

**ASX Announcement**  
**30 September 2021**

## CZ Copper Drilling Update – Positive Progress

- 2,000 metres of Reverse Circulation (RC) and diamond core drilling completed at CZ Project in the current program
- 1,400 metres of diamond core drilling in 7 holes in progress to complete the current program
- Visible copper mineralisation indicating potential extensions to shallow oxide copper portion of the CZ Mineral Resource<sup>1</sup> observed in four drill holes (refer Figure 1) – assays pending
- Diamond drilling to test for extensions of the copper-sulphide (fresh) resource underway
- Large diameter core drilling for metallurgical samples successfully intersected significant intervals of visible copper mineralisation



**Figure 1** - Copper oxide mineralisation; azurite (blue) and malachite (green) in CORC0140 at 34 metres

<sup>1</sup> Refer Appendix 1 for details



Helix Resources Limited (**ASX: HLX**) (“Helix” or “the Company”) is pleased to provide an update on the Company’s copper exploration activities on its wholly owned tenements along the Collierina Copper trend, located in the prolific copper-endowed Cobar region of NSW (refer Figure 6 Location Plan).

The objectives of the drilling in and around the CZ Mineral Resource<sup>2</sup> are:

- Recover large volumes of metallurgical samples representing oxide, transitional and fresh copper mineralisation styles;
- Test for potential extensions of shallow copper oxide mineralisation; and
- Test for extensions to the deeper, fresh copper sulphide mineralisation.

Under challenging circumstances due to COVID-19 restrictions and replacement of several long-term exploration personnel, Helix has drilled eighteen holes in the current program, for a total of nearly 2,000 metres as outlined below and presented in Figure 2, ‘Drill Hole Location Plan’. Diamond core drilling of approximately 1,400 metres has started today.

- *Metallurgical sample drilling* – completed four diamond core holes for 663.3 metres with significant oxide and fresh copper mineralisation intersected at the planned intervals.
- *CZ Resource, shallow extension drilling* - testing for oxide mineralisation extensions has been completed with seven RC holes completed for 599 metres. The copper oxide drilling has been successful with new zones of up to 21 metres of visible copper mineralisation intersected in four of the seven holes. The holes were testing for potential extensions to the current oxide Mineral Resource<sup>2</sup> (refer Figure 1).
- *CZ Resource, deeper extension drilling* - to be undertaken with combined RC pre-collars and diamond core tails. To date seven RC pre collars were completed for 721 metres and diamond core tails on the pre-collars of approximately 1,400 metres drilling commenced today.

In a technical sense, the drilling rig is ‘*aimed at what the geologists can see*’ and not focused on historical, interpreted geological models. This ‘back to fundamentals’ approach is necessary as Helix geologists are continuing to assess gaps in the database with no geological or assay data from various historical holes as per the example presented in Figure 3. Whilst time consuming, this creates positive opportunities to significantly refine the geological model to optimise and enhance the exploration outlook at both the CZ Deposit<sup>2</sup> and also for the new prospects along the Collierina Trend.

