20 May 2021

ASX Announcement

Carlow Castle Update and Proposed Capital Raise.

Artemis ("the Company") today announces that it is now in receipt of guidance from the independent mineral resource consultants ("CSA") currently estimating the new mineral resource statement for the Carlow Castle Project.

The updated resource estimate is based upon an additional 129 drill holes of drilling completed during October 2020 to March 2021. The drilling completed included a change in orientation in high grade zones that was better orientated to intersect mineralisation at a more representative angle. This additional data has had a material difference on the preliminary mineral resource estimate. As such from this guidance we can report that gold grades and contained ounces have declined, copper tonnes have risen but grade fallen and cobalt tonnes remained static but grades declined compared to those previously reported in the 2019 resource update reported to the ASX on 20 November 2019.

A copy of that guidance has been provided by CSA below.

Upon receiving verbal guidance from the mineral resource consultants at 7am EST on 17 May 2021 the Company immediately commenced taking steps to understand the impact of the new drilling on the updated resource estimate. The timing to conclude the final report is estimated at two weeks and the Company will, upon receipt, release this to shareholders.

The Company has now ceased resource drilling activity at Carlow Castle, and upon receipt of the final resource estimation for Carlow Castle from CSA, the Company will undertake a review to determine next steps in moving the Carlow Castle project forward.

However, mineralisation at Carlow remains open in multiple directions and several exploration targets have been identified and are yet to be drill tested. The Greater Carlow Castle tenements remain highly prospective for gold and copper mineralisation.

Artemis intend to refine the current drill targeting to optimise targeting higher grade mineralised zones as part of the Carlow Castle deeps identified at the eastern end of the deposit.
As a consequence of this news, the Board have taken the decision to defer drilling and cancel the proposed capital raise announced to the ASX on 12 May 2021.

The Company has a significant cash and marketable securities balance of $3.7m.

The Company's primary focus in the short term remains expediting the planning and approvals process for the upcoming Paterson Central drill programme which continues at pace and remains totally unaffected by these developments announced today.

Mineral Resource Statement

The Mineral Resource for the Carlow Castle Project as at 19 May 2021 is presented below. All three deposits are open at depth, and Quod Est and Cross-cut are open along strike.

The difference in methodology in the determination of the 2019 and 2021 resource estimate is outlined below.

CSA Global Mineral Resource Guidance

Table 1. Carlow Castle Mineral Resources by classification reported above a cut-off of 0.3 g/t AuEq within an optimised pit shell (current as at 19 May 2021)

	'000 Tonnes	**AuEq (g/t)**	**Au (g/t)**	**Cu (%)**	**Co (%)**	**Au (koz)**	**Cu (kt)**	**Co (kt)**
Oxide	4,400	0.9	0.4	0.3	0.04	53	13	2
Transitional	3,100	1.6	0.7	0.5	0.06	67	15	2
Fresh	6,900	1.7	0.9	0.4	0.06	199	26	4
Total	14,300	1.4	0.7	0.4	0.05	320	53	7

Competent Person Statement

The information in this announcement that relates to Mineral Resources is based on information compiled by Mr Phil Jankowski, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Jankowski has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Jankowski consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

2021 Resource Estimate

The Mineral Resources for the Carlow Caste Project has been estimated, using all drilling data available as at 16 April 2021. The mineralisation for the Carlow Main, Quod Est and Cross-Cut deposits have been interpreted, and grades of Au, Cu and Co estimated. An open pit optimisation has been completed to constrain the reported Mineral Resource. Compared to the previously reported Mineral Resource Estimate, this current estimate includes an additional 129 drillholes for 22,395m, drilled mainly at the eastern end of the Carlow Main deposit, and in the newly discovered Cross-Cut deposit.

Previous Resource Estimate (2019)

In November 2019, CSA Global estimated Inferred Mineral Resources at Carlow Main and Quod Est of 8 Mt @ 0.6% Cu, 1.6 g/t Au and 0.08% Co, reported above a lower cut-off of 0.3% Cu, and within a theoretical optimised pit shell.

Two estimation domains for Carlow Main and Quod Est were used in the modelling, based on a lower cut-off grade of 500 ppm copper. Grade interpolation was completed initially by Ordinary Kriging into panels, with post-processing using Localised Uniform conditioning (LUC) within the panels to derive an estimate at the smaller selective mining unit (SMU) scale. Grade limiting was employed in the panel estimates to restrict the influence of very high grades to 10 m. The optimised pit shell used for the Mineral Resource reporting used the parameters presented in Table 2.

Table 2: Carlow Castle 2019 Resource Mining and Metallurgical Assumptions

	Input Value
Overall Slope Angles	50°
Processing Cost	$48.1/t
Gold Recovery	94.8%
Copper Recovery	85%
Cobalt Recovery	73%
Mining Costs	$2.57/t to $5.77/t, incremented by depth
Gold Price	$2,000/oz
Copper Price	$9,000/t
Cobalt Price	$48,000/t
Au Royalty	2.5%
Cu Royalty	5%
Co Royalty	5%

Geology and Geological interpretation

The Carlow Castle Project is hosted by mainly mafic Archean volcanic arc rocks. The Carlow Castle Main and Quod Est deposits are hosted within structurally controlled, mineralised zones occurring almost at right-angles to each other. The recently defined Cross-Cut deposit is located approximately 200 m north of north of Carlow Main and strikes north-south, sub-parallel to Quod Est (Figure 1).

Mineralisation is hosted within chloritic shear zones in basalts focussed along contacts between the host basalt and footwall and hanging wall gabbro units. At Carlow Main, mineralisation dips steeply north at the western end, while at the eastern end the mineralisation dips steeply south. The Carlow Main deposit strikes over 1.2 km and is partially oxidised to depths of 40 m to as much as 100 m in the east. Mineralisation trends at are complex with gold, copper, cobalt occurring across multiple lithologies, with limited structural control.

The Quod Est and Cross-Cut mineralisation is hosted by north-south chloritic shear zones, and are partially oxidised above 25 m.

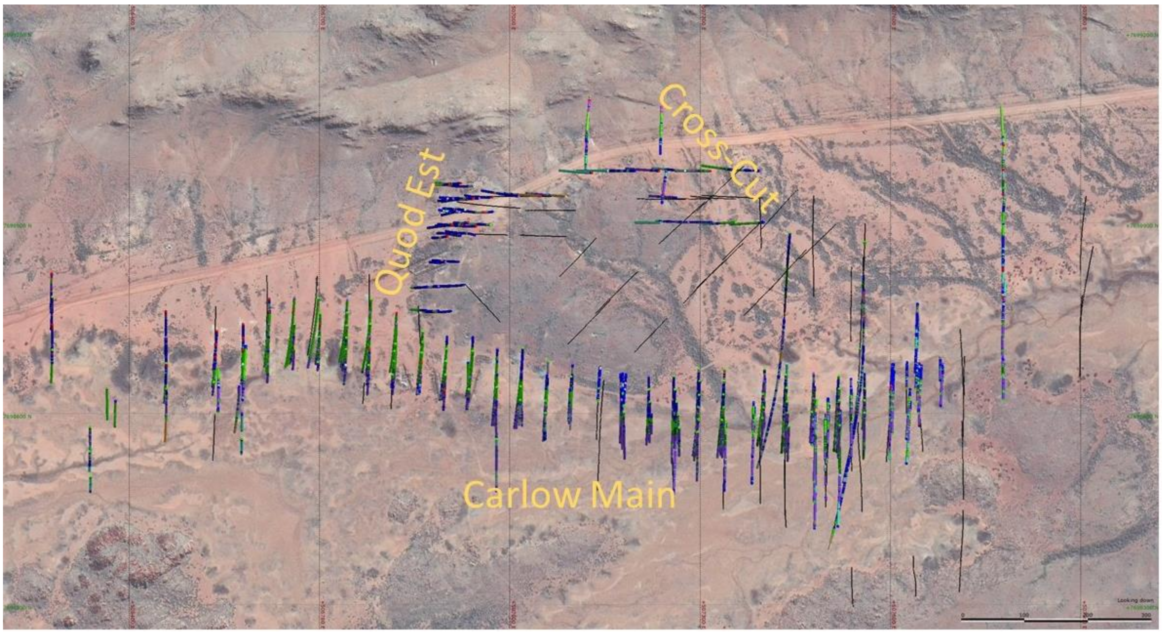

Figure 1: Map of Carlow Castle deposits with drillhole traces

Geological modelling was undertaken using Leapfrog Geo software. Mineralisation wireframes were generated using indicator interpolants based on copper and gold cut-off grades. These defined concentric high and low grade domains.

