

## 4 September 2023

## **ASX Code: COD**

## Test Work Delivers Elizabeth Creek Flowsheet Enhancements

Copper recovery boosted by +40% from the MG14 deposit using low-cost tails leaching, with potential applicability to other deposits included in the March 2023 Scoping Study

## Highlights

- Ongoing metallurgical optimisation at the Elizabeth Creek Copper Project has demonstrated the potential to reduce forecast processing costs and improve copper recoveries.
- Improvement in forecast net copper recovery for the MG14 open pit deposit from 58% to 85% achieved through the application of tails leaching.
- Flotation optimisation tests suggest the potential to further reduce reagent costs without materially decreasing recovery.
- Flowsheet enhancements represent the first of several optimisation options currently being explored by Coda, with the potential to materially improve the economic potential of the Elizabeth Creek Project. These include mechanical cutting studies, ore sorting and other processing enhancements.

**Coda Minerals Limited** (ASX: COD, "Coda", or "the Company") is pleased to report highly encouraging initial outcomes from ongoing enhancement initiatives being undertaken on its 100%-owned **Elizabeth Creek Copper Project** in South Australia, building on the positive Scoping Study outcomes delivered in March 2023.

The results reported today relate to recently completed metallurgical test work on material from MG14, one of the open pit deposits at Elizabeth Creek. Coda has completed a series of metallurgical tests to assess the amenability of flotation tails to leaching, as well as a separate set of tests to reduce reagent consumption during flotation. These tests were designed to improve project economics by reducing costs associated with flotation and to increase copper recoveries and associated revenue through leaching. Both sets of tests were successful:

- Tails Leaching: Using the most practical of the tested lixiviants<sup>1</sup>, the recovery of copper from tails was 65.4%. Combined with flotation recovery, this resulted in an overall recovery boost from 57.9%<sup>2</sup> of copper to 85.4%. The MG14 flotation tails stream at Elizabeth Creek has a copper grade in excess of 0.6% Cu. This stream represents a potentially significant source of value that can be tapped using low-cost leaching methods. Additional copper production by these means has the potential to be highly value accretive, particularly in the forecast supply-constrained copper price environment.
- Flotation Optimisation: No material reduction in copper recovery was identified when concentrations of flotation reagents were reduced, or lower cost chemicals were substituted in the process. This suggests that flotation can likely be carried out at Elizabeth Creek at a lower cost than was assumed in the Scoping Study without compromising recovery, improving overall project economics.

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<sup>&</sup>lt;sup>1</sup> A combination of 5kg/t cyanide and 15 kg/t glycine

<sup>&</sup>lt;sup>2</sup> For full details, please see the Elizabeth Creek Copper Cobalt Project Scoping Study, released to the ASX on 23 March 2023, and available here



Discussing the new results, Coda's CEO Chris Stevens said: "When we released the Elizabeth Creek Copper-Cobalt Project Scoping Study earlier this year, we saw those results not as our final statement on the Project's economics but as a starting point for further optimisation.

"Since then, we have been continuously assessing opportunities to refine and improve our development plans. Optimising flotation reagents and particularly capturing value through tails leaching as a solution to the flotation recovery challenges were obvious first steps. Additional copper recovery means more revenue and more exposure to copper's anticipated future trajectory – which we see as a strong positive for this project.

"The Coda technical team is very familiar with glycine and its potential application at Elizabeth Creek, having undertaken numerous studies into the technique over the years. We are confident in the recyclability of the glycine for example, as well as in its practicality and stability in a production environment.

"With the fundamental science now confirmed, our next step will be further optimisation of the lixiviant mix and to undertake detailed economic assessments to assess the impact on project economics.

The Scoping Study released in March 2023 demonstrated strongly positive economics for the project based on conservative forward commodity price assumptions. We are now focused on driving material enhancements to project economics through multiple enhancements, including the incorporation of mechanical cutting, ore sorting and mine schedule optimisation. We expect to put these all together into a study update shortly.