**Commenting on the ongoing activities, Helix Managing Director Mike Rosenstreich said:**

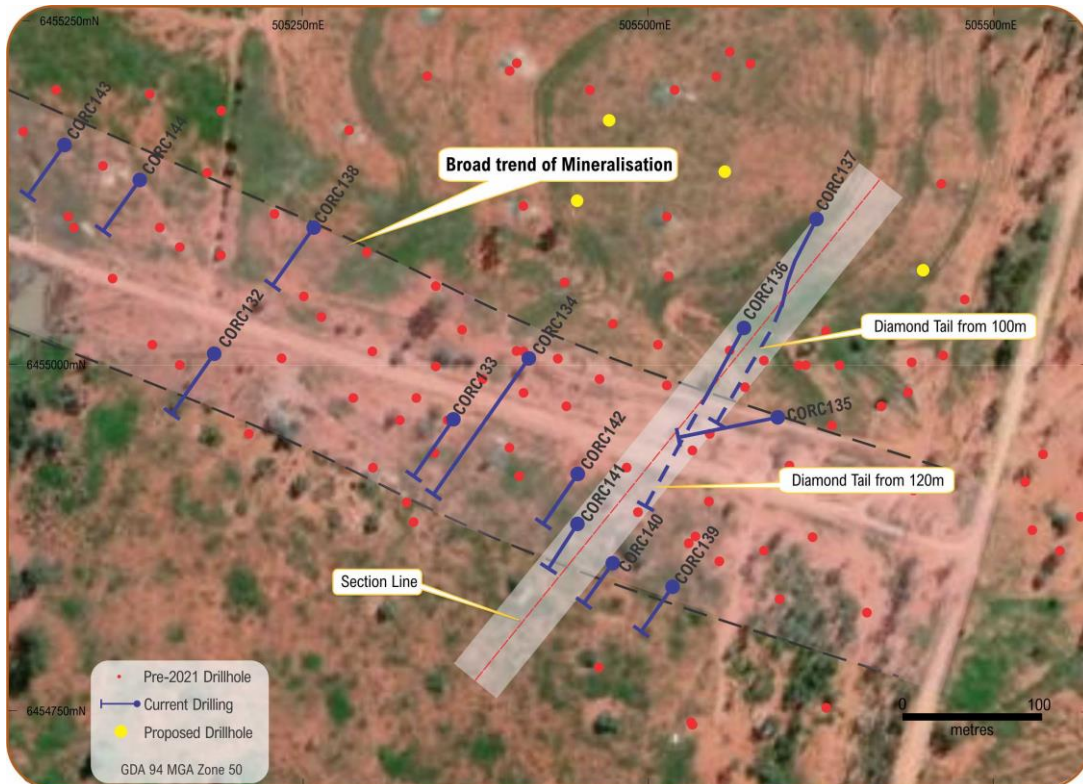
*“Early geological observations are very promising for increasing the resources at CZ and, in tandem with that, to have metallurgical samples to set us on a development pathway.*

*While the Helix exploration team have all recently been appointed to their positions, it is important to note they are now all strategically based in close proximity to operations in regional NSW and all highly experienced in the local geology. I applaud their energy and inquisitive work ethic to revisit all aspects of the previous geological models and focus on the new drilling underway as well as plugging gaps from the earlier drill data base – which I think will contribute to some very exciting discovery opportunities.*

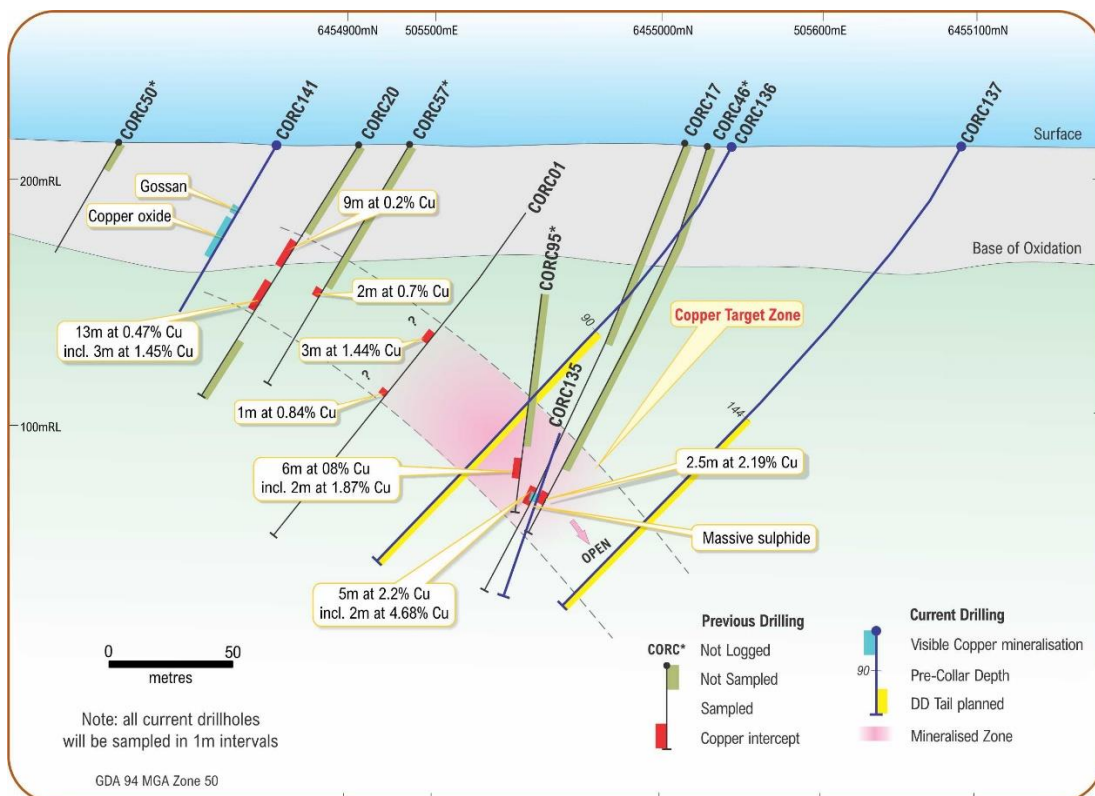
*We believe there is a lot of prospectivity along this Collierina Copper Trend where we are adding to our ground position and initiating work to assess new regional targets in a systematic technically focussed approach – to find more copper.”*

---

<sup>2</sup> Refer Appendix 1 for details.



