GOLDEN CROSS RESOURCES LTD
ABN 65 063 075 178

301/66 Berry Street
NORTH SYDNEY NSW 2060
Phone (02) 9922 1266

For personal use only

30 December 2021

Drilling Completed at Quidong

Drilling was undertaken in December 2021, while a flood event stalled progress for 3 days.

The Quidong Basin has numerous occurrences of carbonate-hosted zinc/lead and gold mineralisation, and potential intrusive-related gold mineralisation, which occurs elsewhere in the region. Previous data and Golden Cross Resources' (GCR) field reconnaissance have identified zinc-lead-gold drill targets which remain to be tested.

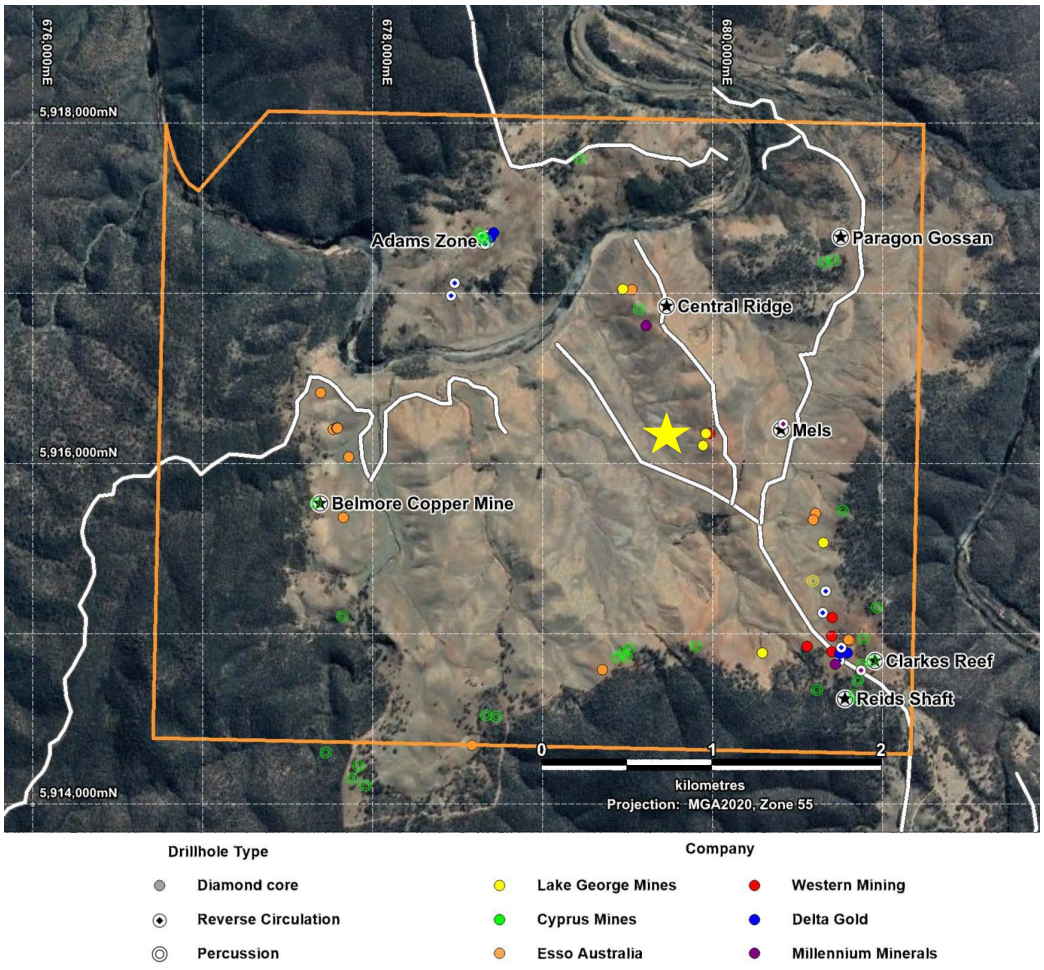

Figure 1: EL7989, previous drill locations and current site
[Hutton 2021]

The basin sequences are dominated by bioclastic and reefal limestones together with calcareous siltstones and sandstones. Sulphide minerals occur in stratabound, vein and replacement styles, and there is a close association of mineralisation with faults (McQueen 1989).