"In addition to the study optimisation work we are now in the final reporting stages of our IOCG targeting work and look forward to updating the marketing on next stage plans this month"

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## Detailed Technical Information

### Tails Leach

A total of six bottle roll tests were carried out on flotation tailings from the MG14 deposit, followed by 2 bottle roll tests on a more representative combined slimes and tails mix. The recovery of copper to concentrate at MG14 is 57.9%, with the remainder reporting to the tails stream, which had a head grade of 0.43% Cu. Follow-up tests were undertaken on combined slimes and tails, which were blended at a ratio of approximately 80% Tails : 20% Slimes to mimic material generated during production. The resultant feed had a head grade of 0.54% Cu (See Table 1).

Table 1 MG14 Tails stream assays

	Ag (g/t)	Al (%)	Co (ppm)	Cu (ppm)	Fe (%)	S (%)	Si (%)	Zn (ppm)
MG14 Tails Grade	6	3.03	105	4225	10.8	0.24	19.8	525
MG14 Combined Slimes/Tails Grade	7.3	3.79	130	5429	9.5	0.25	19.7	515

A significant percentage of the copper remaining in this stream is believed to be oxide or silicate copper, which is largely unavailable to flotation, but may be available to leaching under certain conditions. Historical testwork has demonstrated that cobalt is particularly difficult to leach with these lixiviants but given the very high recovery of cobalt to concentrate (>85% at MG14), leach recovery of cobalt was not prioritised.

The bottle rolls tested a variety of principally alkaline or neutral lixiviants to avoid acid consumption given the dolomitic component of the host shale. The concentrations and results are summarised below as Table 2 and Table 3 respectively.

The majority of tests were "sighter" tests, where lixiviant concentrations were deliberately overdosed to ensure that lixiviant concentration was not a limiting factor. Sample JR008 was an exception to this rule, with a more realistic lixiviant mix tested, with concentrations based on earlier, more comprehensive testwork undertaken on tailings from the Emmie Bluff deposit).<sup>3</sup> This mix and the lower cyanide concentration was then carried into tests 9 and 10.

Table 2 Lixiviant regimes of all bottle roll tests undertaken on MG14 Slimes and Tails

Test/Sample ID	Sample Type	Lixiviant	Sodium Hydroxide	Cyanide	Sulfuric Acid	Ferrous Sulfate	Sodium Sulfite	Hydrochloric Acid	Sodium Hypochlorite	Glycine	Lime	Ammonia
JR002	Tails	Cyanide	70	50								
JR003	Tails	Reducing Acid			1,000	100	523.5					
JR004	Tails	Hypochlorite						640	380			
JR005	Tails	Glycine & Cyanide		50						150	100	
JR006	Tails	Ammonia										1,000
JR008	Tails	Glycine & Cyanide		5						15	10	
JR009	Slimes/Tails	Glycine & Cyanide		5						15	10	
JR010	Slimes/Tails	Cyanide		5							10	

<sup>3</sup> See Appendix 1

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	Sample Type			Extraction (	Products)		Net Cu recovery
		Lixiviant	Ag %	Cu (%)	Co (%)	Zn (%)	Assumes 57.9% recovery to float
JR002 FINAL	Tails	Cyanide	82.5%	90.0%	0.0%	0.0%	95.8%
JR003 FINAL	Tails	Reducing Acid	33.6%	52.6%	0.0%	40.1%	80.0%
JR004 FINAL	Tails	Hypochlorite	0.0%	74.0%	0.0%	0.0%	89.1%
JR005 FINAL	Tails	Glycine & Cyanide	70.7%	82.8%	0.0%	0.0%	92.8%
JR006 FINAL	Tails	Ammonia	21.5%	37.6%	0.0%	0.0%	73.7%
JR008 FINAL	Tails	Glycine & Cyanide	12.0%	67.7%	0.0%	0.0%	86.4%
JR009 FINAL	Slimes/Tails	Glycine & Cyanide	25.1%	65.4%	15.4%	1.8%	85.4%
JR010 FINAL	Slimes/Tails	Cyanide	0.0%	33.5%	12.7%	0.0%	72.0%

Table 3 Lixiviant regimes of all bottle roll tests undertaken on MG14 Tails and Slimes

### Implications for Project Economics

Coda was able to achieve a copper recovery of 58% for the MG14 deposit despite the challenging flotation characteristics of the ore. In addition to the sulphide component, mineralisation at MG14 is hosted in part as copper silicates and oxides, partially as a result of weathering at the relatively shallow deposit. While these same characteristics make the ore challenging to float, they also make the tails and slimes particularly well suited to leaching using benign lixiviants such as glycine.

