



[Galileo Resources PLC](#) - GLR

Star Zinc Initial Inferred Resource Estimate

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Galileo Resources Plc
("Galileo" or "the Company")
Star Zinc Initial (JORC 2012) Inferred Mineral Resource Estimate

Galileo is pleased to announce the completion of an independently reported initial inferred resource estimate ("MRE") in accordance with JORC 2012, for the Company's Zambian Star Zinc project ("the Project") near Lusaka. The MRE reports Inferred zinc resources with reasonable prospects of future economic extraction of approximately **500,000 tonnes at 16% Zinc for 77,000 tonnes of contained metal above a cut off grade of 2% Zinc. This includes approximately 340,000 tonnes at 21% Zinc for 72,000 tonnes of metal above a cut off grade of 8%.** The Company has a 95% interest in the Project. The Zambian government holds a 5% interest. To view this announcement with the illustrative diagrams and JORC code 2012 Table 1 please use the following link:

http://www.rns-pdf.londonstockexchange.com/rns/5223D_1-2019-6-26.pdf

Highlights

- Galileo completes an independent initial inferred resource estimate reported in accordance with JORC 2012 for its Star Zinc project (Licence tenure 19653-HQ-LEL).
- The MRE, using a preliminary open-pit optimisation method reports a high grade hypogene Inferred Zn resource with reasonable prospects of economic extraction of approximately **500,000 tonnes at 16% Zinc for 77,000 tonnes of contained metal above a cut off grade of 2% Zinc. This includes approximately 340,000 tonnes at 21% Zinc for 72,000 tonnes of metal above a cut off grade of 8%.**
- The MRE containing an approximate estimate of **77,000** tonnes of zinc metal, is suitable for potential direct shipping material for ROM to the zinc process/refinery facility at Kabwe, located approximately 120km north of the Project.
- The MRE model defines a clear boundary between a high-grade (>8% Zn) domain and a low-grade (<8% Zn) zone.
- All of the +8% Zn high grade resource blocks, fall within the preliminary pit shell generated for the purpose of outlining resources with reasonable prospects of economic extraction.
- This clear division of high grade and low grade domains confirms the previously announced (14 November 2018) indications of the occurrence of a distinct core of high grade massive willemite (zinc silicate) mineralisation in both the eastern and western limbs of the deposit.

- Mineralised hypogene material outside of the preliminary pit shell remains an Exploration Target^(a) estimated as being **between approximately 85,000 and 180,000 tonnes with an estimated average grade of 3 to 5 % Zn.**
- Similarly, a portion of the mineralised near surface secondary supergene material remains an Exploration Target^(a) estimated as being **between approximately 13,000 and 77,000 tonnes with an estimated average grade of 3 to 5 % Zn.**
- The Company is encouraged to fast track the Project development and to apply with minimum delay for a mining permit to include among other things, undertaking requisite economic and engineering studies for a shallow open-pit mining operation and finalising an off-take agreement for direct shipping ore.

Colin Bird, Chief Executive Officer, said: "This initial JORC-compliant resource estimate confirms the previously announced Exploration Target and the Company's publicly announced* presence of a high grade zinc component in the deposit suitable for direct shipping to the Jubilee Metal Group plc's zinc process/refinery plant at Kabwe. The MRE clearly identifies an easy access near-surface mineable zone with a low stripping ratio of one to one. There will be no requirement for processing equipment other than possibly a mobile primary crusher. A low grade portion of mineralised material remains an exploration target and may be amenable to preconcentrate/upgrade to about 10% Zn either as DSO or blending, pending further test work and method development.

The MRE will allow for a 6-year life-of-mine small scale operation to produce rock mass of only 5,500t/month containing 12,000 t zinc metal per year to Kabwe. While in-house attributable revenues are projected at about USD15 million annually at current price, the annual all in cost is projected not to exceed to USD2 million.

We intend to apply without delay for a mining permit and target mining to start coincident with the Kabwe project."