Low-grade copper domains (Domains 10, 20,30, and 32) (Table 3) were defined using a lower indicator cut-off grade of 200 ppm Cu, and a probability of 0.5; high-grade domains were defined generated using a cut-off grade of 500 ppm Cu, and probabilities of 0.2 to 0.8, in 0.1 increments. A very high grade gold domain (Domain 12) at the eastern end of Carlow Main was interpreted around four high grade gold intersections at a 0.5g/t Au cutoff. The domain interpretation for Carlow CMain was constrained to above the -600mRL, and for Quod Est and Cross-Cut to the -150mRL.

Table 3: Mineralisation Domain descriptions

Deposit	Domain Code	Description
Carlow Main	10	Low-grade zone – Cu, Co +/- Au
Carlow Main	11	High-grade zone – Au, Cu, Co
Carlow Main	12	Very high-grade zone – Au, Cu, Co
Quod Est	20	Low-grade zone – Cu, Co +/- Au
Quod Est	21	High-grade zone – Au, Cu, Co
Cross Cut	30	Low-grade zone – Cu, Co +/- Au
Cross Cut	31	High-grade zone – Au, Cu, Co
Cross Cut	32	Low-grade zone – Cu, Co +/- Au
Cross Cut	33	High-grade zone – Au, Cu, Co

Drilling Techniques

A summary of all drilling is provided in Table 4. The total number of drill holes informing the MRE update is 330, comprising 307 RC and 23 diamond core for a total of 47,139 drill metres. Holes were drilled by a Schramm TD685 rig for RC and an Evolution FH3000 rig for diamond core holes.

Table 4: Drilling History

Year(s)	Company	No. of holes	Hole type	Hole size (mm)	Metres	Hole ID (from)	Hole ID (to)
2017	Artemis	81	RC	133	7,357	ARC001	ARC081
2018	Artemis	108	RC	133	15,882	ARC082	ARC189
2018	Artemis	12	DD	96.1 (HQ3)	1,505	18CCAD001	18CCAD012
2020*	Artemis	62	RC	133	7,574	ARC190	ARC254
2020*	Artemis	11	DD	96.1 (HQ3)	3,788	20CCAD001	20CCAD010
2021*	Artemis	56	RC	133	11,033	ARC255	ARC309

**new data for the 2021 MRE update*

Sampling Techniques

RC samples were collected using a face-sampling 115 mm diameter bit via the inner tube to a rig-mounted, Sandvik tri-cone splitter to yield subsamples of approximately 3 kg from a 1 m sample length. The average sample recovery for 1 m RC samples for 16,115 records was 96.5%.

All core was collected by HQ3 sized triple-tube core barrels. Sample intervals ranged from 0.1 to 1.5 m, with an average of 1 m. The average sample recovery for core samples for 1,690 records was 97.3%.

Core from 2020 was cut in half using a diamond core saw, while the 2018 core was cut into two quarters. One half of the core from 2020 and one quarter core from 2018 was sampled by placing into numbered calico bags, which were tied and placed in plastic or polyweave bags.

Sample preparation consisted of drying, riffle splitting samples >3 kg, coarse crushing, pulverising to >85% passing 75 microns and homogenising the pulp.

Sample Analysis Method

All samples were assayed by ALS in Perth. The counts of the lab methods used, and upper limits for the methods, are shown in Table 5.

Table 5: Count of lab assay methods used by variable, ordered by variable

Variable	Lab Method Code	Generic Method Name	Description	Count	Range (g/t)	Max Value (g/t)
Cu	ME-ICP61	4A_ICPES	0.25 g sample, four acid digest with ICP-AES finish	43,758	1–10,000	10,000
	ME-ICP61A	4A_ICPES	0.4 g sample, four acid digest with ICP-AES finish	170	1–100,000	32,700
	Cu-OG62	4AOG_UN	0.4 g sample, four acid digest with "ore grade" over-limit finish	931	1,000–500,000	157,000
Au	Au-AA25	FAOG_AAS	30 g sample, fire assay, AAS finish	852	0.01–100	23.6
	Au-AA26	FAOG_AAS	50 g sample, fire assay, AAS finish	43,073	0.01–100	100
	Au-DIL26	DIL_UN	Unknown	3	?	108
Co	ME-ICP61	4A_ICPES	0.25 g sample, four acid digest with ICP-AES finish	43,758	10–10,000	10,000
	ME-ICP61A	4A_ICPES	0.4 g sample, four acid digest with ICP-AES finish	170	10–50,000	6,800
	Co-OG62	4AOG_UN	0.4 g sample, four acid digest with "ore grade" over-limit finish	99	500–300,000	65,400

Estimation methodology

Drillholes were composited to 1m downhole lengths, within each of the interpreted mineralisation domains. Statistical analysis indicated there is no significant change in gold, copper and cobalt grades between oxide, transitional, and fresh mineralisation types. There is a moderate correlation between gold and copper, and weaker correlation of between gold and cobalt. Copper and cobalt are moderately correlated.

Grade outliers were treated by reviewing the histograms, log-probability plots and mean-variance plots for each domain variable; topcuts were applied to reduce the risk of local over-estimation (Table 6).

Table 6: Top cuts applied by Domain and Element

Deposit	Domain	Au	Cu	Co
Carlow Main	10	50	20,000	10,000
	11	50	50,000	10,000
	12	50	150,000*	30,000*
Quod Est	20	50	20,000*	10,000
	21	50	50,000*	10,000
Cross Cut	30	50	10,000	2,000
	31	50	50,000	5,000
	32	50	10,000*	2,000
	33	50	50,000	5,000

Normal score experimental variograms were generated in the strike, dip and across-strike directions. The direction of maximum continuity for gold, copper, and cobalt at Carlow Main was modelled with moderate east plunges whereas Quod Est was modelled with steep north plunges. Kriging neighbourhood analysis was completed to optimise the estimation search parameters. The maximum number of samples allowed per each individual drill hole per estimate, was set to six.

Grades were then estimated using Ordinary Kriging into a block model with a block size of 20 mE by 10 mN by 10 mRL. Domain boundaries were treated as hard; only composites within a domain were used to estimate blocks within that domain.

Downhole gamma-density readings composited to 1 m were used to estimate density in mineralised domains in the block mode. Waste densities were assigned from assumed values.

Cutoff Grades

For reporting, an Au equivalent (AuEq) cutoff grade of 0.3ppm Au was applied to the block model. The AuEq was calculated by a weighted average of the three components of Au, Cu and Co (Table 7), using the same commodity prices and metallurgical recoveries as the optimisation. The formula for the Au equivalent is:

$$Au.Eq = Au\ (ppm) + Cu\ (\%) x1.19 + Co\ (\%)\ x\ 5.44$$

Table 7: Au Equivalent calculation derivation

Element	Price	Realised Price per unit	Unit	Recovery %	In Situ Unit Price	Unit	Au Eq Factor
Au	2200	70.74	$/g	95%	67.1	$/g	1.00
Cu	9400	9400	$/t	85%	79.9	$/t	1.19
Co	50000	50000	$/t	73%	365.0	$/t	5.44

Resource Classification

The Mineral Resource has been classified as Inferred. The classification level is based upon assessment of geological understanding of the deposit, geological and mineralisation continuity, drill hole spacing, QC results, search and interpolation parameters, analysis of available density information and current metallurgical testwork.