Given leach recovery rates in the recently completed test work, net copper recovery at MG14 could be expected to increase from 57.9% to 85.4%. Estimates of CAPEX and OPEX required to achieve this are pending and, if viable, tails leaching may be integrated into the Enhanced Scoping Study for the Elizabeth Creek Copper Project.

Additional work may be needed to refine the lixiviant mix and to assess the viability of tails leaching at Windabout. Test work completed in 2022 suggested a comparable or better copper and silver extraction from Emmie Bluff tails<sup>4</sup> using similar lixiviants as well as various methods such as resin-in-leach and additional grinding, which may allow for further extraction of copper or by-products.

## About Glycine Leaching Technology

Glycine leaching is a patented process owned by Draslovka Mining Process Solutions and licensed to Coda Minerals. The technique makes use of glycine as a benign, recyclable lixiviant to leach base and precious metals as a supplement to or replacement for cyanide leaching in alkaline environments.

<sup>4</sup> See Appendix 1

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## Flotation

A series of rougher flotation tests were carried out on material from the Windabout deposit to begin the process of optimisation of flotation conditions, specifically to decrease costs associated with reagent consumption. In addition to a standard baseline test, three variant tests were carried out:

- Reducing Cyquest (a slimes dispersant) by 50%
- Reducing PAX (potassium amyl xanthate, a collector) by approximately 40%; and
- Substituting PAX for SIBX (sodium isobutyl xanthate, a lower cost collector compared to PAX)

All tests included six rougher stages and lasted for a consistent 33 minutes. The results are summarised below as Figure 1 and Figure 2, below.



Figure 1 Copper recovery from rougher flotation test work on Windabout composite samples. Flotation samples collected at 5, 10, 15, 20, 30 and 33 minutes.

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Figure 2 Cobalt recovery from rougher flotation test work on Windabout composite samples. Flotation samples collected at 5, 10, 15, 20, 30 and 33 minutes.

## Implications for Project Economics

The testing shows no material change in copper or cobalt grade or final recovery for the lower cost reagent regimes relative to the baseline, with the variations after 33 minutes generally being within the margin of error expected for single tests.

This suggests that the application of a lower cost reagent regime to flotation at Elizabeth Creek will not reduce recovery or revenue, allowing for potential improvements to project economics. Further testing will be undertaken during the PFS to confirm this and further optimise the flotation reagent regime and reduce OPEX.

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# Update to Scoping Study

In addition to the work reported in this announcement, Coda is currently pursuing a number of avenues to enhance its recent Scoping Study into the Elizabeth Creek Copper-Cobalt Project. These include large and small changes which collectively have the potential to significantly improve the Project's expected economic outcomes. Key initiatives include:

- Mechanical Cutting at Emmie Bluff: Coda is investigating the technical and economic feasibility of mechanical cutting using continuous miners at Emmie Bluff. This is a low-cost mining method which is potentially viable due to the soft and minimally abrasive nature of the black shale host rock at Emmie Bluff. Technical assessment has been completed, with final mine design and CAPEX/OPEX estimates currently ongoing. This technology has step-change potential for project economics and, if successful, will form the core of any near-term updates to the Scoping Study.
- **Ore Sorting:** The company has received preliminary reports from simulations following a major data collection exercise utilising an XRF scanner mimicking the sensors utilised in full scale ore sorters. By removing low grade material before it is crushed and ground, the Company can improve the grade of mill feed and potentially exploit narrower seams which would otherwise be diluted below cut-off grades, potentially exploiting the exploitable fraction of the Mineral Resource. A final report is pending and it is anticipated that results will be released to the market in the coming weeks.
- **Process Refining:** In addition to the information reported in this announcement, the company is continuing efforts to refine its processing flowsheet and material inputs. Adjustments to CAPEX and OPEX to accept locally produced dolomite in place of purchased limestone as an acid neutraliser are ongoing and any associated savings will be integrated into future Scoping Study updates.