*Galileo RNS 14 November 2018

This announcement contains inside information for the purposes of Article 7 of Regulation 596/2014.
JORC (2012) Inferred Mineral Resource Estimate

Independent consulting group Addison Mining Services Ltd ("AMS) completed the mineral resource estimate. The Inferred estimate utilized data for all drill holes completed by Galileo with the final drillhole being completed on the 9th of December 2018. The final drillhole database used for estimation included 52 drill holes for 2220 m of drilling of which 1412 m were assayed over 1433 samples. All drill core was logged for geology, core recovery and rock quality designation.

The Company commissioned AMS to undertake the mineral resource estimate in May 2019.

Block Model

AMS has estimated an **Inferred Resource** of approximately **500,000 tonnes at 16% Zinc for 77,000 tonnes of contained metal above a cut off grade of 2% Zinc. This includes approximately 340,000 tonnes at 21% Zinc for 72,000 tonnes of metal above a cut off grade of 8%.**

Material below a 2% cut off grade is not considered to have a reasonable prospect of economic extraction and is not considered part of the Resource.

The Inferred Resource block model ranges from surface to approximately 40 m below surface over a length of approximately 300 m from east to west and 20 to 100 m from north to south. Thickness is typically between 5 and 25 m.

Table 1: Summary of Resources by Status

Category	Gross			Net Attributable			Operator
	Tonnes (millions)	Grade (g/t)	Contained Metal	Tonnes (millions)	Grade (g/t)	Contained Metal	
Mineral resources per asset							
Measured							
Indicated							
Inferred	500,000	16	77,000	475,000	16	73,150	Galileo
Sub-total							
Total	500,000	16	77,000	475,000	16	73,150	

1. Mineral resources are reported using a 2% Zn cut-off. Figures may not sum due to rounding. The contained metal is determined by the estimated tonnage and grade.

2. Source: Mr J.N. Hogg, MSc. MAIG Principal Geologist for AMS, an independent Competent Person within the meaning of the JORC (2012) code and qualified person under the AIM guidance note for mining and oil & gas companies.

Parts of the hypogene Zn mineralised block model currently outside the preliminary pit shell remain as an exploration target, with potential for conversion to a resource with the application of ore sorting and upgrade methods pending detailed test work and consideration of cost versus yield.

In addition, small quantities of supergene Zn mineralised pisolitic cover and karst cavity infill material remain as an exploration target, pending further investigation into suitable recovery methods.

These quantities of currently 'sub-economic' mineralisation offer potential for further development, and a small incremental addition to resources.

Silver credits for Star Zinc have not been estimated nor reported as part of this study. Potential exists to add Ag resources and potential Ag credits to the Star Zinc resource block model.

Table 2: Gross grade tonnage tables for material inside conceptual pit shell. Material below a cut off grade of 2% is not considered to have a reasonable prospect of economic extraction and is not considered part of the Resource. See notes below for further explanation.

Star Zinc Gross Inferred Resource Grade Tonnage Table

Cut off grade	VOLUME	TONNES	DENSITY	Av Zn Grade %	Contained Zn Metal
15	73,000	250,000	3.5	24	61,000
12	91,000	310,000	3.4	22	69,000
10	98,000	330,000	3.4	22	72,000
8	99,000	340,000	3.4	21	72,000
7	100,000	340,000	3.4	21	72,000
6	100,000	340,000	3.4	21	72,000
5	100,000	340,000	3.4	21	72,000
4	110,000	370,000	3.3	20	73,000
3	120,000	400,000	3.3	19	75,000
2	160,000	500,000	3.2	16	77,000
1	170,000	540,000	3.1	14	78,000
0	170,000	550,000	3.1	14	78,000

1. All material is classified as Inferred Category. Numbers are rounded to reflect that fact that an estimate has been made, and as such totals may vary.

2. Zn grades are in situ grades, no estimation of reserves have been made, resources which are not reserves do not have demonstrated economic viability.

(a) Potential grade of the Exploration Target presented in Table 2 is conceptual in nature: there is insufficient processing and ore sorting data to report as a Mineral Resource at this time. It is uncertain if further technical studies and exploration will result in the estimation of a Mineral Resource.