Mining and Metallurgical factors

In 2019, ALS Metallurgy in Perth completed preliminary metallurgical testwork on two 100 kg drill core composite samples. The metallurgical testwork demonstrated a potential Carlow Castle ore flowsheet utilising gravity and cyanide leach for gold, and flotation to produce copper and cobalt concentrates.

- 48% of the gold by testwork on metallurgical samples was recovered using gravity separation, and most of the balance of the non-gravity gold is recoverable in sulphide concentrates as a by-product using standard flotation. The total recovery of gold achieved was 94.8%
- Quick floating copper minerals produced a high-grade, premium copper concentrate of approximately 30% Cu.
- Deleterious elements including arsenic may be managed with a light concentrate polishing using regrind or blend control. Recoveries depended on mineralogy, with 77–85% copper recoveries achieved.
- Unrecovered copper minerals are predominantly represented by non-floating silicates or secondary oxide copper minerals.
- Cobalt recoveries ranged from 73–79%. Saleable Cobalt concentrate grades ranging 2.3–5.3% Co were produced. Cobaltite (CoAsS) is the dominant cobalt bearing mineral and is therefore intrinsically linked to arsenic affecting its sale price.

The mining and metallurgical factors used for the current resource estimate are presented in Table 8. They are largely unchanged from 2019, with the exception of the mining cost and the metal prices.

In the Company's opinion all elements have reasonable potential to be recoverable and sold.

Table 8: Carlow Castle 2021 Resource Mining and Metallurgical Assumptions

	Input Value
Overall Slope Angles	50°
Processing Cost	$48.1/t
Gold Recovery	94.8%
Copper Recovery	85%
Cobalt Recovery	73%
Mining Costs	$2.57/t to $6.35/t, incremented by depth
Gold Price	$2,200/oz
Copper Price	$9,400/t
Cobalt Price	$50,000/t
Au Royalty	2.5%
Cu Royalty	5%
Co Royalty	5%

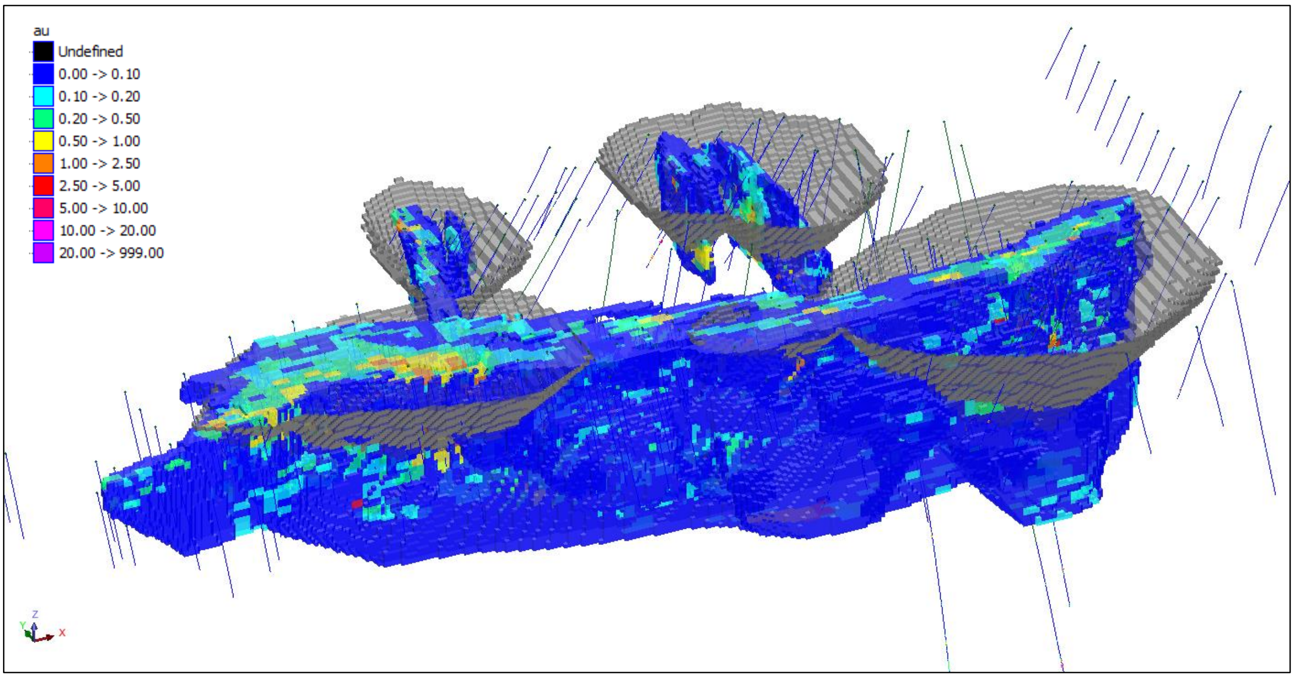

Figure 2: Oblique view of the Carlow Castle Inferred Resource pit optimisation; blocks coloured by Au grade

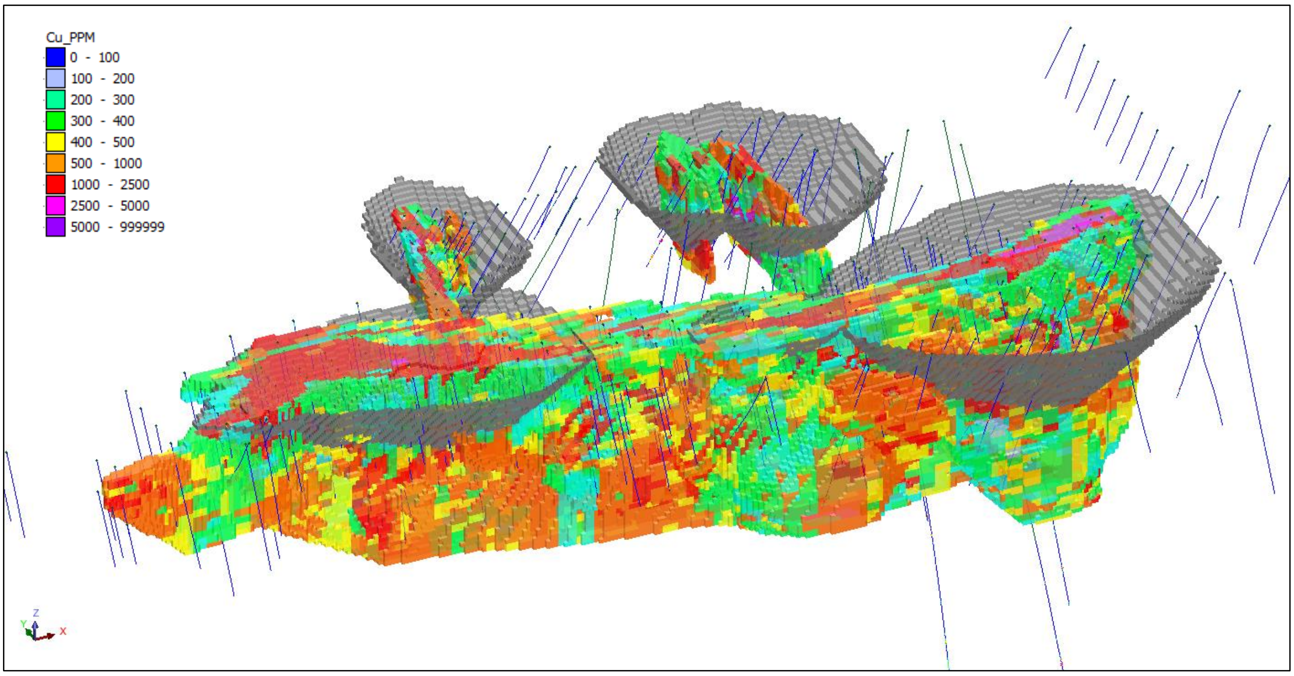

Figure 3: Oblique view of the Carlow Castle Inferred Resource pit optimisation; blocks coloured by Cu grade

This announcement was approved for release by the Board.