**Figure 2: CZ Deposit Drill Hole Location Plan<sup>a</sup>**



**Figure 3: CZ Deposit Schematic 'Cross-Section'<sup>b</sup>**

**Note a & b:** Information relevant to pre-2021 drill intercepts can be found in ASX releases dated; 11 June 2019, *Interim Maiden Resource at Collierina Copper Project*, 25 November 2020, *Collierina copper drilling recommences*, 21 January 2021, *Copper Exploration Update* and 15 February 2021, *NSW Projects Exploration Update*.

## TECHNICAL REPORT

Drilling is currently in progress at the CZ Deposit<sup>3</sup>, on the Collierina Trend. The current CZ drilling program comprises diamond core to provide samples for metallurgical test work and a mixture of RC and diamond core for copper resource extension and definition.

### Metallurgical Drilling

Four large diameter (PQ) diamond holes (Codd0132 to Codd0135) for metallurgical test work were drilled for 663.3 metres. The holes were designed to target oxide, transition and sulphide copper mineralisation. One hole (Codd0134) was extended with HQ core to test a modelled Fixed Loop EM (FLEM) conductor plate at depth; however, no significant sulphide was intersected. Logging of these holes has been completed and core cutting is in progress. The core will be submitted to the laboratory for assay and metallurgical test work next week. Initial assay results are expected in early November.

The metallurgical test work holes intersected a hanging wall succession of mica (phlogopite) schist and chlorite schist with irregular anastomosing quartz veins and faults. The depth of weathering ranges from 27 to 58 metres downhole (14 to 29 metres vertically). Oxide mineralisation comprises purple and dark brown hematite rich gossan with trace chalcocite and copper hydroxide (malachite and azurite), and locally native copper. Sulphide mineralisation comprises massive stratiform fine-grained pyrite ( $\text{FeS}_2$ ) with chalcopyrite ( $\text{CuFeS}_2$ )  $\pm$  sphalerite (ZnS) in laminae or agglomeration.

The footwall succession comprises chlorite-quartz schist (locally laminated) and ultramafic rocks with sheared margins. The ultramafic layer is generally between 40 and 50 metres below the massive sulphide mineralisation, apart from Codd0132 where it occurs in faulted contact with oxide mineralisation. In general, stratigraphy is northwest-southeast trending with variable dips to the northeast of  $35^\circ$  to  $45^\circ$ .

Each of the four holes intersected copper mineralisation, as summarised below.

- Codd0132 intersected 10 metres of copper oxide mineralisation from 32 metres down hole.
- Codd0133 intersected 18 metres of copper oxide mineralisation from 39 metres down hole.
- Codd0134 intersected two massive sulphide intervals, with an upper interval 3.3 metres from 84.7 metres down hole, and a lower 3.2 metre interval from 102.3 metres down hole.
- Codd0135 intersected a 2.4 metre massive sulphide interval from 156.6 metres down hole.

Further details for the mineralised copper intervals are provided in Table 1 and representative core photographs are presented in Figures 4 to 6.



**Figure 4** – Codd0133 52m to 54.7m showing purple-red gossan from 53.3m

<sup>3</sup> Refer Appendix 1 for details.