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# Appendix 1 – Emmie Bluff Tails Leach Test Work

In 2022, Coda undertook tails leach test work with Mining Process Solutions (MPS) to assess the applicability of glycine leach technology to Emmie Bluff tails. Emmie Bluff tails are lower grade than MG14 tails, with a head grade of 0.27% Cu and 2.7 g/t Ag.

A series of 20 diagnostic leach tests (DLTs) were carried out to optimise the lixiviant mix with and without the use of resin and with or without additional grinding. The results are summarised as Figure 3.



Figure 3 DLTs undertaken on tails from Emmie Bluff. Tests 1-6 were without resin and Tests 7-20 with resins to adsorb any leached metal, releasing the glycine to perform more leaching. Tests 1-12 were tests on as received while from Tests 13-20 all samples were ground for 5 minutes.

Two tests (9 and 15) were undertaken at the same reagent concentrations as the testwork undertaken on MG14 tails. Both were undertaken I the presence of resin, which was not used in the MG14 testwork. Recoveries of 58.3% Cu and 52.8% Ag were achieved for unground sample, which improved to 72.1% Cu and 68% Ag if the tails were subjected to an additional 5 minutes of grinding. Copper recoveries improved if the material was acid cured in advance, but this appeared to have a minor negative effect of silver recovery (test 18).

On the basis of these tests, three reactor leach test were undertaken over 48 hours, all in the presence of resin and all utilising additional grinding. The results are summarised as Figure 4.

The reactor leach tests showed mixed results, with slight reductions in copper recovery and typically slight improvements in silver relative to the most directly comparable DLTs.

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Figure 4 Reactor leach test results for material following grinding to P<sub>80</sub> 30 microns. All tests were run in the presence of resin (RIL) to adsorb any leached metal onto the resin releasing the glycine to perform more leaching. All tests were conducted at pH 10, at 40% solids in Perth tap water for 48 hours.

### **Economic Implications**

The results from the 2022 work on Emmie Bluff tails show overall lower copper recovery and better silver recovery than those from MG14. This is likely explained by a combination of the presence of resin and the finer grinding in some of the Emmie Bluff tests, and a different mineralogy at MG14, which includes a higher proportion of copper in oxides and silicates than the relatively "cleaner" and less weathered Emmie Bluff ore. The improvements to recovery do suggest that leaching test work at MG14 should be carried out using finer ground tails and in the presence of resin to attempt to improve silver recovery in particular.

Given the better copper recovery to flotation concentrate at Emmie Bluff<sup>5</sup> relative to MG14 and the better copper recovery from tails leach at MG14, Coda does not consider tails leach at Emmie Bluff a priority, though it is possible that parts of the deposit may have different mineralogies and flotation characteristics more amenable to tails leach. If so, it is anticipated that this will be identified during geometallurgical domaining work during a planned Pre-Feasibility Study drill out.

<sup>5</sup> Estimated to be 77.2% in the Elizabeth Creek Copper Cobalt Project Scoping Study, released March 2023.



This announcement has been authorised for release by the Board of Coda Minerals Ltd

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## Competent Person's Statement

The information in this report which relates to metallurgical results is based on information compiled by Mr. Neil Ireland, who is an employee of Strategic Metallurgy, a metallurgical consultancy engaged by Coda Minerals. Mr Ireland is a Member of the Australian Institute of Mining and Metallurgy and has sufficient relevant experience to the style of metallurgical test work under consideration and interpretation thereof, and to the activities 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 Ireland consents to the inclusion in this report of the matters based on the information compiled by him, in the form and context in which it appears.

# About Coda Minerals

**Coda Minerals Limited** (ASX: COD) is focused on the discovery and development of minerals that are leveraged to the global energy transformation through electrification and the adoption of renewable energy technologies.

Coda's flagship asset is the 100%-owned Elizabeth Creek Copper-Cobalt Project, located in the world-class Olympic Copper Province in the Eastern Gawler Craton, South Australia's most productive copper belt. Elizabeth Creek is centred 100km south of BHP's Olympic Dam copper-gold-uranium mine, 15km from its new Oak Dam West Project and 50km west of OZ Minerals' Carrapateena copper-gold project.