Table 3: Summary of Hypogene Exploration Target estimated at above 2% Zn

CASE	VOLUME	TONNES	DENSITY	Zn%	Zn Metal Tonnes
Conservative	30,000	85,000	2.9	3 to 5	2,900 to 3,900
Pragmatic	63,000	180,000	2.9	3 to 5	6,100 to 8,300

Table 4: Summary of Secondary Supergene Exploration Target estimated at above 2% Zn

CASE	VOLUME	TONNES	DENSITY	Zn%	Zn Metal Tonnes
Conservative	4,600	13,000	2.9	3 to 5	400 to 600
Pragmatic	27,000	77,000	2.9	3 to 5	2,100 to 3,400

Summary of resource estimate and reporting criteria

In accordance the AIM Rules and JORC (2012) reporting guidelines, a summary of the material information used to estimate the Mineral Resource is set out below. The JORC code 2012 Table 1 with details of the resource estimate parameters is available via the link:

http://www.rns-pdf.londonstockexchange.com/rns/5223D_1-2019-6-26.pdf

Geology and geological interpretation

The Star Zinc deposit is hosted within metasedimentary rocks of the late Proterozoic Zambezi Supracrustal sequence (the Cheta and Lusaka Formations), consisting of upper greenschist facies limestones and dolostones marbles with quartz-muscovite schists and feldspathic quartzites. The succession in the Star Zinc pit consists of recrystallized limestone overlain by metamorphosed slaty limestone and then by coarse marbles overlain by hematite rich dolomite.

A broad dome is the main structural feature, with two main fracture trends present, one broadly N-S (typically dipping approximately 70° to the east) and one broadly E-W (typically dipping approximately 70° to the south), both irregularly mineralised.

Mineralisation at Star Zinc occurs in a variety of settings. A mineralized regolith (red soils, terra rossa) often overlies and forms infill on top of a highly irregular karstically weathered rock head morphology. The zinc mineralisation in this zone is predominantly comprised of hemimorphite, smithsonite and sauconite.

Hypogene willemite mineralisation is observed in many styles, broadly irregular, in parts tabular, including massive and semi-massive replacement zones, anastomosing, dilatational at the intersection of possible structures, in calcite-hematite-willemite veins and fractures and more brecciated zones.

Bulk density

Measurements were only completed on phase 1 diamond core which represents holes SZDD001 to SZDD026. Samples were collected for both mineralised and un-mineralised samples across a range of zinc grades determined by pXRF measurements and across all observed lithologies. A total of 261 samples were selected, typically ranging from 3 to 10 cm in length.

A strong positive correlation exists between bulk density and Zn laboratory assay grade. The linear regression line of Bulk Density vs Zn grade was used to calculate a bulk density value for each cell within the block model as follows:

- Estimated Bulk Density = $2.75 + 0.03 \times \text{Zn}\%$

Drilling techniques and hole spacing

Galileo has completed two phases of orientated diamond drilling at the Star Zinc deposit. During the period between December 2017 to and March 2018, a total of 26 holes were completed for 1198.80 metres. A second phase of diamond drilling was completed from August to October 2018 in which a further 26 holes were completed for 1022 metres.

A total of 52 diamond drill holes totalling 2,220.80 metres were used as the input database for geological modelling and resource estimation.

Drill core diameter was PQ and HQ.

Non-vertical holes were orientated on HQ core only typically at end of each 3 metre run using a Reflect ACT II RD rapid decent core orientation tool.

Drill sample data spacing across the current resource area ranges from approximately 20-25m centres within the most densely tested area towards the west, stepping out to approximately 30m centres to the east.

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

Sampling and sub-sampling techniques

Sampling was typically completed on a 1 metre basis, though sampling widths did vary based on the above considerations from approximately 0.5 to 1.5 metres. Approximately 3 to 5 metres either side of the zone of interest were sampled and submitted for assay as well as internal waste up to lengths of 5 metres. Once the sampling intervals had been determined, the section of core was sawn yielding a quarter length piece of core for analytical purposes and the remaining three-quarter piece retained for reference purposes.

All core samples were submitted to Intertek Genalysis laboratories, with sample preparation based in Kitwe, Zambia and analysis in their laboratory in Maddington, Perth.