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Artemis Resources – Carlow Castle JORC 2012 Table 1

JORC 2012 Table 1 Section 1 – Sampling Techniques and Data

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 downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	Sampling consisted of reverse circulation (RC) and ¼ core HQ3 sized diamond samples. Geophysical data, including gamma, density, resistivity and hole calliper, were collected downhole by Wireline Services Group (WSG) using industry standard, calibrated tools.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	The entire RC and diamond drilling sample was extracted prior to subsampling at surface next to the rig. Diamond and RC field duplicates were taken on selected intervals within the interpreted mineralised horizons to measure representativity of sample splits.
	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	1 m RC samples comprised 39,930 m or 91%, HQ3 quarter and half core samples comprised 3,998 m or 9%. Sample intervals for RC and Diamond ranged from 0.3 m – 1.5 m, of which 97% are 1 m length. Sample preparation consisted of coarse crushing a maximum of 3 kg of the submitted sample, pulverising to >85% passing 75 microns and homogenising the pulp. The original assay technique used for copper and cobalt involving digesting a 0.25 g sample (by four acid digest) and ICP-AES finish. Both 30 g and 50 g sample sizes were chosen for analysis of gold, with fire assay fusion and detection by atomic absorption spectrometry (AAS).
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.).*	Drillhole data comprised 330 holes, consisting of 397 RC and 23 HQ3 diamond holes. Holes were drilled by TopDrill. RC by a Schramm TD685 rig and diamond by an Evolution FH3000 rig. RC samples were collected using a face-sampling, 4.5-inch diameter bit via the inner return tube to a rig-mounted, Sandvik tri-cone splitter. All diamond core was collected by HQ3 sized triple-splitter core barrels. Core was orientated by Reflex™ orientation tools.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	CSA Global did not supervise previous drill programs, however Artemis have provided the following guidelines for drill sample recovery which CSA Global consider as adequate. Sample recoveries were recorded by the field geologist in the field during logging and sampling. Cor recoveries were calculated based on nominal run lengths versus measured length of recovered core. • If poor sample recovery is encountered during drilling, the supervising geologist and driller endeavour to rectify the problem to ensure maximum and representative sample recovery. • Visual assessments by a field geologist were made for moisture, and possible contamination. Minor damp samples were encountered, and the field geologist and driller ensured cleanliness of cyclone and splitter was maintained. • A cyclone and static cone splitter were used to ensure representative sampling and were routinely inspected and cleaned. • Sample recoveries during drilling completed by Artemis were high with average recovery for RC 1 m samples of 96.5% and 97.3% for DD samples. Almost all samples were dry.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Triple-tube HQ core drilling was completed to maximise diamond core recoveries. Diamond drilling was completed to assist in validating the results from the RC samples and no identifiable bias was observed. Twin hole analysis showed good correlation between diamond and RC holes analysed.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No relationship between sample recovery and grade has been analysed.
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 RC and diamond drillholes were geologically logged to an industry standard appropriate for the mineralisation present at the project. All drill chip samples were geologically logged at 1 m intervals from surface to the bottom of each drillhole. Diamond core was photographed, and RC chips were retained in chip trays for future reference. The Competent Person considers that the level of detail is sufficient for the reporting of Mineral Resource estimation.

Criteria	JORC Code explanation	Commentary
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Lithological logging is qualitative in nature. Logged intervals were compared to the quantitative geochemical analyses and geophysical logging to validate the logging. Quantitative logging was provided by downhole geophysical density completed on 156 of 201 holes, averaging 75% of the total hole depth, by WSG in open holes within two months of the completion of drilling. The Competent Person considers that the availability of qualitative and quantitative logging has appropriately informed the geological modelling, including weathering and oxidation, water table level and rock type.
	The total length and percentage of the relevant intersections logged.	The total length of all drilling was geologically logged, and an average of 75% of the total hole depth was quantitatively logged for geophysical responses by WSG.
Subsampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	For drilling in 2017 and 2018 diamond core was cut into two quarters and one half using a diamond core saw. One of the quarters was placed into a numbered calico bag, which was tied and placed in a plastic/polyweave bag. For drilling in 2020 and 2021 diamond core was cut into two halves using a diamond core saw. One of the halves was placed into a numbered calico bag, which was tied and placed in a plastic/polyweave bag.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC samples were collected via a rig-mounted, Sandvik tri-cone splitter to yield sub samples of approximately 3 kg from a 1 m sample length.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation consisted of drying, riffle splitting samples >3 kg, coarse crushing, pulverising to >85% passing 75 microns and homogenising the pulp. The Competent Person considers these methods appropriate for this style of mineralisation.
	Quality control procedures adopted for all subsampling stages to maximise representivity of samples.	Artemis inserted 17 Internal Reference Standards (IRMs) of which 11 were used in the 2020 and 2021 drilling in the Mineral Resource update. IRMs “18A” to “18F” and “A” to “F” were of significant numbers and were partially matched with the mineralisation types and matrices (matrix matched) of materials comprising the Mineral Resources. The Competent Person considers these IRMs to have been produced under a rigorous methodology. RC and diamond field duplicates for the 2020 and 2021 drilling totalled 1,166. 1,160 IRMs and 200 blank samples were inserted with routine samples at the rate of approximately one standard, blank or duplicate in every 20 samples. Campaign-based analysis and reporting of quality control (QC) data was undertaken of blanks, field duplicates, laboratory repeats, laboratory blanks, repeats and IRMs in several groups of batches, and as a project-wide group of all results.

Criteria	JORC Code explanation	Commentary
		Laboratory duplicate checks (pulp duplicates) numbered 905, which represents duplication of 4.2% of the 2020 and 2021 dataset. Repeatability between duplicate pairs was very high. Gold assays show a broader scatter within the duplicate samples than the Copper and Cobalt whose majority of samples fall within a +/-10% range. IRMs reflect the expected values of Au and Cu relatively well (suitably accurate), though precision of gold was considered poor, and homogenisation of the IRMs requires addressing.
	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.	Artemis inserted field duplicates to monitor sampling precision. Downhole geophysical data were collected within two months of the drilling for both 2017 and 2018 drilling campaigns by WSG in open holes.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate to the grain size of the material being 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.*	All 44,006 primary samples were assayed by ALS in Perth, which is a National Association of Testing Authorities (NATA) Australia accredited organisation. The original assay technique used for copper and cobalt was 0.25 g sample with four acid digest and ICP-AES finish. When the upper limits of the range recommended by the lab were exceeded, a method more appropriate method was used to re-assay another sample of the pulp. For assays that reached the limits of 1% for the 30 g, the laboratory method ME-ICP61A was triggered, using 0.40 g samples with the same liberation and finish techniques. For some samples, the sample grades did not exceed the upper limit of the ME-ICP61A, but a method with a higher upper limit, being Cu-OG62 for copper and Co-OG62 cobalt, was used to provide more confidence in the analyses. In order of decreasing preference, the methods loaded into the assay table of the database for use in the MRE were: Cu-OG62/Co-OG62; ME-ICP61A; ME-ICP61. Both 30 g and 50 g sample sizes were chosen for analysis of gold, with fire assay and determination by AAS. The limit of 100 g/t was not reached for any samples. The larger sample size of 50 g was predominantly selected to provide greater confidence in the analyses. CSA Global has no information on the Au-DIL26 method, however this method was not used on a significant proportion of assays.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	The gamma signatures of selected drillholes were logged in counts-per-second (cps) by WSG. These wireline measurements were then converted to physical property values using calibrations determined specifically for each physical property parameter, which produced a density value based on the mineral assemblage's present. The data were provided as an average over 10 cm downhole spacings for 97% of the readings, 1 m for 3% of the readings