Coda consolidated 100% ownership of the Elizabeth Creek Copper Project after completing the acquisition of its former joint venture partner, Torrens Mining, in the first half of 2022.

In December 2021, Coda announced a maiden Indicated and Inferred Mineral Resource Estimate for the Emmie Bluff copper-cobalt deposit at Elizabeth Creek comprising 43Mt @ 1.3% copper, 470ppm cobalt, 11g/t silver and 0.15% zinc (1.84% CuEq) containing approximately 560kt copper, 20kt cobalt, 15.5Moz silver and 66kt zinc (800kt CuEq)<sup>6</sup>. Importantly, 92% of the contained metal is classified in the higher confidence 'Indicated Resource' category and is available for use in mining studies.

Emmie Bluff is one of three known 'Zambian-style' copper-cobalt deposits at Elizabeth Creek, including JORC 2012 compliant Indicated Mineral Resources at the Windabout (18Mt @ 1.14% CuEq) and MG14 (1.8Mt @ 1.67% CuEq)



<sup>&</sup>lt;sup>6</sup> 2021.12.20 - Standout 43Mt Maiden Cu-Co Resource at Emmie Bluff, Competent Person: Dr Michael Cunningham.

deposits<sup>7</sup>. Collectively, the three resources at Elizabeth Creek now host a total of 1.1 million tonnes of contained copper equivalent<sup>Error!</sup> Bookmark not defined., Error! Bookmark not defined.

A scoping study into the development of these three deposits was released in March of 2023 demonstrated an economically robust project with a 14 year mine life, capable of producing approximately 25,000 tonnes of copper and 1,000 tonnes of cobalt at steady state production levels. The project had a lifetime average AISC of USD \$2.19/lb of Cu (after by-product credits) and an approximately pre-tax NPV<sub>8</sub> of \$570M<sup>8</sup>.

Coda has also discovered a significant IOCG system adjacent to and below the Emmie Bluff target, with initial deep diamond drilling in June 2021 intersecting 200m of intense IOCG alteration at the Emmie IOCG target, including approximately 50m of copper sulphide mineralisation<sup>9</sup>. Since then, Coda has drilled 21 holes into Emmie IOCG, with all but three returning significant widths of mineralisation, some over 3% copper and 0.5g/t gold<sup>10</sup>.

Coda has a dual strategy for success at Elizabeth Creek. Firstly, it is working towards the next step in the development process for it's Zambian-style copper cobalt projects by advancing a Pre-Feasibility Study to build on the results of the recently released Scoping Study, while simultaneously undertaking exploration to further define and extend known Zambian-style copper-cobalt resources across multiple prospects.

Secondly, it is undertaking a substantial geophysics programme at the Emmie IOCG prospect to further understand the structures and extent of the geological model defined over the past year of drilling.

Coda also has a Farm-In and Joint Venture Agreement with Wilgus Investments Pty Ltd to acquire up to 80% ownership of the Cameron River Copper-Gold Project, located in the highly prospective Mount Isa Inlier in Queensland. The Project comprises 35km<sup>2</sup> of copper and gold exploration tenure spanning two Exploration Permits (EPMs 27042 and 27053).

Through Torrens Mining acquisition, Coda also owns exploration tenements in Victoria, New South Wales and Papua New Guinea.



<sup>&</sup>lt;sup>7</sup> 2020.10.26 - <u>Confirmation Statements JORC</u>, Competent Person: Tim Callaghan.

<sup>&</sup>lt;sup>8</sup> 2023.03.23 – <u>Elizabeth Creek Copper-Cobalt Project Scoping Study</u>

<sup>&</sup>lt;sup>9</sup> 2021.06.22 - <u>Thick Zone of IOCG Mineralisation Intersected at Emmie Bluff Deeps</u>, Competent Person: Mr Matthew Weber.

<sup>&</sup>lt;sup>10</sup> 2022.08.18 – <u>Assays from IOCG Drilling Confirm Target Areas for Follow Up</u>, Competent Person: Mr Matthew Weber.