AGE	STRATIGRAPHIC UNIT
LATE SILURIAN	**Delegate River Mudstone**
	□Thinly bedded (fossiliferous) mudstone, calcareous shale and limestone
	Quidong Limestone
	□Massive limestone, siltstone
	□**Smelter Beds - pyritic sediments**
.....UNCONFORMITY.....	
EARLY SILURIAN	**Meriangaah Siltstone**
	□Siltstone and shale, mainly in the northern part of the Quidong Basin
	Tombong Beds
	□Massive white to pale brown quartzite and minor siltstone
.....UNCONFORMITY.....	
ORDOVICIAN	**Adaminaby Group/Bombala Formation**
	□Undifferentiated clastic sediments

Figure 2: Quidong Basin Stratigraphy

The concept of selective stratabound replacement along favourable stratigraphic horizons adjacent to mineralised structures was proposed by A.G Palmer, Mining Engineer (Palmer 1956), and is also described as a target in the Prospectus for Stirling Minerals Ltd dated 18 April 2007 (Reynolds 2007).

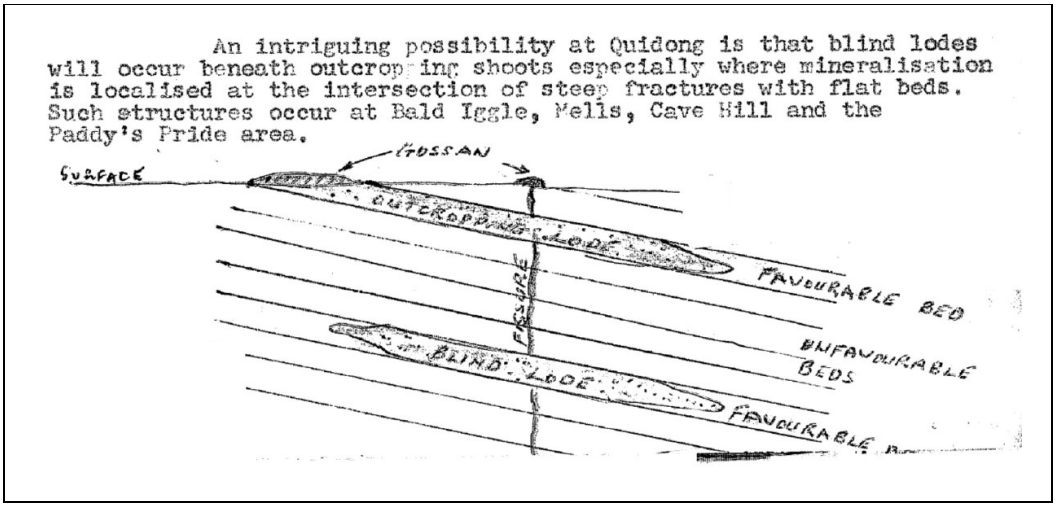

Figure 3: Extract from Open-file Report by A.G Palmer
"Letter to General Manager of Lake George Mines from A.G.Palmer 15 August 1956"
NSW Geological Survey Report: GS1955_015.R00018538 LGM 1956-0815

The source of the metals in the Quidong Basin remains speculative, but some observers have proposed a buried intrusive (Hutton 2021).