Criteria	JORC Code explanation	Commentary
		and a single reading of 3 m. The gamma-density records numbered 117,859, of which 7,480 (6%) and 110,379 (94%) are derived from diamond and RC holes respectively.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	The gamma-density readings were calibrated by logging of calibration material at the WSG facility prior to mobilisation to site.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Senior Artemis geological staff collected and inspected the samples. On behalf of the Competent Person, Mr Matt Clark, Senior Resource Geologist inspected several significant intersections of diamond core. The Competent Person considers that the information provided to him by colleague Mr Matt Clark allows him to appropriately consider the necessary factors in establishing Mineral Resources for the confidence estimated.
	The use of twinned holes.	Diamond holes were drilled to infill areas of RC holes, and diamond sample results showed moderate correlation to the nearest RC sample results. A slight bias was observed for Au, Cu, Co for RC versus diamond assay grades.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	The data entry, storage and documentation of primary data was completed on Microsoft Excel spreadsheets and local hard drives, then imported into a central database managed by CSA Global.
	Discuss any adjustment to assay data.	No adjustments or calibrations have been made to any assay data.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	All hole collars were surveyed by differential global positioning system (DGPS). Down-hole locations were predominantly surveyed by gyroscope, equating to 95% of the total metres surveyed. Gyroscope values in the database were recorded every 30 m, except diamond hole 18CCAD001, and RC holes ARC190 to ARC222 (inclusive) which include records every 10 m. Holes were also surveyed by Reflex EZ TracTM down-hole camera. Another unknown method ("UNK") existed in the database for the survey records of the collar of RC holes ARC033 and ARC105, and another record of the latter at 66 m, both of which had no additional records. The maximum depths of these holes were 22 m and 66 m. The survey data for ARC033 derive from the planned hole azimuth and dip, and the survey data for ARC105 derive from DGPS collar survey measurement, which has been copied to the maximum depth.
	Specification of the grid system used.	Topographic data were captured in GDA94 MGA Zone 50 grid system.
	Quality and adequacy of topographic control.	A topographic surface was built from high-resolution 5 m Unmanned Aerial Vehicle (UAV) point data with a resolution of 10 cm. The Competent Person considers that the surface is suitable for this Mineral Resource estimate.

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The mineralisation has been defined by two orthogonal drilling grids to intersect the east-striking Carlow Main lodes and north-striking Quod Est lodes. The southern boundary of the Quod Est drilling grid adjoins the northern boundary of the Carlow Main grid at its central-western area. Aside from minor mineralisation extension, infill drillholes and several interpretation-controlling scissor holes, drilling is regularly spaced 20 m apart on 40 m spaced sections, nominally averaging –60° dips, which has provided consistent support to intersections of mineralisation and eliminated any influence of hole angles on grade. Drillholes that define the Carlow Main mineralisation lie on 35 sections that shift north or south perpendicular to the sigmoidal curve that defines the mineralisation trend. Drillholes in the western-section of the Carlow Main lodes have been drilled to the south to intersect the very steeply north-dipping lodes, until section 507,640 mE, where the holes have been drilled to the north to intersect the very steeply south-dipping lodes. Drilling into the Quod Est mineralisation has been intersected by east-west orientated holes lying on eight sections – two of which are infill sections – perpendicular to a central easting of 506,650 mE. Drilling into the Cross-Cut mineralisation has been intersected by three sections with east-west orientated drill holes, two-sections with north-south orientated drill holes, and three sections with south-west orientated drill holes.
	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.	The Competent Person believes the mineralised lenses have sufficient geological and grade continuity to support the classification applied to the Mineral Resources given the current drill pattern.
	Whether sample compositing has been applied.	The down-hole intervals logged by the geologist as being mineralised or showing significant alteration were sampled and assayed at 1 m intervals. Compositing of samples occurred for holes ARC036 to ARC081 only. All unmineralised intervals (based on the field portable XRF readings for Cu, Co and As) were composited and assayed over 3 m intervals. Mineralized intervals based on the field XRF readings were assayed in 1 m intervals. If a 3 m composite returned assays above normal background levels, these intervals were re-sampled and assayed at 1 m intervals.
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.*	The regular spaced drilling on consistent sections, and the orientations orthogonal to the strike of the lodes, have provided consistent support to intersections of mineralisation to and minimised any bias or influence of hole angles on grades.

Criteria	JORC Code explanation	Commentary
	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 relationship has been noted between drillhole dip angle and mineralisation. A slight positive bias has been noted for Au, Cu, and Co for drill holes with azimuths oriented sub-parallel to mineralisation. The bias was limited to the eastern section of Carlow Main and influence of high-grade sub-parallel drill holes on the estimation controlled using a small volume wireframe.
Sample security	*The measures taken to ensure sample security.*	Samples were bagged, and cable tied upon collection. The chain of custody was managed by the supervising geologist, who placed up to 10 calico sample bags in polyweave sacks, clearly labelled with: • Artemis Resources Ltd • Address of laboratory • Sample range The polyweave sacks were then loaded directly into a bulka bag. Each hole was placed in a separate bag, and twice a week the labelled bags would be collected and delivered to a transport depot. These were then loaded directly onto a truck and delivered direct to the laboratory. Each bulka bag or hole had a separate sample dispatch, which became a separate analytical batch at the laboratory. Sample security was maintained through short collection and delivery turnarounds and the use of secured transport yards.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No external audit of sampling techniques and data has been undertaken.

JORC 2012 Table 1 Section 2 – Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	The project lies on tenement E47/1797-I, which is held by KML No. 2 Pty Ltd (KML), a 100% owned subsidiary of Artemis. The tenement was granted on 07/05/2008 and is held in good standing. According to the Department of Mines, Industry and Regulation (DMIRS) of WA Mineral Titles Online system, the tenement has an excised portion of land for the expired tenement M47/385 (DMIRS, 2019). The tenement is overlapped by a miscellaneous licence, granted tenement L47/416 held conjointly by Stirling Bay Holdings and Swan Bay Holdings.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The tenement is securely held by a 100% owned subsidiary of Artemis and there are no impediments preventing the operation of the Lease.

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Prior to its name as Carlow Castle, the Project area was known first as Cooper's. Pre-1968 As early as the 1870's, copper ore was mined at the area formerly known as Glenroebourne. Gold was discovered in the district in the late 1880's and numerous, small gold and gold-copper prospects, and minor silver, were worked to 1960. In the 1930's, the area was investigated by North Australian Aerial Geological, Geophysical Survey. In 1964, Westfield Minerals NL undertook extensive regional mapping and stream-soil sampling, and identified and drilled geochemical, magnetic and induced polarisation (IP) anomalies. The Geological Survey of Western Australia (GSWA) published a regional geology map in 1965. 1968 – 1972 In 1968, Consolidated Gold Mining Areas NL drilled seven DD holes for 759 over mining claims MC387 and MC410, which are now within E47/1797-I. The holes intersected mineralisation containing three main chalcopyrite veins ranging from 23 cm to 76 cm thickness and hosted up to 5.36% Cu, 17.14 g/t Au and 1.42% cobalt in separate 2 ft samples. Geophysical work was carried out to improve mineralisation targeting included magnetometer, self-potential and IP surveys. In 1969, in partnership with Roebourne Exploration and Mining Ltd, Amax commenced exploration of the area by 275 wide-spaced magnetometer survey lines and 141 line-miles of IP survey, 2,800 ft of auger drilling, 14,000 ft of percussion drilling, 2,800 ft of DD and 475 ft costean/trench. The details of the exploration program completed are unclear, as the financing arrangements only allowed for partial program completion. The trench revealed two vine structures of high-grade mineralisation, with 8 m @ 1.73% Cu and 14 m @ 2.2% Cu within a wide low-grade copper mineralisation halo grading 0.38% Cu that contained numerous anomalous gold and cobalt results. However, Amax's primary focus for the drilling program was targeting IP anomalies to the north of Carlow Castle that were coincident with a chert band formed from a felsic volcanic horizon that yielded 10 ft @ 2.5% zinc. The target was a stratiform zinc deposit, but instead the source of the IP anomalies was identified as pyrite, and so Amax lost interest in the project area. 1986 – Openpit Mining Ltd In a report for Artemis inserted into the annual report for the combined reporting group to the GSWA, Torbinup Resources Pty Ltd noted that Openpit Mining Ltd explored the known base metal mineralized areas for gold mineralisation in 1986 and 1987, which included detailed mapping of the main workings at Carlow Castle and the drilling of 31 RC holes for 1,527 m in the Carlow Castle, Good Luck and Little Fortune areas (Cahill, 2011, cited in Voermans, 2012). One hole, GC04 intercepted 22 m @ 10.7

