



3 June 2019

ASX ANNOUNCEMENT

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## Anson Produces Battery Quality Lithium Carbonate

### Highlights:

- ~1 kg of 99.9% pure lithium carbonate produced
- Purity exceeds specification provided by Anson's prospective customer in Asia
- Low impurities, tight particle size distribution and low water content
- Battery grade lithium carbonate proof of concept work complete
- Results to guide the final design of the planned in-field pilot plant

Anson Resources Limited (Anson) has produced ~1 kg of battery quality lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) from brine sourced from its Paradox Brine Project near Utah, USA (the Project) via bench top test work as part of the design and engineering of Anson's planned in-field pilot plant.

A photo of Anson Director Bruce Richardson with Tom Currin, from Southwest Technologies, with the ~1kg battery quality lithium carbonate sample is pictured in Figure 1.



Figure 1: Bruce Richardson and Tom Currin with Anson's ~1kg Battery Quality  $\text{Li}_2\text{CO}_3$  Sample

The sample was produced using a dedicated and advanced ion exchange (IX) system operated using accelerated parameters to produce eluate for the lithium carbonate sample project with only one pass of IX. Lilac Solutions processed over 3,500 L of 180 mgLi/L Paradox Basin brine to produce approximately 20 L of high purity lithium chloride concentrate at

approximately 18,000 mg/L of lithium. In the in-field pilot and commercial operations when commercial Lilac operating conditions will be used, Anson expects lithium recoveries from brine to eluate of >80%, as reported in announcement dated 11 May 2019.

Figure 2 shows 4,000 L of Anson’s Paradox Basin Raw Brine at the Lilac Solutions’ Facility in Oakland, California, USA.



**Figure 2: 4,000L of Anson Paradox Basin Raw Brine at the Lilac Solutions Facility in Oakland, CA**

The eluate produced by Lilac Solutions was purified by Southwest Technologies using conventional chemical treatments and carbonated with soda ash to produce lithium carbonate from the purified lithium chloride eluate with no bicarbonation step for purification. The lithium carbonate was then washed with deionized water, dried, and micronized using a jet mill to produce the sample according to a battery quality particle size distribution (PSD) provided by Anson’s prospective customer.

A Malvern Mastersizer 2000 Laser Diffraction Particle Size Analyser was used to analyse the PSD at SGS Laboratories in Lakefield, Ontario.

The PSD of the sample is shown below in Table 1 which compares it to a typical battery quality specification based on a number of specifications reviewed by Anson<sup>1</sup>:

Size Fraction	Anson Lithium Carbonate Particle Size (µm)	Typical Battery Quality Specification (µm)
D10	1.6	1.4-1.8
D50	5.3	4-6
D90	12.7	< 15
Dmax	28.2	< 40

**Table 1: Particle Size Distribution of Anson’s Lithium Carbonate Sample**

This particle size distribution satisfies the strict, confidential specification provided by Anson’s prospective customer. This is a particle size distribution that can be readily used for manufacturing batteries, and will satisfy most other specifications of cathode material manufacturers. The “D-value” for the particle size distribution is the intercept for which 10%, 50%, 90%, and all of the mass of the sample are below a certain particle size. Ex. The largest

<sup>1</sup> Based on review by Anson of public specifications from Albemarle, Orocobre, FMC, and others.

particles in the sample are 28.2 microns, and 50% of the mass of the sample is constituted by particles smaller than 5.3 microns.

Figure 3 shows the lithium carbonate drying in trays at the Southwest Technologies laboratory and Figure 4 shows the lithium carbonate in the hopper of the jet mill (L) and entering the jet mill (R).



**Figure 3: Lithium Carbonate Drying in Trays at the Southwest Technologies' Laboratory**



**Figure 4: Lithium Carbonate in the Hopper of Jet Mill (L) and Entering the Jet Mill (R)**



### Comparison of Chemical Composition to Typical Cathode Purchasing Specifications:

The  $\text{Li}_2\text{CO}_3$  sample meets all of the strict impurity specifications of Anson's prospective customer. Table 2 below presents a comparison of the assay of Anson's sample performed by SGS Laboratories in Lakefield, Ontario, and Applied Technical Services in Marietta, Georgia compared to a typical battery quality lithium carbonate specification compiled by Anson using public information.<sup>2</sup>