All samples are analysed for zinc, germanium, silver and vanadium. Zinc and germanium are determined by sodium peroxide fusion (zirconia crucibles) with ICP-OES/ICP-MS respectively. Silver and vanadium are determined via a four acid digest with ICP-MS.

Core Recoveries

For holes under the phase 1 programme (SZDD001 to SZDD026) the overall average recovery was 89%, whilst under the phase 2 programme (SZDD027 to SZDD052) the overall average recovery was 90%. Minimal core loss was exhibited, except generally within the top 20 metres of each hole, where average core recovery fell to 83%.

Reasonable Prospects for Economic Extraction and Cut-off grades

Galileo proposes to sell Run of Mine (ROM) material to the BRM PLC/Jubilee Metals Group Plc owned Sable zinc plant at the Kabwe Mine in Zambia. Kabwe is approximately 100 km to the North by the T2 paved road.

It is proposed by Galileo that Kabwe will pay a percentage rate of the market Zinc price per tonne of contained metal for material above a minimum 8% Zn. Although the minimum cut off grade for a saleable product is 8% Zn, potential exists to blend mineralised material below this cut off with higher grade material in order to maintain acceptable grades.

In order to identify material which has a reasonable prospect of economic extraction a preliminary pit optimisation to generate a basic ultimate pit shell was completed using the above selling prices and the following key parameters;

- Zinc price - 2700 \$/t (LME 3 year trailing average to April 2019)
- Minimum block grade to be considered - 8% Zn
- Ore/Waste mining cost - 6 \$/t

- Rehabilitation - 1 \$/t
- Transport - 11 \$/t
- Mining Dilution - 5% (Waste/Ore)
- Mining Recovery - 95%
- Pit Slopes - 45°

The grade tonnage figures for all resource blocks within the resultant pit shell were then reported with mining dilution factors applied.

Mineralised blocks below the minimum 'Kabwe DSO' grade of 8% Zn which are mined to access optimised +8% Zn blocks being included as having potential value as blending material.

A minimum lower in pit cut off grade of 2% Zn is identified as the threshold which maintains an average grade in excess of 15% Zn. It is anticipated that blending of material below 2% Zn has negligible impact on recoverable metal and would have a negative impact on potential revenue.

In order to establish the likely economic viability of the above mining approach AMS have estimated the profitability of the mining operation linked to a zinc leach-precipitation circuit. The report "Star Zinc Deposit - Conceptual Project Report", January 2015 by Scorpion Mineral Processing South Africa refers. The following key parameters are used:

- Milling - 11 \$/t ore
- Leaching - 125 \$/t ore
- Precipitation - 640 \$/t zinc produced
- 4y cost price inflation from 2015 - 10 %
- Process recovery - 91 %
- Zn precipitate - 60%

The treatment of 15% Zn grade material is shown to be profitable at a \$2,700/t zinc price and therefore AMS considers the +15% Zn resource using a 2% cut off within the pit shell to have a reasonable prospect of being economic.

Estimation methodology

AMS verified primary analytical data via cross reference against original lab certificates and the re-input of all assays for the project for use in geological modelling and estimation. The database for use as input for mineral resource modelling and estimation has also been validated and verified by AMS and the Competent Person. Micromine 3D geological modelling and estimation software was used for import, validation and QA/QC verification assessment, 3D solid modelling, geostatistics and block model grade interpolation estimation. Data checks include checks for overlapping and missing intervals, dh trace errors, missing survey data, lithology and collars.

All wireframe modelling was completed using implicit modelling. A surface wireframe of the base of the laterite and saprolite regolith horizon was generated and this model converted to a solid using the digital terrain model. Cavity areas were modelled as isolated volumes equal to the vertical thickness of the cavities with an approximate 5 m diameter. Two mineralized wireframes were generated to represent the low (>0.5% Zn) and high grade (>7% Zn) hypogene zinc domains.

Additional control strings and dynamic anisotropy were used to guide the shape and extents of the models and honour surface geological observations and legacy cross-sections.

Hypogene models were restricted to the Regolith and DTM and cavity areas removed. The high grade domain model was restricted so that it did not extend outside the low grade domain model.

Geological models were extrapolated up to ~50m in places between drillholes, the model is reasonably well constrained by drilling at periphery, the base of the model is well constrained by drilling.

All assay values were assigned to their corresponding mineral domain and composited to 2 m with a minimum accepted length of 1 m, residual lengths were added to the previous interval, length multiplied by density weighted

average values were calculated for Zn grade. Top cutting was not applied as no outlying high grade values were identified.

Directional variography was completed on the low and high grade domains using the composite data, the median indicator semi-variograms were found to produce the clearest structure and model semi-variograms fitted to these experimental models. The tertiary axis did not produce a clear experimental semi-variogram in both cases and was given a nominal range of 5m. The same axis orientations were used for both domains

A Block model with the cell size 10 m x 10 m x 4 m was generated over the deposit area, based on the approximate 30 m drill spacing and stratigraphic nature of mineralization. The mineral domain wireframes were written to the block model and sub blocking applied to preserve volumes, the block model was restricted to the DTM.

The block model was interpolated on a domain by domain basis using Ordinary Kriging. A variable search geometry was used to follow the dip of the deposit where it steepens near to the historic open pit, elsewhere the geometry of the axis used in variography were applied.

Additional Kriging Parameters are as follows.

- Interpolation was conducted at the parent block scale
- Discretization 5x5x2
- Negative weights were not set to zero
- Maximum of 2 composite points per drillhole
- Single sector search ellipsoid
- Search Radius 50 x 50 x 10 m for axis 1, 2 and 3 respectively.
- Maximum of 8 composite samples per search.

Following kriging the bulk density was estimated for each cell in the block model based on the estimated Zn grade and application of the linear regression formula described above.

Classification criteria

The Star Zinc deposit defined by drilling has been classified as an Inferred Mineral Resource in accordance with the JORC Code (2012) guidelines 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, open pit mining is the intended mining methodology. Current anticipated processing route is the sale of ROM to the Sable Zinc Kabwe zinc plant.

Competent Person's statement

The Star Zinc 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 qualified person under the AIM guidance note for mining and oil & gas companies. The resource estimate was aided by Mr R. J. Siddle, MSc, MAIG Senior Resource Geologist for AMS, under the guidance of the 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 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 the entity is not aware of any new information or data that materially affects the information contained within the Company's previous announcements referred to herein.

Forward looking statements

Certain statements in this announcement, are, or may be deemed to be, forward looking statements. Forward looking statements are identified by their use of terms and phrases such as "believe", "could", "should" "envisage", "estimate", "intend", "may", "plan", "will" or the negative of those, variations or comparable expressions, including references to assumptions. These forward looking statements are not based on historical facts but rather on the Directors' current expectations and assumptions regarding the Company's future growth, results of operations, performance, future capital and other expenditures (including the amount, nature and sources of funding thereof), competitive advantages, business prospects and opportunities. Such forward looking statements reflect the Directors' current beliefs and assumptions and are based on information currently available to the Directors. A number of factors could cause actual results to differ materially from the results discussed in the forward looking statements including risks associated with vulnerability to general economic and business conditions, competition, environmental and other regulatory changes, actions by governmental authorities, the availability of capital markets, reliance on key personnel, uninsured and underinsured losses and other factors, many of which are beyond the control of the Company. Although any forward looking statements contained in this announcement

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Glossary of technical terms:

"Ag"	silver;
"DSO"	direct shipping ore;
"facies"	observable attribute or attributes of a rock or stratigraphic unit,
"g"	grammes;
"g/t"	grammes per tonne;
"hypogene"	occurrence deep below the earth's surface,
"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;
"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;
"proterozoic"	geological eon spanning the time from the appearance of oxygen in Earth's atmosphere
"pXRF"	portable x-ray fluorescence
"QA/QC"	quality assurance/quality control;
"quartz-muscovite schist"	a foliated metamorphic rock (schist) composed essentially of quartz and mica, occurrence relatively near the surface as opposed to deep hypogene processes;
"supergene"	on existing basement rocks of the earth's crust;
"Supracrustal"	
"Zn"	zinc.

The JORC code Table 1 with details of the resource estimate parameters is available to view on the Company's website at:

http://www.rns-pdf.londonstockexchange.com/rns/5223D_1-2019-6-26.pdf

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