ASX Announcement/Press Release
Zenith Minerals Limited (ASX:ZNC)
24 January 2023

HIGH-GRADE LITHIUM DRILL RESULTS

Waratah Well Lithium Project

Investment Highlights

Waratah Well – High-Grade Lithium Drill Results

- 14m @ 1.0% Li_2O, incl 8m @ 1.5% Li_2O.
- 10m @ 1.4% Li_2O, incl 6m @ 2.0% Li_2O.
- 27m @ 0.8% Li_2O (true width 10m), incl 12m @ 1.2% Li_2O (true width 6m).

Zenith Minerals (ASX:ZNC) (“**Zenith**”, **or the “Company**”) is pleased to report high-grade lithium drill results from pegmatites at the Waratah Well Lithium Project in Western Australia (Figure 1). 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).

Technical Details

The current drill program consisted of a further 13 RC holes (ZWWRC056 – 068) at Waratah Well was designed to assess potential changes in lithium mineralogy down dip below the depth of weathering and possible lithium depletion of lithium mineralisation intersected in drilling completed in mid-2022 (Figures 1 – 3).

New drill results confirm the presence of high-grade lithium below the depth of weathering, returning significant lithium including:

- 14m @ 1.0% Li_2O, incl 8m @ 1.5% Li_2O.
- 10m @ 1.4% Li_2O, incl 6m @ 2.0% Li_2O.
- 27m @ 0.8% Li_2O (true width 10m), incl 12m @ 1.2% Li_2O (true width 6m).

Lithium mineralisation has been identified by laboratory XRD analysis as containing up to 84% petalite. High-grade petalite is not well documented in Western Australia but is known in several overseas deposits. An example of a lithium deposit containing significant petalite is the Arcadia lithium deposit in Zimbabwe formerly owned by Prospect Resources Ltd (ASX:PSC). Prospect reported a JORC 2012 Mineral Resource of 72Mt @ 1.06% Li_2O* and then subsequently completed a feasibility study and pilot plant before divesting its 87% project interest for $US378M ($US422M on a 100% basis)** as announced by ASX:PSC on 23-Dec-21, highlighting petalite as a potential significant economic contributor to lithium projects.

*full details are disclosed in ASX:PSC Release 11-Oct-21
**Refer to ASX:PSC Release 23-Dec-21