Competent Persons' Statements and Confirmatory Statement - Mineral Resource Estimates Information regarding the MG14 and Windabout Mineral Resources is extracted from the report entitled "Confirmation Statements JORC" created on 26<sup>th</sup> October 2020 and is available to view at https://www.codaminerals.com/wpcontent/uploads/2020/10/20201026 Coda ASX-ANN Confirmation-Statements-JORC.pdf

Information regarding the Company's MG14 and Windabout Mineral Resource Estimates is based on, and fairly represents, information and supporting documentation compiled by Tim Callaghan, who is self-employed. Mr Callaghan is a Member of the Australasian Institute of Mining and Metallurgy ("AusIMM"), and has a minimum of five years' experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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' ("JORC Code"). Mr Callaghan has consented to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Information regarding the Emmie Bluff Mineral Resource is extracted from the report entitled "Standout 43Mt Maiden Cu-Co Resource at Emmie Bluff" created on 20th December 2021 and is available to view at https://www.codaminerals.com/wp-content/uploads/2021/12/20211220 Coda ASX-ANN Standout-43Mt-Maiden-Cu-Co-Resource-at-Emmie-Bluff RELEASE.pdf

Information regarding the Company's Emmie Bluff Mineral Resource Estimates is based on, and fairly represents work done by Dr Michael Cunningham of Sonny Consulting Services Pty Ltd. Dr Cunningham is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activities undertaken to gualify 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.

## Listing Rule 5.23.2

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements cited in this announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

## Statement Regarding Metal Equivalent Calculations

Metal Equivalent grades are quoted for one or more of the Emmie Bluff, Windabout and MG14 Mineral Resources, or for exploration results considered by the company to be related directly to one of these Mineral Resources, in this announcement.

### For the Emmie Bluff Mineral Resource:

The Emmie Bluff Mineral Resource is reported as 43Mt @ 1.3% Cu, 470 ppm Co, 11 g/t Ag and 0.15% Zn (1.84% Copper Equivalent (CuEq)) reported at a cut-off grade of 1% CuEq. The calculation of this metal equivalent is based on the following assumptions.

Metal	Coefficient	Forecast Price	Price Unit
Copper	0.8	\$7,000	USD/Tonne
Cobalt	0.85	\$55,000	USD/Tonne
Zinc	0.9	\$2,100	USD/Tonne
Silver	0.85	\$18.50	USD/Oz

Price assumptions used when calculating copper equivalent grades were based primarily on Consensus Economics forecasts of metals, except for Cobalt, which was sourced via communication with subject matter experts. Metallurgical assumptions used when calculating copper equivalent grades were based on a simple bulk float utilising rougher and minimal cleaner/scavenger circuits. The produced a reasonably consistent mean recovery across most metals of between approximately 83 and 94 percent. For simplicity, and to in part account for losses associated with less intensive cleaner floats and losses to the hydromet plant, these figures were rounded down to the nearest 5%.

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Application of these assumptions resulted in the following calculation of CuEq:

 $CuEq\% = Cu\% + 0.00068 \times Co \ ppm + 0.337 \times Zn \ \% + 90.3 \times \frac{Ag \ ppm}{10000}$ 

#### For the Windabout and MG14 Mineral Resource:

The Windabout and MG14 Mineral Resource are reported at a cut-off grade of 0.5% CuEq as:

- Windabout: 17.67Mt @ 0.77% Cu, 492 ppm Co and 8 g/t Ag (1.41% CuEq)
- MG14: 1.83Mt @ 1.24% Cu, 334 ppm Co and 14 g/t Ag (1.84% CuEq)

The calculation of this metal equivalent is based on the following assumptions.

Metal	Mining Recovery %	Dilution %	Recovery %	Payability %	Forecast Price	Price Unit
Copper	0.9	0.05	0.6	0.7	\$6,600	USD/Tonne
Cobalt	0.9	0.05	0.85	0.75	\$55,000	USD/Tonne

Price assumptions used when calculating copper equivalent grades were based on recent historical metal prices at the time of calculation (2018). Metallurgical assumptions are based on extensive metallurgical testwork undertaken on the two deposits to 2018 across various potential flowsheets involving both floatation and leaching. Ag analyses in the estimation and metallurgical testwork were considered insufficient at the time to include in the metal equivalent calculation.