Criteria	JORC Code explanation	Commentary
		g/t Au below the No 1 Lode, which included a 6 m interval of 30.97 g/t Au. 1995 – 2008: Legend Mining Pty Ltd (& others) The following has been taken from Cahill (2011), cited in Voermans (2012). Legend commenced exploration of the area in 1995, initially concentrating on areas of historic workings. Dragon Mining NL, (“Dragon”) and Titan Mining NL (“Titan”) commissioned an Airborne Electromagnetic (“AEM”) survey over a large portion of the West Pilbara in 1996 and 2001 respectively. In 1999 and 2000, Legend explored the copper anomaly identified by AMAX in 1969, which led to the discovery of high-grade copper-gold mineralisation in a soil covered area of Carlow South, south of the main workings. Further field activities included RC drilling, soil geochemical sampling, detailed ground magnetic surveys, trenching, preliminary metallurgical testwork, gradient array induced polarization (“IP”) and transient electromagnetic (“TEM”) surveys and resource estimates. This program was successful in identifying a high-grade pod of gold mineralization which plunges 60° easterly within a broad shear zone and remains open at depth. This pod is surrounded by an extensive halo of lower grade gold and copper mineralization over a strike length of 400 m which is open to the west. In 2000 estimates of mineralization within 100 m of the surface were produced using a sectional polygonal method. A number of other prospects within a 500 m radius of the old Carlow Castle workings were subject to first pass RC drilling and results confirm the widespread presence of copper and gold mineralisation in the area. Approximately 400 m east of the main workings, drill hole CC54 in Carlow East intersected two mineralised horizons within a 20 m thick highly altered zone. The intersections included 4 m grading 1.32% Cu and 4.55 g/t Au from 38 m, and 48 m 5.66% Cu and 1.87 g/t Au, which included 8m @ 0.16% Co. Following orientation TEM and IP surveys over the Carlow South resource, a detailed IP survey was completed over the main area of interest. A detailed interpretation of the data resulted in the identification of numerous IP and resistivity targets. A total of 28 IP targets and 9 resistivity targets were selected and assigned a follow-up priority for immediate drilling. This planned drilling was never undertaken. Small scale mining of the green chrysoprase was undertaken in the past on M47/385 just north of the Carlow Castle main workings and several large boulders were mined and subsequently cut and polished for marketing purposes. Polished hand specimen show a translucent pattern of very fine grained, apple green colour chert, transected by milky-white to blackish quartz veins and veinlets.

Criteria	JORC Code explanation	Commentary
		In 2007 and 2008, Legend undertook geophysical exploration surveys over the project area, which used a combination of AEM and ground-based geophysics, and consisted of: Compilation and processing of regional aeromagnetic and radiometric datasets covering the entire the project area. The compilation involved several historic datasets with line spacing varying from 25 m to 400 m. Three Versatile Time Domain Electromagnetic ("VTEM") surveys covered an area of approximately 410 km2, with flight directions ranging from E-W to NW-SE to N-S depending on the orientation of stratigraphy. Line spacing was either 200 m or 100 m with infill lines of 100 m or 50 m respectively if conductive features of interest were identified. Three Ground Fixed-Loop Transient Electromagnetic ("FLTEM") surveys were carried out to investigate 16 conductors identified by the airborne VTEM surveys. Thirteen of the 16 VTEM targets surveyed identified conductors considered significant enough to warrant future drill testing. 2008 – 2016: No on ground Exploration activities were conducted between 2008 and 2016 as a native title agreement was being negotiated. 2017 – 2019: Artemis commenced resource development drilling at Carlow Castle in 2017 with 81 RC holes completed for 7,357 m. A sub-audio magnetic (SAM) survey over the Carlow South area in 2018 and confirmed the 1.2 km strike of the Carlow Castle Mineral Resource. Resource development drilling in 2018 included 108 RC holes for 15,882 m, and 12 DD holes for 1,505 m. Drilling focussed on the Carlow South and Quod Est areas with drill holes nominally spaced 20 m apart on 40 m spaced sections. The drilling confirmed the high-grade nature of Carlow Castle and results were incorporated into mineral resource estimates in February 2019 and updated in November 2019. In 2019, ALS Metallurgy in Perth completed preliminary metallurgical testwork on two 100 kg drill core composite samples. The metallurgical testwork demonstrated a potential Carlow Castle ore flowsheet utilising gravity and cyanide leach for gold, and flotation to produce copper and cobalt concentrates. 2020 – 2021: In 2020, Artemis completed follow-up resource development drilling at Carlow Castle targeting infill and extensions at depth in the Carlow South and Quod Est areas. A total of 62 RC holes for 7,574 m and 11 DD holes for 3,788 m were completed and successfully intersected mineralisation up to 250 m below the November 2019 Mineral Resource.

Criteria	JORC Code explanation	Commentary
Geology	*Deposit type, geological setting and style of mineralisation.*	The project area lies on Archaean volcanic arc rocks, which overly two unconformable sequences of mainly volcanic and intrusive rocks. Amphibolites and undifferentiated mafic and ultramafic rocks dominate the older sequence, which have been metasomatised by intrusive activity. Gabbros and calcrete-covered serpentinites have been recognised in the area. The Carlow Castle gold-copper-cobalt (Au-Cu-Co) deposits are located 28 km northeast of the Radio Hill processing plant. Carlow Castle and Quod Est are structurally controlled mineralised zones occurring almost at right angles to each other. The Quod Est portion strikes approximately north-south dipping steeply east with a strike length of about 200 m and is fault terminated to the north and potentially at depth. The Carlow Castle portion strikes east-west, being fault disrupted at each end. Drill definition has been completed over the 1,200 m strike length which has a flattened sinusoidal form. At the western end mineralisation dips steeply north, at the eastern end the mineralisation dips steeply south. Mineralisation in Carlow Castle has been shown to extend to at least 550 m below surface. The Cross-Cut mineralisation strikes approximately north-south dipping steeply east, with a strike of about 150 m.
Drillhole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:* *Easting and northing of the drillhole collar* *Elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar* *Dip and azimuth of the hole* *Downhole length and interception depth* *Hole length.*	Exploration results are not being reported.
	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.	Exploration results are not being reported.
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.*	Exploration results are not being reported.

Criteria	JORC Code explanation	Commentary
	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.	Exploration results are not being reported.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Exploration results are not being reported.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	The bulk of the Carlow Main mineralisation lodes dip sub-vertically or steeply to the North and steeply to the South in the eastern 20%, while Quod Est and Cross-Cut lodes dip steeply to the East. Other than a low proportion of scissor holes that provided volume control, drill holes were angled near to 60° and with an azimuth perpendicular to the lodes strike to provide as near a 'true' intercept thickness as realistically possibly.
	If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.	Exploration results are not being reported.
	If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').	Exploration results are not being reported.
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 drillhole collar locations and appropriate sectional views.*	Relevant maps and diagrams are included in the body of this announcement.
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.*	Exploration results are not being reported.
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.*	Surface geological observations have been incorporated into the geological interpretation and in concert with the results of geochemical assays, considered reasonable for this style of mineralisation. Downhole geophysical logging was undertaken. The geophysical probe penetrated >85% of the final hole depth for 61% of the 36 holes and >60% of the final depth for 78% of the holes. Six holes penetrated between 40% and 60% of the final depth, one hole penetrated 33% and one 18% of the final depth.

Criteria	JORC Code explanation	Commentary
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).*	Infill drilling around the higher-grade zones is planned to improve the geological understanding of the host structures and the confidence of the geological model, grade estimate and Mineral Resource confidence in these zones. Metallurgical testwork samples are planned from the oxide, transitional, and fresh weathering zones to optimise the process flowsheet and allow accurate cutoff grades to be determined. Scoping-level studies are planned to increase the confidence in the input parameters for an economic evaluation of the project.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Relevant maps and diagrams are included in the body of this announcement.

