

**4 August 2022**

## **Europa Metals Ltd**

("Europa Metals", the "Company" or the "Group") (AIM, AltX: EUZ)

### **Further Highly Encouraging Metallurgical Results at Toral and Operational Update**

Europa Metals, the European focused lead, zinc and silver developer, is pleased to announce highly encouraging results from its comprehensive metallurgical testwork programme and an update on its resource drilling campaign at its wholly owned Toral lead, zinc and silver project in the Castilla y León region, Spain ("Toral" or the "Toral Project").

#### **Highlights:**

- Metallurgical testwork results received from Wardell Armstrong International Ltd ("WAI") in respect of locked cycle flotation tests ("LCT") on products from an ore sorted bulk siliceous sample
  - o Concentrate Grades                      56.6% Zinc                      69.6% Lead
  - o Overall recovery (Sort & Float)      78.6% Zinc                      80.7% Lead
- Metallurgical results received for LCT from WAI on a further two carbonate samples from:
  - Hole TOD-025D:
    - o Concentrate Grades                      57.4% Zinc                      75.2% Lead
    - o Overall recovery (Sort & Float)      81.4% Zinc                      94.4% Lead
  - Hole TOD-028:
    - o Concentrate Grades                      60.3% Zinc                      64.1% Lead
    - o Overall recovery (Sort & Float)      84.0% Zinc                      87.3% Lead
- Resource drilling ongoing
  - o Following a delay to the start of the current campaign, progress has been impacted by drilling personnel contracting COVID-19
  - o Hole TOD-041 has been completed with mineralisation being intersected at the planned target depth
  - o Hole TOD-042 drilling is underway and currently at 280m with a target depth of approximately 900m
  - o Rig is now operating on a double shift basis in order to seek to catch up with the original programme schedule

#### **Commenting today, Myles Campion, Executive Chairman and acting CEO of Europa Metals, said:**

*"We have been busy so far this year on all fronts, including the recent completion of our metallurgical testwork campaign with WAI which achieved excellent results from*

both the upper siliceous zone and the lower carbonate zone.

"Lead and zinc recoveries to respective concentrates are very good. Ore sorting has played a part in lifting these recoveries (zinc to zinc concentrate by approximately 4 percentage points and lead to lead concentrate by approximately 3 percentage points, versus the previous results on unsorted ore) which is highly encouraging. The grades achieved for both Zinc and Lead are better than previous results, with the siliceous showing that the upper levels can also produce a high-grade concentrate.

"I am also pleased with our ongoing drill programme, albeit there is some catching up still to do, which will aim to prove up further indicated resources at depth."

### **Metallurgical Testwork: Ore Sorting followed by Froth Flotation of Ore Sort Concentrates**

Samples from Ore Sorting undertaken by Tomra GmbH, were submitted to WAI earlier this year. The samples tested were a bulk sample of siliceous style mineralisation and two borehole composites of carbonate style mineralisation. The siliceous sample was a composite of intersections from boreholes TOD-029, TOD-029D, TOD-029D2, TOD-029D3, TOD-034 and TOD-034D (a total of 701.09 kg). The carbonate samples were taken from boreholes TOD-025D and TOD-028 (96.36 kg and 50.7 kg respectively).

The ore sorting results announced previously by the Company in March 2022 were as follows:

#### *Siliceous bulk sample*

- Recovery of 95.7% Pb and 94.3% Zn metal
- 43.7% mass rejection of waste

#### *Carbonate composite from hole TOD-025D*

- Recovery of 98.9% Pb and 94.7% Zn metal
- 46.8% mass rejection of waste

#### *Carbonate composite from hole TOD-028*

- Recovery of 96.6% Pb and 96.1% Zn metal
- 47.7% mass rejection of waste

The sorter products were the subject of the recently completed campaign of locked cycle flotation with the metallurgical results received from WAI comprising:

- Siliceous bulk sample
  - o Flotation Recoveries                      83.4% Zinc      84.3% Lead
  - o Flotation Concentrate Grades            56.6% Zinc      69.6% Lead
  - o Overall recovery (Sort & Float)        78.6% Zinc      80.7% Lead
- Carbonate sample from hole TOD-025D
  - o Flotation Recovery                        85.9% Zinc      95.4% Lead
  - o Flotation Concentrate Grades            57.4% Zinc      75.2% Lead
  - o Overall recovery (Sort & Float)        81.4% Zinc      94.4% Lead
- Carbonate sample from hole TOD-028
  - o Flotation Recovery                        87.4% Zinc      90.3% Lead
  - o Flotation Concentrate Grades            60.3% Zinc      64.1% Lead
  - o Overall recovery (Sort & Float)        84.0% Zinc      87.3% Lead

