil sampling on 100m x 50m spacing
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Samples are considered to be representative of the material sampled.
	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 (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.	Soil samples sieved to -2mm and analysed for 48 element four acid ICP-MS and Pt, Pd, Au 30g FA ICP – AES.
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.).*	No drilling reported this release
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	No drilling reported this release
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	No drilling reported this release
	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 this release

Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	No drilling reported this release
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	No drilling reported this release
	The total length and percentage of the relevant intersections logged.	No drilling reported this release
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No drilling reported this release
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No drilling reported this release
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	No drilling reported this release
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	~200g of sample was pulverised and a sub-sample was taken in the laboratory and analysed.
Sub-sampling techniques and sample preparation - continued	*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.*	No duplicate samples were taken in the field.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Each sample was approximately 200g in weight sieved to -2mm which is appropriate to test for the grain size of material sampled.
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.*	Samples were analysed at ALS Laboratories in Perth and Brisbane, 200g was pulverised and a representative subsample was analysed 48 element four acid ICP-MS and Pt, Pd, Au 30g FA ICP – AES.
	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.	The sensor was an EMIT fluxgate measuring the three component B Field response. Transmitter was a TTX2 injecting a current of 90A into the loop at a frequency of 1 Htz. Receiver was an EMIT Smartem 24. At least 3 repeat readings were taken at each station.
	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.	The soil sampling relied on internal laboratory geochemical reference material and blanks for QA-QC. No external laboratory checks completed to date.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	At least 2 Zenith company personnel have been to the prospect area and observed samples.

	The use of twinned holes.	Nil
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Field data were all entered into a database
	Discuss any adjustment to assay data.	No adjustments were made.
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.*	Sample location is based on GPS coordinates +/- 5m accuracy
	Specification of the grid system used.	The grid system used to compile data was MGA94 Zone 50
Location of data points – continued	*Quality and adequacy of topographic control.*	Topography control is +/- 10m.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No drilling reported this release.
	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.	There is insufficient information to calculate a mineral resource
	Whether sample compositing has been applied.	N/A
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.*	Both soil sampling and EM surveying is of a sufficient density to remove orientation bias.
	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 bias based on current interpretation of shallow south dipping conductors.
Sample security	*The measures taken to ensure sample security.*	All samples were taken by Zenith personnel on site and retained in a secure location until delivered directly to the laboratory by Zenith personnel.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The sampling techniques and data have been reviewed by two company personnel who are qualified as Competent Persons.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and 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.*	Waratah Well is one of two projects being explored under the Zenith Lithium Joint Venture with EV Metals Group (ASX Release 13-Jan-22), where, among other terms, EVM may earn a 60% interest in the lithium rights (that includes Ni and Cu, but not PGE's) in the Waratah Well project by sole funding the completion of a feasibility study within 24 months, with Zenith retaining a 40% project share. The project is located on the Gabyon pastoral lease and is subject to native title claims.
	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.	All tenements are 100% held by Zenith and are in good standing with no known impediment to future granting of a mining lease
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Ni-Cu-PGE exploration in this area limited to a prospectivity review and petrographic study of ultramafic-mafic host rocks.
Geology	*Deposit type, geological setting and style of mineralisation.*	Target is Ni-Cu-PGE sulphide mineralisation hosted within mafic-ultramafic intrusive rocks
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:*	No drilling reported this release
	o easting and northing of the drill hole collar	
	o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	
	o dip and azimuth of the hole	
	o down hole length and interception depth	
	o 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 (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	No arithmetic weighting.
	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	N/A

	examples of such aggregations should be shown in detail.	
Data aggregation methods - continued	*The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No metal equivalents used
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	No drilling reported this release
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No drilling reported this release
	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').	No drilling reported this release
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.*	Refer to Figures 1 - 4 and descriptions in body of text
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 Exploration Results.*	Refer to Figures 1 - 4 and descriptions in body of text
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.*	EM Survey specifications: In-Loop array using 100m x 100m transmitter loop and 50m stations on 200m spaced lines. The sensor was an EMIT fluxgate measuring the three component B Field response. Transmitter was a TTX2 injecting a current of 90A into the loop at a frequency of 1 Htz. Receiver was an EMIT Smartem 24. Data were acquired by Wireline Services Group under the supervision of NewGen Geo. At least 3 repeat readings were taken at each station. EM modelling of conductor plates was carried out by geophysical consultants NewGen Geo.
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).*	RC drill testing planned
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to Figures 2 - 4