**Table 1:** Copper mineralisation in metallurgical sample holes, CODD0132 to CODD0135

Hole ID	Total Depth	Target	Copper Observed	Description
CODD0132	105.7m	Low-grade oxide mineralisation	32m to 42m	Weathered mica-schist with low-intensity copper oxide mineralisation containing trace of chalcocite and copper hydroxides (malachite and azurite)
CODD0133	100.3m	Moderate to low-grade oxide mineralisation	39m to 57m	Weathered mica-schist with moderate-intensity oxide mineralisation with three horizons of gossan containing chalcocite, copper hydroxides and native copper
CODD0134	259.9m	High-grade sulphide mineralisation	84.7m to 88m	Massive fine stratiform pyrite, with deformed/folded chalcopyrite
		FLEM conductor plate below 150m downhole	102.3m to 105.5m	Massive fine stratiform pyrite with chalcopyrite
CODD0135	197.4m	High-grade sulphide mineralisation	156.8m to 159.2m	Massive fine stratiform pyrite with chalcopyrite layers and trace of sphalerite



**Figure 5** – CANDD0134 101.5m to 106.2m showing massive sulphide from 102.3m to 105.5m comprising stratiform fine-grained pyrite and chalcopyrite



## Resource Extension Drilling

RC drilling was recently completed testing for extensions of the existing oxide copper Mineral Resource<sup>4</sup>, as well as providing pre-collars for diamond core drilling to test extensions of primary sulphide copper resources at depth.

Ten RC holes (CORC0136 to CORC0144) for 929 metres have been completed in the current program, three of which are pre-collars that will be extended with diamond core tails. Logging and sampling the last hole, CORC0145, is in progress.

The RC holes tested up dip and along strike from existing primary, transition, and copper oxide mineralisation (refer representative cross section in Figure 3). The dominant host rock is highly weathered and deformed mica schist containing quartz veins and quartz breccia. Copper oxide mineralisation is associated with quartz-rich zones and distinct narrow gossan lenses. Secondary copper occurs in quartz-rich zones containing copper hydroxide minerals (malachite and azurite), in variable intervals of up to 21 metres down hole (Figures 1, 7 and 8). A summary of the visual results for the oxide holes is provided in Table 2.

**Table 2:** Shallow copper oxide mineralisation in CODD0139 to CODD0144

Hole ID	Total Depth (m)	Copper Observed	Interval (m)	Description
CORC0139	72	31m to 39m	8	Box work after sulphide, gossan and quartz with manganese staining and copper hydroxides (malachite).
CORC0140	66	27m to 47m	20	Iron oxide, variable copper hydroxides (malachite and azurite) and quartz.
CORC0141	78	32m to 53m	21	Gossan, variable copper hydroxides (malachite and azurite) and box work after sulphide.
CORC0142	90	None		Weathered and fresh schist.
CORC0143	58 (abd.)	None		Weathered schist. Hole terminated due to water.
CORC0144	90	38m to 39m	1	Copper hydroxide (malachite) and quartz.
CORC0145	144	TBA	NA	Logging in progress.

The copper oxide drilling has been successful with new zones of copper mineralisation intersected in four of the five holes to successfully test the targeted oxide Mineral Resource<sup>4</sup> extensions. It is anticipated that the copper oxide Mineral Resource at CZ<sup>4</sup> will increase after assay results are received and processed. Collar details for the drill holes completed to date are provided in Table 3.

The remainder of the drilling program will target deeper primary mineralisation with diamond tails to RC pre-collars. Approximately 1,400 metres of diamond core drilling remains to be completed in 7 diamond tails to the pre-collared holes. An additional two holes are available in the approved 20-drill hole program, and these holes (likely pre-collared diamond holes) will be designed after further review of ongoing results. The first batch of samples from the RC drilling program have been submitted to the laboratory, with results anticipated in late October 2021.

<sup>4</sup> Refer Appendix 1 for details.



Figure 6 – C0DD0135 155.3m to 160.3m showing massive sulphide from 156.8m to 159.2m comprising fine stratiform pyrite with chalcopyrite layers and trace sphalerite.

Table 3: Drill Hole Details (MGA94 Zone 55)

Hole ID	Drill Type	Target	Easting (mE)	Northing (mN)	Start Dip	Azimuth	RL	Total Depth
C0DD0132	DD	Metallurgy	505186	6455010	-60	215	204	105.7
C0DD0133	DD	Metallurgy	505359	6454963	-60	215	212	100.3
C0DD0134	DD	Metallurgy	505414	6455007	-60	215	212	259.9
C0DD0135	DD	Metallurgy	505594	6454964	-70	260	211	197.4
CORC0136	RCDD	Pre-collar	505570	6455028	-60	215	203	90
CORC0137	RCDD	Pre-collar	505621	6455107	-60	215	208	144
CORC0138	RCDD	Pre-collar	505258	6455102	-60	215	205	97
CORC0139	RC	Oxide	505517	6454840	-60	215	216	72
CORC0140	RC	Oxide	505474	6454857	-60	215	217	66
CORC0141	RC	Oxide	505449	6454886	-60	215	217	78
CORC0142	RC	Oxide	505450	6454923	-60	215	214	90
CORC0143	RC	Oxide	505071	6455163	-60	215	199	58
CORC0144	RC	Oxide	505129	6455137	-60	215	203	90