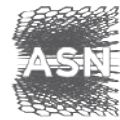
Component	Analysis Method	Anson Lithium Carbonate Sample Assay Results	Typical $\text{Li}_2\text{CO}_3$ Specification for Cathode Purchasing
		<i>ppm unless otherwise stated</i>	
$\text{Li}_2\text{CO}_3$ (%)	Acidimetric Titration	99.9%	>99.5%
Al	ICP-AES	3	5
B	ICP-AES	< 4 (BDL)	10
Ca	ICP-AES	< 9 (BDL)	50
Cr	ICP-AES	< 1 (BDL)	5
Cu	ICP-AES	< 1 (BDL)	5
Fe	ICP-AES	3	5
K	ICP-AES	< 10 (BDL)	10
Mg	ICP-AES	4	50
Mn	ICP-AES	< 0.5 (BDL)	10
Na	ICP-AES	55	200
Ni	ICP-AES	< 6 (BDL)	5
Pb	ICP-AES	< 20 (BDL)	5
Sr	ICP-AES	1	5
Ti	ICP-AES	1	5
Zn	ICP-AES	< 7 (BDL)	5
Cl	Argentometric Titration	0.2	100
SO <sub>4</sub>	ICP-AES	< 10 (BDL)	500
H <sub>2</sub> O	Karl Fischer Titration	0.06%	< 0.20%
Ignition Loss	500F for 30 min	0.10%	0.40%

**Table 2: Chemical Composition of Anson's Battery Quality Lithium Carbonate Sample (BDL = below detection limit)**

Most key elements in the SGS assay of the Anson  $\text{Li}_2\text{CO}_3$  sample are below the detection limit of the ICP-AES (inductively coupled plasma atomic emission spectroscopy) instrument, and the ones that are above the detection limit do not exceed typical battery quality lithium carbonate specifications, which are shown in the right-hand column in Table 2. Based on the composition of metals above their detection limits (ex. Fe, Al), Anson expects all metals BDL to be within the specification of the prospective customer.

The  $\text{Li}_2\text{CO}_3$  sample exceeds the specifications provided by Anson's prospective customer for all elements in the specification.

<sup>2</sup> Based on review by Anson of public specifications from Albemarle, Orocobre, FMC, and others.



## **Progress on In-Field Pilot Plant**

The learning from this stage of the design and engineering step is being incorporated into the flow sheet and final designs for the off-site production of a 20 kg sample to commence product qualification testing with prospective customers and for the in-field pilot plant which is intended to produce larger  $\text{Li}_2\text{CO}_3$  samples.

The in-field pilot will utilize industrial-scale, continuous processing equipment which will unlock Anson's ability to achieve very high lithium recoveries from brine to produce battery quality lithium products.