Application of these assumptions resulted in the following calculation of CuEq:

$$CuEq\% = Cu\% + 0.0012 \times Co p_{1}$$

It is the opinion of the company that both sets of prices used in the calculations are reasonable to conservative long-term forecasts for real dollar metal prices during the years most relevant to the deposits (approx. 2026-2030).

It is the opinion of the company that all of the elements included in the metal equivalent calculations have a reasonable potential to be recovered and sold.

For full details of the Emmie Bluff Metal Equivalent calculation, please see "Standout 43Mt Maiden Cu-Co Resource at Emmie Bluff", released to the ASX on 20<sup>th</sup> December 2021 and available at <u>https://www.codaminerals.com/wp-</u>

content/uploads/2021/12/20211220 Coda ASX-ANN Standout-43Mt-Maiden-Cu-Co-Resource-at-Emmie-Bluff RELEASE.pdf.

For full details of the MG14/Windabout Metal Equivalent Calculation, please see "Confirmation of Exploration Target & Mineral Resource and Ore Reserve Statement", released to the ASX on 23<sup>rd</sup> October 2020 and available at <a href="https://www.codaminerals.com/wp-content/uploads/2020/10/20201026">https://www.codaminerals.com/wp-content/uploads/2020/10/20201026</a> Coda ASX-ANN Confirmation-Statements-JORC.pdf.

### Forward Looking Statements

This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.

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## Appendix 2: Detailed Technical Information and JORC Table 1

## Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul> <li>Metallurgical sample was taken from:         <ul> <li>MG14: Slimes and tails were taken from bulk flotation (undertaken in 2022) of a master MG14 composite derived from 2 wide diameter drill holes drilled in 2018 designed to be representative of the deposit. The material has been kept in cold storage since compositing/flotation to minimise oxidation.</li> <li>Emmie Bluff: a master Emmie Bluff composite, derived from HQ Diamond core from various holes at the Emmie Bluff deposit. The composite was designed by Coda's metallurgical consultants to be broadly representative of the Emmie Bluff deposit as a whole.</li> </ul> </li> </ul>



Criteria	JORC Code explanation	Commentary
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Drilling has not been reported as part of this release.</li> <li>Metallurgical sample was taken from HQ diamond core (Emmie Bluff) and 8" diamond core (MG14).</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Drilling has not been reported as part of this release.</li> <li>Metallurgical sample was taken from diamond drilling at Emmie Bluff and MG14, where recovery is typically excellent. No recovery issues were noted in the holes/at the depths from which sample was derived.</li> </ul>





Criteria	JORC Code explanation	Commentary
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Drilling has not been reported as part of this release. No Mineral Resource has been estimated as part of this announcement.</li> <li>All core was qualitatively logged by suitably qualified field geologists at the time of drilling.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Drilling has not been reported as part of this release.</li> <li>Tapley Hill Fm shale (host rock) is a fine grained shale, mineralogy is known to be fine grained from field logging/XRD – grain size is not considered a relevant factor for sampling representivity but is a factor in metallurgical properties.</li> </ul>

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Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>Original assays via sodium peroxide fusion, ICP-OES/ICP-MS (Ag).</li> <li>Assay methodology utilised by Core Resources: Base metals/Ag by ICP-OES/, Sulphur speciation by LECO.</li> <li>All assays were undertaken under the supervision of Strategic Metallurgy or Mining Process solutions: Base Metals by XRF BM, Ag by D7 1g to 100ml.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No details are available of repeats, standards, etc. or other assay verification tests undertaken. Duplication and verification of results may be undertaken during the PFS if warranted.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	Drilling has not been reported as part of this release.





Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drilling has not been reported as part of this release.</li> <li>Representative composites was made of material from a number of holes to improve representivity.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	• Drilling has not been reported as part of this release.
Sample security	• The measures taken to ensure sample security.	<ul> <li>Metallurgical samples (half core) were provided by Coda to Strategic Metallurgy for cold storage, and eventually was used to generate a floatation concentrate and associated tails/slimes, samples of which were utilised in house (MG14) or provided to MPS via a courier company.</li> <li>Sample has been consistently held and stored by primary contractors to Coda Minerals in what the company considers to be secure settings.</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	No audits, umpire assays or reviews have been undertaken.



## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>Emmie Bluff is located on EL 6265. MG14 is located on EL 6518</li> <li>Both tenements are owned by Coda Minerals, formally as a 70:30 split between by Coda Minerals Ltd and Terrace Mining Pty Ltd (a wholly owned subsidiary of Coda).</li> <li>The tenure is in good standing and is considered secure at the time of this release. No other impediments are known at this time.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Historical exploration of the Emmie Bluff prospect has been undertaken by (among others) Mt Isa Mines, Gunson Resources, Torrens Mining and Gindalbie Metals (Coda's predecessor company).</li> <li>With the exception of data from Gindalbie Metals, all historical results used to guide Coda's exploration has been obtained from the Geological Survey of South Australia via the South Australian Resources Information Gateway (SARIG).</li> </ul>

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Criteria	JORC Code explanation	Commentary
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul> <li>The Elizabeth Creek project, of which Emmie Bluff is a part, sits in the Stuart Shelf within the broader Olympic Copper Province in South Australia.</li> <li>Emmie Bluff mineralisation is hosted in the dolomitic shales and dolarenites of the Neoproterozoic Tapley Hill Formation. This formation unconformably overlies the Meso/Palaeoproterozoic Pandurra Formation due to local uplifting associated with the Pernatty Upwarp. This unconformity, as well as structures associated with the Pernatty Upwarp, represent the most likely fluid flow pathways associated with the emplacement of metal bearing sulphides.</li> <li>Emmie Bluff mineralisation closely resembles mineralisation in the MG14 and Windabout resources found approximately 40 kilometres to the south, also within the broader Elizabeth Creek tenure. It is considered to fall within the broad "Zambian-style" family of sediment hosted copper deposits.</li> </ul>
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	Drilling has not been reported as part of this release.





Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>Drilling has not been reported as part of this release.</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>No additional diagrams are considered relevant for this release.</li> </ul>
Balanced reporting	<ul> <li>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.</li> </ul>	<ul> <li>No additional data is considered relevant for this release.</li> </ul>

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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.

#### Flotation:

- All tests undertaken at ambient temperatures in simulated saline site water.
- MG14 Tails Leach:
  - All tests undertaken at ambient temperatures in simulated saline site water for 24 hours. Tests JR003 and 004 were overhead stirrers, remainder were bottle rolls.
  - No attempt was made for to account for recirculation of cleaner tails which, assuming a 23% concentrate grade and 50% recovery of copper from cleaner and recleaner tails streams, would be expected to increase combined slimes and tails grade to 0.66%. This is not anticipated materially affect overall recovery of approximately 85.5%.

### **INTERPOLATED RESULTS (MG14)**

	Mass (g)	Mass (%)	Cu (%)	Dist (%)	Cu (g)	
Float						
Final conc	68.0	2.6	23.0	56.1	15.6	
Final tails (incl slimes)	1,839.3	97.4	0.7	43.9	12.2	
TOTAL	1,907.3	100.0	1.5	100.0	27.8	
Leach test on tail (incl. recycle streams).						
Head	1,839.3	97.4	0.7	43.9	12.2	
Leach	8.2	0.4		29.4	8.2	
Tail	1,831.1	97.0	0.2	14.5	4.0	
TOTAL	1,839.3	97.4	0.7	43.9	12.2	
Float Recovery			56.1			
Leach recovery			29.4			
Net Recovery		85.5				

Interpolated results for recirculated cleaner and recleaner tails. Yellow highlighted cells indicate assumptions as detailed in above text.

- Emmie Bluff Tails Leach:
  - 2L baffled reactors were used under ambient conditions (~20°C). All tests were conducted at pH 10, at 40% solids in Perth tap water for 48 hours.
  - No attempt was made to account for recirculation of cleaner or recleaner tails.

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Criteria	JORC Code explanation	Commentary		
		No other substantive exploration results are considered relevant to this		
		release.		
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided</li> </ul>	<ul> <li>Coda intends to assess the economic viability of the integration of tails leaching and/or the reduction of relevant flotation reagents into its Elizabeth Creek Copper-Cobalt Project scoping study and, if warranted, may undertake follow-up test work prior to releasing an update to the scoping study.</li> <li>No other diagrams are considered relevant to this release.</li> </ul>		
	this information is not commercially sensitive.			

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