### **Comparison with the 2019 locked cycle flotation tests on carbonate drill core**

Locked cycle flotation tests simulate a full-scale plant flowsheet. Each test at WAI's facilities was conducted in a series of six cycles using the flowsheet shown in Figure 1

below. For the second and subsequent cycles, lead and zinc cleaner tailings products were combined with the feed to the previous stage of flotation. For example, lead second cleaner tails were returned to first cleaner feed. The final concentrates, zinc scavenger tailings and zinc rougher tailings from the final two cycles, were weighed and sent for independent analysis. The results were then used to calculate recovery and concentrate grades.

**Figure 1:  
Locked Cycle Test Flowsheet**

[http://www.rns-pdf.londonstockexchange.com/rns/8339U\\_1-2022-8-3.pdf](http://www.rns-pdf.londonstockexchange.com/rns/8339U_1-2022-8-3.pdf)

Results of the 2019 and 2022 testwork programmes are summarised in Table 1 below. These results indicate that Toral could clearly achieve excellent concentrate grades.

**Table 1:  
Summarised Results of the 2019 and 2022 Testwork  
(Note: recovery and concentration data are from the original feed)**

Test	Lead Concentrate			Zinc Concentrate		
	Lead Recovery (%)	CR	Conc (% Pb)	Zinc Recovery (%)	CR	Conc (% Zn)
2019 Carbonate LCT1 Float	84.3	39.4	57.5	70.7	29.8	55.8
2019 Carbonate LCT2 Float	83.7	34.9	60.0	77.0	24.9	59.1
2022 Carbonate 025D Sort + Float	94.4	18.8	75.2	81.4	42.3	57.4
2022 Carbonate 028 Sort + Float	87.3	51.4	64.1	84.0	24.0	60.3
2022 Silicate Sort + Float	80.7	59.7	69.6	78.6	52.9	56.6

Ore sorting and froth flotation are processes that concentrate and recover metal values. The concentration ratio ("CR") is defined as the weight of feed divided by the weight of concentrate. Performance of an individual test can be judged in terms of recovery and CR. For an operating plant, daily results for recovery and CR continually vary. However, the results generally form a trend when plotted on axes of recovery versus CR. The same type of plot can be useful in comparing locked cycle test results.

**Figure 2:  
Zinc Recovery vs Concentration Ratio Plot of LCT Results**

[http://www.rns-pdf.londonstockexchange.com/rns/8339U\\_1-2022-8-3.pdf](http://www.rns-pdf.londonstockexchange.com/rns/8339U_1-2022-8-3.pdf)

Overall results for zinc recovery (for 2022, sort & float and for 2019, just float) are shown in Figure 2. At any given CR, higher recovery indicates improved performance, and figure 2 illustrates that the combined sort plus float procedure has given better performance than flotation alone for the zinc concentrate.

In respect of the 2022 results, the best estimate of zinc recovery is the trendline shown in Figure 2, which is "a least squares fit" for the three different testwork data points. This line intersects the recovery axis at 89.7%.

This intercept incorporates for zinc metal losses during the sorting process of 3.9% and also a recovery loss during the flotation process of a further 6.4% of zinc to lead concentrate.

The equation of the trend line is as follows:

$$\text{Recovery \%} = 89.7 - (0.21 * \text{CR})$$

In practice, when a full-scale plant and concentrator are in operation the aim is to produce a saleable zinc concentrate grade of approximately 55% to 60% Zn. To achieve this target concentrate grade, the required concentration ratio (and achievable recovery) depends mainly on the headgrade from the deposit.

At Toral, the average resource grade (October 2021 Resource Estimate, @ 4% Zn equivalent cut off) is 3.9% zinc, such that a future potential processing plant could operate at a CR of 17 to zinc concentrate, which would achieve a zinc recovery of

86.1% and a concentrate grade of 57.1% zinc.

An approximate estimate of the zinc recovery improvement resulting from sorting can be made from Figure 2. Projecting the two points from the 2019 testwork back to a CR of 17 and then comparing with the best estimate of recovery trendline indicates a recovery improvement of approximately 4 percentage points.

**Figure 3:  
Lead Recovery vs Concentration Ratio Plot of LCT Results**

[http://www.rns-pdf.londonstockexchange.com/rns/8339U\\_1-2022-8-3.pdf](http://www.rns-pdf.londonstockexchange.com/rns/8339U_1-2022-8-3.pdf)

Overall results for lead recovery (for 2022, sort & float and for 2019, just float) are shown in Figure 3, with the combined sort plus float procedure again giving better performance than flotation alone.

In respect of the 2022 results, the best estimate of lead recovery is the trendline shown in Figure 3, which is "a least squares fit" for the three testwork data points, intersecting the recovery axis at 97.4%. This intercept allows for the average loss of lead during sorting of 2.6% and the equation of the trend line is as follows:

$$\text{Recovery \%} = 97.4 - (0.24 * \text{CR})$$

In practice, a concentrator would seek to produce a saleable lead concentrate grade of approximately 70% lead. The average resource grade at Toral (October 2021 Resource Estimate) is 2.7% lead, such that a CR of 29 to lead concentrate would be required to achieve a lead recovery of 90.4% and a concentrate grade of 70.8% lead.

An approximate estimate of the lead recovery improvement resulting from sorting can be made from Figure 2. Projecting the two points from the 2019 testwork back to a CR of 29 and then comparing with the best estimate of recovery trendline indicates a recovery improvement of approximately 3 percentage points.

In summary, the Europa Metals' team believes that ore sorting followed by flotation has significant cost, performance and operational advantages compared with flotation alone.

The Company will now consider how best to utilise ore sorter rejects and flotation tailings. These waste products will be valuable as potential cemented aggregate backfill and paste fill for underground mining operations. Some tailings products could also be used as landfill for reclamation of an existing quarry.

### **Analysis of Final Concentrates Produced in the 2022 Locked Cycle Testwork**

Final zinc and lead concentrates from the 2022 testwork were sent for detailed chemical analyses. The analyses for commonly applied penalty elements are shown in Table 2 below. The concentrates were generally below penalty levels except for mercury. High mercury levels are common for Spanish zinc concentrates and local smelters are able to manage such feeds. As an alternative, a future plant at Toral could incorporate a concentrate treatment process in order to reduce the mercury to below penalty levels.

**Table 2:  
Penalty Element Analyses of Concentrates Produced in the 2022 Testwork**

Concentrate From Testwork	As (ppm)	Bi (ppm)	Cd (ppm)	Fe (%)	Mg (%)	Mn (ppm)	Hg (ppm)	F (ppm)
Siliceous Lead Conc	513	2.6	87	4.32	0.08	80	234	120
Siliceous Zinc Conc	104	0.2	1,325	2.72	0.06	120	2,970	40
Carbonate 025D Lead Conc	80	2.6	60.8	1.04	0.29	60	96	<20
Carbonate 025D Zinc Conc	33	0.1	1,445	1.83	0.28	70	1,745	30
Carbonate 028 Lead Conc	212	7.9	177.5	5.6	0.17	60	197	30
Carbonate 028 Zinc Conc	16	0.1	1,635	1.75	0.08	50	1,085	20
Penalty Level for Zinc Conc	2,000	200	2,500	8%	0.18%	5,000	50	200

## Resource Drilling

Following an initial delay to the arrival of the rig on site due to increased exploration activity and therefore rig demand in Spain, the first hole, TOD-041, has recently been completed. Hole TOD-041 intersected mineralisation at its target depth, whilst drilling of hole TOD-042 has commenced and is advancing well, as the rig contractor is operating on a double shift, and is currently at 280m with a target depth of approximately 900m.

The objective of this ongoing campaign is to seek to extend the indicated resource at depth towards the east of the current zone and link up a known area of encouraging data. If successful, this will add tonnes to the envisaged future mining plan. Additionally, all holes are being geotechnically evaluated as we drill, thereby providing additional information for the feasibility study process.

This drilling campaign will also complete our R&D collaboration project with the Centre for the Development of Industrial Technology (CDTI) which will conclude later this year.

## Competent Person's statement

The information contained in this announcement that relates to exploration activities is based upon information compiled by Evan Kirby, Non-Executive Director of Europa Metals. Dr Kirby is a Fellow of the Southern African Institute for Mining and Metallurgy and has sufficient experience which 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 December 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Dr Kirby consents to the inclusion in this announcement of the matters based upon the information in the form and context in which it appears.

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*The information contained within this announcement is deemed by the Company to constitute inside information as stipulated under the Market Abuse Regulation (EU) No. 596/2014 as it forms part of United Kingdom domestic law by virtue of the European Union (Withdrawal) Act 2018, as amended.*

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