**Figure 7** – Copper oxide mineralisation; malachite and quartz in CORC0139 at 35 metres.



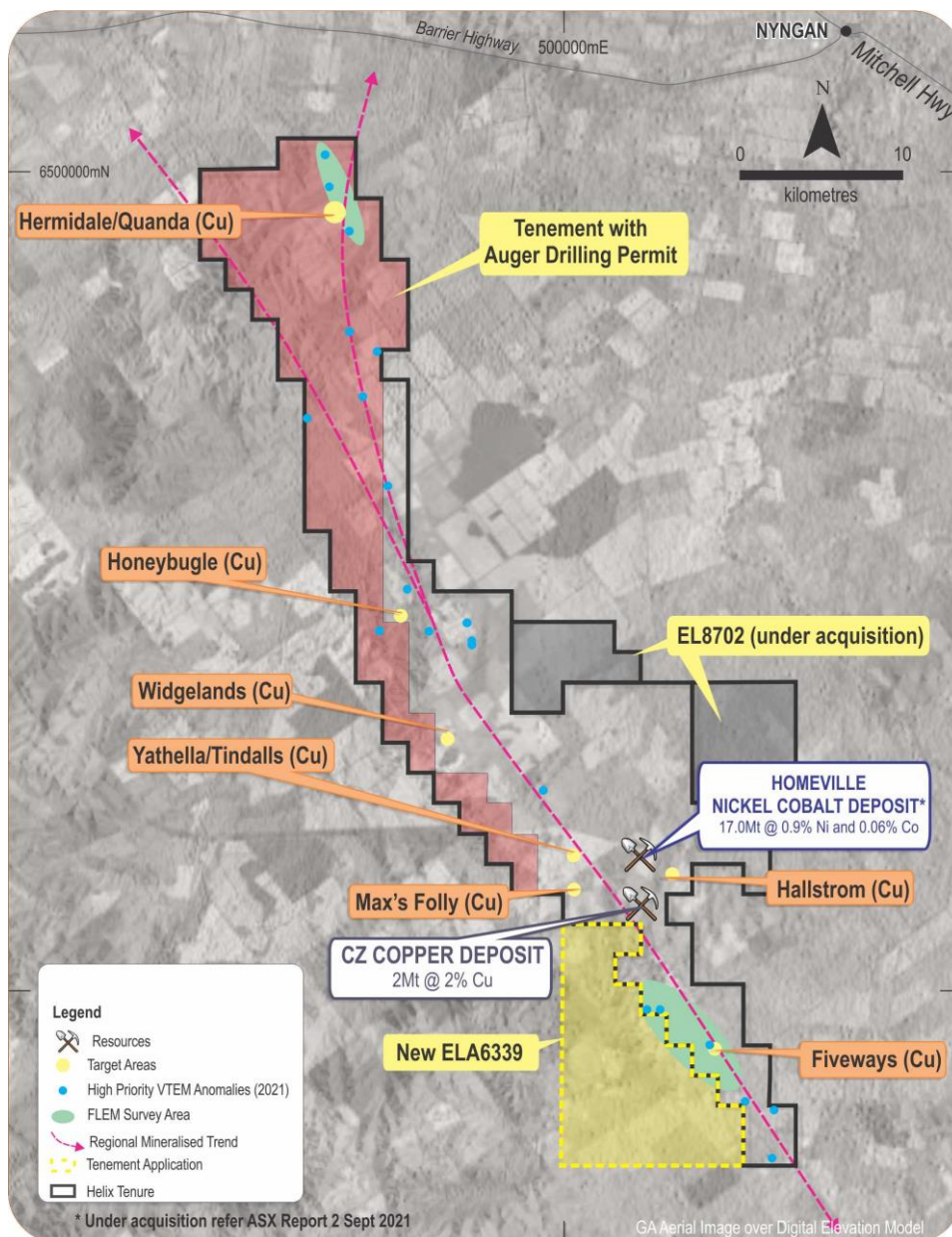
**Figure 8** – Copper oxide mineralisation. **A:** malachite, azurite and quartz in CORC0141 at 38m. **B:** malachite and quartz in CORC0144 at 39m.



