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## **Europa Metals Ltd**

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

### **Updated Mineral Resource Estimate - 55% Increase in Indicated Resource for Toral Pb, Zn & Ag Project, Spain**

Europa Metals, the European focused lead, zinc and silver developer, is pleased to announce the results of an updated independent Mineral Resource Estimate, reported in accordance with JORC (2012), in respect of its wholly owned Toral lead-zinc-silver project located in northern Spain ("Toral" or the "Toral Project").

#### **Highlights:**

- Updated independent Indicated and Inferred Mineral Resource Estimate for Toral, reported in accordance with JORC (2012). The input database for the estimate, included:
  - o 172 diamond drill holes (including wedges) and 4 reverse circulation (RC) drill holes totalling 59,658.73 metres of drilling (including environmental drillholes), and 19 underground channels for 18.75 metres.
  - o 8 new parent mineral exploration drill holes TOD-028 to TOD-035 and six new daughter drill holes (metallurgical/geotechnical data), and one failed daughter hole.
  - o Application of updated fault models.
  - o Application of new lithological facies domain models.
- Indicated resource estimate of approximately 5.9Mt @ 7.1% Zn Equivalent (including Pb credits) and 27g/t Ag, representing an approximate:
  - o 55% increase in Indicated resource tonnes;
  - o 39% increase in Indicated contained tonnes of zinc to approximately 251,000 tonnes;
  - o 30% increase in Indicated contained tonnes of lead to approximately 196,000 tonnes; and
  - o 40% increase in Indicated contained ounces of silver to approximately 5.2 million ounces.
- A total resource of approximately 20Mt @ 6.3% Zn Equivalent (including Pb credits), 3.9% Zn, 2.7% Pb and 22 g/t Ag, including:
  - o 790,000 tonnes of zinc, 550,000 tonnes of lead and 14 million ounces of silver.

#### **Outlook**

The Company expects to integrate the updated resource estimate, with the substantially increased indicated resource and grade increase within the upper zones, with its ongoing engineering analysis in order to assess the positive influence on the proposed future mining and processing route for the Toral project.

The Company will also utilise the bulk sample obtained during the recent drill programme to undertake a new phase of metallurgical and waste testing via Wardell Armstrong International. It is intended that ore sorting analysis will be conducted on the large bulk sample within the upper zones to complement its 2020 work. In addition, further ore sorting testwork will be utilised to determine the potential recovery and concentrate production levels from the lower, carbonate zones.

#### **Laurence Read, CEO of Europa Metals, commented:**

*"With an approximate 55% increase in the Indicated category to 5.9Mt @ 7.1% Zinc Equivalent (including Pb credits), sitting within a total resource, open at depth and to the East, of 20Mt @ 6.3% Zinc Equivalent (including Pb credits), this independent resource update represents a significant advance for the Toral lead, zinc and silver project.*

*"By formulating and implementing a highly targeted drilling campaign, our team has achieved this significant result in a highly efficient manner, in an area of the resource that should directly impact the early future production years of the Toral project. We are now progressing to a new phase of metallurgical testing in order to determine the most efficient production*

routes for the upper zone including examination of ore sorting. The overall focus continues to be on proving up our well established lead, zinc and silver resource area and continuing to de-risk the development profile."

**Myles Champion, Executive Chairman of Europa Metals, further commented:**

"This is an excellent result for Europa Metals with the upper siliceous zone returning better than expected grades and widths which has enabled the reporting of a substantial increase in Indicated tonnes from a concentrated drilling programme. The deposit continues to deliver positive news and this boost to the Indicated resource provides further certainty on tonnes and grade profiles to assist with the assessment of mine life and future production profile in further studies."

**Overview**

Europa Metals is pleased to announce the results of an independent updated Mineral Resource Estimate, in accordance with JORC (2012), for Toral pursuant to which there has been an approximate 55% increase in the Indicated resource category to approximately 5.9Mt at 7.1% Zinc Equivalent (including Pb credits) and 27g/t Ag. The upgrade follows the analysis of assays returned from the Company's 2021 diamond drilling campaign (involving, *inter alia*, key new drill holes TOD-028 and TOD-035) and incorporation of updated fault and new lithological facies domain models. The update was commissioned from and prepared by Addison Mining Services Limited ("AMS").

Figure 1 showing AMS' resource block model for Toral as a 3D view looking north, by Zn Equivalent (PbAg)% grade: [http://www.ms-pdf.londonstockexchange.com/ms/6336N\\_1-2021-9-30.pdf](http://www.ms-pdf.londonstockexchange.com/ms/6336N_1-2021-9-30.pdf)

Figure 2a: showing AMS' resource block model for Toral as a 3D view looking north, by resource category: [http://www.ms-pdf.londonstockexchange.com/ms/6336N\\_1-2021-9-30.pdf](http://www.ms-pdf.londonstockexchange.com/ms/6336N_1-2021-9-30.pdf)

Figure 2b: AMS' resource block model for Toral 2D showing increase in indicated area: [http://www.ms-pdf.londonstockexchange.com/ms/6336N\\_1-2021-9-30.pdf](http://www.ms-pdf.londonstockexchange.com/ms/6336N_1-2021-9-30.pdf)

This latest updated Mineral Resource Estimate, effective as of 14 September 2021 for the Toral deposit comprises:

- An Indicated resource of approximately 5.9Mt @ 7.1% Zn Equivalent (including Pb credits), 4.2% Zn, 3.3% Pb and 27g/t Ag, including:
  - o 251,000 tonnes of zinc, 196,000 tonnes of lead and 5.2 million ounces of silver.
- An Inferred resource of approximately 14Mt @ 6% Zn Equivalent (including Pb credits), 3.8% Zn, 2.5% Pb and 20 g/t Ag, including:
  - o 540,000 tonnes of zinc, 350,000 tonnes of lead and 9 million ounces of silver.
- A total resource of approximately 20Mt @ 6.3% Zn Equivalent (including Pb credits), 3.9% Zn, 2.7% Pb and 22 g/t Ag, including:
  - o 790,000 tonnes of zinc, 550,000 tonnes of lead and 14 million ounces of silver.

The Company's Board believes the results of this update compare very favourably with the previously reported Mineral Resource Estimate, announced on 14 August 2020 and effective as of 12 August 2020, which comprised the following tonnages and grade:

- An Indicated resource of approximately 3.8Mt @ 8.3% Zn Equivalent (including Pb credits), 4.7% Zn, 3.9% Pb and 30g/t Ag, including:
  - o 180,000 tonnes of zinc, 150,000 tonnes of lead and 3.7 million ounces of silver.
- An Inferred resource of approximately 14Mt @ 6.5% Zn Equivalent (including Pb credits), 4% Zn, 2.7% Pb and 23 g/t Ag, including:
  - o 540,000 tonnes of zinc, 360,000 tonnes of lead and 10 million ounces of silver.
- A total resource of approximately 17Mt @ 6.9% Zn Equivalent (including Pb credits), 4.1% Zn, 2.9% Pb and 24 g/t Ag, including:
  - o 720,000 tonnes of zinc, 510,000 tonnes of lead and 14 million ounces of silver.

\* Zn Eq (PbAg)% is the calculated Zn equivalent incorporating silver credits as well as lead and is the parameter used to define the cut-off grade used for reporting resources ( $Zn\ Eq\ (PbAg)\% = Zn + Pb*0.867 + Ag*0.027$ ). Zn Equivalent calculations were based on 3-year trailing average price statistics obtained from the London Metal Exchange and London Bullion Market Association giving an average Zn price of US\$2,516/t, Pb price of US\$1,961/t and Ag price of US\$19.4/oz. Recovery and selling factors were incorporated into the calculation of Zn Eq values. It is the Company's opinion that all the elements included in the metal equivalents calculation (zinc, lead and silver) have a reasonable potential to be recovered and sold.

**Implications of the resource update and updated resource model for the Toral Project**

The significant increase in size and contained metal of the Indicated resource exceeded

management's expectations and forms a significant cornerstone from which to further de-risk and optimise the future production profile and economics of the Toral project. By utilising the updated resource model in addition to the new geotechnical and metallurgical data recovered from the 2021 drill campaign, the Company can now analyse how the early years production design might best be developed, in particular complementing the 2020 ore sorting work conducted on the lower, carbonate zones, to determine how ore sorting in the upper zone could increase production efficiencies. Given the levels of grade now established in the upper zone and the physical location of the mineralisation, further work on the decline design can also be advanced.

At this time, no copper has been brought into the resource as only limited intersections have occurred. Equally, the resource expansion is predominantly occurring within the upper boundaries of the pre-existing resource with no further exploration yet being made below the resource cut-off at the base or to the East.

### **Revised inputs**

The geological team at Europa Metals has completed several important workstreams and internal projects over the last five years to improve our geological understanding of the Toral deposit.

The 2018 re-logging exercise of the historic Peñarroya core at the Instituto Geológico y Minero de España (IGME) facilities, proved to be beneficial as it assisted in increasing the Company's understanding of the geological environment and controls on mineralisation. In addition, it provided basic structural data and, importantly, increased the quantity and quality of bulk density measurements.

The completion of detailed surface geological mapping in 2019 led to the 2020 updated structural database to provide further data and guidance on structural influences within the confines of the Toral deposit.

The findings from such work have been incorporated into the updated resource model, thereby providing better delineated geological boundaries, and utilised for updating the structural framework which has been integral in establishing the updated resource model.

Europa Metals completed eight parent diamond drill holes (TOD-028 to TOD-035) and seven daughter wedge holes in the last drilling campaign for total drilling of 5,183.90 metres (including failed hole TOD-035F). The objective of the 2021 drill campaign was to test up dip extensions to the high-grade zone and increase the Indicated resource, within predominantly siliceous lithofacies material for ore sorting and metallurgical tests. All drilling was planned to cut the deposit above elevation 190mRI (approximately 300 to 500 metres below surface) to extend the Indicated resource zone above that delineated in the 2020 mineral resource estimate.

### **Competent Person's Updated Inferred and Indicated Mineral Resource Estimate, Reported in Accordance with the JORC Code (2012 edition)**

Further to the diamond drilling conducted in 2021, the Company commissioned AMS to complete an independent updated Mineral Resource Estimate. The updated Mineral Resource Estimate is based on all the available historical data from six drilling campaigns conducted on licence number 15.199 (namely, the 1972 - 1984 Peñarroya-Adaro campaign, the 2006 - 2008 Lundin Mining campaign, the 2016 - 2017 Europa Metals' campaign and the Company's September 2018 to August 2019 RC and diamond drilling, November 2019 to January 2020 diamond drilling and January to June 2021 diamond drilling), along with historic underground channel sampling results from numerous old adits.

The updated Mineral Resource Estimate has been reported in accordance with the Joint Ore Reserve Committee (JORC) code, 2012 edition.

### **Block Model**

The resource update has identified potentially economic mineralisation ranging from surface to approximately 1,100m below surface. The new block model currently extends for a strike length of 3,600m and is still open to the east and west along strike and also at depth where it has not yet been closed off.

Figure 3: AMS' East West 2D Toral block model by grade:

[http://www.ms-pdf.londonstockexchange.com/ms/6336N\\_1-2021-9-30.pdf](http://www.ms-pdf.londonstockexchange.com/ms/6336N_1-2021-9-30.pdf)

The Inferred and Indicated resource for the Zn-Pb-Ag mineralisation located on the Toral Project's licence area has been estimated at various cut-offs (refer to Table 1 below). The Company reviewed the new block model along with its appointed geological consultants, AMS, and concluded that a 4% Zn Equivalent cut-off grade was appropriate utilising estimated mining parameters established during the 2020 scoping study and mineralogy and using an historical three-year trailing average for metals prices, which, although conservative, was deemed appropriate at this stage in the project's development.

Zn Price Used:            US\$ 2,516/t    US\$ 1.14/lb

Pb Price Used: US\$ 1,961/t US\$ 0.90/lb  
 Ag Price Used: US\$ 19.4/oz

Table 1: Summary of mineral resources for the Toral property reported at a 4.0% Zn equivalent cut-off grade (including Pb and Ag credits) and estimated grade and tonnages at the various cut-off grades. Figures are rounded to reflect the accuracy of the estimations.

Cut-Off Zn Eq (PbAg)%	Tonnes (Millions)	Density	Zn Eq (Pb)%	Zn Eq (PbAg)%	Zn %	Pb %	Ag g/t	Contained Zn Tonnes (000s)	Contained Pb Tonnes (000s)	Ag Troy Oz (Millions)
Indicated										
6.0	3.9	2.93	8.5	9.3	5.1	3.9	30	200	152	3.8
5.0	4.8	2.92	7.8	8.6	4.7	3.6	29	226	173	4.4
4.0	5.9	2.90	7.1	7.8	4.2	3.3	27	251	196	5.2
3.5	6.2	2.90	7.0	7.7	4.1	3.3	27	255	200	5.3
Inferred										
6.0	8	2.90	7.3	7.9	4.9	2.8	22	370	210	5.4
5.0	10	2.90	6.7	7.2	4.4	2.7	21	450	280	7.0
4.0	14	2.90	6.0	6.5	3.8	2.5	20	540	350	9.0
3.5	16	2.90	5.6	6.2	3.6	2.4	19	580	390	10.0
Total										
6.0	12	2.90	7.7	8.4	4.9	3.2	25	570	370	9
5.0	15	2.90	7.0	7.7	4.5	3.0	23	680	450	11
4.0	20	2.90	6.3	6.9	3.9	2.7	22	790	550	14
3.5	22	2.90	6.0	6.6	3.7	2.6	21	830	590	15
Partially Weathered Material										
6.0	12	2.90	7.7	8.4	4.9	3.2	25	570	370	9
Unweathered Fresh Rock										
4.0	16	2.90	6.7	7.2	4.3	2.7	21	710	440	11

Notes:

- No mineral reserve calculations have been undertaken. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
- Numbers are rounded to reflect the fact that an Estimate of Resources is being reported. Rounding of numbers may result in differences in calculated totals and averages. All tonnes are metric tonnes.
- Zn equivalent calculations were based on 3 year trailing average price statistics obtained from the London Metal Exchange and London Bullion Market Association giving an average Zn price of US\$2,516/t, Pb price of US\$1,961/t and Ag price of US\$19.4/oz. Recovery and selling factors were incorporated into the calculation of Zn Eq values. It is the Company's opinion that all the elements included in the metal equivalents calculation (zinc, lead and silver) have a reasonable potential to be recovered and sold.
- Zn Eq (PbAg)% is the calculated Zn equivalent incorporating silver credits as well as lead and is the parameter used to define the cut-off grade used for reporting resources ( $Zn\ Eq\ (PbAg)\% = Zn + Pb*0.867 + Ag*0.027$ ).
- Zn Eq is the calculated Zn equivalent using lead credits and does not include silver credits ( $Zn\ Eq = Zn + Pb*0.867$ ).
- The Mineral Resource Estimate set out above for the zinc, lead and silver mineralisation in the Toral project area is based on a 3D geologic model and wireframe restricted block model that integrated the exploration work on the Toral project up to 14 September 2021. The block model used uniform cell size of 25x10x25m to best suit the orientation of the mineralisation and sample spacing. The block model was rotated by 20° in plan view to best match the trend of mineralisation. Sub cells were applied to better fit the wireframe solid models and preserve accurate volume as much as possible. Cells were interpolated at the parent block scale using a Median Indicator Kriging.
- No Top Cuts were applied to the 2m downhole composite data used for grade estimation.
- The Indicated and Inferred mineral resource category for the Toral lead-zinc-silver project set out in the table above (at cut-off grades >4% Zn Equivalent) comply with the resource definitions as described in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).
- The tonnes and grades reported at a cut-off grade of 3.5% Zn equivalent are below the economic cut-off grade of 4% and as such should not be considered mineral resources, they are shown here for comparison purposes only.

### Summary of Updated Resource Estimate and Reporting Criteria

In accordance with JORC (2012) reporting guidelines, a summary of the material information used to estimate the updated Mineral Resource Estimate is set out below (for further detail please refer to the JORC (2012) Table 1, set out in the Appendix to this announcement).

### Geology and geological interpretation

The Toral Project is a traditional polymetallic (lead-zinc-silver) deposit, which is hosted over 6km of strike length of the prospective Lower Cambrian Vegadeo Limestone formation, that is regionally mineralised along more than 40km of its extent. The deposit represents a carbonate hosted, structurally controlled deposit type, demonstrating fault-controlled contact, vein, carbonate

replacement and breccia styles of mineralisation situated close to and along the boundary between footwall slates and hanging wall limestones and dolomites. Sub-ordinate lead-zinc-silver mineralisation also occurs wholly within the hanging wall limestones and dolomites, approaching the contact with the slates.

Historic drill hole re-logging undertaken in 2018 provided improved geological, structure, alteration and weathering/oxidation information, incorporated into the interpreted geological and mineralised models for the updated resource estimate. Surface mapping and remote data interpretation by Europa Metals has enabled the development of an interpreted fault model, also incorporated into the updated geological and mineralised models used in the updated mineral resource estimate.

### **Weathering**

The weathering profile was observed throughout the drill holes and historic shallowly emplaced horizontal adits. In general, observations on weathering and oxidation at Toral suggests a poorly developed or truncated profile overall, with minimal oxidation developed much below 30 metres from the surface, with the majority of the country rock being un-weathered or showing only fractured controlled weathering and oxidation in the form of iron oxide joint tarnishing and fracture infill. Weathering and oxidation are deeper within the main parts of the mineralised structure, and is interpreted as partial, being fracture controlled with less than 10% weatherable minerals weathered and/or oxidised. A weathering surface was interpreted at the moderately weathered - partially weathered and fracture-controlled boundary to sub-divide the moderately oxidised 'transitional' zone material and ~10% weathered 'fresh' material below.

Due to the strong lithological and structure control, an observed trough is developed at the transitional-fresh boundary along the main structure, interpreted through the drill hole logging of weathering. The accuracy of the surface at this stage is suitable for application and use in the reporting of Inferred and Indicated resources and further work is required to increase the understanding of the boundary and its effects on the deposit.

### **Bulk density**

The resource database contains 3,012 bulk density measurements, with a total of 234 within the mineralised wireframe, with a mean value of 2.84 g/cm<sup>3</sup>.

A broad linear relationship between Pb+Zn grade and Bulk Density was identified from scattergrams and the formula  $2.7 + 0.02(\text{Pb}+\text{Zn}\%)$  used to estimate block density in relation to block grade within the block model, density was capped at 3.5 g/cm<sup>3</sup>.

### **Drilling techniques and hole spacing**

The updated Mineral Resource Estimate includes new information from eight parent diamond drill holes (TOD-028 to TOD-035) and six successful daughter wedge holes from the last drilling campaign for total drilling of 3,368 metres (including failed hole TOD-035F), all collared from surface.

A total of 172 diamond drill holes (including wedges) and 4 reverse circulation (RC) drill holes totalling 59,658.73 metres of drilling, and 19 underground channels for 18.75 metres were used as the input database for geological modelling and resource estimation. Note that this drillhole database includes environmental monitoring drillholes.

Drill core diameter was PQ, HQ, NQ2, NQ and BQ depending upon depth. Tube type is unknown for the historic Peñarroya drilling, whilst the triple tube method was used for the historic Lundin and Europa Metals' drilling campaigns.

The recent diamond core has been orientated. No orientation has been performed on the historic drill core.

Drill and UG channel sample data spacing across the current resource area ranges from approximately 50-100m x 50-100m centres within the most densely tested area situated in the NW, stepping out to approximately 200m x 200m within the mid-section and 100-200m x 500m in the SE.

The distribution of drill holes and UG channel sampling, supported by surface and underground mapping, is sufficient to establish the degree of geological and grade continuity appropriate for a JORC (2012) Inferred and Indicated classification of resources.

### **Sampling and sub-sampling techniques**

The four main phases of historic exploration drilling and sampling are:

- 1972-1984 Peñarroya-Adaro: diamond drill core method was used to obtain samples for geological logging and sampling. Geological and analytical data is recorded on hardcopy. Selective sampling method was employed around areas of interest. Sampling intervals measure approximately 1m, half core sent for analysis, with half core retained for reference. Exact details on core processing, sampling techniques and

analytical methods are unclear, however subsequent explorers Lundin Mining sent the majority of the Peñarroya core pulp reject samples to ALS Chemex for multi element re-analysis by ICP.

- 2006-2008 Lundin Mining: diamond drill core method was used. Core logging completed on hardcopy. Selective sampling method was employed around areas of interest. Sampling intervals measure approximately 1m, half core sent for analysis, with half core retained for reference. Samples typically 1m half core, with samples prepared at the then Lundin Laboratory in Suecia, then shipped to ALS Chemex Vancouver for multi-element analysis by ICP. Half core samples reduced to -400 microns and 100g sub-samples taken for analysis. Multi-element re-analysis of available Peñarroya diamond drill hole pulp reject samples completed at ALS Chemex Vancouver using ICP.
- 2016-2017 Europa Metals: diamond drill core and underground cut channel sampling methods used to obtain samples for geological logging and sampling. Geological and analytical data is recorded on hardcopy. Selective sampling method was employed around areas of interest. Sampling intervals measure approximately 1m, half core sent for analysis, with half core retained for reference. Samples sent to ALS Seville for preparation and multi-element analysis by ICP. Half core samples reduced to -400 microns and 100g sub-samples taken for analysis.
- 2018-2021 Europa Metals: diamond drill core and RC chips used to obtain samples for geological logging and sampling. Geological and analytical data is recorded on paper and later digitised. Selective sampling method was employed around areas of interest. Sampling intervals measure approximately 1m, half core and RC riffle splits sent for analysis, weighing approximately 2-3kg, with half core and chip sub-samples retained for reference. Samples were sent to ALS Seville for preparation and multi-element analysis by ICP. Half core and RC samples were reduced to -400 microns and 100g sub-samples taken for analysis.

### **Diamond Core Recovery**

A total of 14,706 core recovery measurements exist in the database for the drilling with average core recovery of 79%. The average for the Europa Metals diamond drilling is 96%. Core recovery is measured over run lengths.

### **Cut-off grades**

The Inferred and Indicated resource for the Pb-Zn-Ag mineralisation located on the Toral property, licence number 15.199, has been estimated at various cut-offs. For the Toral deposit resource, the economic cut-off was determined by calculation of block revenue factors based on Zn equivalent calculations derived from an historical three-year trailing average for Zn, Pb and Ag prices. Indicative mining and processing costs derived from the 2020 scoping study and typical of the region and deposit type were applied along with typical mining recovery and dilution factors and metallurgical recovery factors identified by laboratory studies and production at comparable deposits and accepted by AMS. For reporting in compliance with JORC (2012), an economic cut-off grade of 4% Zn equivalent (including Pb and Ag credits) was selected considering the aforementioned factors and allowing for some increase in commodity prices to define resources with a reasonable prospect of eventual economic extraction now or in the near future. Resources are reported as follows:

The updated mineral resource estimate as of 14 September 2021 for Toral comprises:

- An Indicated resource of approximately 5.9Mt @ 7.1% Zn Equivalent (including Pb credits), 4.2% Zn, 3.3% Pb and 27g/t Ag, including:
  - o 251,000 tonnes of zinc, 196,000 tonnes of lead and 5.2 million ounces of silver.
- An Inferred resource of approximately 14Mt @ 6% Zn Equivalent (including Pb credits), 3.8% Zn, 2.5% Pb and 20 g/t Ag, including:
  - o 540,000 tonnes of zinc, 350,000 tonnes of lead and 9 million ounces of silver.
- A total resource of approximately 20Mt @ 6.3% Zn Equivalent (including Pb credits), 3.9% Zn, 2.7% Pb and 22 g/t Ag, including:
  - o 790,000 tonnes of zinc, 550,000 tonnes of lead and 14 million ounces of silver.

### **Estimation methodology**

AMS verified new primary analytical data via cross reference against original laboratory certificates. The database for use as input for mineral resource modelling and estimation has also been validated and verified by AMS. Micromine 2021 3D geological modelling and estimation software was used for import, validation and QC verification assessment, 3D solid modelling, geostatistics and block model grade estimation and block model reporting. Data checks include checks for overlapping and missing intervals, drill hole trace errors, missing survey data, lithology and collars.

As with previous resource estimates completed by AMS (2017, 2018, 2019, 2020) wireframe solid models were created for each domain based on a mineralisation threshold of approximately 0.2% for Zn and Pb (approximately 0.4% Zn+Pb). Analysis of Zn and Pb grades in cross section and in scatter plots showed a strong relationship and no requirement to model Zn and Pb separately was identified. Ag showed a strong correlation with Pb and was estimated within the Zn/Pb mineralised domain.

The updated wireframes were generated using Micromine's implicit vein modelling functionality and incorporated major fault boundaries to better honour offsets in the structure and preserve thicknesses between intercepts. Interpretation of the mineralised domains was guided by geological interpretation of the deposit incorporating structural and lithological boundaries and surface expression in topographical data and outcrop mapping.

To the northwest the resource is truncated by the licence boundary and extended approximately 10m past the south easterly most drillhole which was mineralised but contained sub-economic grades (3m at 2.4% ZnEq). The total strike length of the modelled mineralisation within the licence is approximately 3.1km. The structure remains open to the southeast. Down dip the model was extrapolated approximately 50-200m below the deepest sample in the northwest and central parts of the deposit, and approximately 250-280m below the deepest sample in the southeast with consideration of depths tested along strike to the northwest. The models extent is from surface to a range of approximately 800 - 1,150m below the surface. Extents of extrapolation are considered appropriate for the level of information, deposit type, strike and depth extents tested, observed and geostatistical grade continuity and the assigned resource classification.

A uniform cell block model of 25 mE, 10 mN, 25 mZ was restricted to the wireframes using block factors. The block model was rotated by 20° in plan view to best match the trend of mineralisation. The uniform model and 2m sample composites for the mineralised domain were then flattened to a constant vertical plane striking 110° to account for fault offsets, improve variography and grade mapping. Thickness was preserved in the flattening process and no lateral stretching was applied.

Block model interpolation and extrapolation for Zn, Pb and Ag was completed using directional variograms for each element in the flattened space at the uniform block scale. Median Indicator Kriging was used, where each cut-off bin in the indicator interpolation process uses the same median indicator variogram for each element. Indicator bins were selected based on dices plus incremental percentiles in the tail of the distribution.

During block model interpolation, the influence of some isolated high-grade values was found to be sufficiently localised and did not have undue influence on the estimates of grade. It was decided that there was no requirement for top cutting.

### Classification criteria

The portion of the Toral deposit defined by drilling, underground development and channel sampling, has been classified as an Inferred and Indicated mineral resource in accordance with JORC (2012) based on a combination of drill spacing, geological confidence, grade continuity, previous mining and the quality control standards achieved.

### Mining and metallurgical methods and parameters

Based on the orientations, thickness and depths to which the ore body has been modelled, as well as the estimated grade, underground sub level open stope mining is the intended mining methodology with froth floatation for recovery.

### Comparison with Previous Mineral Resource Estimate

The updated Mineral Resource Estimate compares favourably with the previously reported Indicated and Inferred Mineral Resource Estimate announced on 14 August 2020 and effective as of 12 August 2020.

#### Previous Mineral Resource Estimate Announced in August 2020

Table 2: Summary of 2020 mineral resources for the Toral property reported at a 4.0% Zn equivalent cut-off grade (including Pb and Ag credits) and estimated grade and tonnages at the various cut-off grades. Figures are rounded to reflect the accuracy of the estimations.

Cut-Off Zn Eq (PbAg)%	Tonnes (Millions)	Density	Zn Eq (Pb)%	Zn Eq (PbAg)%	Zn %	Pb %	Ag g/t	Contained Zn Tonnes (000s)	Contained Pb Tonnes (000s)	Ag Troy Oz (Millions)
<b>Indicated</b>										
<b>6</b>	2.8	2.9	9.5	10.0	5.3	4.5	34	150	130	3.1
<b>5</b>	3.3	2.9	8.9	9.5	5.0	4.2	32	170	140	3.4
<b>4</b>	<b>3.8</b>	<b>2.9</b>	<b>8.3</b>	<b>8.9</b>	<b>4.7</b>	<b>3.9</b>	<b>30</b>	<b>180</b>	<b>150</b>	<b>3.7</b>
<b>3</b>	4.1	2.9	7.9	8.5	4.4	3.7	29	180	150	3.8
<b>Inferred</b>										
<b>6</b>	8	2.9	7.8	8.3	4.7	3.4	28	370	270	7.2
<b>5</b>	10	2.9	7.2	7.7	4.4	3.0	26	450	310	8.6
<b>4</b>	<b>14</b>	<b>2.9</b>	<b>6.5</b>	<b>6.9</b>	<b>4.0</b>	<b>2.7</b>	<b>23</b>	<b>540</b>	<b>360</b>	<b>10</b>
<b>3</b>	17	2.9	5.9	6.3	3.7	2.4	20	610	400	11
<b>Total</b>										
<b>6</b>	11	2.9	8.2	8.8	4.8	3.7	30	520	390	10

<b>5</b>	14	2.9	7.6	8.1	4.5	3.3	27	620	450	12
<b>4</b>	<b>17</b>	<b>2.9</b>	<b>6.9</b>	<b>7.3</b>	<b>4.1</b>	<b>2.9</b>	<b>24</b>	<b>720</b>	<b>510</b>	<b>14</b>
<b>3</b>	21	2.9	6.3	6.7	3.8	2.7	22	790	560	15
<b>Transitional Oxide Material</b>										
<b>4</b>	3	2.9	5.2	5.7	2.6	2.9	27	75	83	2.5
<b>Unweathered Fresh Rock</b>										
<b>4</b>	14	2.9	7.2	7.7	4.5	3.0	24	650	430	11

Notes:

1. No mineral reserve calculations have been undertaken. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
2. Numbers are rounded to reflect the fact that an Estimate of Resources is being reported as stipulated by JORC 2012. Rounding of numbers may result in differences in calculated totals and averages. All tonnes are metric tonnes.
3. Zn equivalent calculations were based on 3 year trailing average price statistics obtained from the London Metal Exchange and London Bullion Market Association giving an average Zn price of US\$2,680/t, Pb price of US\$2,100/t and Ag price of US\$16.2/oz. Recovery and selling factors were incorporated into the calculation of Zn Eq values. It is the Company's opinion that all the elements included in the metal equivalents calculation (zinc, lead and silver) have a reasonable potential to be recovered and sold.
4. Zn Eq (PbAg)% is the calculated Zn equivalent incorporating silver credits as well as lead and is the parameter used to define the cut-off grade used for reporting resources (Zn Eq (PbAg)% = Zn + Pb\*0.926 + Ag\*0.019).
5. Zn Eq is the calculated Zn equivalent using lead credits and does not include silver credits (Zn Eq = Zn + Pb\*0.926).
6. The Mineral Resource Estimate set out above for the zinc, lead and silver mineralisation in the Toral project area is based on a 3D geologic model and wireframe restricted block model that integrated the exploration work on the Toral project up to 21 January 2020. The block model used uniform cell size of 25x10x25m to best suit the orientation of the mineralisation and sample spacing. The block model was rotated by 20° in plan view to best match the trend of mineralisation. Sub cells were applied to better fit the wireframe solid models and preserve accurate volume as much as possible. Cells were interpolated at the parent block scale using an Ordinary Kriging.
7. Following statistical analysis and assessment of the updated assay composite database top cuts of 125g/t Ag were applied to the data. No top cuts were applied for Zn or Pb.
8. The Indicated and Inferred mineral resource category for the Toral zinc-lead-silver project set out in the above table (at cut-off grades >4% Zn Equivalent) comply with the resource definitions as described in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).
9. The tonnes and grades reported at a cut-off grade of 3% Zn equivalent are below the economic cut-off grade of 4% and as such should not be considered mineral resources, they are shown here for comparison purposes only

The updated Mineral Resource Estimate is therefore positive in terms of increased Indicated resource tonnes and contained metal.

- Indicated resource estimate of approximately 5.9Mt @ 7.1% Zn Equivalent (including Pb credits) and 27g/t Ag, representing an approximate:
  - o 55% increase in Indicated resource tonnes;
  - o 39% increase in Indicated contained tonnes of zinc to approximately 251,000 tonnes;
  - o 30% increase in Indicated contained tonnes of lead to approximately 196,000 tonnes; and
  - o 40% increase in Indicated contained ounces of silver to approximately 5.2 million ounces.

### Competent Person's Statement

*The updated Toral resource estimate was prepared by Mr J.N. Hogg, MSc, MAIG, Principal Geologist for AMS, an independent Competent Person within the meaning of the JORC (2012) code and a Competent Person under the AIM guidance note for mining and oil & gas companies. The updated resource estimate was completed by Mr R. J. Siddle, MSc, MAIG Senior Resource Geologist for AMS and Competent Person. Mr Hogg has reviewed and verified the technical information that forms the basis of, and has been used in the preparation of, the updated Mineral Resource Estimate and this announcement, including all analytical data, diamond drill hole logs, QA/QC data, density measurements, and sampling, diamond and RC drilling and analytical techniques. Mr Hogg consents to the inclusion in this announcement of the matters based on the information, in the form and context in which it appears. Mr Hogg has also reviewed and approved the technical information in his capacity as a Qualified Person under the AIM Rules for Companies.*

*Additionally, Mr Hogg confirms that AMS is not aware of any information or data that materially affects the information contained within the Company's previous announcements referred to herein.*

For further information on the Company, please visit [www.europametals.com](http://www.europametals.com) or contact:

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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.*

**Glossary of technical terms:**

"Ag"	silver;
"g"	grammes;
"g/t"	grammes per tonne;
"ICP"	inductively coupled plasma;
"Inferred resource"	that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes;
"Indicated resource"	that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.
"JORC"	the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, as published by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia;
"JORC (2012)"	the 2012 edition of the JORC code;
"m"	metre;
"Mineral Resource"	a concentration or occurrence of material of economic interest in or on the earth's crust in such form and quantity that there are reasonable and realistic prospects for eventual economic extraction. The location, quantity, grade, continuity, and other geological characteristics of a Mineral Resource are known, estimated from specific geological evidence and knowledge, or interpreted from a well-constrained and portrayed geological model;
"Mt"	million tonnes;
"oz"	troy ounce;
"Pb"	lead;
"QA/QC"	quality assurance/quality control; and
"Zn"	zinc.

**APPENDIX: Table 1 (JORC 2012)**

**Section 1 Sampling techniques and data**

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

Criteria	JORC Code explanation	AMS Commentary
		· Historic and recent diamond drill core and

Criteria	JORC Code explanation	underground <b>AMS Commentary</b>
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Completed over three main phases of exploration drilling and sampling:               <ul style="list-style-type: none"> <li>1972 - 1984 Peñarroya - Adaro. Diamond drill core method was used to obtain samples for geological logging and sampling.</li> <li>2006 - 2008 Lundin Mining. Diamond drill core method was used. Core logging completed on paper.</li> <li>Europa Metals. Diamond drill core, RC chips and underground cut channel sampling methods used to obtain samples for geological logging and sampling.</li> </ul> </li> <li>Drill core samples were half core with an average length of 1m.</li> <li>No handheld XRF instruments were used.</li> </ul>
	<ul style="list-style-type: none"> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used</li> </ul>	<ul style="list-style-type: none"> <li>Channel sampling was supervised by a Europa Metals' geologist and samples that did not cross lithological boundaries were possible.</li> <li>The measures for sample representivity are unknown for the historical drilling.</li> <li>Efforts to ensure sample representativity for the Europa Metals' drilling include:               <ul style="list-style-type: none"> <li>Constant review of recovery data with drill crews,</li> <li>Review of downhole survey data while drilling in progress to ensure the piece points are being intercepted,</li> <li>Always sampling the same side of the core, while leaving the orientation line in place.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> </ul>	<ul style="list-style-type: none"> <li>2006 - 2008 Lundin Mining sent half core samples for multi-element analysis of available Peñarroya DDH samples completed at ALS Chemex Vancouver using ICP.</li> <li>Lundin sent their core samples to ALS Chemex Vancouver for ICP analysis.</li> <li>Europa Metals sent all samples to ALS Seville for preparation and multi-element analysis by ICP.</li> <li>ALS Seville is accredited and conforms with ISO9001:2008.</li> </ul>
	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Historic and recent diamond drill core methods are discussed below:               <ul style="list-style-type: none"> <li>1972 - 1984 Peñarroya - Adaro. Geological and analytical data is recorded on hardcopy. Selective sampling method was employed around areas of interest. Sampling intervals measure approx. 1m, half core sent for analysis, with half core retained for reference. Exact details on core processing, sampling techniques and analytical methods are unclear.</li> <li>2006 - 2008 Lundin Mining. Diamond drill core method was used. Core logging completed on paper. Selective sampling method was employed around areas of interest. Sampling intervals measure approx. 1m, half core sent for analysis, with half core retained for reference. Samples typically 1m half core, with samples prepared at the then Lundin Laboratory in Switzerland, then shipped to ALS Chemex Vancouver for multi-element analysis by ICP.</li> <li>Europa Metals. Diamond drill core, RC chips and underground cut channel sampling methods used to obtain samples for geological logging and sampling. Geological and analytical data is recorded on hardcopy. Selective sampling method was employed around areas of interest. Sampling intervals measure approx. 1m, half core sent for analysis, with half core retained for reference. Samples sent to ALS Seville for preparation and multi-element analysis by ICP. Half core and RC samples reduced to -400 microns and 100g sub-sample taken for analysis.</li> </ul> </li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <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</li> </ul>	<ul style="list-style-type: none"> <li>A total of 172 diamond and RC drill holes (including wedges) totalling 59,658.73 metres, and 19 underground channels for 18.75 metres were used as the input database for geological modelling and resource estimation. These holes include environmental monitoring holes.</li> <li>Drill core diameter was PQ, HQ, NQ, NQ2 and BQ depending upon depth. Standard tube</li> </ul>

Criteria	JORC Code explanation (what method, etc).	AMS Commentary
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul style="list-style-type: none"> <li>was used for Triple tube method was used for Lundin and Europa Metals' campaigns.</li> <li>Europa Metals' diamond core was orientated using the reflex ACT III.</li> <li>Total core recovery, solid core recovery, Rock Quality Designation (RQD) and fracture frequency were recorded on hardcopy tables for the diamond drilling.</li> <li>A total of 14,706 core recovery measurements exists in the database for the drilling with average recovery of 79%. The average for the Europa Metals' diamond drilling is 96%. Core recovery is measured over run lengths.</li> </ul>
	<ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	<ul style="list-style-type: none"> <li>The drilling procedures for the historical works have not been reviewed and as such, the measures taken for sample recovery and to ensure representativity cannot be commented on.</li> <li>Efforts to maximise sample recovery for the Europa Metals' drilling include: <ul style="list-style-type: none"> <li>Constant review of recovery data with drill crews,</li> <li>Slowing drill rate in areas of broken ground,</li> <li>Reducing run lengths in areas of broken ground.</li> <li>Use of specific drilling fluids (stabilised slurries) in broken ground areas.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The resource database contains 3,012 bulk density measurements, with a total of 234 within the mineralised wireframe, with a mean value of 2.84 g/cm<sup>3</sup>.</li> <li>A broad linear relationship between Pb+Zn grade and Bulk Density was identified from scattergrams and the formula 2.7 + 0.02(Pb+Zn%) used to estimate block density in relation to block grade within the block model, density was capped the 3.5 g/cm<sup>3</sup>.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Selected intervals representing areas of interest were logged in the Peñarroya drill holes. All Lundin and Europa Metals holes were logged in their entirety. The historical Peñarroya core was re-logged by Europa Metals geologists in 2018 in its entirety where the core was available.</li> <li>Core logging was recorded on paper logs, using a combination of printed graphic log templates (Peñarroya, Lundin), and paper (Europa Metals).</li> <li>Logging records lithology, textures, mineralisation, weathering, alteration and veining where appropriate.</li> <li>The core and channel logging has been completed to a sufficient level of detail to support appropriate Mineral Resource Estimations.</li> <li>Geotechnical data for the drill holes has been reviewed.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	<ul style="list-style-type: none"> <li>Drill core was qualitative and quantitative in nature.</li> <li>DH lithology, alteration, mineralisation and structural observations were recorded by variable interval based on characteristic similarities and change boundaries.</li> <li>Summary interval information was inputted to Excel, comprising single code field and codes to describe logged lithology, alteration, mineralisation and major structure for the interval.</li> <li>Lundin and Europa Metals core is routinely photographed. Historical Peñarroya core was photographed during the re-logging in 2018.</li> <li>Channel sample logging was quantitative in nature and not photographed.</li> </ul>
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>All drill core and RC chips were logged in their entirety.</li> <li>Channel samples were logged in their entirety.</li> <li>Graphic and schematic logs were produced for all drilling.</li> </ul>
	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul>	<ul style="list-style-type: none"> <li>The sub-sampling techniques and sample preparation details are not known for the Peñarroya drill core.</li> <li>Lundin and Europa Metals' core was cut in half using a core saw. Sampling was supervised by the geologist.</li> <li>Europa Metals' field duplicates are quarter core.</li> </ul>

Criteria	JORC Code explanation	ALS Commentary
<b>Sub-sampling techniques and sample preparation</b>		<ul style="list-style-type: none"> <li>Underground channel sample by angle grinder/circular saw. A channel approximately 7 cm wide and 5 cm deep to obtain 2-3 kg sample.</li> </ul>
	<ul style="list-style-type: none"> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> </ul>	<ul style="list-style-type: none"> <li>Channel samples were not split. They were sent to ALS as bulk 2-3kg samples.</li> <li>RC samples were riffled at the rig and were generally dry when split.</li> </ul>
	<ul style="list-style-type: none"> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul style="list-style-type: none"> <li>The drilling procedures for the historical works have not been reviewed and as such, the appropriateness cannot be commented upon. However, the lithology and assay determinations are sufficient for an Inferred category.</li> <li>Channel sample collection and Europa Metals' drilling procedures, sample size, preparation and analysis are considered appropriate for the mineralogy and deposit type.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	<ul style="list-style-type: none"> <li>The drilling procedures for the historical works have not been reviewed and as such, the QC procedures cannot be commented upon.</li> <li>All half core was taken on the left side.</li> <li>Samples were constrained by lithology but were 1m in length where possible or divided equally where necessary.</li> </ul>
	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Field duplicate scattergram analysis of the samples shows a good correlation between the original and duplicate samples.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Statistical analysis shows that samples are appropriate to the grain size of the material being sampled.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	<ul style="list-style-type: none"> <li>Historical Peñarroya assaying and laboratory procedures are unknown.</li> <li>Commercial laboratories ALS Chemex Vancouver and ALS Seville (ISO9001:2008) were used for Lundin and Europa Metals' drill core respectively and Europa Metals' underground channel sample analysis.</li> <li>Multi-element analysis, including Pb, Zn, Cu, Ag by ICP-MS were completed on all samples.</li> <li>Over limits samples were re-analysed using ore grade methods of determination.</li> <li>Sample analytical techniques are considered in line with industry standard for this style of mineralisation.</li> <li>Given the expected grades, lithology and deposit type, the laboratory procedures are considered appropriate for this level of classification.</li> </ul>
	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>No geophysical tools, spectrometers or handheld XRF instruments were used in the exploration and resource work.</li> </ul>
	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>QC sample insertion procedures were not employed during the historical Peñarroya drill campaigns. However, Lundin re-analysis of Peñarroya drill core pulp rejects does allow for comparison of original and pulp duplicate analysis results for verification purposes.</li> <li>Lundin Mining completed limited quarter core field duplicate insertion and pulp reject re-analysis. No external standards.</li> <li>Europa Metals conducted a QC programme of inserting quarter core field duplicates, course blank and pulp blank material, standards, selection of pulp repeats and submission of pulp rejects for umpire lab re-analysis.</li> <li>ALS Chemex and ALS Seville internal QC exists for the Peñarroya Lundin re-analysis, Lundin core and Europa Metals core and channel sample batches.</li> <li>No significant issues were identified in the QC data.</li> <li>The nature and quantity of QC data, procedures employed, level of accuracy and precision are considered acceptable for the assigned resource classification. The quality of assay data and laboratory tests is acceptable for the resource classification for this deposit.</li> <li>Shewhart Plots of the QC samples showed no</li> </ul>

Criteria	JORC Code explanation	AMS Commentary
		<p>sample bias is <b>AMS Commentary</b> within acceptable limits.</p> <ul style="list-style-type: none"> <li>Nelson rules of monitoring were applied.</li> <li>The nature and quantity of QC data for the channel sampling, procedures employed, level of accuracy and precision are considered acceptable for the assigned resource classification.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	<ul style="list-style-type: none"> <li>Drill core has been routinely verified by AMS geologists throughout the various recent drilling programmes.</li> <li>27 verification samples have been taken.</li> <li>Geological data from gallery is observed and reported by geologists and mining engineers.</li> <li>Paper recorded drill hole logging data is transferred to Access, imported into Micromine 3D geological modelling software for validation.</li> <li>No significant issues in the drill logging were observed. The logging is accurate and suitable.</li> </ul>
	<ul style="list-style-type: none"> <li>The use of twinned holes.</li> </ul>	<ul style="list-style-type: none"> <li>There has been no verification twin drilling carried out.</li> </ul>
	<ul style="list-style-type: none"> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	<ul style="list-style-type: none"> <li>DGPS collar and survey excel data, and lab analytical data transferred from lab.csv, to Excel and imported to Micromine 3D geological modelling software.</li> <li>All analytical data generated from Lundin re-analysis and Lundin core samples, Europa Metals' core and channel samples for use as input to estimation have been verified by cross reference against lab assay certificates, re-import and re-building of the project analytical database.</li> <li>2018-2020 lab certificates were verified and checked against database assays.</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>No adjustment to the analytical data was considered necessary, other than conversion to zinc equivalents for reporting purposes, following industry best practice. Raw analytical data remained unchanged.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Peñarroya drill hole collar locations were measured off plans and sections, located on the ground and picked up using Geomax 35 high-precision DGPS device. Accuracy +/-5 m. Peñarroya drill hole dip and azimuth measured from historical plans, cross sections and longitudinal section. Accuracy +/-5 m.</li> <li>Europa Metals' drill collar locations were surveyed using a Geomax Zenith 35 DGPS device with sub-centimetre accuracy. Both RC and diamond downhole surveys were completed at 5-10 m regular intervals using a REFLEX GYRO™ tool.</li> <li>Old workings were surveyed using Lieca Disto tmx310 survey device.</li> </ul>
	<ul style="list-style-type: none"> <li>Specification of the grid system used.</li> </ul>	<ul style="list-style-type: none"> <li>Data was captured and located using a Universal Transverse Mercator (UTM). The geographic coordinate reference system used by the client was European Terrestrial Reference System 1989 UTM Zone 29 ('ETRS89 / UTM29N').</li> <li>Elevations are reported in metres above sea level.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Topographic DTM taken from 5m resolution Lidar data MDT05-Lidar, from government mapping and survey association Plan Nacional de Ortofotografía Aérea (PNOA).</li> <li>Topographic control is sufficient for level of resource category.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Drill and UG channel sample data spacing across the current resource area ranges from approximately 50-100mx50-100m centres within the most densely tested area towards the NW, stepping out to approximately 200mx200m within the mid-section, and 100-200x500m in the SE.</li> </ul>
	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>The distribution of drillholes and UG channel sampling is sufficient to establish the degree of geological and grade continuity appropriate for JORC (2012) Indicated and Inferred classification of resources.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether sample compositing has</li> </ul>	<ul style="list-style-type: none"> <li>Length weighted averages including internal waste were applied for reporting of</li> </ul>

Criteria	JORC Code explanation	AMS Commentary
		<ul style="list-style-type: none"> <li>The details are shown with the accompanying tables.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Drilling and underground sampling is angled to intercept mineralised structures at high angle, as close to perpendicular to dip and strike as practicable.</li> <li>3D review of sections shows that there appears to be no sample bias introduced by drilling orientation.</li> <li>True thicknesses are reported in the accompanying tables.</li> </ul>
	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>The mineralisation is a steeply dipping vein and sampling tries to reduce the bias by sampling on a perpendicular plane where possible.</li> <li>Review of drilling and channel sections with the lithological unit appear to show no obvious bias.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Historical Peñarroya sample security protocols are not available.</li> <li>Lundin/Europa Metals' drill core is transported from site to logging facility in securely covered core boxes by the Lundin/Europa Metals' geologists.</li> <li>Core logged and sampled in secure facility.</li> <li>Samples are bagged in plastic bags and labelled with individual sample numbers, sample name and sample location. Each bag is sealed to avoid tampering and contamination.</li> <li>Plastic bags are placed in dry weave bags.</li> <li>Samples are delivered to laboratory by courier in secured boxes/bags.</li> <li>Couriers transported the samples to ALS. The couriers were then responsible for the chain of custody.</li> <li>The samples arrive in good condition at ALS Seville.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Numerous site visits have been conducted to the Toral Project and core processing facility in Ponferrada (licence number 15.199), the latest on 29 August 2021 by Mr. James Hogg (CP).</li> <li>Data has also been reviewed regularly by AMS staff as it is received from the laboratory and on submission of databases from Europa Metals.</li> <li>Findings were satisfactory and suitable for use in mineral resource estimation.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	AMS Comments
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Toral exploration permit number 15.199 (also referred to as Permiso de Investigacion), is located approximately 400km northwest of Madrid, within the Province of León, Autonomous Community of Castile and León.</li> <li>Licence 15.199 covers an area of 20.29km<sup>2</sup>.</li> <li>Exploration licence 15.199 is owned by Europa Metals Iberia., a wholly owned subsidiary of Europa Metals Ltd. The licence was renewed on 15 November 2020 for a further period of 3 years.</li> </ul>
	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All tenements are in good standing.</li> <li>AMS are unaware of any impediments that may affect the licences.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>1972-1984 - Peñarroya-Adaro. 58 drill holes, 32 wedge drill holes.</li> <li>1992-1995 - Geominera. Data re-evaluation.</li> <li>2005-2008 - Lundin Mining. 7 drill holes.</li> <li>2009-2011 - Goldquest Mining. Soil and rock geochemistry. Historic gallery mapping. Data evaluation. NI43-101 Mineral Resource Estimate</li> <li>2012-2015 - Portex Mining Corporation. Geological mapping. Data re-evaluation.</li> <li>2015-2016 - Goldquest Iberica S.L. Soil and rock geochemistry. Geological mapping.</li> <li>2016-2017 - Goldquest Iberica S.L. (Europa Metals Limited). 6 drill holes. Historic gallery mapping and sampling. Data re-evaluation and interpretation.</li> </ul>
		<ul style="list-style-type: none"> <li>The Toral project is located in the Southwestern part of the regional West Asturian Leonese Zone (WALZ),</li> </ul>

Criteria	JORC Code explanation	AMS Comments
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation</li> </ul>	<p>a major tectono-AMS Comments of the Hercynian Orogeny.</p> <ul style="list-style-type: none"> <li>The mineralisation at Toral is considered as structurally controlled carbonate hosted Pb-Zn type. Shear and thrust fault controlled mineralisation within favourable carbonate lithology and favourable contrasting contacts between carbonates and shales.</li> <li>Styles of mineralisation are boudinage drusy quartz vein, replacement breccia, disseminated clots associated with silica, carbonate and chlorite alteration.</li> <li>Main metallic minerals are Sphalerite, Galena, Pyrite, Chalcopyrite and silver.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>Topographic DTM taken from 5m resolution Lidar data MDT05-Lidar, from government mapping and survey association Plan Nacional de Ortofotografía Aérea (PNOA). <ul style="list-style-type: none"> <li>Drilling: <ul style="list-style-type: none"> <li>Number of drillholes used: 172</li> <li>Collar East: 679962 mE - 684690 mE</li> <li>Collar North: 4708653 mN - 4710598 mN</li> <li>Collar RL: 411 mRL - 754 mRL</li> <li>Azimuth: 000° - 354°</li> <li>Dip: -90° - -40°</li> <li>Length: 35.40m - 1285.3m</li> <li>Interception depth: 588 mRL - -398 mRL</li> <li>1,615 Pb and Zn assay values (from 115 drillholes)</li> <li>1,454 Ag assay values (from 101 drillholes)</li> </ul> </li> <li>UG Channels: <ul style="list-style-type: none"> <li>Number of channels: 19</li> <li>Collar East: 680917mE - 682607mE</li> <li>Collar North: 4709161mN - 4709996mN</li> <li>Collar RL: 447mRL - 693mRL</li> <li>Azimuth: 010° - 313°</li> <li>Dip: -24° - 19°</li> <li>Length: 0.25m - 4.25m</li> </ul> </li> </ul> </li> <li>No data is being excluded.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>During block model interpolation, the influence of some isolated high-grade values was found to be sufficiently localised and did not have undue influence on the estimates of grade. It was decided that no need for top cutting was required.</li> <li>Data aggregation or Grade Compositing rules for the reporting of exploration drill and channel significant results were minimum width 1m, minimum average grade 0.5% ZnEq, maximum allowable internal waste of 2m.</li> <li>Zn equivalent calculations were based on 3 year trailing average price statistics obtained from the London Metal Exchange and London Bullion Market Association giving an average Zn price of US\$2,516/t, Pb price of US\$1,961/t and Ag price of US\$19.4/oz.</li> <li>Recovery and selling factors were incorporated into the calculation of Zn Eq values.</li> <li>It is the Company's opinion that all the elements included in the metal equivalents calculation (zinc, lead and silver) have a reasonable potential to be recovered and sold.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is interpreted as sub-vertical to steeply dipping to the NE.</li> <li>Drilling and underground sampling considered the nature of the mineralisation prior to commencement of exploration.</li> <li>Angled drilling is sub-perpendicular to +/- 20° oblique to mineralisation.</li> <li>Review of drilling and channel sections with the lithological unit appear to show no obvious bias.</li> </ul>

Criteria	JORC Code explanation	AMS Comments
	<ul style="list-style-type: none"> <li>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 style="list-style-type: none"> <li>True thickness of mineralisation ranges from approximately 90%-60% downhole interval length.</li> <li>True lengths are reported in the tables, as calculated by Micromine.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Appropriate scaled diagrams are included within the AMS Toral JORC (2012) Resource Statement and Technical Report.</li> <li>Tables of intercepts are included in the relevant sections.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All available exploration data for the Toral deposit area has been collected and reported.</li> <li>Representative data from all drilling and underground channel sampling has been reported.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No geophysical works have been completed.</li> <li>Geological mapping and solid geology map generation completed.</li> <li>Structural interpretation and 3D modelling completed.</li> <li>Soil geochemical surveys demonstrate strong coherent Zn in soil anomalism coincident with interpreted controlling structures.</li> <li>Geotechnical tests have been carried out on 84 samples chosen by Europa Metals in different lithologies. Data have been compiled from 48 samples tested for geotechnical studies from old reports from Peñarroya.</li> <li>Metallurgical testing has been completed at Wardell Armstrong's laboratory. The results of the testwork are discussed within the technical report.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Surface drilling and trenching works testing open strike extent to the SE and NW and infill drilling within current resource limits to increase confidence and resource class.</li> <li>Increased metallurgical and recovery test work.</li> </ul>
	<ul style="list-style-type: none"> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate scaled diagrams and maps are included within the AMS Toral JORC (2012) Resource Statement and Technical Report.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	AMS Comments
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> </ul>	<ul style="list-style-type: none"> <li>Analytical data is pared by query with sampling data via sample number.</li> <li>AMS has cross referenced the analytical database with laboratory certificates.</li> <li>Micromine 3D geological modelling and estimation software used for import, validation and QAQC verification assessment.</li> <li>Basic core and sample storage, handling, data capture and transfer methodologies discussed and are considered satisfactory.</li> <li>The database is suitable for use for use in Mineral Resource Estimates.</li> </ul>
	<ul style="list-style-type: none"> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Micromine 2021 software was used to validate the channel sampling and drill hole databases.</li> <li>Data checks include overlapping and missing intervals, trace errors, missing survey and coordinate data, lithology, consistency of sample lengths interval files. Checks for out of range values were also made.</li> <li>No significant errors were found within the database. Some minor typographical errors were identified and fixed.</li> </ul>
	<ul style="list-style-type: none"> <li>Comment on any</li> </ul>	



Criteria	JORC Code explanation	AMS Comments
<b>Site visits</b>	Competent Person and the outcome of those visits.	<ul style="list-style-type: none"> <li>The Competent Person for the resource estimation is Mr. James Hogg. Mr Hogg's last site visit was completed on 29 August 2021.</li> <li>Site visits have not identified any issues relating to the reporting of mineral resources.</li> </ul>
	<ul style="list-style-type: none"> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Site visits have been undertaken.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Based upon the level of available information, geological and deposit complexity, interpretation of the main lithological boundaries and controls to mineralisation are considered satisfactory and appropriate for the assigned resource class.</li> <li>Fault modelling is simplified, and further refinement will improve the models accuracy moving forward.</li> </ul>
	<ul style="list-style-type: none"> <li>Nature of the data used and of any assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Drillhole lithological and analytical information, prospect scale surface geological mapping, underground mapping and sampling, location of underground workings were used in geological interpretation.</li> <li>Mineralisation is modelled as a continuous unit within the major fault units, however it is anticipated some smaller scale faulting and offset post mineralisation will be present which is not accounted for in modelling.</li> </ul>
	<ul style="list-style-type: none"> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative interpretations infer potential thrust repeats and potential for additional parallel mineralised zones. However, at the level of information this interpretation remains unsupported by drill data and conceptual in nature.</li> </ul>
	<ul style="list-style-type: none"> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> </ul>	<ul style="list-style-type: none"> <li>Drillhole lithological and analytical information and underground channel mapping and sampling were used in geological interpretation.</li> <li>The geological model was used to guide the interpretation and continuity of Zn-Pb mineralised domains.</li> <li>Post mineralisation transfer faults are interpreted to affect continuity by minor offset.</li> </ul>
	<ul style="list-style-type: none"> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Grade continuity is currently interpreted to be slightly greater down dip forming "shoots". Faulting effects geological continuity on a local scale (50-100m) perpendicular to the strike on mineralisation.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is encountered at surface and based on current testing, extends to approximately 1,100m below the surface. Mineralisation is currently tested across a 3,600m strike length, the orientation of mineralisation zone is approximately 110 degrees, averaging approximately 3.5m in thickness and ranging from ~2m to ~5.5m.</li> <li>Mineralisation is encountered at surface as a process of the incisions.</li> </ul>
	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> </ul>	<ul style="list-style-type: none"> <li>As with previous resource estimates completed by AMS (2017, 2018, 2019, 2020) wireframe solid models were created for each domain based on a mineralisation threshold of approximately 0.2% for Zn and Pb (approximately 0.4% Zn+Pb). Analysis of Zn and Pb grades in cross section and in scatter plots showed a strong relationship and no requirement to model Zn and Pb separately was identified. Ag showed a strong correlation with Pb and was estimated within the Zn/Pb mineralised domain.</li> <li>The updated wireframes were generated using Micromine's implicit vein modelling functionality and incorporated major fault boundaries to better honour offsets in the structure and preserve thicknesses between intercepts. Interpretation of the mineralised domains was guided by geological interpretation of the deposit incorporating structural and lithological boundaries and surface expression in topographical data and outcrop mapping.</li> <li>A weathering surface which represents the approximate transition partially weathered material to material dominated by joint weathering and fresh rock was modelled manually in cross section.</li> <li>A main structure or vein (MV) was modelled and split into four fault units. Four subordinate structures accounting for less than 1% of the mineralised volume were modelled manually using cross section string interpretation. Some drill holes are outside the licence to the northwest. The model included these drillholes, but the resultant block model was filtered to only include blocks within the licence boundary.</li> <li>To the northwest the resource is truncated by the licence boundary and are extended approximately 10m past the south easterly most drillhole which was mineralised but contained sub-economic grades (3 m at 2.4% ZnEq). The total strike length of the modelled mineralisation within the licence is approximately 3.1 km. The structure remains open to the southeast. Down dip the model was extrapolated approximately 50-200m below the deepest sample in the northwest and central parts of the deposit,</li> </ul>

Criteria	JORC Code explanation	AMS Comments
<b>Estimation and modelling techniques</b>		and approximately 250-280m below the deepest sample in the southeast with consideration of depths tested along strike to the northwest. The models extent from surface to a range of approximately 800 - 1150 m below the surface. Extents of extrapolation are considered appropriate for the level of information, deposit type, strike and depth extents tested, observed and geostatistical grade continuity and the assigned resource classification.
	<ul style="list-style-type: none"> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> </ul>	<ul style="list-style-type: none"> <li>The estimates have been reconciled against previous AMS estimates.</li> <li>The increases / decreases are related to data confidence and additional samples and updated models.</li> <li>A full description for the differences is described in the body text.</li> <li>There are no historical production records to validate against.</li> </ul>
	<ul style="list-style-type: none"> <li>The assumptions made regarding recovery of by-products.</li> </ul>	<ul style="list-style-type: none"> <li>It is the opinion of the Company that Ag will be recovered along with Pb and Zn and a credit paid on refining.</li> </ul>
	<ul style="list-style-type: none"> <li>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</li> </ul>	<ul style="list-style-type: none"> <li>No estimation of deleterious elements has been made at this time and it is anticipated this will be conducted on completion of a block model which is to be used for PFS.</li> </ul>
	<ul style="list-style-type: none"> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> </ul>	<ul style="list-style-type: none"> <li>A uniform cell block model of 25m E, 10 m N, 25m Z was restricted to the wireframes using block factors. The block model was rotated by 20° in plan view to best match the trend of mineralisation. The uniform model and 2m sample composites for the mineralised domain were then flattened to a constant vertical plane striking 110° to account for fault offsets, improve variography and grade mapping. Thickness was preserved in the flattening process and no lateral stretching was applied.</li> </ul>
	<ul style="list-style-type: none"> <li>Any assumptions behind modelling of selective mining units.</li> </ul>	<ul style="list-style-type: none"> <li>Wireframe models included minimum anticipated mining width of ~2m.</li> </ul>
	<ul style="list-style-type: none"> <li>Any assumptions about correlation between variables.</li> </ul>	<ul style="list-style-type: none"> <li>As with previous resource estimates completed by AMS (2017, 2018, 2019 and 2020) wireframe solid models were created for each domain based on a mineralisation threshold of approximately 0.2% for Zn and Pb (approximately 0.4% Zn+Pb).</li> <li>Analysis of Zn and Pb grades in cross section and in scatter plots showed a strong relationship and no requirement to model Zn and Pb separately was identified. Ag showed a strong correlation with Pb and was estimated within the Zn/Pb mineralised domain.</li> </ul>
	<ul style="list-style-type: none"> <li>Description of how the geological interpretation was used to control the resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>The updated wireframes were generated using Micromine's implicit vein modelling functionality and incorporated major fault boundaries as inclined and vertical planes. Interpretation of the mineralised domains was guided by geological interpretation of the deposit incorporating structural and lithological boundaries such as footwall slate contacts and surface expression in topographical data and outcrop mapping.</li> </ul>
	<ul style="list-style-type: none"> <li>Discussion of basis for using or not using grade cutting or capping.</li> </ul>	<ul style="list-style-type: none"> <li>During block model interpolation, the influence of some isolated high-grade values was found to be sufficiently localized and did not have undue influence on the estimates of grade.</li> <li>It was decided that no need for top cutting was required.</li> </ul>
	<ul style="list-style-type: none"> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>The block model was validated visually in long section and cross section to inspect assay grades vs block grades, particular attention was given to areas of low grade that may be influenced by higher grade samples within search radii. The mean values including declustered mean of the input data were compared against the output data along with comparison of histograms. Several sensitivity checks were completed using different kriging neighbourhoods.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
		<ul style="list-style-type: none"> <li>For the purpose of reporting updated resources with reasonable prospect of eventual economic extraction a cut-off grade of 4% Zn equivalent was selected, based upon</li> </ul>

Criteria	JORC Code explanation	AMS Comments
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<p>mining, processing, and production rate parameters identified in the updated scoping study (2020), using a three-year trailing average price for Zn, Pb and Ag.</p> <ul style="list-style-type: none"> <li>Zn equivalent calculations were based on 3 year trailing average price statistics obtained from the London Metal Exchange and London Bullion Market Association giving an average Zn price of US\$2,516/t, Pb price of US\$1,961/t and Ag price of US\$19.4/oz.</li> <li>Zn Eq (PbAg)% is the calculated Zn equivalent incorporating silver credits as well as lead and is the parameter used to define the cut-off grade used for reporting resources (Zn Eq (PbAg)% = Zn + Pb*0.867 + Ag*0.027).</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Assumed mining methods are based upon a review of methods of extraction, cost and performance on similar type deposits. Summary of mining and processing costs used in determination of economic cut off. Mechanised Cut and fill mining method assumed.</li> <li>Total Mining Processing cost estimated at US\$62.93/t. Dilution assumed at 90% and 10%.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Assumed processing methods are based upon a review of methods of extraction, cost and performance of similar type deposits.</li> <li>Assumed metallurgical recoveries are Zn 85%, Pb 86% and 82% Ag.</li> <li>Assumed concentrate selling factors are Zn 85%, Pb 95%, Ag 89%</li> </ul>
	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing</li> </ul>	<ul style="list-style-type: none"> <li>No assumptions are made on environmental factors other than the cost to back fill waste tailings.</li> <li>Flora and fauna studies were started in 2019 by the companies and institution of "Universidad de Leon" and</li> </ul>

<b>Environmental factors or assumptions</b>	<b>JORC Code explanation</b>	<b>AMS Comments</b>
	<p>determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</p>	<p>"Mas que pájaros, biología, ecoturismo y medioambiente S.L.". Their report is pending.</p> <ul style="list-style-type: none"> <li>AMS has not reviewed any Environmental, Social and Permitting (ES&amp;P) documents or licences.</li> <li>AMS understands that there are no legal or project permitting, environmental and social settings issues or risks.</li> <li>No red flags were identified via the site visit or study desk review.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> </ul>	<ul style="list-style-type: none"> <li>The bulk density was calculated using the Archimedes method weighting the samples in air and water using a Kern precision balance.</li> <li>Bulk density measurements were carried out on most of the drillholes, in both mineralised and un-mineralised samples.</li> <li>The resource database contains 3,012 bulk density measurements, with a total of 234 within the mineralised wireframe, with a mean value of 2.84 g/cm<sup>3</sup>.</li> </ul>
	<ul style="list-style-type: none"> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>No bulk material was measured.</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>The resource database contains 3,012 bulk density measurements, with a total of 234 within the mineralised wireframe, with a mean value of 2.84 g/cm<sup>3</sup>.</li> <li>A broad linear relationship between Pb+Zn grade and Bulk Density was identified from scattergrams and the formula <math>2.7 + 0.02(\text{Pb}+\text{Zn}\%)</math> used to estimate block density in relation to block grade within the block model, density was capped the 3.5 g/cm<sup>3</sup>.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> </ul>	<ul style="list-style-type: none"> <li>In the updated resource estimation of the Toral property, the above definitions have been taken into consideration when applying resource classification. It was the opinion of the Competent Person that within some areas of the deposit sample density, Quality Control data, density determinations and drilling recoveries were sufficient to allow classification of some additional Indicated Resources versus the previous (2020) Resource Estimate.</li> <li>The area of the previous Indicated Resources was still found to be valid with the addition of some new drilling at higher elevations which was considered suitable for inclusion in the Indicated Resource. Within the indicated area the mean average distance of composites is 95m and the mean closest distance 48m. The remaining blocks within the block model were classified to the Inferred category.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> </ul>	<ul style="list-style-type: none"> <li>The assigned classification of Inferred and Indicated reflects the Competent Persons' assessment of the accuracy and confidence levels in the input data and the resulting Mineral Resource Estimate.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>The result reflects the quality and quantity of data, geostatistical analysis of correlation and relationship between mineralised samples (semi-variography) and the Competent Person's view of the deposit.</li> <li>The semi-variography reflects the sample density.</li> </ul>

Audits or reviews	JORC Code explanation	AMS Comments
	<ul style="list-style-type: none"> <li>Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>The 2021 Mineral Resource has been reviewed internally as part of normal validation processes by AMS.</li> <li>The AMS 2021 resource estimate has not been audited or reviewed externally at the time of writing.</li> </ul>
<p><b>Discussion of relative accuracy/ confidence</b></p>	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> </ul>	<ul style="list-style-type: none"> <li>It is the Competent Person's opinion that the level of confidence is consistent with the level of Inferred and Indicated categorised mineral resources.</li> <li>Geostatistical assessment of confidence limits such as conditional simulation of grades has not been conducted at this time.</li> <li>Interpretation of the thickness and therefore volume of the mineralisation along with bulk density have the greatest effect on the contained metal.</li> <li>Kriging neighbourhood and the control of higher grade samples and preventing them from over smoothing is also important in producing a realistic estimate.</li> <li>It is the Competent Person's opinion that the level of confidence is consistent with the level of Indicated and Inferred categorised mineral resources.</li> </ul>
	<ul style="list-style-type: none"> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>The estimate is a local estimate to the 25m block scale; however, the data density is too sparse to allow modelling of selective units inside of the 25m panel scale.</li> <li>As with all kriged estimates there is a degree of smoothing.</li> </ul>
	<ul style="list-style-type: none"> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>There are no historical production records from the deposit.</li> </ul>

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