For personal use only

For personal use only

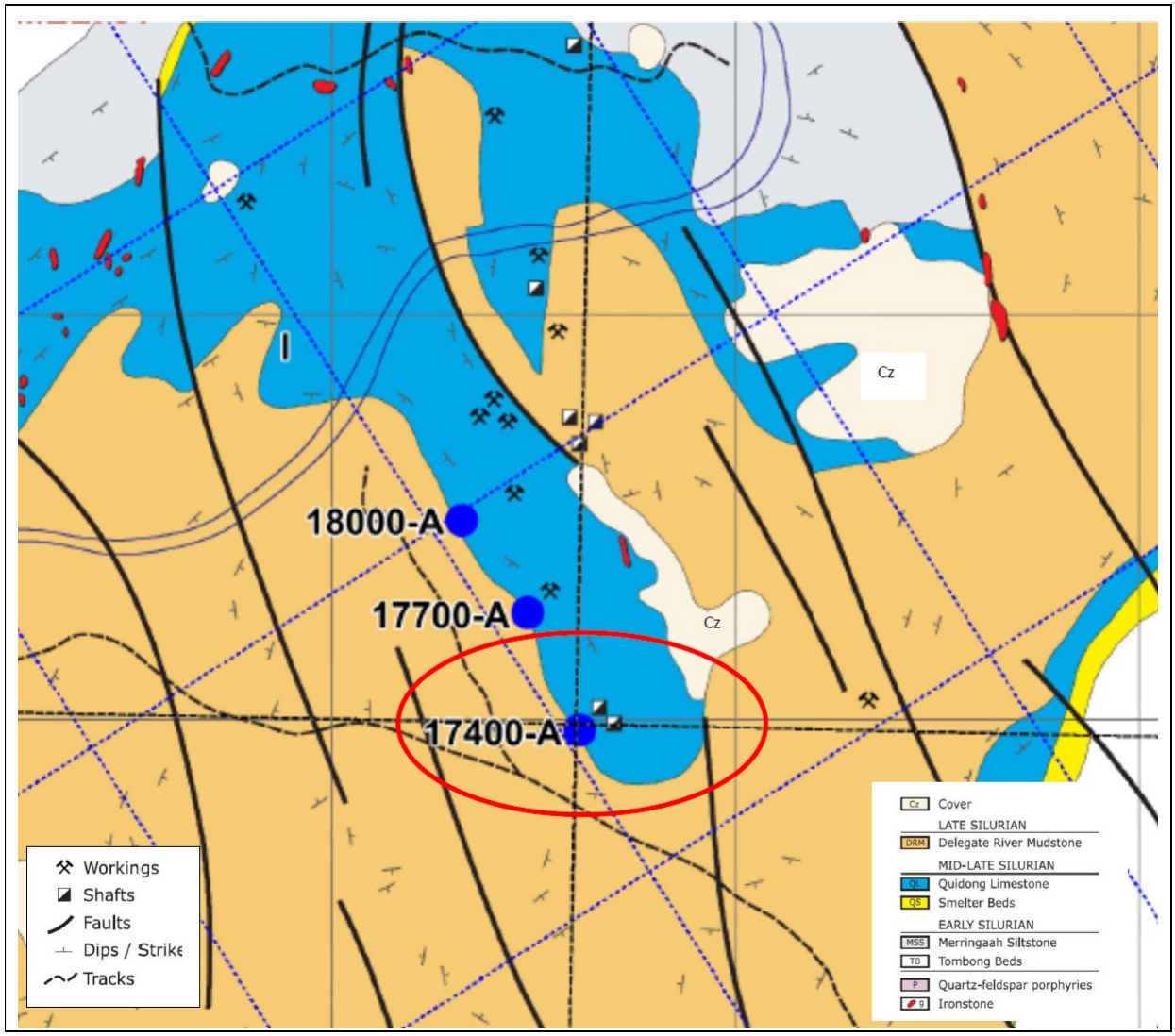

Figure 4: Central Ridge Area: Evaluated drillsites on Geology
[map adapted from McQueen 1989]

Three alternatives for drill positions were approved along the Central Ridge area (**Figure 4**) to test the stratabound replacement concept and extent of the associated mineralised structures. Siting considerations including minimal earthworks to achieve satisfactory distances to target were prioritised and site 17400A was selected. At this location, two small prospecting shafts shown in previous mapping (McQueen 1989) have a maximum of 5 metres depth and indications of copper mineralisation on dump material (oxides of copper – malachite and azurite as fragments and fracture coatings). A similar small occurrence was observed in a prospecting pit during drill site reconnaissance at a location 130 metres to the southeast (0679853E; 5916093N MGA GDA94). Further mapping is planned.