## Regional Copper Exploration

As reported previously, approval has been received for regional exploratory auger drilling comprising approximately 1,000 shallow holes in the northern section of the Collerina Trend within EL7438<sup>5</sup>. This work is expected to commence in November subject to finalising an appropriate drilling contractor.

The program is designed to follow-up on several high-priority VTEM targets identified in March 2021 in the Hermidale/Qanda prospect area at the north of the tenement. As well, the Company filed an application for additional exploration licence (ELA6339) to ensure coverage of high-priority VTEM targets identified in the south of the Collerina Trend, on the western boundary of the existing tenement, near Five Ways. Surface EM surveys are also planned for these prospects as soon as cropping activity is complete. Details are provided in Figure 6 – which has been updated and corrected to the version presented previously<sup>4</sup>.



**Figure 6:** Location Plan of approved auger drilling.

<sup>5</sup> Refer to HLX ASX report dated 23 September 2021



## COMPETENT PERSON STATEMENT

The information in this report that relates to exploration results, Mineral Resource estimates and geological data for the Cobar projects is based on information generated and compiled by Mr Gordon Barnes and Mr Mike Rosenstreich who are both employees and shareholders of the Company. Mr Barnes is a Member, of the Australian Institute of Geoscientists and Mr Rosenstreich is a Fellow of the Australasian Institute of Mining and Metallurgy. They both have sufficient experience that is relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to each qualify as Competent Person(s) as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Barnes and Mr Rosenstreich have consented to the inclusion of this information in the form and context in which it appears in this report.

**This ASX release was authorised by the Board of Directors of Helix Resources Ltd.**



**ABN: 27 009 138 738**  
**ASX: HLX**



**Contact Details:**  
Helix Resources Limited  
78 Churchill Avenue,  
SUBIACO, WA, 6008

PO Box 825  
West Perth, WA, 6872

Email: [helix@helixresources.com.au](mailto:helix@helixresources.com.au)  
Web: [www.helixresources.com.au](http://www.helixresources.com.au)  
Tel: +61 (0)8 9321 2644



### **Board of Directors:**

Peter Lester          Non-Executive Chairman  
Tim Kennedy          Non-Executive Director  
Jason Macdonald      Non-Executive Director  
Mike Rosenstreich      Managing Director

### **Company Secretary**

Ben Donovan



### **Investor Contact:**

Mike Rosenstreich  
Tel: +61 (0)8 9321 2644  
Email: [helix@helixresources.com.au](mailto:helix@helixresources.com.au)



## APPENDIX 1: Central Zone (CZ) Copper Deposit

A mineral resource compliant with the 2012 JORC Code for the CZ Deposit is summarised in Table 1 below. It is a high-grade copper discovery made by Helix in late 2016 along the Collierina Trend.

**Table 1: Central Zone Mineral Resource Estimate (June 2019) (0.5% Cu Cut-off)**

Classification	Type	Tonnes	Cu	Au	Cu	Au
		Mt	%	g/t	t	oz
Indicated	Oxide / Transitional	0.17	1.1	0.0	1,900	200
Inferred	Oxide / Transitional	0.46	0.6	0.0	2,700	100
<b>Total</b>	<b>Oxide / Transitional</b>	<b>0.63</b>	<b>0.7</b>	<b>0.0</b>	<b>4,600</b>	<b>300</b>
Indicated	Fresh	0.83	2.6	0.2	21,800	6,600
Inferred	Fresh	0.57	2.5	0.1	14,100	2,500
<b>Total</b>	<b>Fresh</b>	<b>1.40</b>	<b>2.6</b>	<b>0.2</b>	<b>35,800</b>	<b>9,100</b>
Indicated	Oxide / Transitional	0.17	1.1	0.0	1,900	200
Indicated	Fresh	0.83	2.6	0.2	21,800	6,600
Inferred	Oxide / Transitional	0.46	0.6	0.0	2,700	100
Inferred	Fresh	0.57	2.5	0.1	14,100	2,500
<b>Total</b>	<b>Combined</b>	<b>2.03</b>	<b>2.0</b>	<b>0.3</b>	<b>40,400</b>	<b>9,400</b>

*(Rounding errors may occur in summary tables)*

Other than results contained in this report, Helix confirms that it is not aware of any new information or data that materially affects the Mineral Resource information included in Helix ASX release dated 11 June 2019, *Interim Maiden Resource at Collierina Copper Project*. All material assumptions and technical parameters underpinning the estimates in that release continue to apply and have not materially changed.