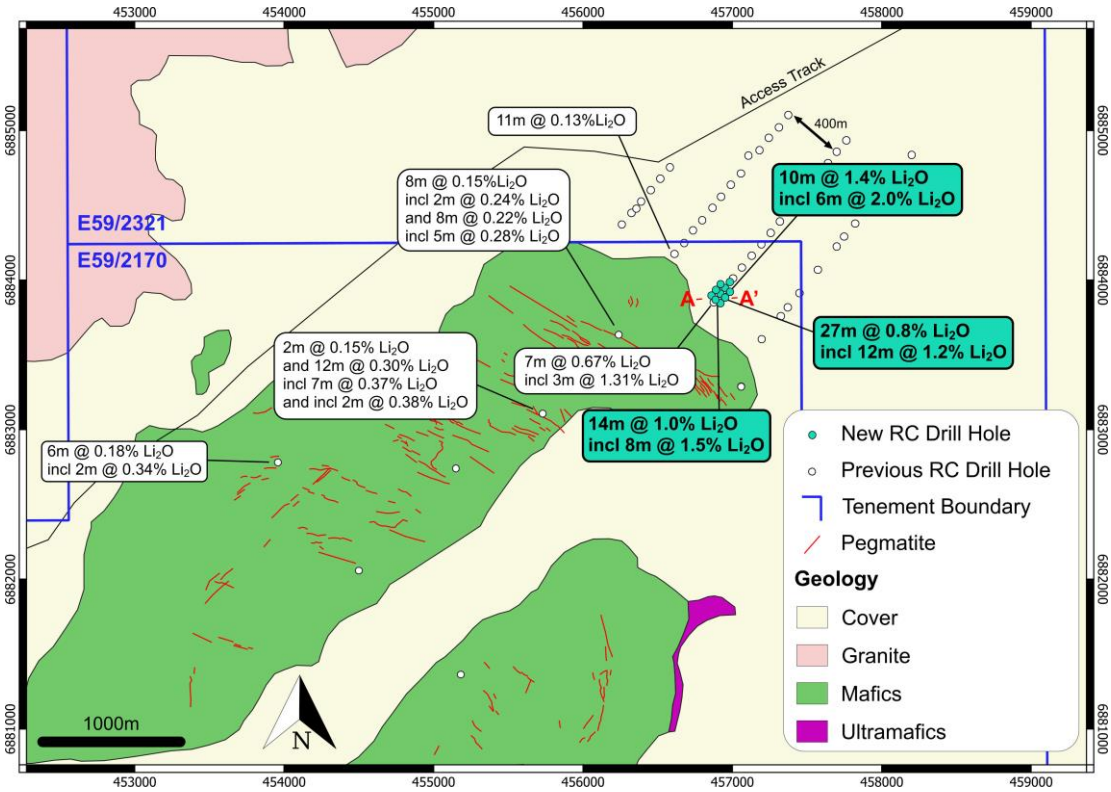

Figure 1: Waratah Well Lithium Prospect Area - Lithium Drilling Results and Location of Cross Section A-A'