GQDD01 was sited (**Figure 5**) to target down dip from float and subcrop of ferruginous sediments interpreted to represent the surface expression of the Smelter Bed position.

Drill Hole ID	MGA East*	MGA North*	Decl	Azimuth (degrees M)	Length (m)
GQDD01	**0679747**	**5916191**	**-60**	**043**	**99.0**
*MGA Zone 55 Datum GDA94					

For personal use only

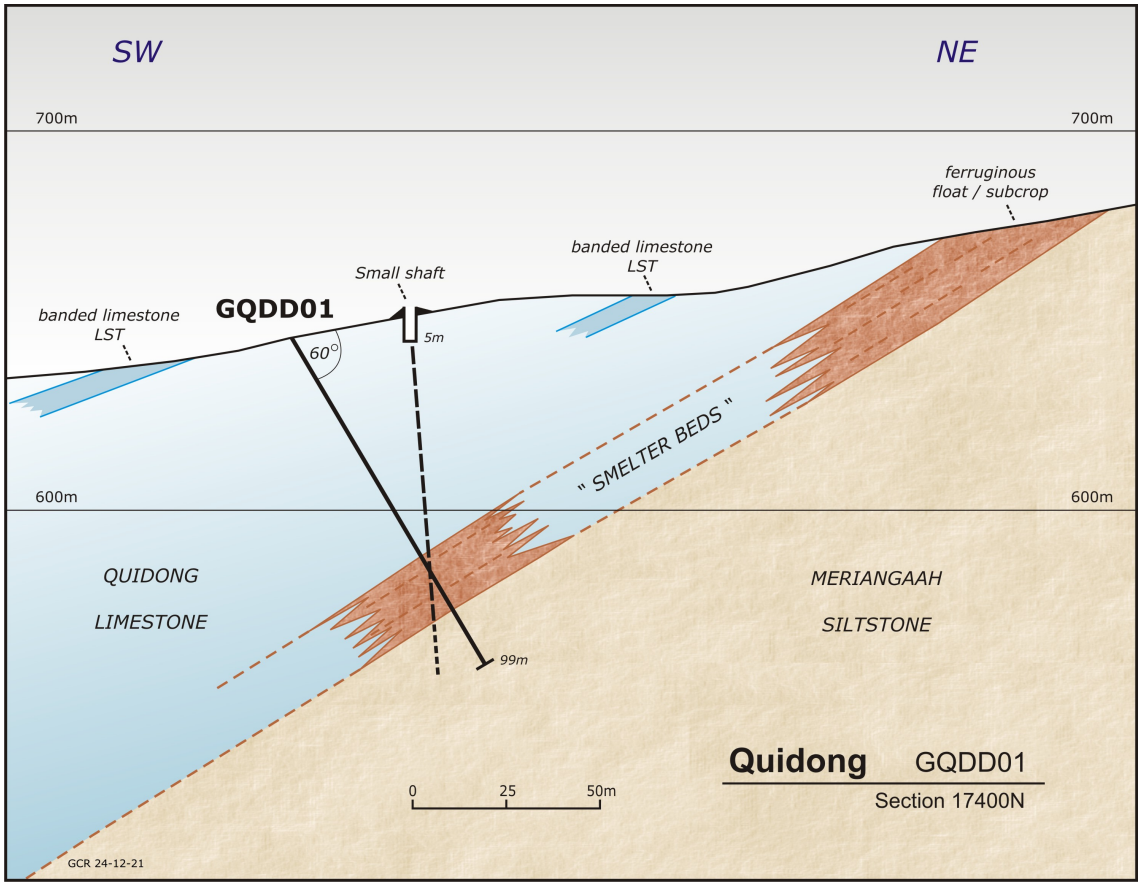

Figure 5: GQDD01 cross section and concept

GQDD01 intersected an interbedded sequence of calcareous siltstone, fossiliferous limestone, and calcareous sandstone, interpreted to be part of the Quidong Limestone Formation. The anticipated intersection of subvertical mineralised structures and the favourable Smelter Bed horizon at approximately 60-70m downhole was not observed, most likely due to faulting or uncertain orientation of the structure. On the basis of this interpretation, the target horizon is interpreted to be deeper or laterally removed beyond the current drilling, and could be further tested by lengthening the hole at a future time following further evaluation.

A geological log of GQDD01 is provided below.

Hole ID	East MGA	North MGA	Elev (m)	Dec (deg)	Azi deg Mag	Lgth (m)
GQDD01	0679747	5916191	649	-60.0	043	99.0

From	To	Lgth	Description	
0.0	1.0	1.0	Hole Collar: No recovery	
1.0	9.0	8.0	Limestone	Banded dk grey silty limestone 80% and pale grey calcareous bands 20%
9.0	9.7	0.7	Fault	broken limestone
9.7	56.6	46.9	Limestone	gradual increase in pale grey limestone bands
56.6	59.2	2.6	Limestone	coarse shelly bands in dark silty matrix
59.2	61.1	1.9	Limestone	Coarse shelly band; dark silty matrix
61.1	70.0	8.9	Limestone	sandy limestone with shelly bands
70.0	75.5	5.5	Limestone	coarse shelly bands
75.5	82.0	6.5	Limestone	pale grey, sandy limestone, with coasre shelly bands, and some crinoids
82.0	85.0	3.0	Limestone	very fractured, carbonate veined, brecciated