JORC 2012 Table 1 Section 3 – Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	*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.*	Geophysical files were uploaded from the data logging device to the contractor's central storage database and then provided in both raw and corrected/filtered format in CSV, LAS and PDF format. This has removed the potential for transcription errors and for reference checks. Core logging was completed by Artemis on site using project-specific logging codes and a database management system; DataShed™, with primary key fields and look-up tables. Collar survey, down hole survey and assay files were loaded from source files using templates to load into predefined tables. These measures enforced strict referential integrity and validation rules to prevent corruption errors. The Competent Person found no material errors and deemed the database was fit for the purpose of Mineral Resource estimation.
	Data validation procedures used.	The Competent Person checked the drillhole files for the following errors prior to Mineral Resource estimation: • Absent collar data • Multiple collar entries • Questionable downhole survey results • Absent survey data • Overlapping intervals • Negative sample lengths • Sample intervals which extended beyond the hole depth defined in the collar table. • Assay values reported as negative detection limits were updated to half detection limits.

Criteria	JORC Code explanation	Commentary
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The Competent Person has not visited the site, but has relied on information from colleague Mr Matt Clark, Senior Resource Geologist, collected during a site visit in April 2021.
	If no site visits have been undertaken, indicate why this is the case.	The Competent Person considers that the information provided to him by colleague Mr Matt Clark allows him to appropriately consider the necessary factors in establishing Mineral Resources for the confidence estimated.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The host lithologies at Carlow Castle are basalt and gabbro, with mineralisation predominantly in basalt with a strong lithological control on mineralisation between basalt and gabbro. The dominant control on mineralisation is by structures potentially far smaller than the drill hole spacing and smaller than which can be explicitly modelled. Therefore, the geological model consisted of waste and mineralisation.
	Nature of the data used and of any assumptions made.	No material assumptions have been made which affect the MRE reported herein.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The Competent Person is confident any alternative interpretations would result in globally immaterial differences in the Mineral Resource estimate.
	The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology.	Mineralisation generally shows a continuous grade distribution from un-mineralised through to high grade, with minor inflection points within the log-probability plot for the distribution. One such inflection occurs at 200 ppm Cu, on which definition of mineralisation lodes were based. A second cut-off at 500 ppm correlated with high-grade copper, gold, and cobalt, and also correlated with structural measurements defined by structural logging and modelling. The geological model includes a shallow, approximately 3 m thick overburden surface and an oxide horizon that averages 40 m depth. Transitional material is typically 10 to 20 m thick and extends down to 100 m depth in the eastern section of Carlow Main.
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.*	The Carlow Main lodes have been modelled as a set of anastomosing fingers extending off and conjoining a major central zone that follows a broad sigmoidal curve whose average centreline at 769,660 mN strikes 1,200m east-west. The anastomosing lodes vary in thickness from 5 m where they pinch to 90 m in the thickest portion. The high-grade 500 ppm copper shell averages 30-40m thick, within the low-grade 200 ppm copper wireframe that extends up to 50 m to the north and south. At the western end, mineralisation dips steeply north, and at the eastern end it dips steeply south. Mineralisation in Carlow Main has been interpreted to a maximum of 630 m below surface, averaging 280 m. The Quod Est and Cross Cut mineralisation have been modelled similarly with low-grade 200 ppm copper shell and inner high-grade 500 ppm grade shells. Quod Est and Cross-Cut lodes have been interpreted as a steeply east dipping

Criteria	JORC Code explanation	Commentary
		lodes. The major lode at Quod Est outcrops and strikes NNE, bifurcates at its southern third, and measures about 200 m overall, with maximum depth of 180 m. The Cross Cut mineralisation has been interpreted as two lode structures that strike 150 m NNE and dip steeply east, to a maximum depth of 180 m.
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*	The Mineral Resources were estimated within nine estimation domains, representing Carlow Castle Main, Quod Est and Cross Cut, formed from the mineralisation model interpreted at nominal cut-offs of 200 ppm and 500 ppm Cu. The domains were further split into overburden, oxide and fresh by the oxidation wireframes. A small volume wireframe was modelled in the eastern section of Carlow Main based on a 0.5 g/t Au cut-off to control the influence of high-grade holes that were drilled subparallel to mineralisation. All geological modelling was undertaken using Leapfrog Geo software. Estimation domains were modelled using indicator interpolants and the nominal 200 ppm Cu, 500 ppm Cu, and 0.5 g/t Au cut-off grades. Statistics, grade and density estimates, and variography, were undertaken in Supervisor software, and composite selection and block coding, undertaken in Surpac software, used the combined domains as hard boundaries. Samples were composited to 1 m intervals based on assessment of the raw drillhole sample interval lengths. Quantitative Kriging Neighbourhood Analysis (QKNA) was undertaken using Supervisor software to assess the effect of changing key kriging neighbourhood parameters on block grade and density estimates. Kriging Efficiency and Slope of Regression were determined for a range of block sizes, minimum and maximum samples, search dimensions and discretisation grids. A two-pass search ellipse strategy was adopted, whereby the first pass equated to the full range of the relevant variogram model for each domain, with a minimum of 8 samples, maximum of 20 samples and a maximum of 6 samples per hole. The second pass search ellipse was between 2 to 3.5-times the variogram model range, with a minimum of 8 samples, maximum of 16 samples and a maximum of 6 samples per hole. All blocks were filled in the first two passes. A 20 mE x 10 mN x 10 mRL parent cell size was constructed covering the full volume of the mineralisation and additional space for mine infrastructure planning. Sub-celling was employed to 5 mE x 5 mN x 5 mRL to improve block volume fitting to the complex wireframe. Mineralisation domains were coded in the block model below the overburden surface, and further coded by oxidation domain. High grade cuts were used to constrain outliers in the dataset as described above.

Criteria	JORC Code explanation	Commentary
		Grade interpolation for Au, Cu, Co, As, S was completed using ordinary kriging (OK) into the parent block cells. The search employed a dynamic anisotropy to allow the ellipse to rotate along the sinusoidal mineralisation domains.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	Several previous historical resource estimates have been completed previously. These reports were available to the Competent Person. These did not necessarily cover the same area as this Mineral Resource update and were volumetrically smaller in their extent. Further; while these Previous Mineral Resources are quoted below, the approach taken to modelling and estimation differs fundamentally from that of the current estimate Consequently, the models are not directly comparable. In 2018, Mr Philip Jones estimated Mineral Resources reported in accordance with the JORC Code for Carlow South using drilling data provided by Artemis to model mineralisation wireframes that were based on a total net smelter return of >$30 using the following metal factors: • Copper: Price: $4.473/lb; Recoveries: 75% (mining and metallurgical recovery) • Gold: Price: $USD1282.10/oz; Recoveries: 90% (mining and metallurgical) • Cobalt: Price: $54,500/t; Recoveries: 75% mining and metallurgical In January 2019 Al Maynard & Associates estimated Inferred Mineral Resources at Carlow Castle South and Quod Est of 7.7 Mt @ 0.51% Cu, 1.06 g/t Au and 0.08% Co. Four domains, based on the strike of the mineralisation, were used in the modelling. High grade cuts were also applied using mean grades +2SD of copper, gold and cobalt per domain. Grades were interpolated by Inverse Distance Squared (ID^2). In November 2019, CSA Global estimated Inferred Mineral Resources at Carlow Castle South and Quod Est of 8 Mt @ 0.6% Cu, 1.6 g/t Au and 0.08% Co, reported above a lower cut-off of 0.3% Cu, and within a theoretical optimised pit shell. Two estimation domains for Carlow Main and Quod Est were used in the modelling based on a lower cut-off grade of 500 ppm copper. Grade interpolation was completed initially by ordinary kriging into panels, with post-processing using localised uniform conditioning (LUC) within the panels to derive an estimate at the smaller selective mining unit (SMU) scale. Grade limiting was employed in the panel estimates to restrict the influence of very high grades to 10 m. The optimised pit shell used for the Mineral Resource reporting used the following parameters: • 50^{o} overall slope angle

Criteria	JORC Code explanation	Commentary
		• Oxide and Fresh used same recoveries/processing costs • \$48.1/t processing cost • 85% copper recovery • 94.8% gold recovery • 73% cobalt recovery • Mining costs \$/t incremented by depth ranging from \$2.57 through to \$5.77 inclusive. • Copper: \$9000/t • Gold: \$2000/oz • Cobalt: \$48,000/t
	The assumptions made regarding recovery of by-products.	The co-products, gold and cobalt, are assumed to be recoverable within the mineralisation wireframe volumes that have been modelled on a copper grade cut-off. The metallurgical testwork for gold and cobalt may not be representative of the material reported as Mineral Resources. However, the metallurgical testwork results show that gold and cobalt can be recovered.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Arsenic and sulphur have been estimated, although it is unknown at this stage of the project if they are deleterious for copper, gold and cobalt.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The dimensions of the parent block used for estimation represents approximately half the drillhole spacing in the X orientation and one quarter the spacing in the Y orientation.
	Any assumptions behind modelling of selective mining units.	SMU units were not modelled. The parent block size of 10 m in the Z direction is approximately twice the size of assumed SMU of 5 m high mining benches. The assumed SMU has been determined based on the assumption of a production scenario utilising small to medium size earthmoving equipment (for reference; 125 tonne excavator, plus CAT 777 or equivalent haul trucks). In the experience of the Competent Person, this equipment selection may be considered typical for a deposit of the size and style of Carlow Castle.
	Any assumptions about correlation between variables	No assumptions have been made regarding the correlation of variables.
	Description of how the geological interpretation was used to control the resource estimates.	Logged geology, alteration and structural controls were used in the interpretation of lodes within the resource model. Hard boundaries were used for estimation between mineralised domains.
	Discussion of basis for using or not using grade cutting or capping.	For the estimate of grades, high-grade cuts were applied to reduce the influence of extreme outliers. These values, determined by statistical analysis including review of CV

Criteria	JORC Code explanation	Commentary
		values, histograms, log-probability plots and mean-variance plots.
	The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.	Standard model validation was completed using numerical methods (histogram and swath plots) and validated visually in section and 3D against the input raw drillhole data, composites and blocks.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages have been estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	The Mineral Resources were reported at a 0.3 ppm Au.Eq cut-off, within a Whittle™ theoretical optimisation that used the following factors: • 50° overall slope angle • Oxide, Transitional and Fresh used same recoveries / processing costs • $48.1 / tonne processing (includes refining, insurance and G&A) • Recoveries, which in Artemis' opinion have a reasonable potential to be achieved, are: • 85% Cu recovery • 94.8% Au recovery • 73% Co recovery • Mining Costs $ / tonne incremented by depth (coded into each block in the model by RL), ranging from $2.57 through to $5.77 inclusive • Prices: ○ Cu $9,400 / tonne ○ Au $2,200 / oz ○ Co $50,000 / tonne • 2.5% royalty per ounce payable on gold produced. 5% royalties per tonne payable on both copper and cobalt produced. • Au.Eq was calculated from a combined weighted grade of Au, Cu, Co using the same commodity prices and metallurgical recoveries as the optimisation. Au.Eq = Au (ppm) + Cu (%)x1.19 + Co (%) x 5.44
Mining factors or assumptions	*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.*	Open pit mining is considered as the appropriate method for future studies, and the Competent Person believes that there are reasonable prospects for eventual economic extraction based on the outputs of the Whittle optimisation completed. A minimum mining width of 2 m was applied (downhole composite width). No other mining assumptions were made. Detailed mining assumptions such as dilution and minimum mining widths will be included in any optimisation, detailed mine planning and Life of Mine plan.

Criteria	JORC Code explanation	Commentary
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 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.*	Preliminary metallurgical testwork was conducted by ALS Metallurgy in 2019 focussing on the metallurgical amenability of selected samples to a conventional gravity gold, cyanide leach and flotation processes. Results are detailed below: Gold • 48% of gold by testwork on metallurgical samples was recovered using gravity separation, and most of the balance of the non-gravity gold is recoverable in sulphide concentrates as a by-product using standard flotation. Copper • Quick floating copper minerals produced a high-grade, premium copper concentrate of approximately 30% Cu. • Deleterious elements including arsenic may be managed with a light concentrate polishing using regrind or blend control. Recoveries depended on mineralogy, with 77–85% copper recoveries achieved. • Unrecovered copper minerals are predominantly represented by non-floating silicates or secondary oxide copper minerals. Cobalt • Cobalt recoveries ranged from 73–79%. Saleable Cobalt concentrate grades ranging 2.3–5.3% Co were produced. Cobaltite (CoAsS) is the dominant cobalt bearing mineral and is therefore intrinsically linked to arsenic affecting its sale price. Artemis believe the gold recovered by metallurgical testwork could be sold in concentrates as a credit or recovered on site using a cyanide leach process. Acid soluble copper testwork has been completed for oxide and transitional ore and estimated in the block model by inverse distance (ID2) to guide additional metallurgical sampling. CSA Global recommend additional metallurgical programs across the Mineral Resource incorporating results from acid soluble copper and multi-element analysis. Further geometallurgical testwork to develop quantitative mineralogy and rock mass studies is also recommended.
Environmental 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*	No assumptions regarding possible waste and process residue disposal options have been made. Sulphur and arsenic have been estimated into the model to allow the assessment of potentially acid forming minerals and other environmentally sensitive residue.

Criteria	JORC Code explanation	Commentary
	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.*	For mineralisation, downhole geophysical gamma density was used to estimate density by OK using the relevant variogram and estimation parameters for each statistical domain. Only sample points that had a calliper measurement of not more than 20% of the nominal hole diameter for each hole type were included in the analysis and data for estimation. The gamma density was visually correlated point-by-point to each overlapping water immersion determination of specific gravity on HQ3 core, which found a strong correlation. The size and range of lengths of density determinations are considered by the Competent Person to be robust. A correlation of 0.05 was calculated between sample lengths and density determinations, confirming that the sample length has no impact on the density. The gamma-density of the RC hole is weakly low-biased compared to the diamond core density, while the gamma-density of the diamond hole is very weakly high-biased. Sample points were composited to 1 m length prior to estimation. Waste densities were applied from nominal values.
	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.	The gamma determines a quantitative, in situ measurement of density that accounts for void spaces. The measurements have been calibrated to regular calibration holes in iron ore deposits in the Pilbara, and on materials at the contractor's facility. The water immersion method measurements were determined by measuring the weight of part or the entire sample in air and water and then applying the formula bulk density = weight_air/(weight_air-weight_water). Samples of drill core were sealed with a masonry sealant/wax and allowed to dry prior to bulk density determination. The estimate of density was undertaken within oxidation domains in the mineralisation.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The gamma density data were considered sufficient in number for all material types, quantitative and unbiased when large calliper deviations from the nominal hole diameter were removed. Calibration was undertaken using comparison to other holes and to density measured by water immersion. The approach adopted is considered robust.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The MRE was classified as Inferred based on the level of geological understanding of the mineralisation, quality of samples, density data, drillhole spacing, historical nature of the drilling, detail of metallurgical information available for

Criteria	JORC Code explanation	Commentary
		soluble / insoluble copper speciation and sampling and assaying processes.
	Whether appropriate account has been taken of all relevant factors (i.e. 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).	The classification reflects the overall level of confidence in mineralised domain continuity based the mineralisation drill sample data numbers, spacing and orientation. Overall mineralisation trends are reasonably consistent within the various lithotypes over numerous drill sections.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource classifications applied appropriately reflect the view of the Competent Person.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	Internal audits were completed by CSA Global which verified the technical inputs, methodology, parameters and results of the estimate.
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 accuracy of the MREs is communicated through the classification assigned to the various parts of the deposits. The MREs have been classified in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this table. The MRE statement relates to a global estimate of in-situ tonnes and grade.
	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.	The accuracy of the MREs is communicated through the Inferred classification assigned to the deposit. The MRE has been classified in accordance with the JORC Code. All factors that have been considered have been adequately communicated in Section 1, Section 2 and Section 3 of this table. The MRE statement relates to a global estimate of in-situ tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No production data are available.