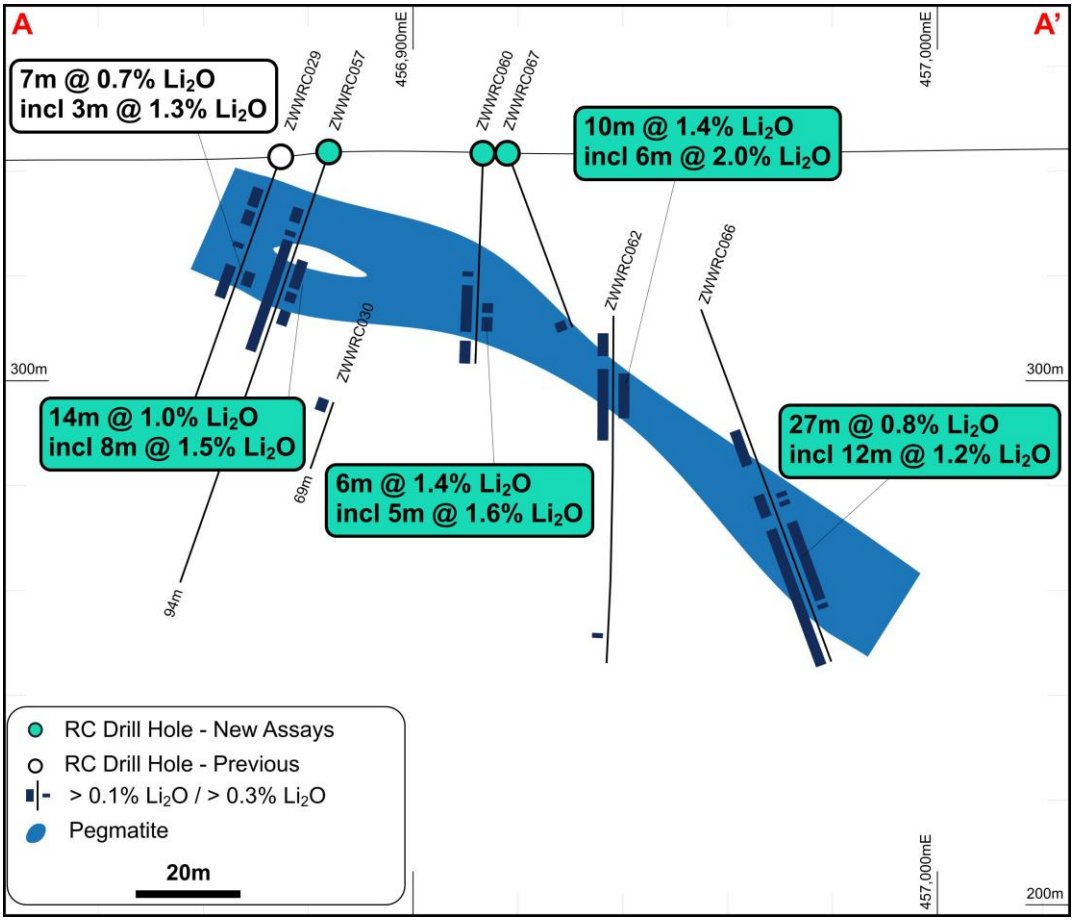

Figure 2: Waratah Well Lithium Prospect Drilling Cross Section A-A'

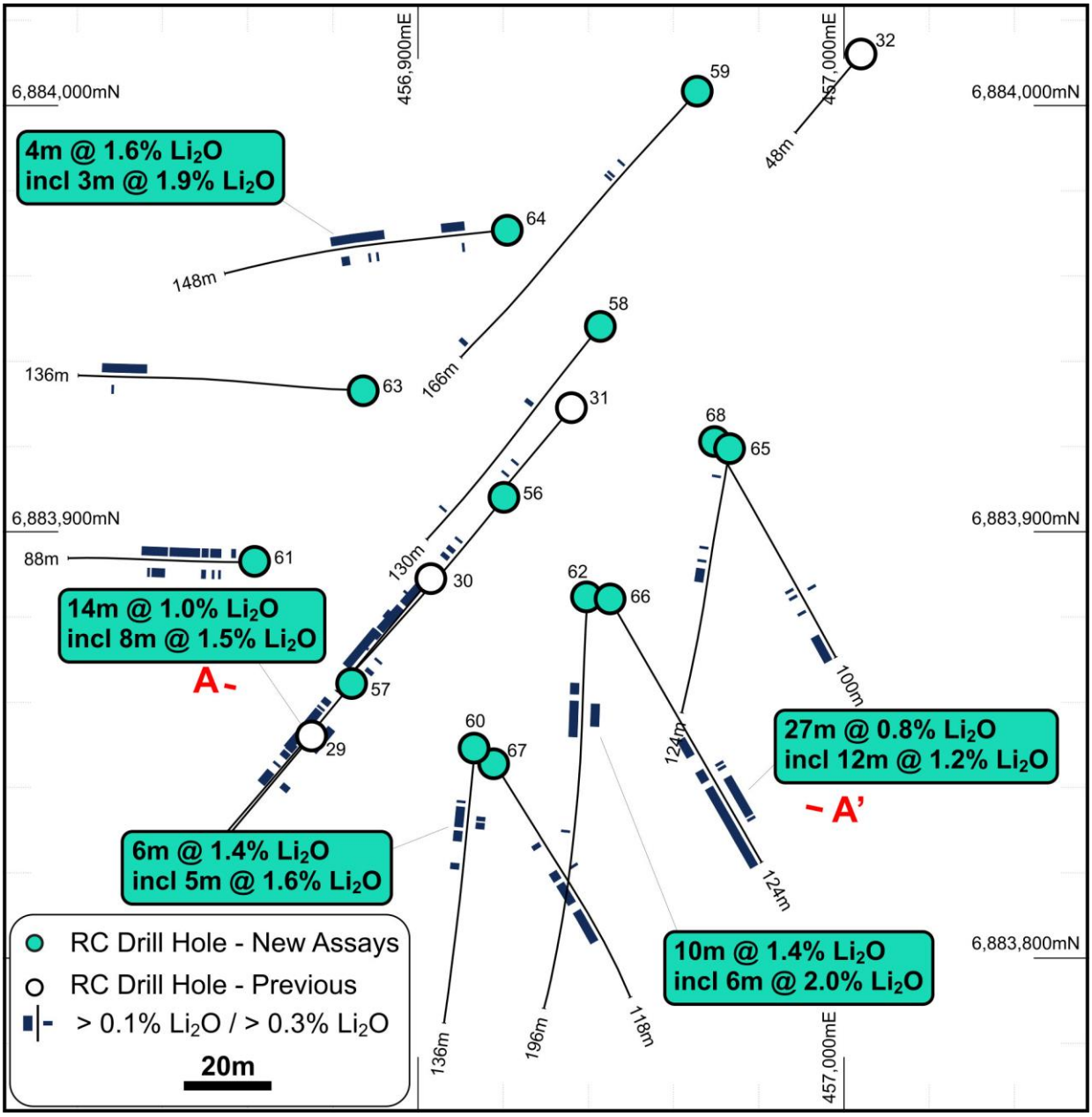

Figure 3: Waratah Well Lithium Prospect Collar Plan Showing Significant Lithium Results

Background on Lithium Target

An initial phase of 7 wide-spaced (1km spacing) RC drill holes were completed in early 2022 at the Waratah Well project to test a zone (>3km x >2km) of shallow dipping, outcropping lithium-tantalum rich pegmatite dykes. This work confirmed the presence of widespread lithium bearing pegmatite dykes over a 4km long zone, open to the north and east under soil cover (ASX Release 10-Mar-22). Mineralisation was identified as a mixture of holmquistite and trilithionite confirming the presence of fertile lithium-caesium-tantalum (LCT) pegmatite dykes.

The area north and east of those lithium mineralised drill holes was subsequently targeted with four (4) fences of RC drill holes (400m line spacing) to test for pegmatites under the soil cover in mid-2022.

Widespread pegmatites were encountered, with 22 out of the 47 holes intersecting pegmatites, ranging in thickness from 1m up to 24m.

Significant lithium results were intersected in 3 drill holes (ASX Release 6-Jul-22), with the higher lithium zones occurring at the base of the pegmatites in fresh rock, implying that the lithium may be depleted in the near surface weathered zone. Better results included: ZWWRC029 - 7m @ 0.67% Li_2O, including 3m @ 1.31% Li_2O at the base of the 24m thick pegmatite, with the upper portion being strongly weathered and ZWWRC030 – 22m @ 0.22% Li_2O including 1m @ 0.61% Li_2O, upper portion of the pegmatite also weathered. XRD analysis confirmed that the lithium minerals, of those better mineralised zones, are dominantly petalite.

The confirmation of lithium mineralisation being petalite is very positive. The follow-up drill program reported in this release shows significant concentrations of lithium down dip of the drilling completed in mid-2022.

Next Steps

Planning is in progress for a substantial follow-up drill program to define the extents of lithium mineralisation that remains open to the north, south and east under shallow soil cover at Waratah Well.

Executive Chair David Ledger said: *"we are very pleased that we now have two lithium projects, Waratah Well and Split Rock in Western Australia, both returning high-grade lithium drill results. We have an exciting year ahead with large drill campaigns planned to unlock the potential of both lithium projects. I look forward to providing further updates on both projects."*

Table 1: Drill Collar Location Details

Hole ID	Hole Type	Easting	Northing	Depth (m)	Azimuth	Dip
ZWWRC056	RC	456920	6883908	100	220	-60
ZWWRC057	RC	456884	6883864	94	220	-60
ZWWRC058	RC	456943	6883948	130	220	-60
ZWWRC059	RC	456966	6884003	166	220	-60
ZWWRC060	RC	456913	6883849	136	190	-60
ZWWRC061	RC	456862	6883893	88	260	-60
ZWWRC062	RC	456940	6883885	196	190	-60
ZWWRC063	RC	456887	6883933	136	260	-60
ZWWRC064	RC	456921	6883971	148	260	-60
ZWWRC065	RC	456973	6883920	124	190	-60
ZWWRC066	RC	456945	6883884	124	150	-55
ZWWRC067	RC	456918	6883846	118	150	-55
ZWWRC068	RC	456970	6883921	100	150	-55

Table 2: Significant Drill Results

Hole ID	From (m)	To (m)	Interval (m)	Li_2O (%)	Cs (ppm)	Rb (ppm)	Ta (ppm)	Unit
ZWWRC056				NSR				
ZWWRC057	**23**	**37**	**14**	**1.03**	**95**	**2351**	**27**	**Peg**
incl	**24**	**32**	**8**	**1.52**	**90**	**2755**	**30**	**Peg**
ZWWRC058				NSR				
ZWWRC059				NSR				
ZWWRC060	**33**	**39**	**6**	**1.40**	**83**	**2451**	**24**	**Peg**
incl	**34**	**39**	**5**	**1.56**	**70**	**2081**	**25**	**Peg**
ZWWRC061	16	25	9	0.27	277	2384	40	Peg/Bas
and	42	50	8	0.52	161	2030	19	Peg/Bas
incl	**44**	**45**	**1**	**1.24**	**56**	**1771**	**15**	**Peg**
ZWWRC062	**49**	**59**	**10**	**1.39**	**98**	**2376**	**33**	**Peg/Bas**
incl	**50**	**56**	**6**	**1.95**	**84**	**2442**	**23**	**Peg**
ZWWRC063	118	119	1	0.34	155	818	12	Bas
ZWWRC064	22	23	1	0.71	167	4667	16	Peg
and	64	69	5	0.37	163	1141	20	Peg/Bas
and	**79**	**83**	**4**	**1.63**	**71**	**2000**	**22**	**Peg**
incl	**79**	**82**	**3**	**1.85**	**74**	**1830**	**21**	**Peg**
ZWWRC065				NSR				
ZWWRC066	80	107	27	0.75	126	3489	29	Peg
incl	**90**	**102**	**12**	**1.17**	**118**	**3021**	**29**	**Peg**
ZWWRC067	**54**	**55**	**1**	**1.40**	**128**	**4215**	**30**	**Peg**
ZWWRC068	71	72	1	0.49	789	5000	39	Peg

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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 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 EV Metals Group (EVM), a global battery material and technology company with plans to develop an integrated Battery Chemicals Complex at Yanbu Industrial City on the western coast of Saudi Arabia. EV Metals 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 the Yanbu complex 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.

In addition to its battery metal assets, Zenith owns a portfolio of gold and base metal projects that was intended for a demerger into a separate company, Mackerel Metals Limited, to be listed on ASX. Following a review of market conditions, the Company decided to defer the strategy of a spin-out and instead advance these projects under Zenith's stewardship (ASX release 2-Dec-22). To this end, it has engaged the services of experienced geologist and resources professional Kevin Seymour to advance that portion of the Company's portfolio. Mr Seymour is a highly experienced and credentialled exploration geologist with broad experience in different commodities and geological terrains. He was the Managing Director of Woomera Mining Ltd and was formerly the General Manager of Exploration at Ramelius Resources Ltd. He held senior exploration roles with Glengarry Resources, Sons of Gwalia and Delta Gold.

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 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.

Appendix 1: Waratah Well Lithium Drilling - JORC Table 1

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.*	1m reverse circulation drill samples were collected at depths ranging from 0 to 196m depth. Samples were collected via a cyclone.
	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 intervals 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.	Slimline Reverse circulation drilling was used to obtain 1m samples from which 2 kg was pulverised with analysis for lithium by sodium peroxide fusion with ICP-MS & OES finish.
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.).*	Slimline Reverse circulation face sample bit
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Recovery of all samples was estimated visually
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Reverse circulation face sample bit ensured good recoveries throughout the drill program
	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.	Acceptable overall sample recoveries throughout drill program no bias likely.

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.*	All drill samples were logged by a qualified geologist and descriptions recorded in a digital data base.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Qualitative logging, representative sample retained for each drill metre
	The total length and percentage of the relevant intersections logged.	100%
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No core
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Rotary splitter for each 1m sample.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples were analysed at SGS Laboratories in Perth, 2 kg was pulverised and a representative subsample was analysed for lithium by sodium peroxide fusion with ICP-MS & OES finish.
	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 2kg in weight 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 SGS Laboratories in Perth, 2 kg was pulverised and a representative subsample was analysed for lithium by sodium peroxide fusion with ICP-MS & OES finish.
	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.	Semi-quantitative XRD analysis was used to determine the mineral species of lithium mineralised zones. The sample was supplied by the client to Microanalysis Australia for the above-mentioned analyses. A representative sub-sample was removed and lightly ground such that 90% was passing 20 µm. Grinding to this size helps eliminate preferred orientation. Only crystalline material present in the sample will give peaks in the XRD scan. Amorphous (non-crystalline) material will add to the background. The search match software used was Eva 4.3. An up-to-date ICDD card set was used. The X-ray source was cobalt radiation. No standards were used in the quantification process. The concentrations were calculated

		using the normalized reference intensity ratio method where the intensity of the 100% peak divided by the published I/Ic value for each mineral phase is summed and the relative percentages of each phase calculated based on the relative contribution to the sum. This method allows for slight attention to be paid to preferred orientation but is limited in considering other factors including but not limited to; variable crystallinity, alteration, fluorescence, substitution and lattice strain. Chemical assay data (XRF/ICP) was supplied by the client as an elemental relative abundance/concentration indicator. The XRD concentration of the interpreted phases (below) may have been adjusted in consideration of the chemical assay.
	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.	Blanks and certified reference material for lithium were included in the analytical batches and indicate acceptable levels of accuracy and precision. XRD analyses of 9 mineralised intervals confirms the high-grade lithium host mineral as petalite.
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 and representative drill chip 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.*	RC holes drilled at nominal 50 x 50m spacing.
	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.	Simple weight average mathematical compositing applied

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.*	Drilling is angled at -60 degrees to the SW and W and is generally close to representing true width thickness of the gently NE dipping lithium mineralisation, unless otherwise stated in the text of this report, based on the current geological interpretation. Further drilling is required to confirm this interpretation.
	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 dipping lithium mineralisation
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 Result

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 (refer to ASX Release 13th January 2022), where, among other terms, EVM may earn a 60% interest in the lithium rights 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.*	No previous lithium exploration in this area
Geology	*Deposit type, geological setting and style of mineralisation.*	Target is lithium hosted as the mineral spodumene in pegmatites, akin to deposits such as Greenbushes, Mt Marion, Wodgina and Pilgangoora all located in Western Australia
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:*	Drill collars are provided in Table 2 whilst significant lithium results are included in Table 1.
	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.*	Simple arithmetic weight averaging with minimum cut-off grade of 0.3% Li_2O with a maximum of 4m internal dilution and high-grade reported at 1% Li_2O no internal dilution.
	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.	As above and included in Tables
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.*	Drilling is angled at -60 degrees to the SW and W and is generally close to representing true width thickness of the gently NE dipping lithium mineralisation, unless otherwise stated in the text of this report, based on the current geological interpretation. Further drilling is required to confirm this interpretation.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	As above
	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').	Drilling is angled at -60 degrees to the SW and W and is generally close to representing true width thickness of the gently NE dipping lithium mineralisation, unless otherwise stated in the text of this report, based on the current geological interpretation. Further drilling is required to confirm this interpretation.
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 & 3 and Tables 1 - 2 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 & 3 and Tables 1 - 2 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.*	No other meaningful or material exploration data to be reported at this stage
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).*	Additional RC drilling planned to test follow-up on the new thick lithium pegmatite intersections.
	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 1 & 3