**ENDS**

## **For further information please contact:**

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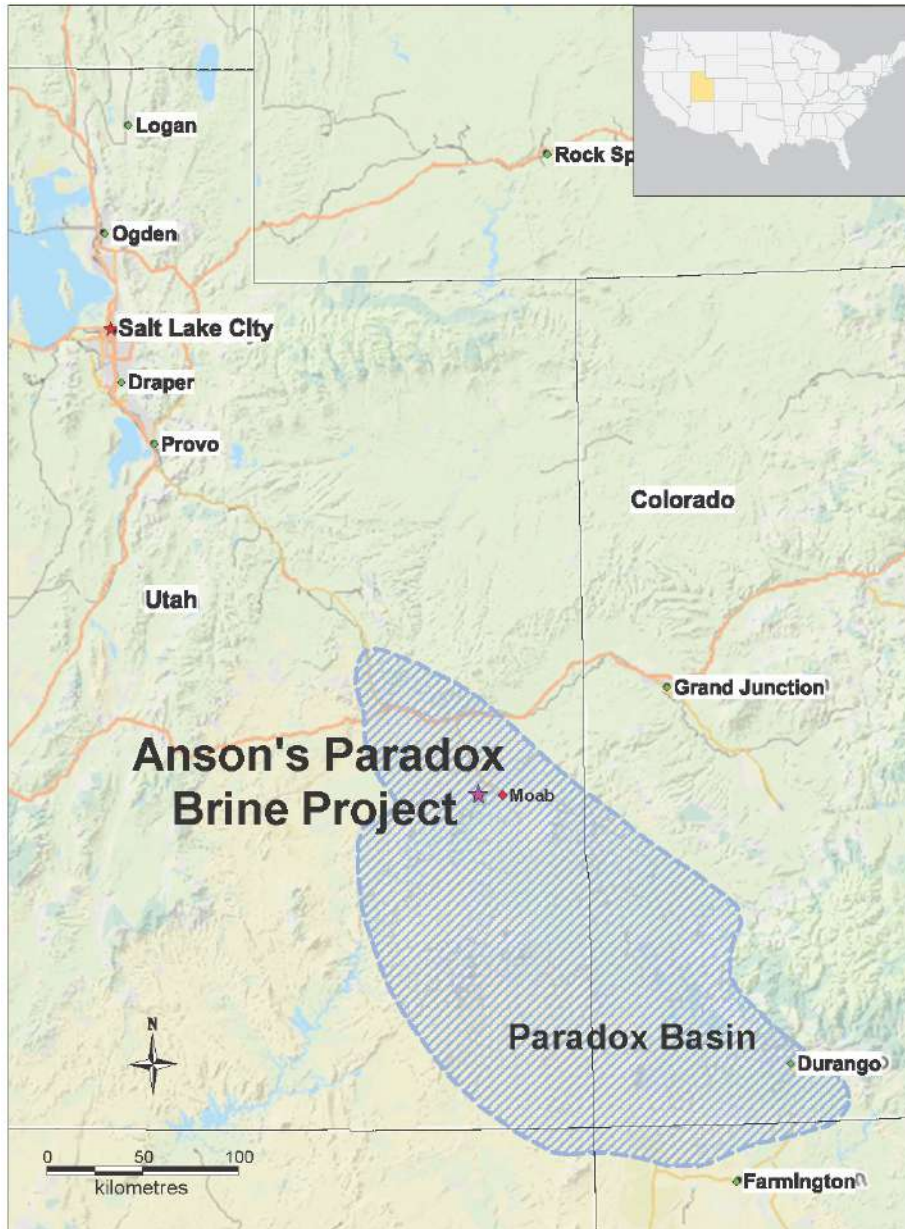
**Forward Looking Statements:** Statements regarding plans with respect to Anson's mineral projects are forward looking statements. There can be no assurance that Anson's plans for development of its projects will proceed as expected and there can be no assurance that Anson will be able to confirm the presence of mineral deposits, that mineralisation may prove to be economic or that a project will be developed.

**Competent Person's Statement:** The information in this Announcement that relates to exploration results and geology is based on information compiled and/or reviewed by Mr Greg Knox, a member in good standing of the Australasian Institute of Mining and Metallurgy. Mr Knox is a geologist who has sufficient experience which is relevant to the style of mineralisation under consideration and to the activity being undertaken 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 and consents to the inclusion in this report of the matters based on information in the form and context in which they appear. Mr Knox has reviewed and validated the metallurgical data and consents to the inclusion in this Announcement of this information in the form and context in which it appears. Mr Knox is a director of Anson and a consultant to Anson.

**Chemical Engineer's Statement:** The information in this Announcement that relates to metallurgical data, chemistry and processing is based on information compiled and/or reviewed by Mr. Alexander Grant. Mr. Grant is a chemical engineer with a MS degree in Chemical Engineering from Northwestern University. Mr. Grant has sufficient experience which is relevant to brine chemistry and processing and processing. Mr Grant is a director of Anson and a consultant to Anson.

### **About the Paradox Brine Project**

Anson is targeting lithium rich brines in the deepest part of the Paradox Basin in close proximity to Moab, Utah. The location of Anson's claims within the Paradox Basin is shown below:



## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
<p><i>Sampling techniques</i></p>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li><i>In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<p><b>Long Canyon Re-Entries</b></p> <ul style="list-style-type: none"> <li>On re-entry, sampling of the supersaturated brines has been carried out.</li> <li>Samples were collected in IBC containers from which samples for assay (500ml) were collected.</li> <li>Brine from flow testing was stored in 400 barrel tanks for future use.</li> <li>The analysis performed on the samples includes determination of physical and chemical properties on liquid and solid samples.</li> <li>For the chemical determinations, the techniques used are common laboratory gravimetry and titrations, and also ICP analysis.</li> <li>For the physical determinations - pH meters, conductivity meters, density meters, laboratory thermometers, analytical scales, and drying stoves are used.</li> </ul>
<p><i>Drilling techniques</i></p>	<ul style="list-style-type: none"> <li><i>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, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></li> </ul>	<ul style="list-style-type: none"> <li>Mud Rotary Drilling (18 ½" roller bit).</li> <li>4-5/8" 3 Way drag bit used for re-entry</li> <li>Brine was used as a drilling fluid</li> </ul>
<p><i>Drill sample recovery</i></p>	<ul style="list-style-type: none"> <li><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li><i>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.</i></li> </ul>	<p><b>Long Canyon Re-Entries</b></p> <ul style="list-style-type: none"> <li>Sampling followed the protocols produced by SRK for lithium brine sampling.</li> <li>Initial samples were sent to multiple certified laboratories in the USA.</li> <li>Bulk sample transported to Lilac Solutions in Oakland, California.</li> </ul>

Criteria	JORC Code Explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>	<p><b>Long Canyon Re-Entries</b></p> <ul style="list-style-type: none"> <li>• All cuttings from the historic oil wells were geologically logged in the field.</li> </ul>
	<ul style="list-style-type: none"> <li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>• The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>• Geological logging is qualitative in nature.</li> <li>• All drill holes were logged.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled,</li> </ul>	<p><b>Long Canyon Re-Entries</b></p> <ul style="list-style-type: none"> <li>• Sample sizes were appropriate for the program being completed.</li> <li>• Sampling followed the protocols produced by SRK for lithium brine sampling.</li> <li>• Samples were collected in IBC containers and samples taken from them.</li> <li>• Bulk samples were also collected for future use.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<p><b>Long Canyon Re-Entries</b></p> <ul style="list-style-type: none"> <li>• The assays were carried out at SGS Laboratories in Lakefield, Ontario which is a certified laboratory with experience in lithium carbonate analysis.</li> <li>• Assays were carried out using an ICP-AES instrument.</li> <li>• Quality and assay procedures are considered appropriate.</li> <li>• The analysis carried out on the samples includes determination of both physical and chemical properties.</li> <li>• All equipment is calibrated with externally certified samples.</li> <li>• Quality control procedures include the use of duplicates and standards in the extraction processes.</li> </ul>



Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.</i></li> </ul>	<p><b>Long Canyon Re-Entries</b></p> <ul style="list-style-type: none"> <li>• Documentation has been recorded and sampling protocols followed.</li> <li>• The samples received at the laboratory and electronically recorded in the laboratory's central database.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<p><b>Long Canyon Re-Entries</b></p> <ul style="list-style-type: none"> <li>• Locations surveyed using hand held GPS.</li> <li>• The grid system is NAD 83, UTM Zone 12.</li> <li>• The project is at an early stage and information is insufficient at this stage in regards to sample spacing and distribution. No sample compositing has occurred.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Data spacing is considered acceptable for a brine sample but has not been used in any Resource calculations.</li> <li>• No sample compositing has occurred.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All drill holes were drilled vertically (dip -90).</li> <li>• The lithium bearing brines are sub-horizontal.</li> <li>• Orientation has not biased the sampling.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	<b>Long Canyon Re-Entries</b> <ul style="list-style-type: none"> <li>• Sampling protocols were followed and chain of custody recorded.</li> <li>• Samples were transported to the laboratory in sealed rigid plastic bottles with sample numbers clearly identified. Each sample interval was sealed in a plastic bag and they were shipped in a sealed cooler.</li> <li>• The bulk sample was trucked to Lilac Solutions in California.</li> <li>• Samples from the Lilac test work were shipped to the laboratory in Ontario for assay.</li> </ul>
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	<b>Long Canyon Wells</b> <ul style="list-style-type: none"> <li>• No audits or reviews of the data have been conducted at this stage.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<b>The Paradox Brine Project</b> <ul style="list-style-type: none"> <li>• The wells were located on oil and gas leases, held by multiple oil companies.</li> <li>• The project consists of 1317 placer claims in Utah.</li> <li>• All claims are in good standing.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Past exploration in the region was for oil exploration.</li> <li>• Brine analysis only carried out where flowed to surface during oil drilling.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Oil was targeted within clastic layers (mainly Clastic Zone 43)</li> <li>• Lithium is being targeted within the clastic layers in the Paradox Formation.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><i>Drill hole Information</i></p>	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<p><i>Data aggregation methods</i></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<p><i>Relationship between mineralisation widths and intercept lengths</i></p>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>• <i>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’).</i></li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>