

28 July 2022

# 37Mt Ore Reserve cements foundation for long-term growth at Sandfire's MATSA Copper Operations

# **Highlights**

- Updated Proved and Probable Ore Reserve estimate completed for the 4.7Mtpa MATSA Copper Operations (MATSA), located in the Huelva Province, Spain, as at 30 April 2022:
  - Overall Proved and Probable Ore Reserve estimate for MATSA of **37.1Mt at 1.6% Cu, 2.6% Zn, 0.8% Pb and 36.1g/t Ag** containing an estimated **593Kt of copper, 975Kt of zinc, 286Kt of lead and 43.0Moz of silver** with an estimated Net Smelter Return (NSR) of US\$116/t¹ (using an NSR cut-off).
  - o Proved Ore Reserve estimate increased by 41% to 26.2Mt at 1.7% Cu and 2.7% Zn.
  - The Ore Reserve estimate comprises 24.5Mt of Polymetallic material at 1.5% Cu and 3.8% Zn and 12.6Mt of Cupriferous and Stockwork material types at a combined grade of 1.7% Cu.
- Contained ore tonnes have increased by 3% with an 8% decrease in contained copper and a 5% increase in contained zinc since the previous Ore Reserve estimate stated as at 31 July 2020. This replaces mining depletion over the intervening two years.

Sandfire Resources Ltd (**Sandfire** or **the Company**) is pleased to report an updated Ore Reserve estimate for the MATSA Copper Operations, located in the Iberian Pyrite Belt in southern Spain, totalling **37.1Mt at 1.6% Cu, 2.6% Zn, 0.8% Pb and 36.1g/t Ag** containing an estimated **593Kt of copper, 975Kt of zinc, 286Kt of lead and 43.0Moz of silver** with an estimated Net Smelter Return (NSR) of US\$116/t (using an NSR cut-off).

The updated Ore Reserve estimate, reported as at 30 April 2022, represents Sandfire's first Ore Reserve estimate for MATSA since it assumed ownership of the project on 1 February 2022.

The Ore Reserve estimation was completed employing industry best practice and robust NSR methodology utilising Sandfire's technical expertise at MATSA and corporate technical services. The MATSA Ore Reserve has been updated based on updated Mineral Resources (as announced on 30 June 2022) and changes to modifying factors.

This has resulted in a net overall increase in the MATSA Ore Reserve of 1.2Mt, a decrease of 53kt of contained copper and increase of 46kt of contained zinc after accounting for annual mining depletion and adjustments to modifying factors.

<sup>&</sup>lt;sup>1</sup> The estimation of the Ore Reserve NSR US\$/t value and applied NSR cut-off can be found under the attached Sandfire MATSA Ore Reserve Statement and Explanatory Notes under the Ore Reserve section and details outlined in Section 4 of the JORC 2012 Table 1.



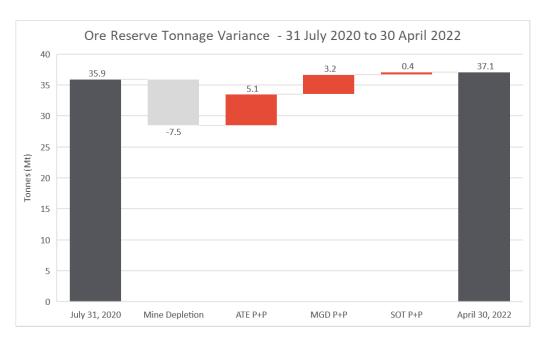


Figure 1 – MATSA Ore Reserve tonnage variance 31 July 2020 to 30 April 2022

Table 1 shows a summary of the MATSA Mineral Resources<sup>2</sup> (MR) and Ore Reserves (OR) by mine and the increase or decrease from the previous respective declaration statements<sup>3</sup>.

Table 1: Summary of MATSA Mineral Resources and Ore Reserves by Mine

Mine and Category	Tonnes (Mt)	NSR (US\$/t)	Cu (%)	Zn (%)	Pb (%)	Ag (g/t)	Cu (Kt)	Zn (Kt)	Pb (Kt)	Ag (Moz)	Incr. / Decr.
Aguas Teñidas MR	51.3	132	1.3	3.3	0.9	42.2	682	1,678	464	69.5	+4.6Mt
Aguas Teñidas OR	16.4	105	1.3	3.3	0.9	41.2	208	549	155	21.8	+1.9Mt
Magdalena MR	25.2	204	2.4	2.8	0.8	41.3	616	701	207	33.5	-2.8Mt
Magdalena OR	17.6	131	1.9	2.2	0.7	32.4	335	390	115	18.4	-0.4Mt
Sotiel MR	51.0	86	1.1	3.3	1.4	40.9	540	1,678	719	67.1	+3.8Mt
Sotiel OR	3.0	87	1.6	1.2	0.5	29.7	50	36	15	2.9	-0.3Mt
<b>MATSA Mines MR</b>	127.40	128	1.4	3.2	1.1	41.5	1,839	4,057	1,390	170.1	+5.6Mt
<b>MATSA Mines OR</b>	37.1	116	1.6	2.6	8.0	36.1	593	975	286	43.0	+1.2Mt
Projects MR	19.8	85	1.2	1.6	0.6	27.6	246	324	123	17.6	+19.8Mt
MATSA Cons. MR	147.2	122	1.4	3.0	1.0	39.6	2,085	4,381	1,513	187.6	+25.4Mt

#### Notes:

- 1. Mineral Resources are inclusive of Ore Reserves.
- Different long term real commodity prices are used to estimate NSR value for Mineral Resources and Ore Reserves. See attached explanatory notes.
- 3. Declaration date for Mineral Resources is 31 December 2021.
- 4. Numbers may not add due to rounding.

<sup>&</sup>lt;sup>2</sup> ASX release "147Mt Mineral Resource sets strong foundation for optimisation and long-term growth at MATSA', dated 30<sup>th</sup> June 2022.

<sup>&</sup>lt;sup>3</sup> ASX release "Transformational acquisition of the MATSA Mining Complex in Spain and A\$1,248 million equity raising", dated 23<sup>rd</sup> September 2021.



The MATSA process plant located at Aguas Teñidas has a nominal capacity of 4.7Mtpa consisting of three independent processing streams. The mine operating strategy adopted for MATSA is to maximise value by utilising the mill capacity and blending the various plant feed sources to produce the highest value concentrate.

The blending strategy considers the two primary ore types at MATSA, Polymetallic and Cupriferous, and the variations within those ore types, e.g. Stockwork and Sotiel Polymetallic. The in-built system flexibility allows short and longer-term ore feed variability to be managed to achieve objectives. End of mine life production tails can also be effectively managed.

Mill feed sourced from the respective mines is nominally split 45% from Aguas Teñidas, 45% from Magdalena and 10% from Sotiel.

Measured and Indicated Mineral Resource sterilisation assessments will be undertaken in each respective mine that has remnant areas. Focus areas include the Aguas Teñidas orebody including stockwork at Aguas Teñidas, Masa 1 at Magdalena and the Sotiel, Sotiel East and Migollas orebodies at Sotiel. Studies will also be initiated to determine the technical and economic viability of remaining unconverted Measured and Indicated Mineral Resources.

No Ore Reserves have been declared for the satellite deposits of Concepción, Poderosa and Castillo-Buitrón as these only contain Inferred Mineral Resources. Studies will be undertaken to determine the technical and economic viability of these deposits and provide direction on their future development potential.

#### **Management Comment**

Sandfire Managing Director and CEO, Karl Simich, said:

'The delivery of this Ore Reserve represents another significant milestone for Sandfire since taking ownership of MATSA in February this year. The Ore Reserve is derived from the JORC Mineral Resource announced on 30 June and provides further validation of the quality and scale of the MATSA asset.

'Importantly, the updated Ore Reserve – which was completed to a very high standard using industry best practice methodologies – more than replaces mining depletion over the two years since the last Ore Reserve was published and sets a very strong foundation for the next stage of optimisation, growth and development at MATSA.

'It's important to remember that there has been minimal drilling at MATSA in the two years since the last Ore Reserve was published, and we see a significant opportunity both to convert additional Resources to Reserves and to grow the overall Mineral Resource and Ore Reserve inventory with exploration success.

'We plan for over 100,000 metres of drilling at MATSA in FY2023, comprising a combination of grade control, in-mine exploration and regional exploration. Our focus will be on targeting extensions of existing deposits and upgrading additional Inferred Resources to the higher confidence Indicated category. We are confident this work will result in further growth in Ore Reserves and mine life.

'The completion of updated Mineral Resources and Ore Reserves at MATSA is an important step forward for us that will underpin ongoing mine planning and scheduling to ensure that we maximise the value of this cornerstone asset for our shareholders over the next decade and beyond.'

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#### This announcement is authorised for release by Sandfire's Managing Director and CEO, Karl Simich.

#### **Competent Person's Statement**

The information in this report that relates to Mineral Resources is based on and fairly represents information and supporting documentation prepared by Mr Orlando Rojas who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Rojas is a full-time employee of GeoEstima. Mr Rojas has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves'. Mr Rojas consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

#### **Competent Person's Statement**

The information in this report that relates to Ore Reserves is based on and fairly represents information and supporting documentation prepared by Mr Neil Hastings who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Hastings is a full-time employee of Sandfire Resources. Mr Hastings has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves'. Mr Hastings consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

#### Forward-Looking Statements

Certain statements made during or in connection with this release contain or comprise certain forward-looking statements regarding Sandfire's Mineral Resources and Reserves, exploration and project development operations, production rates, life of mine, projected cash flow, capital expenditure, operating costs and other economic performance and financial condition as well as general market outlook. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, such expectations are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements and no assurance can be given that such expectations will prove to have been correct.

There is also continuing uncertainty as to the full impact of COVID-19 on Sandfire's business, the Australian economy, share markets and the economies in which Sandfire conducts business. Given the high degree of uncertainty surrounding the extent and duration of the COVID-19 pandemic, it is not currently possible to assess the full impact of COVID-19 on Sandfire's business or the price of Sandfire securities.

Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, delays or changes in project development, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchange rates and business and operational risk management.

Except for statutory liability which cannot be excluded, each of Sandfire, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in these forward-looking statements and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in forward-looking statements or any error or omission. Sandfire undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly, you should not place undue reliance on any forward-looking statement.



# **MATSA Copper Operations Ore Reserve** Statement and Explanatory Notes



#### **Setting**

The MATSA Copper Operations comprises copper-zinc-lead deposits of three mines: Aguas Teñidas, Magdalena and Sotiel and three Projects. These deposits are all interpreted as volcanogenic massive sulphide, or VMS, in a well-established mineralised belt known as the Iberian Pyrite Belt (IPB) deposits located in southwest Spain near the international border with Portugal (see Figure 2).

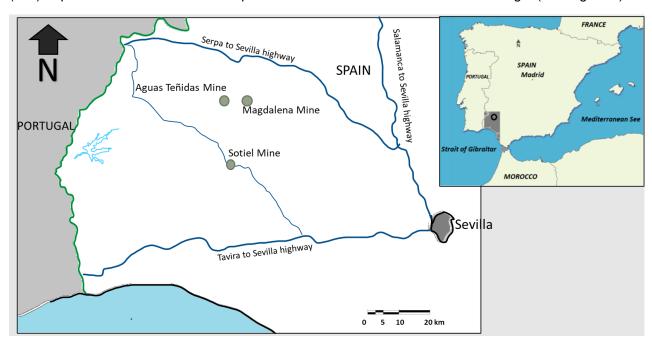


Figure 2: Location of MATSA deposits, Southwest Spain

MATSA holds 43 exploitation concessions grouped into three mining projects: Aguas Teñidas, Magdalena and Sotiel covering 53.3km² and has applied for four additional exploitation concessions.

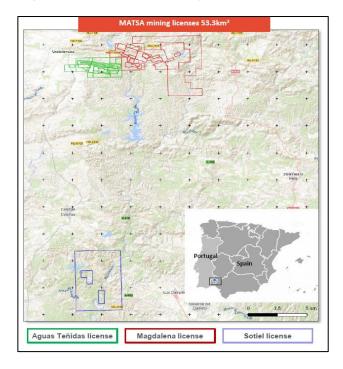


Figure 3: Location of Aguas Teñidas, Magdalena and Sotiel mines



The three MATSA mines are located in relatively close proximity to one another (see Figure 2). The Aguas Teñidas mine is 7km west of the Magdalena mine, within the Almonaster la Real municipality and less than 2km from the villages of Valdelamusa and Cueva de la Mora. The Sotiel mine is located approximately 38km south of the Aguas Teñidas mine within the municipality of Calañas, immediately on the southern border of the village of Sotiel Coronada.

The three MATSA mines are accessed by the national road network which is characterised by well-maintained paved roads. The Aguas Teñidas processing plant is located approximately 100km north from the industrial port city of Huelva.

Mineralisation at all three mines is dominated by massive sulphides, with the dominant sulphide mineral being pyrite with lesser amounts of sphalerite, chalcopyrite and galena. The character of the mineralisation is specific to each mine.

#### **MATSA Mineral Resource**

The MATSA December 2021 Mineral Resources statement was publicly declared on 30<sup>th</sup> June 2022 via an ASX announcement titled, "147Mt Mineral resource sets strong foundation for optimisation and long-term growth at MATSA". A summary of the information contained in the release is outlined below.

The MATSA December 2021 Mineral Resources statement relates to the Mineral Resources estimate for the MATSA Copper Operations which includes copper-zinc-lead deposits of three mines: Aguas Teñidas, Magdalena and Sotiel and three Projects.

The Mineral Resources statement is as of 31 December 2021 and includes drillhole data acquired between 1984 and December 2021, and also uses mapping information collected from underground development in its three mines.

The 2021 model uses an approach to interpretation consistent with that used for previous models for Aguas Teñidas, Magdalena and Sotiel Mines, and add, with respect to previous statements, resources related to three projects that were previously in an exploration stage.

The resource model of Aguas Teñidas Mine includes the Aguas Teñidas, Western Extension, Calañesa, and Castillejito deposits. The resource model of Magdalena mine includes Masa 1, Masa 2, Masa Gold and Masa Gold Norte deposits, and the resource model of Sotiel Mine includes Sotiel, Sotiel East, Migollas, Calabazar, and Elvira deposits. The projects resource models include Concepción, Castillo–Buitrón and Poderosa deposits.

Mining and processing assumptions were used to derive NSR values for each mine in order to evaluate the proportions of the block model that could reasonably be expected to be economically mined. NSR is a function of the material type, metal grades, metallurgical recoveries, realisation costs, forecast metal prices, and the payability of each metal according to the agreed smelter terms.

The Mineral Resource reporting cut-off value for in-situ mineralisation is based on the estimated incremental mining costs for each respective mine.



Table 2: MATSA Mineral Resources Estimate as at 31 December 2021

Deposit	Class	Tonnes (Mt)	NSR (US\$/t)	Cu (%)	Zn (%)	Pb (%)	Ag (g/t)	Cu (Kt)	Zn (Kt)	Pb (Kt)	Ag (Moz)
Aguas	Measured	39.4	131	1.3	3.2	0.9	42.1	523	1,273	357	53.3
Teñidas	Indicated	9.0	126	1.2	3.2	0.9	40.5	110	287	80	11.7
Combined	Inferred	2.9	167	1.7	4.1	0.9	48.7	49	118	27	4.5
Resources	Total	51.3	132	1.3	3.3	0.9	42.2	682	1,678	464	69.5
Magdalena	Measured	15.9	232	2.7	3.5	1.0	50.6	427	560	160	25.9
Combined	Indicated	4.5	149	1.9	1.6	0.5	25.6	87	70	23	3.7
Resources	Inferred	4.8	162	2.1	1.5	0.5	25.3	103	71	24	3.9
	Total	25.2	204	2.4	2.8	0.8	41.3	616	701	207	33.5
Sotiel	Measured	29.4	91	1.1	3.5	1.5	42.1	316	1,029	443	39.8
Combined	Indicated	10.8	87	1.2	2.9	1.2	41.3	126	310	130	14.4
Resources	Inferred	10.7	70	0.9	3.2	1.4	37.5	99	338	146	12.9
	Total	51.0	86	1.1	3.3	1.4	40.9	540	1,678	719	67.1
Projects	Measured	-	0	-	-	-	-	-	-	-	-
Combined	Indicated	-	0	-	-	-	-	-	-	-	-
Resources	Inferred	19.8	85	1.2	1.6	0.6	27.6	246	324	123	17.6
	Total	19.8	85	1.2	1.6	0.6	27.6	246	324	123	17.6
Total	Measured	84.7	136	1.5	3.4	1.1	43.7	1,265	2,862	961	119.0
Combined	Indicated	24.3	113	1.3	2.7	1.0	38.1	323	667	232	29.7
Resources	Inferred	38.2	97	1.3	2.2	0.8	31.7	496	852	320	38.9
	Total	147.2	122	1.4	3.0	1.0	39.6	2,085	4,381	1,513	187.6

#### Notes:

- 1. Mineral Resources estimate has been reported in accordance with the 2012 edition of the JORC Code.
- 2. Mineral Resources are reported on a 100% ownership basis.
- 3. Mineral Resources are inclusive of Ore Reserves.
- 4. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- 5. Mineral Resources are estimated at the following NSR cut-off value:
  - a. Magdalena: US\$43/t
  - b. Aguas Teñidas and projects: US\$40/t
  - c. Sotiel: US\$50/t
- 6. Mineral Resources are estimated using the following long-term prices:
  - a. Cu US\$8,863/t
  - b. Zn US\$3,042/t
  - c. Pb US\$2,579/t
  - d. Ag US\$25.7/oz
- Cu recovery for Polymetallic ranged between 32% and 79%, for Cupriferous ranged between 29.8% and 93% and for Stockwork ranged between 66% and 93%.
- 8. Zn recovery for Polymetallic ranged between 32% and 83%.
- 9. Pb recovery for Polymetallic ranged between 22% and 50%.
- 10. Original statements did not present metal content, these have been derived for consolidated table only.
- 11. Numbers may not add due to rounding.



#### **MATSA Ore Reserve**

The reported Ore Reserves for the Aguas Teñidas, Magdalena and Sotiel operations are based on the 10 block models which formed the basis of the Mineral Resource estimates.

The effective date of the Mineral Resource statement is 30 December 2021, with the effective date of the previous Ore Reserve statement being 30 April 2020. Ore Reserves incorporated depletion by MATSA up to 30 April 2022, as compared to the 31 December 2021 Mineral Resource estimate. Mineral Resources are presented on an inclusive basis, meaning including any Measured or Indicated classified material that has been considered for conversion to Ore Reserves.

Material type classification is determined by the requirements of the process plant to produce concentrates containing certain quality characteristics. Cupriferous ore is defined as Zn<2.5% and Cu/Zn>1.7 with the remainder defined as Polymetallic ore.

Estimation of the Ore Reserve adopts the same NSR methodology that is used in the estimation of the Mineral Resource with the only difference being the selected commodity prices. An NSR cut-off value approach is applied for each stope or development block, with each value calculated according to the ore type, metal grades, metallurgical recoveries, realisation costs, transport costs, forecast metal prices and the payability of each metal according to offtake agreements. For the Ore Reserve estimate various NSR cut-off values (incremental through to full cost) were used dependent on the status of development access.

- Long term real commodity prices: Cu US\$8,020/t, Zn US\$2,300/t, Pb US\$1,785/t, Ag US\$18.51/oz.
- Exchange rate: EUR/USD1.20.
- Process plant recoveries are estimated from material type grade/concentrate recovery curves and applied by mine and material type:
  - o Polymetallic: Aguas Teñidas and Magdalena Zn, Cu, Pb concentrates.
  - o Polymetallic: Sotiel Zn, Cu, Pb concentrates.
  - Copper: Aguas Teñidas and Magdalena Cu concentrate.
  - Copper: Sotiel Cu concentrate.
  - o Copper stockwork: Aguas Teñidas and Magdalena Cu concentrate.
- Metal payability, penalties, realisation costs, shipping costs are based on current offtake agreements for the various concentrates.
- Mine to port logistic costs are based on current road transport contract pricing.

The primary NSR cut-off values used for the Ore Reserve estimate are shown in Table 3.



**Table 3: Ore Reserve Cut-Off Values** 

Mine	Incremental COV (US\$/t ore)	Opex. COV (US\$/t ore)	Opex + Capex COV (US\$/t ore)
Aguas Teñidas	40	64	78
Magdalena	43	59	67
Sotiel	50	70	78

Table 4 and Table 5 show a breakdown of ore reserves by mine and by material type with long section and plans shown in Figure 4 through to Figure 6. The long sections and plans show the updated Ore Reserve estimate with the current life-of-mine (LOM) stope and development designs which have been depleted for mining to the period ending 30 April 2022.

Table 4: MATSA Ore Reserve Estimate as at 30 April 2022 by Mine

Mine	Class	Tones (Mt)	NSR (US\$/t)	Cu (%)	Zn (%)	Pb (%)	Ag (g/t)	Cu (Kt)	Zn (Kt)	Pb (Kt)	Ag (Moz)
Aguas	Proved	10.9	108	1.4	3.4	1.0	44.1	147	364	105	15.4
Teñidas	Probable	5.6	99	1.1	3.3	0.9	35.6	61	185	50	6.4
	Total	16.4	105	1.3	3.3	0.9	41.2	208	549	155	21.8
Magdalena	Proved	13.1	138	2.0	2.4	0.7	35.2	258	320	94	14.8
	Probable	4.5	113	1.7	1.5	0.5	24.3	77	70	22	3.5
	Total	17.6	131	1.9	2.2	0.7	32.4	335	390	115	18.4
Sotiel	Proved	2.3	86	1.6	1.0	0.4	28.7	37	23	10	2.1
	Probable	0.8	90	1.6	1.7	0.7	32.5	13	13	6	8.0
	Total	3.0	87	1.6	1.2	0.5	29.7	50	36	15	2.9
MATSA	Proved	26.2	121	1.7	2.7	0.8	38.3	442	707	208	32.3
Consolidated	Probable	10.9	104	1.4	2.5	0.7	30.7	151	268	78	10.7
	Total	37.1	116	1.6	2.6	0.8	36.1	593	975	286	43.0

#### Notes:

Numbers may not add due to rounding.



Table 5: MATSA Ore Reserve Estimate as at 30 April 2022 by Material Type

Mine	Class	Tonnes (Mt)	NSR (US\$/t)	Cu (%)	Zn (%)	Pb (%)	Ag (g/t)	Cu (Kt)	Zn (Kt)	Pb (Kt)	Ag (Moz)
Aguas Teñida	S										
Polymetallic	Proved	8.9	112	1.3	4.0	1.1	49.2	117	355	102	14.2
	Probable	3.6	108	0.9	5.1	1.4	50.1	33	183	49	5.8
	Total	12.5	111	1.2	4.3	1.2	49.5	151	538	151	20.0
Cupriferous	Proved	1.9	91	1.6	0.5	0.2	20.2	30	9	3	1.2
	Probable	2.0	83	1.4	0.1	0.0	8.9	27	2	1	0.6
	Total	3.9	87	1.5	0.3	0.1	14.5	57	11	4	1.8
Total	Proved	10.9	108	1.4	3.4	1.0	44.1	147	364	105	15.4
	Probable	5.6	99	1.1	3.3	0.9	35.6	61	185	50	6.4
	Total	16.4	105	1.3	3.3	0.9	41.2	208	549	155	21.8
Magdalena											
Polymetallic	Proved	8.8	151	2.0	3.5	1.0	46.6	176	304	87	13.1
	Probable	1.7	137	1.7	3.6	1.1	46.3	30	63	18	2.6
	Total	10.5	148	2.0	3.5	1.0	46.5	206	367	105	15.7
Cupriferous	Proved	4.3	112	1.9	0.4	0.2	12.0	82	16	7	1.7
	Probable	2.8	99	1.7	0.3	0.1	10.6	48	7	3	1.0
	Total	7.1	107	1.8	0.3	0.1	11.5	129	23	10	2.6
Total	Proved	13.1	138	2.0	2.4	0.7	35.2	258	320	94	14.8
	Probable	4.5	113	1.7	1.5	0.5	24.3	77	70	22	3.5
	Total	17.6	131	1.9	2.2	0.7	32.4	335	390	115	18.4
Sotiel					·						
Polymetallic	Proved	1.0	64	1.3	1.5	0.6	29.3	13	15	6	0.9
	Probable	0.5	71	1.2	2.4	1.1	35.8	6	12	5	0.6
	Total	1.5	66	1.3	1.8	0.8	31.4	19	27	12	1.5
Cupriferous	Proved	1.3	103	1.9	0.6	0.3	28.2	25	8	3	1.2
	Probable	0.3	121	2.2	0.5	0.2	27.2	7	2	1	0.3
	Total	1.6	106	2.0	0.6	0.2	28.0	31	10	4	1.4
Total	Proved	2.3	86	1.6	1.0	0.4	28.7	37	23	10	2.1
	Probable	0.8	90	1.6	1.7	0.7	32.5	13	13	6	0.8
	Total	3.0	87	1.6	1.2	0.5	29.7	50	36	15	2.9
MATSA Conso	olidated				·	,		,			
Polymetallic	Proved	18.7	127	1.6	3.6	1.0	46.9	306	674	195	28.2
	Probable	5.8	113	1.2	4.4	1.3	47.8	69	257	73	8.9
	Total	24.5	124	1.5	3.8	1.1	47.1	375	931	268	37.2
Cupriferous	Proved	7.5	105	1.8	0.4	0.2	16.9	136	33	13	4.1
	Probable	5.1	94	1.6	0.2	0.1	11.0	82	11	5	1.8
	Total	12.6	101	1.7	0.4	0.1	14.5	218	44	17	5.9
Total	Proved	26.2	121	1.7	2.7	0.8	38.3	442	707	208	32.3
	Probable	10.9	104	1.4	2.5	0.7	30.7	151	268	78	10.7
	Total	37.1	116	1.6	2.6	0.8	36.1	593	975	286	43.0
Natao.		<b>U</b>				7.0					

Notes:

Numbers may not add due to rounding.



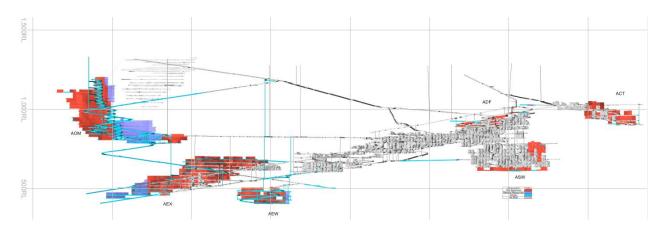


Figure 4: Long Section of Aguas Teñidas Ore Reserves 30 April 2022

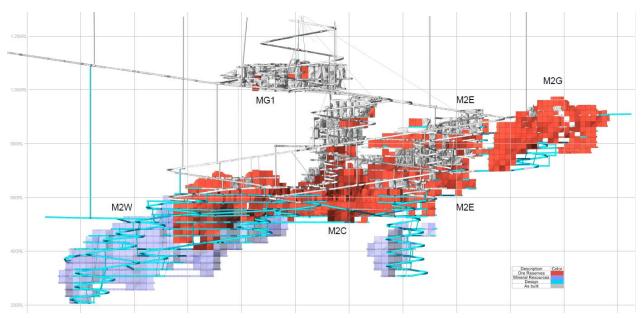


Figure 5: Long Section of Magdalena Ore Reserves 30 April 2022



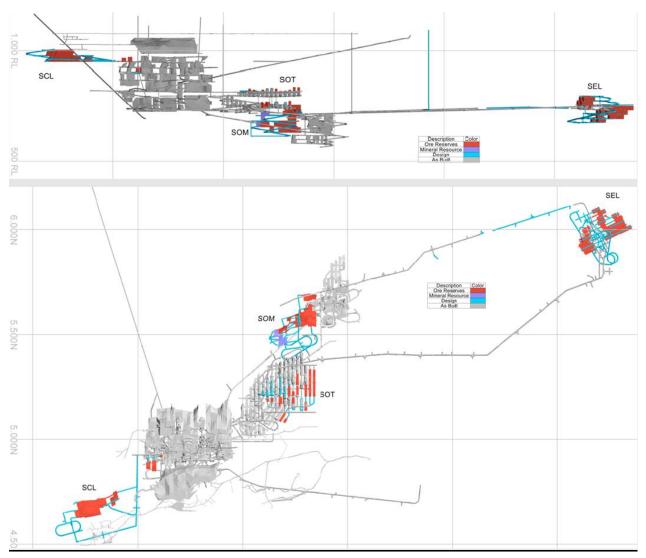


Figure 6: Long Section and Plan of Sotiel Ore Reserves 30 April 2022

### **Changes to the MATSA Ore Reserve Estimate**

Changes to the modifying factors adopted for the 30 April 2022 Ore Reserve are shown in Table 6.

**Table 6: Changes to Modifying Factors** 

Item	Ore Reserve 31 July 2020	Ore Reserve 30 April 2022	Comments
Commodity Prices and FX			
Cu Price (US\$/t)	6,800	8,020	
Zn Price (US\$/t)	2,400	2,300	
Pb Price (US\$/t)	2,000	1,785	
Ag Price (US\$/oz)	17.0	18.5	
FX EUR:USD	1.20	1.20	
Cut-off Value			
ATE – Incr., Opex., Opex+Capex (US\$/t ore)	41, 63, not used	40, 64, 78	Updated based on actuals and forecast



Item	Ore Reserve 31 July 2020	Ore Reserve 30 April 2022	Comments
MGD – Incr., Opex., Opex+Capex (US\$/t ore)	40, 49, not used	43, 59, 67	Updated based on actuals and forecast
SOT – Incr., Opex., Opex+Capex (US\$/t ore)	49, 65, not used	50, 70, 78	Updated based on actuals and forecast
Dilution (External)			
ATE (%)	12	12	
MGD (% or m)	MGD 12, M2W 6, M2G 20	MGD 12, M2G HW 1m, FW 2m	New data and assessment
SOT (%)	11	SOT 12, SOE 18, SEL 10	Operating experience
Mining Recovery			
ATE (%)	85	90	Operating experience
MGD (%)	84	90	Operating experience
SOT (%)	90	95	Operating experience

Approximately 7.5Mt ore tonnes containing 150kt of copper and 209kt of zinc were extracted from the MATSA mines during the period 31 July 2020 to 30 April 2022.

A significant increase in Measured mineral resources has translated into a 41% increase in Proved Ore Reserves after consideration of modifying factors.

When compared with the previous Ore Reserve estimate reported as at 31 July 2020, the updated 30 April 2022 Ore Reserve provides a 3% increase in contained tonnes, an 8% decrease in contained copper and a 5% increase in contained zinc. This result broadly replaces mining depletion over the intervening 21-month period. The drop in contained copper tonnes is primarily due to changes in the Magdalena mineral resource estimate.

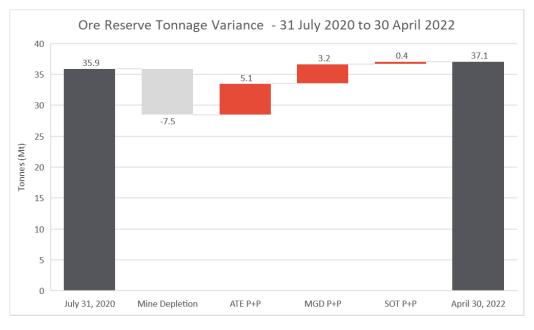


Figure 7: Ore Reserve tonnage variance - 31 July 2020 to 30 April 2022





Figure 8: MATSA Ore Reserve contained copper variance - 31 July 2020 to 30 April 2022

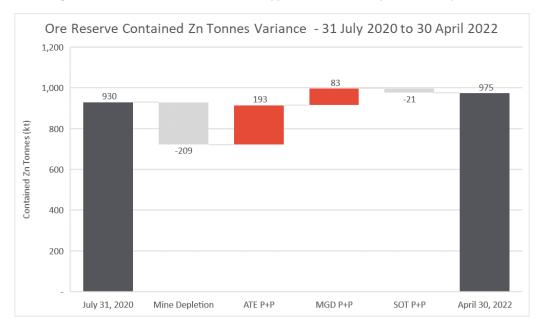


Figure 9: MATSA Ore Reserve contained zinc variance - 31 July 2020 to 30 April 2022



## APPENDIX 1: JORC CODE, 2012 EDITION – TABLE 1

#### **MATSA COPPER OPERATIONS**

JORC Code Assessment Criteria	Comment					
Section 1 Sampling Techniques and Data						
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 downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	<ul> <li>Drilling undertaken by MATSA conforms to industry best practices and the resultant sampling pattern is sufficiently dense to interpret the geometry, boundaries, and different styles of the sulphide mineralisation at the three mines with a high level of confidence within well drilled areas.</li> <li>The procedure used to acquire drilling information in historic programs (prior to 2004) is not documented or recorded.</li> </ul>					
Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	<ul> <li>Historical holes are generally surrounded by a majority of more recent MATSA drillholes (post 2004) which largely confirm the location of mineralisation which indirectly suggests that the location accuracy of the historical holes is reasonable.</li> </ul>					
Aspects of the determination of mineralisation that are Material to the Public Report. 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	<ul> <li>Historical drillholes comprise less than 22% of all drillholes at the Project and where these exist, the mineralisation location is confirmed by surrounding MATSA drillholes</li> </ul>					
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	<ul> <li>All samples from all three mines were taken from diamond drill cores drilled from both, surface and underground. Samples were cut longitudinally in half using an auto-feeding diamond core saw, or whole core, depending on the purpose of the drill hole and the core diameter.</li> </ul>					
information.	<ul> <li>Sampling intervals are then marked, typically at 2m intervals, although this is reduced depending on the geology and mineralisation in the core. The most common sample lengths in the assay database are 1m and 2m.</li> </ul>					
	Diamond drill holes were generally sampled along their entire length.					



JORC Code Assessment Criteria	Comment
Drilling techniques  Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.), and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	<ul> <li>All drilling conducted at the three mines and the surrounding areas to date has been diamond drilling ("DDH") – from both surface and underground collar locations.</li> <li>Total surface DDH = 1,367 drillholes (614,124m)</li> <li>Total underground DDH = 5,874 drillholes (706,396m)</li> <li>MATSA does not currently drill orientated core.</li> <li>Drilling has been carried out by external third-party contractors both for surface and underground programs.</li> <li>The diamond drilling has been conducted using various drilling machines and is usually undertaken using wireline double tube tools.</li> <li>Coring sizes vary with surface drillholes progressing from PQ to HQ, and then NQ, depending on the target depth of the drillhole. The underground exploration drillholes start in HQ and can be reduced to NQ size depending on the target depth of the drillhole.</li> <li>The underground production drillholes are all NQ in diameter and reduction in size are not applied, as these are typically short in length. Almost all massive sulphide mineralisation is drilled using HQ or NQ diameters</li> </ul>
Drill sample recovery  Method of recording and assessing core and chip sample recoveries and results assessed.  Measures taken to maximise sample recovery and ensure representative nature of the samples.  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.	<ul> <li>The drill core is transported from the drilling rigs to the Core Shed where it is sorted and stored before being processed. Core intervals are measured against the drillers recorded measurements and then the core recovery is determined by MATSA geologists.</li> <li>The core recovery in the mineralised horizons is rarely less than 95% for all drilling contractors.</li> <li>Core was cut along a cut-line marked by the supervising geologist, which was marked orthogonal to the main core axis.</li> </ul>



JORC Code Assessment Criteria	Comment
Logging  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.	• The drill core is laid out on an angled logging rack with dedicated lights and water supply. The MATSA logging includes lithological coding as well as assigning an overall geological unit. The lithological coding system used at the three mines records 68 individual rock types. These individual rock types are grouped into an overall geological unit code, or main rock type.
Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.), photography.	<ul> <li>The core logging is qualitative in nature whereas the sampling and results are quantitative. All drill cores are photographed and catalogued appropriately.</li> </ul>
The total length and percentage of the relevant intersections logged.	All drill holes are fully logged.
	<ul> <li>Longitudinally cut half core samples are produced using a core saw.</li> </ul>
	No non-core data was used in the Mineral Resource Estimate.
Sub-sampling techniques and sample preparation	For all intersections with logged presence of sulphides and adjacent waste zones, cores are marked for
If core, whether cut or sawn and whether quarter, half or all core taken.	sampling and cut into two equal halves. The core is placed in a v-rail prior to being placed in the core cutting machine, the core is then cut. One half of the core is selected for sample preparation and assay
If non-core, whether riffled, tube sampled, rotary split, etc., and whether sampled wet or dry.	analysis, whilst the other is retained as a reference sample.
	Core sample preparation at the laboratory was completed as follows:
For all sample types, the nature, quality and appropriateness of the sample preparation technique.	<ul> <li>Weight.</li> <li>Oven dry, each sample is stored in a metal tray on a rack and dried at 105°C for at least two hours.</li> </ul>
Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	<ul> <li>The entire dried sample is first crushed using a jaw crusher.</li> <li>The sample is then run through a cone crusher which reduces 90% of the particles to less than 2 mm in size.</li> </ul>
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.	<ul> <li>Each sample is then placed on a large plastic sheet and rolled (mixed) 20 times to homogenise the sample.</li> <li>After homogenisation, sample is split using an automatic riffle splitter resulting in a 500g sample, the sample must be at least 400g in weight and no more than 800g.</li> </ul>
Whether sample sizes are appropriate to the grain size of the material being sampled.	<ul> <li>The 500 g sample is milled using a ring mill for seven minutes resulting in the sample particles passing through a 75 µm sieve.</li> <li>The pulverised sample is then placed on a large plastic sheet, and it is mixed (rolled) 20 times to homogenise the sample. The pulp sample is then dip sampled to obtain a 150g sub-sample.</li> </ul>



JORC Code Assessment Criteria	Comment
	<ul> <li>Any external check samples, which require pulp material, are also taken during this process (external umpire and MATA reference samples). This 150g sample is then placed in a small plastic or paper bag with the sample number printed on it.</li> </ul>
	<ul> <li>Coarse blanks and twin duplicates are inserted at the laboratory at the start of the sample preparation process.</li> </ul>
	Duplicate analysis of pulp samples has been completed and identified no issues with sampling
	representatively with assays showing a high level of correlation.
	The sample size is considered appropriate for the mineralisation style.
Quality of assay data and laboratory tests	Samples are assayed using ICP-OES, with aqua regia digest at the Internal MATSA laboratory.
The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is	Samples are also fire-assayed for Au. The elements (Cu, Zn, Pb, Ag, Au, As, Sb, Bi, Cd, Ni, Se, Mn
considered partial or total.	and Co, Hg, Fe and S) are analysed at the MATSA laboratory, along with the minimum detection limits
	of the assaying equipment (ICP- OES).
For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times,	Historically at the Sotiel Mine, only Cu, Zn, Pb, and S% were assayed for (unknown method).
calibrations factors applied and their derivation, etc.	The historical Aguas Teñidas core was assayed for the current MATSA suite of elements in most cases
Nature of quality control procedures adopted (e.g., standards,	(when the mine was active), typically by ICP and XRF.
blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision	No geophysical tools were used to analyse the drilling samples.
have been established.	QAQC samples (blanks, certified reference material and duplicates) are inserted by MATSA staff into
	the sample stream prior to these being sent to the laboratory for assay analysis. MATSA also employs
	ALS (previously OMAC Laboratories Ltd) and ALS Chemex (Global) as its external reference
	laboratories used to undertake check (umpire) assay analysis.
	Blank samples used by MATSA comprise silica material and have been included in the sample stream
	for Aguas Teñidas since 2009. In reviewing the blanks analysis data, MATSA has applied a 4X
	detection limit threshold, specific for each element. Samples which plot above this threshold are
	determined as failed samples is typically due to contamination or a mix up of samples (incorrect



JORC Code Assessment Criteria	Comment
	labelling). The results of the blank analysis demonstrate that the sample preparation process employed at MATSA limit contamination to a reasonable level.
	<ul> <li>Fine blank samples were used by MATSA on 2016 for Aguas Teñidas and Magdalena and 2017 for other projects (these samples have not continued to be made). Those comprise pulped (homogenised) silica material, these have been included in the sample stream. The results of the fine blank analysis are within reasonable limits, with little evidence for sample contamination between the ICP samples.</li> </ul>
	Twin duplicate samples used by MATSA are quarter core field duplicate samples which have been included in the sample stream at Aguas Teñidas and Magdalena since 2016, and at the other deposits since 2017. As expected, these duplicate results show a wider range of variation than the other duplicate types inserted into the sample stream by MATSA but still show reasonably good repeatability as well as good correlation between the original and duplicate sample. The twin duplicates report correlation coefficients typically more than 0.85 (most above 0.9).
	<ul> <li>Coarse duplicate samples used by MATSA are collected after the second split following crushing. The results for the coarse duplicates show a high degree of repeatability and a very high degree correlation between the original and duplicate sample, with a correlation coefficient typically more than 0.97.</li> </ul>
	<ul> <li>Internal pulp duplicates sample used by MATSA are collected at the final stage of sample preparation.</li> <li>The results for the pulp duplicates show a high degree of repeatability and a high degree of correlation between the original and duplicate sample, with a correlation coefficient typically more than 0.98.</li> </ul>
	<ul> <li>External duplicate samples are collected at the final stage of sample preparation and sent to the umpire laboratory (ALS Laboratories, Ireland ISO/IEC 17025). The results for the external duplicates show a high degree of repeatability and a high degree of correlation between the original and duplicate samples, with a correlation coefficient typically more than 0.97.</li> </ul>
	<ul> <li>MATSA has used 37 different CRM across all the deposits since production at the Aguas Teñidas mine recommenced in 2008. The CRM are used to monitor Cu, Zn, Pb, Ag, and Au grades. All CRM used</li> </ul>



JORC Code Assessment Criteria	Comment
	have been created in - house by MATSA and were sent for round robin laboratory analysis, at ALS Vancouver, ALS Loughrea, SGS Peru, SGS Canada, ALS Perth, and ALS Brisbane. Overall, the grade ranges of the CRM are representative of the different mineralisation types (cupriferous and polymetallic) and grades as demonstrated in the drillhole statistics.
	<ul> <li>GeosEstima considers that the QAQC results for each of the deposits to demonstrate acceptable levels of accuracy and precision at the laboratories.</li> </ul>
	<ul> <li>GeosEstima therefore has confidence that the associated assays are of sufficient quality to be used in the subsequent Mineral Resource estimate.</li> </ul>
Verification of sampling and assaying  The verification of significant intersections by either independent or alternative company personnel.	<ul> <li>Documented verification of significant intervals by independent personnel has not been done, however the mineralisation appears to be reasonably continuous and is not dominated by any one significant intersection.</li> </ul>
The use of twinned holes.	Furthermore, the tenor of copper and zinc is visually predictable in massive or semi massive sulphide
Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	<ul> <li>intersections.</li> <li>A number of new drillholes have been drilled in proximity of older ones and confirm existing information.</li> </ul>
Discuss any adjustment to assay data.	Consequently, no twinned holes have been drilled.



JORC Code Assessment Criteria	Comment
Location of data points  Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.  Specification of the grid system used.  Quality and adequacy of topographic control.	<ul> <li>The MATSA drillhole collars, for both underground and surface drillholes, are surveyed by the MATSA survey department. The surface collar locations are surveyed using GPS total station which has a reported accuracy of less than 10cm in the X, Y, and Z coordinates. The underground collars are surveyed using a total station method which has an accuracy of less than 10cm in the X, Y, and Z coordinates.</li> <li>The procedure used to survey historic drillhole collars (drilled prior to 2004) is not documented or recorded. Historical holes are generally surrounded by a majority of MATSA drillholes which largely confirm the location of mineralisation which indirectly suggests that the location accuracy of the historical holes is reasonable.</li> <li>Regarding downhole survey the majority of the drillholes have a start and end of hole measurement only. MATSA typically uses a REFLEX Flexi-It multi-shot tool for all of its downhole surveys, with the measurements taken every 25m. The REFLEX tool is a magnetic tool, and the survey azimuth is aligned to mine grid north.</li> <li>Collars are marked out and picked up in the ETRS89 UTM Zone 29 N format.</li> <li>Validation of surface diamond drilling collars was carried out by independent consultants (SRK) in previous MREs in Elvira and Calañesa using a handheld GPS. This process found no major discrepancies when these were compared against the satellite imagery. Underground drillhole collars were also compared against the underground development with no major issues identified.</li> <li>A local mining grid is used at the three mines. Aguas Teñidas and Magdalena mine use the same local grid. Conversion to this grid is undertaken from WGS84 co-ordinates and is achieved by adding 1,002.968m to the elevation (Z) values (to avoid negative numbers in the underground development) and then a translation is applied to the X and Y coordinates by adding 0.006m to the X and 0.196m to the Y coordinate respectively.</li> </ul>



JORC Code Assessment Criteria	Comment
	<ul> <li>Sotiel mine grid is calculated by applying a translation (from the Pozo Isidro co-ordinate system) of 689,597.452m to the X coordinate and 4,164,133.734m to the Y coordinate, after which a translation is applied to all three coordinates, with 2,000m added to X, 5,000m added to the Y, and 1,000m added to the Z coordinate. Finally, a rotation of 24.7° is applied to align the strike of the orebodies to an eastwest direction.</li> <li>Concepción, Castillo-Buitrón and Poderosa Projects are in UTM coordinates, ED 50, Huso 29.</li> </ul>
Data spacing and distribution  Data spacing for reporting of Exploration Results.	All surface and underground drilling at the three mines is typically aimed to intersect mineralisation perpendicular to strike where access facilitates this.
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.  Whether sample compositing has been applied.	<ul> <li>From surface drilling is on 30 to 50 m sections (north-south), meanwhile underground is on 20m spacing.</li> <li>No sample compositing is applied during the sampling process.</li> </ul>
Orientation of data in relation to geological structure	All drilling undertaken at the three mines is typically aimed to intersect mineralisation perpendicular to
Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	strike where access facilitates this. A few geotechnical holes were not drilled perpendicular to the strike of the mineralisation, although these were not specifically intended for use in geological modelling or MRE.
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.	<ul> <li>No significant sampling bias occurs in the data due to the orientation of drilling with regards to mineralisation.</li> </ul>
	<ul> <li>Drilling undertaken by MATSA conforms to industry best practices and the resulting sampling pattern is sufficiently dense to interpret the geometry, boundaries, and different styles of the sulphide mineralisation at the three mines with a high level of confidence within well drilled areas. Confidence in the geological interpretation decreases in areas of reduced sample coverage and is reflected in the classification of mineral resources.</li> </ul>



JORC Code Assessment Criteria	Comment
	<ul> <li>It is GeosEstima's view that the drilling orientations are appropriate to model the geology and mineralisation based on the current geological interpretation.</li> </ul>
Sample security  The measures taken to ensure sample security.	<ul> <li>All drill cores from the three mines are delivered to the core shed, usually via flatbed trucks, for photography, core recovery calculations, geological and geotechnical logging, and sampling.</li> <li>The core shed, sample preparation facilities and laboratory are all confined within secure boundaries, with controlled access points, where only authorised, mine personnel are allowed entry.</li> </ul>
Audits and reviews  The results of any audits or reviews of sampling techniques and data.	No audits or reviews have been completed.
Section 2 Reporting of Exploration Results	
Mineral tenement and land tenure status  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.	MATSA currently holds 55 mining permits which cover all three mines and has the rights to exploit the Aguas Teñidas and Magdalena mines in the municipality of Almonaster Ia Real and the Sotiel mine in the municipality of Calanas, both of which are located in the province of Huelva. The Company also has exploitation (mining) and research (exploration) permits which cover more than 1,100 km² in the IPB and 160km² in the Spanish region of Extremadura.
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.	The Aguas Teñidas, Magdalena, and Sotiel mines are covered by 33, 21, and one mining permits, respectively. The Aguas Teñidas mining permits were renewed in 2012 for a 30-year period and are due to expire on 31 August 2042. The Magdalena mining permits were issued in 2013 and are due to expire on 15 January 2043, except for the Magdalena Masa 2 permit which is due to expire on 07 July 2046. The Sotiel mining permit was renewed in 2015 and is due to expire on 19 January 2045.
	MATSA was granted an exploration permits for the Concepción, Poderosa and Castillo-Buitrón projects.



JORC Code Assessment Criteria	Comment
	The "Permiso de Investigación El Patrás" (exploration permit) which includes Concepción was granted to MATSA on the 14/11/2002. On the 17/01/2018 MATSA applied for a mining permit which is currently being processed by the authorities, Exploration work continues in this area.
	• The "Permiso de Investigación Buitrón" (exploration permit) which includes the Castillo-Buitrón Project was granted to MATSA on the 03/11/2015. A first 3-year extension was granted on the 03/06/2020.
	<ul> <li>The "Permiso de Investigación Buitrera" (exploration permit) which includes the Poderosa Project was originally granted to MATSA on the 28/01/2010. MATSA applied for a third 3-year extension on the 03/12/2021.</li> </ul>
Exploration done by other parties  Acknowledgment and appraisal of exploration by other parties.	Mining in the IPB has occurred for over 2,500 years. Activity can be dated to Roman and Phoenician periods. Significant interest in IPB did not re-emerge until the 1800s following the successful extraction of Cu, resulting in over 60 mines operating by 1900. The Rio Tinto Company was formed in 1873 to operate these mines. The discovery of the Neves Corvo deposit in 1977, renewed exploration interest in the region, which ultimately led to the discovery of the mineralisation associated with the Aguas Teñidas mine and re-opening of the Sotiel Mine in 1983.
	• The Calañesa deposit is the oldest known deposit in the mine area. The deposit was first mined in the Roman period; however, the oldest records referencing exploration and mining are from 1886 by the Compagnie des Mines de Cuivre d Aguas Teñidas, who operated the mine until the end of the 19th Century. It was later mined in 1916 by Huelva Copper Company until 1934. Since this time, most of the exploration in relation to the Calañesa deposit has been surface drilling by MATSA, the majority of which was completed in 2018, except for the exploration conducted by Billiton during the 1980s. Billiton relinquished the property in 1990. Placer Dome subsequently acquired the project and between 1991 and 1994 drilled the deposit and built on Billiton's previous work. Navan then acquired the project between 1995 and 2000 and, in 1995, acquired the mining rights for the Aguas Teñidas and Western Extension deposit. In April 1997, Navan acquired Almagrera SA from the Spanish government. This



JORC Code Assessment Criteria	Comment
	operation comprised the Sotiel underground mine, a minerals processing complex (at Sotiel mine) for Cu, Zn, and Pb, and an acid plant.
	The Castillejito deposit was discovered by RioMin in 1998 via gravimetric survey.
	Magdalena deposit was discovered by MATSA in September 2011.
	The Sotiel mine comprises the Sotiel, Sotiel East, Migollas, Elvira, and Calabazar deposits. There is limited information available on the historical exploration and mining previously conducted at the mine.
Geology  Deposit type, geological setting and style of mineralisation.	The MATSA deposits are all interpreted to be volcanogenic massive sulphide, or VMS, deposits. VMS deposits are predominantly stratiform accumulations of sulphide minerals that precipitate from upwelling hydrothermal fluids associated with magmatism on or below the seafloor in a wide range of geological settings.
	<ul> <li>The deposits at Aguas Teñidas and Magdalena mines also have stockwork sulphide zones in the footwall that can be quite extensive and are characterised by primarily pyrite and chalcopyrite mineralisation.</li> </ul>
	<ul> <li>The deposits which comprise the Project have been categorised as Kuroko type VMS deposits based on their mineralogy, geological setting, and geometry/size.</li> </ul>
Drill hole information	No Exploration Results have been reported in this release. This criterion is not relevant to this report on
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:	Mineral Resources.
Easting and northing of the drill hole collar	
<ul> <li>Elevation or rl (reduced level – elevation above sea level in metres) of the drill hole collar</li> </ul>	
Dip and azimuth of the hole	
Downhole length and interception depth	
Hole length.	



JORC Code Assessment Criteria	Comment
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.	
Data aggregation methods	No Exploration Results have been reported in this release. This criterion is not relevant to this report on
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.	Mineral Resources.
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.	
The assumptions used for any reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept lengths	<ul> <li>No Exploration Results have been reported in this release. This criterion is not relevant to this report on Mineral Resources.</li> </ul>
These relationships are particularly important in the reporting of Exploration Results.	Milleral Resources.
If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	
If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g., 'downhole length, true width not known').	
Diagrams	No Exploration Results have been reported in this release. This criterion is not relevant to this report on
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.	Mineral Resources.



JORC Code Assessment Criteria	Comment
Balance reporting  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.	No Exploration Results have been reported in this release. This criterion is not relevant to this report on Mineral Resources.
Other substantive exploration data  Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations, geophysical survey results, geochemical survey results, bulk samples – size and method of treatment, metallurgical test results, bulk density, groundwater, geotechnical and rock characteristics, potential deleterious or contaminating substances.	<ul> <li>No Exploration Results have been reported in this release. This criterion is not relevant to this report on Mineral Resources.</li> </ul>



JORC Code Assessment Criteria	Comment
Further work  The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).  Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	<ul> <li>MATSA is carrying out Brownfield exploration around its mines and Greenfield exploration programs in Spain and Portugal.</li> </ul>
Section 3 Estimation and Reporting of Mineral Reso	ources
Database integrity  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.  Data validation procedures used.	<ul> <li>The databases were directly exported from the master Geobank (Micromine) database, as managed by MATSA geologists. The following drillhole data was included:         <ul> <li>Collars including collar co-ordinates, hole lengths, date drilled, etc.</li> <li>Downhole surveys;</li> <li>lithology;</li> <li>specific gravity samples (density); and</li> <li>sample assay intervals.</li> </ul> </li> <li>GeoEstima completed a phase of data validation on the digital sample data supplied by the Company, and previous owners of the mines, from their Geobank (Micromine) database which included the following:</li> </ul>
	<ul> <li>Search for sample overlaps, duplicate or absent samples;</li> </ul>
	<ul> <li>Checks for anomalous assay results;</li> <li>Checks for incorrect or irregular survey results; and</li> </ul>



JORC Code Assessment Criteria	Comment
	Search for non-sampled drillhole intervals within the mineralised zones.
Site visits  Comment on any site visits undertaken by the Competent Person and the outcome of those visits.  If no site visits have been undertaken indicate why this is the case.	<ul> <li>A site visit has been undertaken by Competent Person between April 25 to 28, 2022. The visit included the following inspections:</li> <li>The Core shed and MATSA Internal laboratory facilities, Aguas Teñidas and Magdalena mines;</li> <li>The process plant; and</li> <li>A set of representatives drillhole cores was reviewed with the resource and exploration geologists in order to discuss the main geological features of deposit. Ore control process was reviewed and several meetings with key ore control geologists, mine geologists, resources geologists, mine planning engineers and metallurgists were held.</li> </ul>
Geological interpretation  Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The main control of mineralisation is well known, but confidence in the geological interpretation varies locally and is dependent on the spacing of drilling of which varies throughout the deposit.
Nature of the data used and of any assumptions made.  The effect, if any, of alternative interpretations on Mineral	<ul> <li>The geological model of Aguas Teñidas Mine includes the Aguas Teñidas, Western Extension,</li> <li>Calañesa, and Castillejito deposits. The geological model of Magdalena mine includes Masa 1, Masa 2</li> <li>Masa Gold and Masa Gold Norte deposits, and the geological model of Sotiel Mine includes Sotiel,</li> </ul>
Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation.	Sotiel East, Migollas, Calabazar, and Elvira deposits.
The factors affecting continuity both of grade and geology.	• Each deposit was interpreted by MATSA geologists on cross-sections using implicit and explicit methodology. For deposits modelled by implicit tools Leapfrog Geo software was used creating wireframes of massive or semi-massive sulphides (MS) or stockwork (SW) for the cupriferous stockwork zones based on logged rock code in the drilling database. The explicit models were made or cross-sections, based primarily on the occurrence of logged massive or semi-massive sulphides in diamond drillholes and underground exposures, where applicable. The cross-section interpretations are triangulated in Datamine software to produce volumes denoted as SM and SW by the MATSA geologists.



JORC Code Assessment Criteria	Comment
	All available geological logging data from diamond core are used for the interpretations.
	<ul> <li>The geological interpretation of mineralised boundaries is considered robust and alternative interpretations do not have the potential to impact significantly on the Mineral Resources.</li> </ul>
	<ul> <li>The interpreted mineralisation boundaries are used as hard boundaries during the Mineral Resource estimation, domains are intrinsically related to the geology.</li> </ul>
	<ul> <li>The massive sulphides and cupriferous stockwork mineralisation are controlled by tabular lens shaped bodies which are typically strata bound and or structurally controlled to varying degrees.</li> </ul>
Dimensions  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.	Polymetallic mineralisation in Aguas Teñidas mine is related to four tabular lens shaped bodies. Together Aguas Teñidas and Western Extension extend from approximately 270m to 890m below surface. Mineralisation extends for 3,000m along west-east strike, dipping 80° to the north. The cumulative total true width of mineralisation ranges from 10m to 80m. Calañesa is a smaller tabular lens extending from approximately 100m below the surface. Mineralisation extends for 400m along west-east strike, dipping 60° to the south. The cumulative total true width of mineralisation ranges from 1m to 4m. Castillejito is composed of two tabular lenses with synclinal shape extending from approximately 100m below the surface located to the North of Aguas Teñidas. Mineralisation extends for 750m along West-East strike, dipping 68° to the north. The cumulative total true width of mineralisation ranges from 10m to 50m
	<ul> <li>Polymetallic mineralisation in Magdalena mine is related to tabular lens shaped bodies extending from approximately 100m to 830m below surface. Mineralisation extends for 2,000m along West-East strike, dipping 70° to the north. The cumulative total true width of mineralisation ranges from 3m to 70m.</li> <li>Polymetallic mineralisation in Sotiel mine is related to four tabular lenses shaped bodies extending from</li> </ul>
	approximately 200m to 400m below surface. Mineralisation extends discontinuously; Calabazar and Sotiel extend 600m along a 60°E strike, dipping 40° to the northwest. The cumulative total true width of mineralisation ranges from 3m to 30m; Migollas extends 250m along 60°E strike, dipping 40° to the



JORC Code Assessment Criteria	Comment
	northwest. The cumulative total true width of mineralisation ranges from 3m to 20m; Elvira extends 400m along 60°E strike, dipping 40° to the northwest. The cumulative total true width of mineralisation ranges from 10m to 40m.
	<ul> <li>Polymetallic mineralisation in Castillo-Buitrón is composed of two east-west oriented tabular lens outcropping to surface, dipping 70° to the north: Poniente and Levante. The former extends for 170m along strike and 300m in depth, with thickness from 5m to 20m, and the latter extends for 90m along strike and 200m in depth, with thickness ranging from 5m to 12m.</li> </ul>
	<ul> <li>Polymetallic mineralisation in Concepción is related to east-west oriented tabular lens outcropping to the surface, dipping 67° to the north. It currently extends for 500m along strike and 700m in depth, with thickness ranging from 5m to 50m (higher thickness is reached in the upper part were two lenses run parallel).</li> </ul>
	<ul> <li>Polymetallic mineralisation in Poderosa is composed of two parallel East-West oriented tabular lenses, recognisable from 200m below surface. Mineralisation extends for 250m along strike, 750m in depth with thickness ranging from 5m to 38m.</li> </ul>



#### **JORC Code Assessment Criteria**

#### Estimation and modelling techniques

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.

The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.

The assumptions made regarding recovery of by-products.

Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).

In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.

Any assumptions behind modelling of selective mining units.

Any assumptions about correlation between variables.

Description of how the geological interpretation was used to control the resource estimates.

Discussion of basis for using or not using grade cutting or capping.

The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.

#### Comment

- Multivariate data analysis shows high degree of correlation between Cu and Bi; between Zn, Ag, Pb, Hg and Sb; and between F and S. There is not a clear correlation between Cu and Zn. This analysis was considered as initial driver in the grade estimation process.
- Domains for Cu and Bi estimates were defined within Cu mineralisation wireframes, in some cases, these bodies were divided into sub-zones to define domains of high and low-grade Cu.
- Different divisions into sub-zones to define domains of high and low-grade zinc were applied. Within these domains Zn, Ag, Pb, Hg and Sb were estimated.
- The majority of samples were composited to 4m in length, in few cases to 2m in length using domain wireframes as restriction.
- The original Cu mineralisation domains were used for Au, As, Fe, S and density estimates.
- Grade estimation technique applied for estimation within Cu, Zn and mineralisation domains was ordinary kriging (OK) for all variables Cu, Bi, Zn, Ag, Pb, Hg, Fe, S, density, and most part of domains. Only in a few domains, where data was scarce, Inverse Distance Squared (IDW2) was applied.
- Analysis suggests that a stationarity assumption is reasonable for the style of deposit and linear estimation of grades. Variograms are bounded and well structured. Variograms were fitted for all domains independently. In some domains variograms model were fitted on transformed data.
- Top cuts were applied to isolated high-grade composites prior to estimation where applicable based on review of histograms, disintegration analysis and statistical analysis of composites. Distance based top cuts were also used to limit the influence of isolated high-grade composites.
- The search ellipsoid was settled in three nested neighbourhood and is constrained by the optimum number of samples to ensure data used to estimate blocks. Searching with local orientation was applied based on a reference surface interpreted for each mineralised solid.



JORC Code Assessment Criteria	Comment
	Mineral Resource estimation was completed with Isatis Neo software.
	Silver, gold, and lead has been estimated as a by-product within the MATSA deposits.
	Estimates include deleterious or penalty elements As, Bi, Hg, and Sb.
	No selective mining units are assumed in this estimate.
	<ul> <li>The block model is assigned unique domain codes matching the corresponding domain codes defined by mineralisation wireframes. Wireframes are then used as hard boundaries during interpolation where blocks are estimated only with composites having the corresponding domain code.</li> </ul>
	<ul> <li>Top cuts were applied to isolated composites prior to estimation where applicable based on review of histograms, probability plots, deciles, and statistical analysis.</li> </ul>
	The process of validation includes standard model validation using visual and numerical methods:
	■ The block model estimates are checked visually against the input composite/drillhole data;
	<ul> <li>Swath plots of the estimated block grades and composite mean grades are generated by eastings, northings and elevations and reviewed to ensure acceptable correlation, and;</li> </ul>
	<ul> <li>Global statistical comparisons of mean estimated block grades to mean composite grades.</li> </ul>
Moisture  Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.



JORC Code Assessment Criteria	Comme	ent				
Cut-off parameters  The basis of the adopted cut-off grade(s) or quality parameters applied.	on ter  NS NS	<ul> <li>Polymetallic mineralisation suggests using NSR to value resources. NSRs has been calculated based on metallurgical information obtained from cumulative process plant experience and on Sandfire's long term metal price projections.</li> <li>NSRs are defined by ore type: Polymetallic ore and Cupriferous ore</li> <li>NSRs cut-off were calculated considering mining, process, maintenance, general service, and administration cost which are different for each mine (Aguas Teñidas, Magdalena and Sotiel), see table below.</li> </ul>				
			ATE - Projects	MGD	SOT	
		Mining Cost	13.69	15.76	21.93	
		Process Operation	10.01	10.01	10.01	
		Process Maintenance	3.62	3.62	3.62	
		General Services	2.59	2.59	2.59	
		Administration	3.54	3.54	3.54	
		NSR €/t	33.45	35.52	41.69	
		NSR US\$/t	40.14	42.62	50.02	
	Note: mining costs do not include development cost					
	• Mi	<ul> <li>Mineral Resources are estimated at the following NSR cut-offs:</li> </ul>				
	•	Magdalena: 42.62 US\$/t				
	•	Aguas Teñidas and projects	s: 40.14 US\$/t			
	•	Sotiel: 50.02 US\$/t				
	• Mi	neral Resources are estimate	d using the following long	-term prices:		



JORC Code Assessment Criteria	Comment
Mining factors or assumptions  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.	<ul> <li>Cu 8,863 (US\$/t)</li> <li>Zn 3,042 (US\$/t)</li> <li>Pb 2,579 (US\$/t)</li> <li>Ag 25.7 (US\$/oz)</li> <li>Cu recovery for polymetallic material ranged between 32% and 79%, for cupriferous material ranged between 29.8% and 93% and for stockwork ranged between 66% and 93%.</li> <li>Zn recovery for polymetallic material ranged between 32% and 83%.</li> <li>Pb recovery for polymetallic material ranged between 22% and 50%.</li> <li>Mineral Resource potentially can be economically mined by underground mining methods. It is assumed any of the current mining method used by MATSA can be used (Aguas Teñidas and Magdalena are mined for transverse and longitudinal sub-level, longhole open stoping. At the Sotiel mine, a modified long hole stoping approach is employed).</li> <li>The NSR value is computed for each mine using metal prices (Cu, Zn, Pb) higher than the prices used for Life of Mining planning in order evaluate the proportions of the block model that could assure RPEEE.</li> </ul>
Metallurgical factors or assumptions  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	• Mineral Resources are estimated assuming that these will be processed in the Aguas Teñidas processing plant. This plant has two separate processing streams, a polymetallic and a copper processing stream, which are used to produce concentrates. The polymetallic mineralisation stream processes polymetallic massive sulphide material, whereas the copper mineralisation stream processes mineralisation stemming from stockwork material and cupriferous massive sulphides.



JORC Code Assessment Criteria	Comment
the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
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 operation. While at this stage the 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.	<ul> <li>Capacity exists within current approvals to accommodate waste rock and tailings for the remaining Mineral Resource in the existing facilities at MATSA.</li> <li>With the reopening of the mine in 2013, MATSA has recovered old waste dumps (environmental rehabilitation) in areas degraded by historical mining activity. These dumps may be used to fill the Sotiel mine stopes in the future.</li> </ul>



JORC Code Assessment Criteria	Comment
Bulk density  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.  The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs,	<ul> <li>Density measurements have been taken for all main rock types intersected in each drillhole. This was completed by weighing a piece of core in air and then determining the core volume by displacement of water. The MATSA geologists typically select intact drill core which are between 5cm or 10cm in length for density analysis.</li> <li>In mineralised zones three density measures are averaged for a sampling support of 2m in length.</li> </ul>
porosity, etc.), moisture and differences between rock and alteration zones within the deposit.  Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	<ul> <li>In the case of barren rocks sampling is performed every 15m to 20m for density measurement.</li> <li>The weight of the dry sample is initially determined using bench mounted electronic scales, before being submerged in water to determine the submerged weight. The following equation has then been applied by MATSA to determine the dry density: Density = weight (in air) / [weight (in air) – weight (in water)].</li> </ul>
	<ul> <li>It should be noted that MATSA does not coat drill cores with wax as pore space (vugs/fractures) are not typically an issue according to MATSA. There is a strong correlation between specific gravity and S and Fe.</li> <li>No assumptions for bulk density were made.</li> <li>Density is estimated using OK or IDW2 within the Cu domains. Density is also estimated in waste</li> </ul>
	blocks around the Cu domains.
Classification  The basis for the classification of the Mineral Resources into varying confidence categories.	<ul> <li>The classification criteria are based on drillhole spacing that consider the style of mineralisation and the selectivity of the mining method in three mines of MATSA.</li> </ul>
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.	<ul> <li>MATSA has been employing these distances to drillhole criteria for several years and find that they reconcile appropriately (based on Resource classification) to observations and results from mining.</li> </ul>
Whether the result appropriately reflects the Competent	



JORC Code Assessment Criteria	Comment							
Person(s)' view of the deposit.	Class	Aguas Teñidas, Western Extension, Calañesa	Castillejito	Magdalena	Sotiel	Castillo- Buitrón	Concepción	Poderosa
	Measured Indicated	<20 m <40m	<20 m <40m	<=25m <=50m	<=20 m <=40m	<40m	<40m	
	Inferred  The M	>40m ineral Resource es	>40m	>50m ropriately refle	>40m	>40m npetent Per	>40m	only inferred ne deposit.
Audits or reviews  The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>No external audits or reviews have been completed.</li> <li>The Resource Estimates have been reviewed internally by qualified Sandfire personnel and are considered fit for purpose.</li> </ul>							



JORC Code Assessment Criteria	Comment
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.	<ul> <li>The accuracy and confidence level in the Mineral Resource estimate is commensurate with that implied by the classification.</li> <li>The classification criteria take in account mining experience of MATSA in this type and style of mineralisation.</li> <li>The Mineral Resource is derived from a block model that is intended to have sufficient local accuracy to be useful for mine planning decisions.</li> <li>Factors that affect accuracy and confidence include:</li> </ul>
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.  These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	<ul> <li>The accuracy of the interpreted position of mineralised domain boundaries; and</li> <li>Estimated block grades being smoother than true grades, due to OK having been used as the interpolation method.</li> </ul>
Section 4 Estimation and Reporting of Ore Reserves	
Mineral Resource estimate for conversion to Ore Reserve  Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	The reported Ore Reserves for the Aguas Teñidas (ATE), Magdalena (MGD) and Sotiel (SOT) operations are based on the 10 block models which formed the basis of the Mineral Resource estimates. Whilst various Mineral Resource statements are presented per deposit for each operation, the Ore Reserve statements are presented at an operational level, not further split per deposit.
Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The effective date of the Mineral Resource statement is 31 December 2021, with the effective date of the Ore Reserve being 30 April 2022. Ore Reserves incorporated depletion by MATSA up to 30 April 2022, as compared to the 31 December 2021 Mineral Resource estimate.
	<ul> <li>Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Ore Reserves.</li> </ul>
Site visits  Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	<ul> <li>The Competent Person for this Ore Reserve statement is a full-time employee of Sandfire Resources (Sandfire), is based in Perth, and has visited site visit twice during 2022.</li> </ul>



JORC Code Assessment Criteria	Comment
If no site visits have been undertaken indicate why this is the case.	
Study status  The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.  The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	<ul> <li>MATSA has been in commercial operation since 2009. Aguas Teñidas from 2009, Magdalena from 2015 and Sotiel from 2014. It is noted that both Aguas Teñidas and Sotiel mines have prior historic mining activity pre MATSA.</li> <li>The Modifying Factors used in the conversion of Mineral Resources to Ore Reserves are based on current and historic MATSA operating experience.</li> </ul>
The basis of the cut-off grade(s) or quality parameters applied	<ul> <li>An NSR cut-off value approach is applied for each stope or development block, with each value calculated according to the ore type, metal grades, metallurgical recoveries, realisation costs, transport costs, forecast metal prices and the payability of each metal according to offtake agreements. NSR values are estimated for individual blocks into each respective mineral resource block model. Key parameters applied are as follows:         <ul> <li>Long term real commodity prices: Cu US\$8,020/t, Zn US\$2,300/t, Pb US\$1,785/t, Ag US\$18.51/oz</li> </ul> </li> <li>Exchange rate: EUR/USD 1.20</li> <li>Process plant recoveries are estimated from material type grade/concentrate recovery curves and applied by mine and material type:         <ul> <li>Polymetallic: Aguas Teñidas and Magdalena – Zn, Cu, Pb concentrates.</li> <li>Polymetallic: Sotiel - Zn, Cu, Pb concentrates.</li> <li>Copper: Aguas Teñidas and Magdalena – Cu concentrate.</li> <li>Copper: Sotiel – Cu concentrate.</li> <li>Copper stockwork: Aguas Teñidas and Magdalena – Cu concentrate.</li> </ul> </li> </ul>



JORC Code Assessment Criteria	Comment			
	<ul> <li>Metal payability, penalties, realisation costs, shipping costs are based on current offtake agreements for the various concentrates.</li> </ul>			
	<ul> <li>Mine to port logistic costs are based on current road transport contract pricing.</li> </ul>			
	<ul> <li>NSR cut-off values used, incremental through to full cost, is dependent on the status of development access:</li> </ul>			
	<ul> <li>Incremental COV (US\$/t ore): ATE=40, MGD=43, SOT=50</li> </ul>			
	<ul> <li>Opex COV (US\$/t ore): ATE=64, MGD=59, SOT=70</li> </ul>			
	<ul> <li>Opex+Capex COV (US\$/t ore): ATE=78, MGD=67, SOT=78</li> </ul>			
Mining Factors or assumptions  The method and assumptions used as reported in the Pre- Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate	<ul> <li>The Ore Reserve has been estimated using accepted industry practices for underground mines including stope optimisation analysis (Deswik), mine design, mine scheduling and the development of a cash flow model incorporating the Company's technical and economic projections for the mine for the duration of the Life of Mine Plan ("LoMP").</li> </ul>			
factors by optimisation or by preliminary or detailed design).  The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The primary underground mining method approach at the three mines is sub-level long-hole open stoping ("LHOS") with transverse and longitudinal orientation depending on orebody thickness. Stope voids at Aguas Teñidas and Magdalena are backfilled with paste fill. Sotiel uses a combination of unconsolidated development waste and cemented rock fill ("CRF"). Drift and Fill ("D&F) mining is planned in a small zone of the Aguas Teñidas orebody around and above previously mined out stopes. The mining methods selected are considered appropriate for the respective mines and orebodies.			
The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and preproduction drilling.	<ul> <li>Stopes to be mined in the short term are assessed on an individual basis using all related local mining, geological and geotechnical experience to date. This includes data gathered from back-analysis of stopes mined to date in adjacent or similar areas. Stopes to be mined in the medium to long term employ geotechnical parameters derived from area mining experience and / or diamond drill core.</li> </ul>			
The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	<ul> <li>The 31 December 2021 Mineral Resource models were used as the basis for stope and development design. No modifications were made to this model for mine design purposes apart from the addition of block NSR value estimates.</li> </ul>			
The mining dilution factors used.  The mining recovery factors used.	<ul> <li>Ore Reserves have been estimated by generating detailed mining shapes for all areas that contain Measured or Indicated Mineral Resources as well as access development. Internal stope dilution has been designed into the mining shapes and interrogated. External stope dilution and mining recovery</li> </ul>			



JORC Code Assessment Criteria	Comment
Any minimum mining widths used.  The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.  The infrastructure requirements of the selected mining methods	factors have been applied post geological block model interrogation to generate final mining diluted and recovered ore tonnage and grade. External dilution and mining recovery factors:  External dilution:  Aguas Teñidas (%): 12  Magdalena (%, m): 12, M2G 1.0m HW, 2.0m FW  Sotiel (%): 12, SOE 18, SEL 10  Mining Recovery:  Aguas Teñidas (%): 90  Magdalena (%, m): 90  Sotiel (%): 95  A minimum mining width of 4.0 m is used based on the nature of the deposits and the equipment fleet employed.  Ore Reserves contain approximately 91kt of Inferred Mineral Resource which equates to 0.2% of the reported total.  The operating mines at MATSA have all the required infrastructure in place that is required to service the selected mining methods.
Metallurgical factors or assumptions  The metallurgical process proposed and the appropriateness of that process to the style of mineralization.  Whether the metallurgical process is well-tested technology or novel in nature.	MATSA has a central processing facility located at Aguas Teñidas that treats ore from all three mines and has a nominal capacity of 4.7Mtpa. It comprises two processing plants which contain two crushing lines and three processing lines that produce copper, zinc and lead concentrates that are blended on-site prior to transport to the port of Huelva. The processing lines have been designed to process both Cupriferous and Polymetallic ores and can be reconfigured depending on ore availability and blend. Cupriferous is defined as Zn<2.5% and Cu/Zn>1.7 with the remainder defined as Polymetallic. The metallurgical process is well tested technology.



JORC Code Assessment Criteria	Comment
The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.  Any assumptions or allowances made for deleterious elements.  The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.  For minerals that are defined by a specification, has the Ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?	<ul> <li>The metallurgy is well understood at MATSA with projected process recoveries based on the Ore Reserve mine schedule and empirical models.</li> <li>Deleterious elements are accounted for by a combination of onsite ore blending and concentrate blending to maximise concentrate value.</li> </ul>
Environmental  The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	<ul> <li>Approvals have been granted for the raising of the existing Tailings Management Facility (TMF) from 1320 R.L. to 1324 R.L. Construction is planned to commence in 2023. Closure of this TMF is scheduled to occur in 2026.</li> <li>Planning for a replacement TMF is underway with permit applications scheduled to occur during the latter half of 2022. Construction is scheduled to occur late 2024 to 2025 with operation scheduled to align with the closure of the current TMF.</li> </ul>
Infrastructure  The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.	<ul> <li>MATSA has been operating for several years and as such the infrastructure required to facilitate mining and processing operations are in place and fit for current purposes. Planned replacement of equipment to sustain operations is considered and captured under the life of mine capital plan.</li> <li>The power generation mix and supply in Spain is such that power supply is considered low risk. MATSA are also assessing medium and longer-term renewable energy initiatives.</li> </ul>
Costs  The derivation of, or assumptions made, regarding projected capital costs in the study.	<ul> <li>Capital costs are generally limited to that required to sustain the operation and are based on current contracts and quotes and forward projections.</li> <li>Operating costs are based on historical averages, current contracts, and forward projections.</li> </ul>
The methodology used to estimate operating costs.	<ul> <li>Current offtake agreements for copper, zinc and lead concentrates provide the basis for downstream cost estimation.</li> </ul>
Allowances made for the content of deleterious elements.	Exchange rates are based on consensus forecasts and vary over the life of the mine.



JORC Code Assessment Criteria	Comment
The source of exchange rates used in the study.	<ul> <li>Land freight is based on existing contracts and forward projections.</li> <li>No royalties are payable.</li> </ul>
Derivation of transportation charges.	
The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	
The allowances made for royalties payable, both Government and private	
Revenue Factors	Commodity prices are based on consensus forecasts and vary over the life of the Ore Reserve. The
The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.  The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products	<ul> <li>life-of-mine average values are:</li> <li>Copper (US\$/t): 8,099</li> <li>Zinc (US\$/t): 2,515</li> <li>Lead (US\$/t): 1,829</li> <li>Silver (US\$/oz): 19.2</li> <li>The exchange rate is based on consensus forecasts and vary over the life of the Ore Reserve. The life-of-mine average value is:</li> <li>EUR/USD: 1.14</li> <li>Current offtake agreements for copper, zinc and lead concentrates provide the basis for revenue factor derivation.</li> </ul>
Market assessment	<ul> <li>MATSA has life of mine offtake agreements for the sale of copper, zinc and lead concentrates.</li> </ul>
The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	<ul> <li>Pricing is fundamentally on value of contained metals the main metals being copper and zinc and lead and silver credits.</li> </ul>
A customer and competitor analysis along with the identification of likely market windows for the product.	<ul> <li>The price of copper, zinc and lead being set based on the LME which is a mature, well established and publicly traded exchange.</li> </ul>
Price and volume forecasts and the basis for these forecasts.	



JORC Code Assessment Criteria	Comment
For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	<ul> <li>Independent expert publications (CRU, