

### Assays confirm significant copper-zinc at Accrington

#### **HIGHLIGHTS**

- First hole (FR18-004) targeting the Accrington skarn returns significant copperzinc including:
  - 102m @ 0.58% Cu, 0.60% Zn, 9 g/t Ag from 194m; and
  - 16m @ 0.62% Cu from 84m
- Results extend mineralisation to the east of historical drilling which included 36.58m @ 1.23% Cu, 0.60% Zn and 41.4m @ 0.94% Cu, 0.39% Zn
- Channel sampling of partially oxidised mineralised outcrop returned 86m @ 0.31% Cu, 0.18% Zn, 13 g/t Ag, 0.11 g/t Au including 16m @ 0.44% Cu, 16 g/t Ag, 0.12 g/t Au
- Drill permits expected shortly to allow drilling of the untested Lower Garnet Skarn where previous selective sampling of old workings returned copper (up to 5.66%), zinc (up to 10.65%), lead (up to 12.70%), silver (up to 858 g/t) and gold (up to 1.1 g/t)
- Mineralisation confirmed in drilling and surface sampling across 1000m by up to 400m with further potential across the 4km by up to 2km Accrington skarn
- Results increase confidence in a large Cu-Zn-Ag-Au-Pb deposit at Accrington
- Results from FR18-005 and FR18-006 are expected in October.

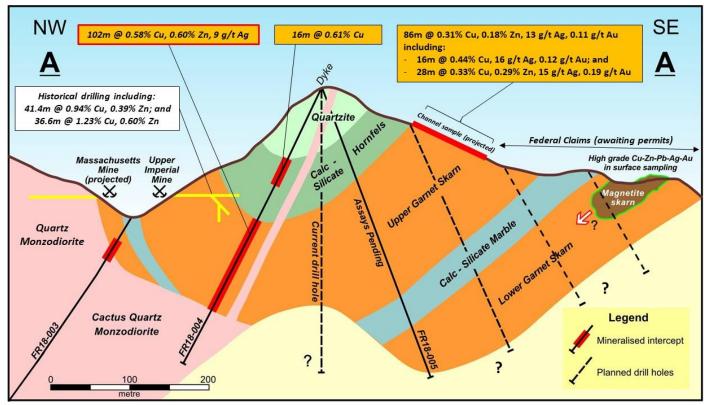


Figure 1: Conceptual cross section with intercepts from drilling and channel sampling (refer to ASX Announcement on 19 July 2017 for full historical drill results).



Alderan Resources Limited (ASX: AL8) is pleased to provide an update on exploration at Accrington, part of the Company's Frisco Project located in Utah, USA. Assay results from initial drilling of the Accrington skarn have been received and confirmed a significant interval of copperzinc mineralisation from drill hole FR18-004 with further copper mineralisation across 86m confirmed in surface channel sampling along the new Upper Accrington Road.

Commenting on the results, CEO, Christopher Wanless said:

"We know from historical mining that Accrington can host high grade mineralisation. The drill results are important in that they demonstrate potential to define a large deposit, amenable to modern low-cost bulk mining across the large Accrington skarn.

It is still very early days, however the scale of the Accrington mineral system presents an exciting opportunity for the Company. We have only just started to uncover the potential across the Accrington skarn which measures up to 4km by 2km in areal extent. Other skarn systems in the USA at Battle Mountain (Phoenix Mine) and Car Fork/Bingham also demonstrate that significant and high grade deposits can sit outside the skarn. For example, we know that at the Horn Mine, situated to the East of Accrington, high grade lead-zinc-silver sulphide bodies occurred as replacements within limestone and within a major fault zone.

It is also important to remember that Accrington is located in a region with exceptional infrastructure, low cost power, a skilled workforce, an extremely competitive taxation system, proximal smelters and end users. This could result in a significantly lower economic cut-off grade compared to deposits in many other jurisdictions as demonstrated by other large mines and developments in the United States such as Pumpkin Hollow (571mt @ 0.44% Cu¹) and the Phoenix Mine (309 mt @ 0.89 g/t Au, 0.15% Cu²), both skarn hosted deposits".

### Drilling confirms significant copper-zinc mineralisation

Initial assay results from Accrington have been received confirming thick skarn hosted copper mineralisation in FR18-004 and in channel sampling from road outcrops. Results from FR18-004 include:

- 102m @ 0.58% Cu, 0.60 % Zn, 9 g/t Ag from 194m; and
- 16m @ 0.62% Cu from 84m

Sampling across an 86m outcrop of mineralised and partially oxidised skarn on the Upper Accrington Road returned:

- 28m @ 0.33% Cu, 0.29% Zn, 15 g/t Ag, 0.19 g/t Au
- 10m @ 0.39% Cu, 0.27% Zn, 12 g/t Ag
- 16m @ 0.44% Cu, 16 g/t Ag, 0.12 g/t Au; and
- 12m @ 0.33% Cu, 15 g/t Ag

Mineralisation was also intersected to the west of FR18-004 in FR18-001 which intersected 10m @ 0.55% Cu from 2m before entering intrusive rocks and in FR18-003 which intersected minor copper mineralisation.

Mineralisation is predominantly chalcopyrite (a copper sulphide) and sphalerite (a zinc sulphide) hosted within garnet skarn and prograde alteration. Oxidised mineralisation is also observed in

<sup>&</sup>lt;sup>1</sup> https://www.nevadacopper.com/projects/reserves/mineral-reserves/

<sup>&</sup>lt;sup>2</sup> https://s1.q4cdn.com/259923520/files/doc\_downloads/reserves\_and\_resources/Newmont-Reports-2017-Reserves-and-Resources.pdf



outcrops and in the upper parts of FR18-004. Oxidised intervals may have lower grades due to leaching of minerals at surface. Bornite has also been observed in the current drill hole (FR18-006). Whilst gold results are generally low, the Company expects higher gold associated with zones of retrograde alteration which occur over a wide area at the southern end of Accrington.

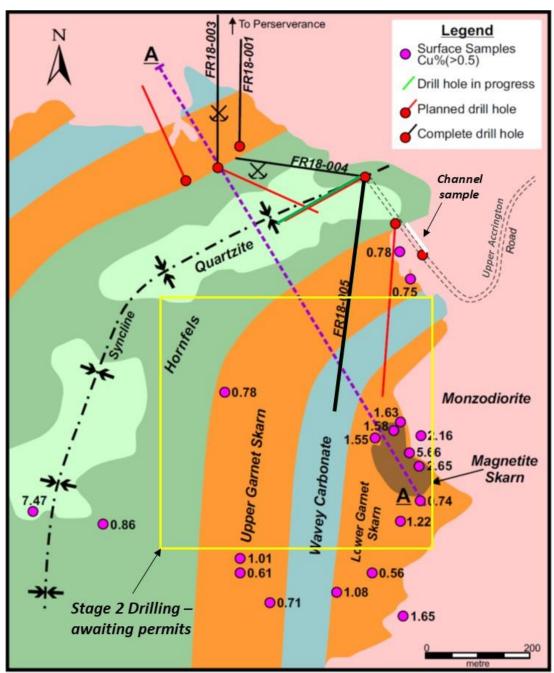


Figure 2: Geological plan of the Imperial to Accrington East Skarn Area also showing Alderan rock sample results (only copper shown)<sup>3</sup>.

FR18-004 is the first of several drill holes specifically targeting the Accrington skarn where the Company has identified potential for a large-tonnage copper-zinc skarn. The results confirm mineralisation continues to the east of the Imperial Mine where historical drilling was undertaken

<sup>&</sup>lt;sup>3</sup> For further details of exploration results, please refer to the Prospectus published on 8 June 2017



by Bear Creek Mining Company in 1967 at the Imperial Mine. Drilling took place mostly within underground workings and comprised of short drill holes. Historical results included:

- 36.6m @ 1.23% Cu, 0.6% Zn (from 0m to end of hole);
- 26.8m @ 1.40% Cu from (from 0m);
- 41.5m @ 0.94% Cu, 0.39% Zn (from 0m to end of hole);
- 26.8m @ 1.01% Cu (from 12m to end of hole);
- 59.7m @ 0.59% Cu, 0.22% Zn (from 6.1m to 65.84m); and
- 85.34m @ 0.30% Cu, 0.46% Zn (from 38.1m to 123.44m).

For a full description of historical drill results refer to the ASX announcement "Alderan Resources expands Frisco Project" published on 19 July 2017.

Results from drill holes FR18-005 and FR18-006 are pending with assays due in 2-5 weeks. Full results including holes FR18-001 and FR18-003 are shown in Table 2.

### **Drilling set to Test Second Mineralised Horizon at Accrington East**

Mineralisation intersected in FR18-004 occurs in the Upper Garnet Skarn. Further to the east, mineralisation at Accrington East is hosted in an additional second outcropping mineralised horizon (Lower Garnet Skarn) which has not been tested by drilling to date (see Figure 1). Previous selective sampling of old mine dumps within this second mineralised horizon has identified high grade copper-zinc-lead-silver-gold associated with magnetite skarn (refer to Table 1 below).

Drilling is set to continue on private (patented) land testing an area of approximately 500m by up to 300m. Additional drilling will be conducted on adjoining Federal claims, subject to receipt of permits where further extensions of the mineralised Upper and Lower Garnet Skarn occur.

Table 1: Selective rock chi	p results from m	nagnetite skarn a	nt Accrington East <sup>4</sup> .
		9	3

Sample ID	Cu	Zn	Pb	Ag (g/t)	Au (g/t)
FRDRS017	2.16%	1.1%		5.09	0.20
FRDRS018	1.63%	0.48%		33.8	1.10
FRDRS019	1.58%	10.65%	0.14%	30.5	0.50
FRDRS020	5.66%	4.09%		10.25	0.39
FRDRS021	2.65%	6.56%	4.69%	50.8	0.39
FRDRS023	1.55%	2.10%	12.7%	858	0.91

### **Potential across the Accrington Skarn**

Accrington is a large mineralised skarn measuring approximately 4km by up to 2km. Mineralisation is also expected to extend outside the skarn into adjoining sediments. Historical mining activity has taken place throughout the skarn focused on high grade structurally controlled

<sup>&</sup>lt;sup>4</sup> Sampling was undertaken prior to listing. Refer to the Company's Prospectus including Independent Geologist Report published on 8 June 2017.



Pb-Zn-Cu-Ag-Ag deposits. Many prospect pits exposing mineralisation also occur throughout the skarn.

The principal focus of the Company is on the thick copper-zinc-lead-silver-gold bearing garnet skarns which outcrop at Accrington East and at the Imperial Mine, a distance of over 1km. These exposed mineralised units are expected to continue at depth to the south towards the historical Double Barrel and Washington (refer to Figure 3).

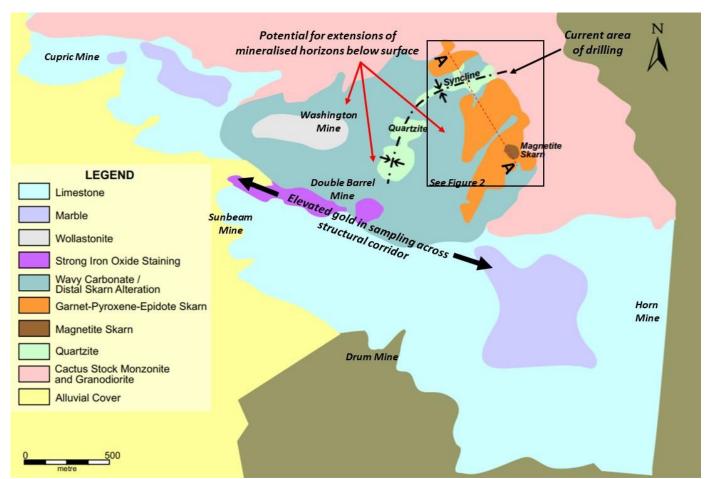


Figure 3: Simplified geology map of Accrington showing potential areas within which mineralised copper-zinc-lead-silver-gold bearing horizons may occur at depth.



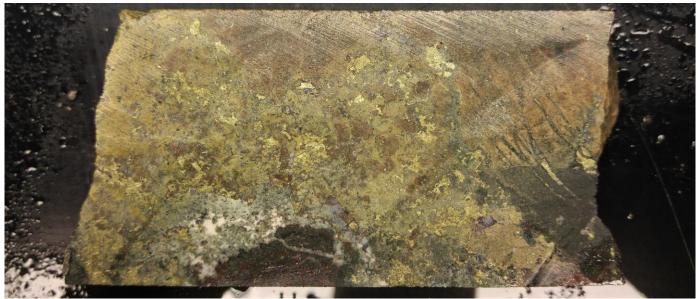


Figure 4: Drill core from FR18-004 with abundant sulphides comprising chalcopyrite (a copper sulphide mineral comprising 34.63% copper) mineralisation within skarn at 282.3m.

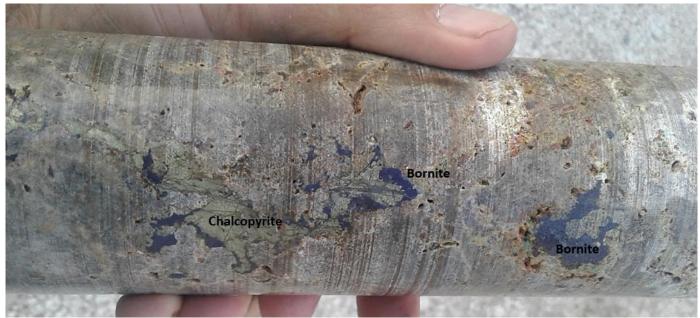


Figure 5: Drill core from FR18-006 with bornite (a copper sulphide comprising 63% copper) and chalcopyrite (a copper sulphide comprising 34.63% copper) mineralisation within skarn.



Table 2: Assay results

Drillhole ID	Target	From (m)	To (m)	Interval (m)	Cu (%)	Zn (%)	Ag (g/t)	Description
FR18-001	Perseverance	2	12	10	0.55	NSR	11	Mineralised skarn
FR18-003	Perseverance	50	66	16	0.22	NSR	NSR	Mineralised skarn, oxides
FR18-004	Accrington Skarn	84	100	16	0.62	NSR	NSR	Mineralised skarn
and		194	296	102	0.58	0.60	9	Mineralised skarn

#### Notes:

1. Reported mineralisation is quoted in downhole depths. True width may be less than downhole intercept width (apparent width), and insufficient work has been completed to enable accurate calculation of true widths. No cut-off grade has been applied.

#### Table 3: Drillhole Location Details

Drillhole ID	Easting	Northing	Dip	Azimuth	Depth (m)	Drill Type	
FR18-001	300100	4259693	-60	360	310.94	Diamond	
ED40.000	NI-4tili	-1/-1	-1			l	
FR18-002	Not utilise	ed/abandone	<b>a</b>				
FR18-003	300043	4259611	-61	353	1016.3	Diamond	
FR18-004	300375	4259528	-55	290	362.18	Diamond	

### Notes:

1. FR18-001 was previously called ALIM001 and FR18-003 was previously called ALIM003.



Table 4: Channel sampling assay results (Upper Accrington Road)

ID	From (m)	To (m)	Interval (m)	Cu (%)	Zn (%)	Au (g/t)	Ag (g/t)	Description
UAR001	0	86	86	0.31	0.18	0.11	13	Mineralised skarn, partially oxidised
Including	4	32	28	0.33	0.29	0.19	15	Mineralised skarn, partially oxidised
and	36	46	10	0.39	0.27	0.05	12	Mineralised skarn, partially oxidised
and	54	70	16	0.44	0.12	0.12	16	Mineralised skarn, partially oxidised
and	74	86	12	0.33	0.03	0.09	15	Mineralised skarn, partially oxidised

#### Notes:

- 1. The road cut along the upper quartzite ridge (Upper Accrington Road) was sampled with continuous rock chip sampling at 2m intervals for 90m. This zone is referred to as the upper garnetskarn zone which was intersected in drill hole FR18-004 below the quartzite. No cut-off grade has been applied.
- 2. Based on dip measurements taken along the road cut the true thickness of this upper skarn mineralized zone is estimated at 53 meters.

--- Ends ---



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#### **Competent Persons Statement**

The information in this presentation that relates to exploration targets, or exploration results is based on information compiled by John Schloderer, a competent person who is a member of the Australian Institute of Geoscientists (AIG). John Schloderer is the Exploration Manager of Alderan Resources Limited. {insert name} has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the JORC Code (JORC Code). John Schloderer consents to the inclusion of this information in the form and context in which it appears.

Mr John Schloderer confirms that that the information provided in this announcement provided under ASX Listing Rules Chapter 5.12.2 to 5.12.7 is an accurate representation of the available data and studies for the proposed exploration programmes that relate to this "material mining project".

#### **Forward Looking Statement**

Statements contained in this release, particularly those regarding possible or assumed future performance, costs, dividends, production levels or rates, prices, resources, reserves or potential growth of Alderan Resources Limited, are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.

## JORC Code, 2012 Edition – Table 1 report

# **Section 1 Sampling Techniques and Data**

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</li> </ul>	This release refers to multi-element assay results of holes FR18-001, FR18-003, FR18-004
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	
	<ul> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> </ul>	
	<ul> <li>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.</li> </ul>	
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Drilling is by diamond core of HQ (61mm) diameter, FR18-001 and FR18-003 used triple tube splits and TruCore orientation device. FR18-004 used standard tube and the Reflex ACT II orientation device.</li> </ul>
		<ul> <li>The Trucore and ACT II device requires competent core at the core lifter in order to result in a useable orientation line. Sections of core which are broken results in limited or no oriented core in these intervals.</li> </ul>
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Core is measured by a qualified geologist using downhole marking blocks placed by the driller. Zones of cave or fill are assessed by competence, texture and geologic relationship to surrounding rock, as

Criteria	JORC Code explanation	Commentary
	Measures taken to maximise sample recovery and ensure	well as reported cave from drill crew.
	<ul> <li>representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade</li> </ul>	<ul> <li>Drilling through poor ground conditions has resulting in minor zones of poor drill recovery.</li> </ul>
	and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• FR18-001 - Casing depth is 3m. Average core recovery is 96.2%.
	ioss/gain of fine/coarse material.	• FR18-003 – Casing depth is 3m. Average core recovery is 96.5%.
		• FR18-004 – Casing depth is 2.80m. Average core recovery is 93.1%.
		<ul> <li>No relationship between core recovery and grade has yet been established as recovery is quite high.</li> </ul>
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate	All core has been geologically logged to a level of detail to support future geological modelling and resource estimation.
	<ul> <li>Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	<ul> <li>All logging is qualitative with visual estimates of various characteristics conducted by a qualified geologist.</li> </ul>
		All core is photographed by DMT Corescan and photographs recorded in a proprietary database.
	The total length and percentage of the relevant intersections logged.	rocorded in a propriotary database.
Sub- sampling	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul>	<ul> <li>Core is cut with an Almonte core saw and half core is sent in for multi- element analysis.</li> </ul>
techniques and sample preparation	<ul> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> </ul>	<ul> <li>Sample prep includes crushing the entire sample to 70% pasing - 2mm, Boyd rotary split off 250g and pulverize split to better than 85%</li> </ul>
preparation	<ul> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	passing 75 microns.
	<ul> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	
	<ul> <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> </ul>	
	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
Quality of	The nature, quality and appropriateness of the assaying and	Analysis is done by ALS Geochemistry North american laboratories

Criteria	JORC Code explanation	Commentary
assay data and laboratory tests	laboratory procedures used and whether the technique is considered partial or total.	<ul> <li>Au analysis is by fire assay and AAS using 30g nominal sample weight.</li> </ul>
	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 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.	<ul> <li>Multi element analysis is by four acid digestion and ICP-AES</li> </ul>
10000	make and model, reading times, calibrations factors applied and their	<ul> <li>Standards, blanks or field duplicates are inserted exery 8 to 9 samples.</li> </ul>
	duplicates, external laboratory checks) and whether acceptable levels	Acceptable levels of accuracy are 2 standard deviations.
Verification of sampling	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data</li> </ul>	<ul> <li>Significant intersections are done by a competent person and checked by the the staff chief geologist.</li> </ul>
and assaying		Data is managed by a dedicated data base manager using Data Shed
		software with electronic storage and periodic backup.
	Discuss any adjustment to assay data.	
Location of data points	<ul> <li>Discuss any adjustment to assay data.</li> <li>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.</li> </ul>	<ul> <li>Collar locations are set with handheld GPS with a positional accuracy of +/3m. Upon completion of drilling, collar locations will be surveyed with DGPS to a positional accuracy of +/-0.1m, to be conducted by a</li> </ul>
	Specification of the grid system used.	licensed surveyor.
	Quality and adequacy of topographic control.	<ul> <li>Progress downhole surveys are conducted by Boart Longyear and Major Drilling personnel at 30m intervals using a Reflex EZshot single shot magnetic survey tool.</li> </ul>
		Grid coordinate system is WGS84 Zone 12, UTM (m) units.
		<ul> <li>Upon completion of drilling, topographic control will be provided by DGPS to a positional accuracy of +/-0.1m, to be conducted by a licensed surveyor.</li> </ul>
Data spacing and	Data spacing for reporting of Exploration Results.  Whether the plate appairs and distribution is sufficient to establish the	<ul> <li>At this early exploration stage, the data spacing is variable as the focus is on identifying new zones of mineralisation.</li> </ul>
distribution	<ul> <li>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</li> </ul>	Reconnaissance drilling only, no resource estimation being undertaken at this time.
	classifications applied.	No sample compositing is applied. Drill core is sampled at 2 meter

Criteria		J	ORC Code explanation	C	ommentary
		•	Whether sample compositing has been applied.		intervals.
	in	•	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering	•	FR18-001 Orientation of 360/-60 intersects the intrusive body at an unbiased angle.
relation to geological structure	ological  If the relationship between the drilling orientation and the orientation	If the relationship between the drilling orientation and the orientation	•	FR18-003 Orientation of 360/-62 intersects the intrusive body at an unbiased angle.	
diradiaro			•	FR18-004 Orientation of 290/-55 intersects the potentially statigraphy controlled skarn at as near a true angle as possible.	
				•	Insufficient data exists to properly asses degree of structural control or True Width.
Sample security		•	The measures taken to ensure sample security.	•	Samples are maintained in a secured warehouse and the chain of custody is ALS Laboratories supervision from site location pick up to the laboratory in secured ALS transport
Audits o	or	•	The results of any audits or reviews of sampling techniques and data.	•	No external audits have been undertaken. These would be part of future resource estimation work.

# **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	<ul> <li>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</li> </ul>	<ul> <li>The Frisco Prospect comprises 275 patented and 252 unpatented claims, which are governed by the Horn, Cactus and Northern Carbonate lease agreements entered into with the private landowner, Horn Silver Mines Inc.</li> </ul>
	<ul> <li>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.</li> </ul>	<ul> <li>The Horn and Cactus lease agreements grant Alderan all rights to access the property and to explore for and mine minerals, subject to a retained royalty of 3% to the landholder. Alderan holds options to reduce the royalty to 1% and to purchase the 231 patented claims.</li> </ul>
		<ul> <li>The Northern Carbonate Lease grants Alderan with all rights to access the property and to explore for and mine minerals, subject to a retained royalty of 3% to the landholder. Alderan holds options to reduce the royalty to 1% and to purchase the 231 patented claims.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>Alderan was in full compliance with both lease agreements and all claims were in good standing at the time of reporting.</li> </ul>
Exploration done by	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>A large amount of historical exploration has been carried out by numerous different parties dating back to the 1800's.</li> </ul>
other parties		<ul> <li>Historical mining records including level plans and production records exist for the period between 1905 and 1915 when the vast majority of production occurred</li> </ul>
		<ul> <li>Historical drilling has been carried out by multiple parties including Anaconda Company, Rosario Exploration Company, Amax Exploration and Western Utah Copper Corporation/Palladon Ventures</li> </ul>
		<ul> <li>Data has been acquired, digitized where indicated, and interpreted by Alderan.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Porphyry style mineralised district with several expressions of mineralisation at surface, such as breccia pipes, skarns, structurally- hosted mineralisation, and manto style mineralised zones.</li> </ul>
		Part of the larger Laramide mineralising event.
		Overprinted by Basin and Range tectonics.
	A summary of all information material to the understanding of the	Details for hole FR18-001
Information	exploration results including a tabulation of the following information for all Material drill holes:	<ul> <li>Easting WGS84 Zn12 – 300100mE</li> </ul>
	o easting and northing of the drill hole collar	<ul> <li>Northing WGS84 Zn12 – 4259693nN</li> </ul>
	elevation or RL (Reduced Level – elevation above sea level in	○ Elevation - 2144m asl
	metres) of the drill hole collar	○ Collar dip -60°, Azimuth 360°
	o dip and azimuth of the hole	<ul> <li>Chalcopyrite mineralisation is noted from 0-13.8m</li> </ul>
	o down hole length and interception depth	<ul> <li>Hole completed at 310.94m.</li> </ul>
	o hole length.	Details for hole FR18-003
	If the exclusion of this information is justified on the basis that the	<ul> <li>Easting WGS84 Zn12 – 300043mE</li> </ul>
	information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clean	o Northing WGS84 Zn12 – 4259611nN
	explain why this is the case.	o Elevation - 2117m asl

Criteria	JORC Code explanation	Commentary
		<ul> <li>Collar dip -61°, Azimuth 353°</li> <li>Hole completed at 1016.30m.</li> <li>Details for hole FR18-004</li> <li>Easting WGS84 Zn12 – 3000375mE</li> <li>Northing WGS84 Zn12 – 4259528nN</li> <li>Elevation - 2342m asl</li> <li>Collar dip -55°, Azimuth 290°</li> <li>Chalcopyrite mineralisation is noted from 77m downhole.</li> <li>Hole completed at 362.18m.</li> </ul>
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.	Significant intercepts use a weighting average technique using a quoted cut of grade or an indiction of no curtoof grade.
	<ul> <li>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.</li> </ul>	
	<ul> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	
Relationship between mineralisatio n widths and	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known its neture about the reported.</li> </ul>	<ul> <li>Reported mineralisation is quoted in downhole depths. True width may be less than downhole intercept width (apparent width), and insufficient work has been completed to enable accurate calculation of true widths.</li> </ul>
intercept lengths	<ul> <li>angle is known, its nature should be reported.</li> <li>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').</li> </ul>	
Diagrams	<ul> <li>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.</li> </ul>	
Balanced	Where comprehensive reporting of all Exploration Results is not	Widths of the down hole intervals are reported.

Criteria	JORC Code explanation	Commentary
reporting	practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	
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.	Details of other exploration results are recorded in the Independent Geologist's Report, contained in the Prospectus and on the announcement dated 28 June 2017.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).   Discussions of the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth is a first transfer of the lateral depth in the lateral depth	Details of intended exploration activities are mentioned in the report above and in previous announcements made by the Company on the 28 June 2017 and also recorded in the Independent Geologist's
	<ul> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Report, contained in the Prospectus.

# **Section 3 Estimation and Reporting of Mineral Resources**

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> </ul>	No resource estimation has been undertaken
	Data validation procedures used.	
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	•
	If no site visits have been undertaken indicate why this is the case.	
Geological interpretation	Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.	•
	Nature of the data used and of any assumptions made.	
	<ul> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> </ul>	
	<ul> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> </ul>	
	The factors affecting continuity both of grade and geology.	
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	•
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	•
	<ul> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes</li> </ul>	

Criteria	JORC Code explanation	Commentary
	appropriate account of such data.	
	The assumptions made regarding recovery of by-products.	
	<ul> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> </ul>	
	<ul> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> </ul>	
	Any assumptions behind modelling of selective mining units.	
	Any assumptions about correlation between variables.	
	<ul> <li>Description of how the geological interpretation was used to control the resource estimates.</li> </ul>	
	Discussion of basis for using or not using grade cutting or capping.	
	<ul> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	•
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	•
Mining factors or assumptions	<ul> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions	•

Criteria	J(	ORC Code explanation	Commentary
		regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmen- tal factors or assumptions	•	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	•	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	•
	•	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.	
	•	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	
Classification	•	The basis for the classification of the Mineral Resources into varying confidence categories.	•
	•	Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	
	•	Whether the result appropriately reflects the Competent Person's view of the deposit.	
Audits or reviews	•	The results of any audits or reviews of Mineral Resource estimates.	•

Criteria	J(	ORC Code explanation	Commentary
Discussion of relative accuracy/confidence	•	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	•
	•	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	
	•	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

# **Section 4 Estimation and Reporting of Ore Reserves**

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	No resource estimation has been undertaken
estimate for conversion to Ore Reserves	<ul> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	•
	If no site visits have been undertaken indicate why this is the case.	
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	•
	<ul> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	•
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	•
	<ul> <li>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</li> </ul>	
	<ul> <li>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</li> </ul>	
	The major assumptions made and Mineral Resource model used for	

Criteria	JORC Code explanation	Commentary
	pit and stope optimisation (if appropriate).	
	The mining dilution factors used.	
	The mining recovery factors used.	
	Any minimum mining widths used.	
	<ul> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> </ul>	
	The infrastructure requirements of the selected mining methods.	
Metallurgical factors or	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	•
assumptions	<ul> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> </ul>	
	<ul> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> </ul>	
	Any assumptions or allowances made for deleterious elements.	
	<ul> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> </ul>	
	<ul> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	
Environmen- tal	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	•
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	•
Costs	The derivation of, or assumptions made, regarding projected capital	•

Criteria	JORC Code explanation	Commentary
	costs in the study.	
	The methodology used to estimate operating costs.	
	<ul> <li>Allowances made for the content of deleterious elements.</li> </ul>	
	The source of exchange rates used in the study.	
	Derivation of transportation charges.	
	<ul> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> </ul>	
	<ul> <li>The allowances made for royalties payable, both Government and private.</li> </ul>	
Revenue factors	<ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> </ul>	•
	<ul> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> </ul>	•
	<ul> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> </ul>	
	Price and volume forecasts and the basis for these forecasts.	
	<ul> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	
Economic	<ul> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> </ul>	•
	<ul> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	•

Criteria	JORC Code explanation	Commentary
Other	<ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> </ul>	•
	Any identified material naturally occurring risks.	
	The status of material legal agreements and marketing arrangements.	
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	•
	<ul> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	
	<ul> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	•
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	•
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	
	Accuracy and confidence discussions should extend to specific	

Criteria	JORC Code explanation	Commentary
	<ul> <li>discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	

### **Section 5 Estimation and Reporting of Diamonds and Other Gemstones**

(Criteria listed in other relevant sections also apply to this section. Additional guidelines are available in the 'Guidelines for the Reporting of Diamond Exploration Results' issued by the Diamond Exploration Best Practices Committee established by the Canadian Institute of Mining, Metallurgy and Petroleum.)

Criteria		JORC Code explanation	Commentary
Indicator minerals		<ul> <li>Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.</li> </ul>	No resource estimation has been undertaken
Source diamonds	of	<ul> <li>Details of the form, shape, size and colour of the diamonds and the nature of the source of diamonds (primary or secondary) including the rock type and geological environment.</li> </ul>	•
Sample collection		<ul> <li>Type of sample, whether outcrop, boulders, drill core, reverse circulation drill cuttings, gravel, stream sediment or soil, and purpose (eg large diameter drilling to establish stones per unit of volume or bulk samples to establish stone size distribution).</li> <li>Sample size, distribution and representivity.</li> </ul>	•
Sample		Type of facility, treatment rate, and accreditation.	•
treatment		<ul> <li>Sample size reduction. Bottom screen size, top screen size and re- crush.</li> </ul>	
		<ul> <li>Processes (dense media separation, grease, X-ray, hand-sorting, etc).</li> </ul>	
		<ul> <li>Process efficiency, tailings auditing and granulometry.</li> </ul>	
		<ul> <li>Laboratory used, type of process for micro diamonds and accreditation.</li> </ul>	
Carat		One fifth (0.2) of a gram (often defined as a metric carat or MC).	•
Sample grade		<ul> <li>Sample grade in this section of Table 1 is used in the context of carats per units of mass, area or volume.</li> </ul>	•
		<ul> <li>The sample grade above the specified lower cut-off sieve size should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes. For alluvial deposits, sample grades quoted in carats</li> </ul>	

Criteria	JORC Code explanation	Commentary
	per square metre or carats per cubic metre are acceptable if accompanied by a volume to weight basis for calculation.	
	<ul> <li>In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive sample grade (carats per tonne).</li> </ul>	
Reporting of Exploration Results	<ul> <li>Complete set of sieve data using a standard progression of sieve sizes per facies. Bulk sampling results, global sample grade per facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry.</li> </ul>	•
	Sample density determination.	
	Per cent concentrate and undersize per sample.	
	Sample grade with change in bottom cut-off screen size.	
	<ul> <li>Adjustments made to size distribution for sample plant performance and performance on a commercial scale.</li> </ul>	
	<ul> <li>If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples.</li> </ul>	
	<ul> <li>The weight of diamonds may only be omitted from the report when the diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.</li> </ul>	
Grade estimation	Description of the sample type and the spatial arrangement of drilling or sampling designed for grade estimation.	•
for reporting Mineral Resources	The sample crush size and its relationship to that achievable in a commercial treatment plant.	
	<ul> <li>Total number of diamonds greater than the specified and reported lower cut-off sieve size.</li> </ul>	
	<ul> <li>Total weight of diamonds greater than the specified and reported lower cut-off sieve size.</li> </ul>	
	The sample grade above the specified lower cut-off sieve size.	

Criteria	JORC Code explanation	Commentary
Value estimation	<ul> <li>Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples.</li> </ul>	•
	<ul> <li>To the extent that such information is not deemed commercially sensitive, Public Reports should include:</li> </ul>	
	<ul> <li>diamonds quantities by appropriate screen size per facies or depth.</li> </ul>	
	o details of parcel valued.	
	o number of stones, carats, lower size cut-off per facies or depth.	
	<ul> <li>The average \$/carat and \$/tonne value at the selected bottom cut-off should be reported in US Dollars. The value per carat is of critical importance in demonstrating project value.</li> </ul>	
	<ul> <li>The basis for the price (eg dealer buying price, dealer selling price, etc).</li> </ul>	
	An assessment of diamond breakage.	
Security and	Accredited process audit.	•
integrity	Whether samples were sealed after excavation.	
	<ul> <li>Valuer location, escort, delivery, cleaning losses, reconciliation with recorded sample carats and number of stones.</li> </ul>	
	Core samples washed prior to treatment for micro diamonds.	
	Audit samples treated at alternative facility.	
	Results of tailings checks.	
	Recovery of tracer monitors used in sampling and treatment.	
	Geophysical (logged) density and particle density.	
	<ul> <li>Cross validation of sample weights, wet and dry, with hole volume and density, moisture factor.</li> </ul>	
Classification	<ul> <li>In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive grade (carats per tonne). The elements of uncertainty in these estimates should be</li> </ul>	•

C	riteria	JORC Code explanation	Commentary
		considered, and classification developed accordingly.	