85.0	85.2	0.2	Fault	Traces of fracture pyrite 85-85.2
85.2	95.0	9.8	Limestone	
95.0	96.1	1.1	Shear zone	20 degrees to C axis; minor 1cm vein w trace py 90 degr to C
96.1	99.0	2.9	Limestone	fine grained sandy
99.0			EOH	

For personal use only

The Quidong Limestone Formation is considered unprospective for metals, and accordingly no analyses of this part of the sequence overlying the Smelter Bed horizon position are planned.

Outcomes from the current drilling will be applied to the refinement of the conceptual targets and modification of ongoing exploration.

This announcement has been reviewed and authorised for release by the GCR Board.

References:

Hutton, M. et al, 2021: Independent Geologist's Report, GCR Exploration Projects. *GEOS Mining report for GCR Prospectus dated 29 November 2021.*

McQueen, K.G, 1989: "Sediment geochemistry and base metal sulphide mineralisation in the Quidong area, southeastern New South Wales, Australia" *Mineralum Deposita, vol 24, 1989*

Palmer. A.G., 1956: Letter to the General Manager, Lake George Mines Ltd. *NSW Geological Survey Report: GS1955_015.R00018538 LGM 1956-0815.*

Palmer. A.G., 1957: Letter to the General Manager, Lake George Mines Ltd. *NSW Geological Survey Report: GS1955_015.R00018538 LGM 1957-0105.*

Reynolds, N., 2007. Independent Geologist's Report, Stirling Minerals Limited, Quidong Project, New South Wales. *CSA Australia report for Stirling Minerals Limited Prospectus dated 15 March 2007*.

The information in this report that relates to Exploration Results is based on information from previous reports, compiled by Mr Bret Ferris, who is a Member of the Australasian Institute of Geoscientsts. (AIG). Mr Ferris is a consultant to Golden Cross Resources Limited, and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Ferris consents to the inclusion in this report of the matters based on that information in the form and context in which it appears.

GQDD01 Drill Site – looking southwest

For personal use only

JORC Compliance Statement for GQDD01

Sections 1 and 2 of Table 1, JORC Code, 2012 Edition

Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• No Sampling undertaken based on logging outcomes.
Drilling techniques	• *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).*	• Core drilling HQ split tube [HQ3] • No orientation tool. Relationship of primary structures to drillhole derived from prominent surface outcrop.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• Core recoveries consistently 100%. Rare core loss in faults marked up in core trays. • No sampling
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Logging was carried out at a level commensurate with an early stage exploration program with lithologies, mineralisation, alteration, faults, fractures, veins noted. • Logging was both qualitative and quantitative. All core photographed wet and dry after markup and before disturbance by transport, cutting/sampling.. • Hole GQDD01 logged in field over full length 0 - 99.0m.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• No sampling.
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.* • *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*	• No sampling • No instrumental analyses undertaken. • N/A • N/A

Criteria	JORC Code explanation	Commentary
	bias) and precision have been established.	
Verification of sampling and assaying	• *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.*	• No independent verification was carried out • GQDD001 was designed to test a conceptual target based on surface data from previous exploration. • Drill logs are hard copy.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drill hole collar location by handheld GPS. • No downhole survey for short HQ hole with chrome barrell. The collar has been preserved for later entry of Downhole Survey Camera if required or if the drillhole is lengthened. • MGA (GDA94) grid system and Local Quidong Grid. The Quidong Local Grid North is rotated 32 degrees counterclockwise (west) from MGA North. • Topographic control derived from Geoscience Australia DTM adequate for exploration purposes.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• No sampling • N/A.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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 sampling • GQDD01 was collared at -60 degrees declination. It will cross the main structural fabric [bedding] close to perpendicular. Other structures will be crossed at a variety of angles, most typically ~30 degrees for subvertical structures.
Sample security	• *The measures taken to ensure sample security.*	• The drill core was palletised and strapped with metal strapping prior to transport to the Molong Field Base.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No sampling. In-house procedures are documented for processing and markup of the drill core.

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 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 Quidong Project is held 100% by Golden Cross Operations PL, a wholly owned subsidiary of Golden Cross Resources Ltd under EL7989 • EL7989 covers the "Quidong" pastoral property – freehold land • EL7989 has a renewal application to 23 October 2024 pending over a ~48% reduced area of 6 graticular units or ~14 sq. kilometres.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Since 1956 the area has been explored by Lake George Mines Ltd, Hastings Exploration NL; Cyprus Mines Corp, Esso Australia Ltd; Western Mining Corp Ltd, Plagolmin Pty Ltd, Delta Gold ltd, Millennium Minerals Operations Pty Ltd, Avon Resources Ltd, Stirling Minerals Ltd.

For personal use only

For personal use only

Criteria	JORC Code explanation	Commentary
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Stratabound carbonate-replacement adjacent to mineralised structures.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	**Hole ID** **Easting** **Northing** **Dip** **Azi** **Length** **GQDD01** **0679747** **5916191** **-60°** **043°** **99.0m** Co-ordinates are GDA94 MGA Zone 55. Azimuth in degrees magnetic Elevation is ~630m above sea level
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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No sampling
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• The target stratigraphy will be crossed by the drill hole close to perpendicular.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• A drill section, and location plan are included in the report
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.*	• No sampling
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No substantive exploration data in the area of the current GCR drillhole. Previous exploration has largely targeted the perimeter areas of the Quidong Basin where the prospective Smelter bed horizon outcrops. Testing downdip in the Central areas has been proposed by past explorers with limited attention to date.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The hole was drilled to test a conceptual target derived from surface exploration information, and for approved licence compliance requirements. The outcome will be used to assist design of future exploration and drilling in the target area.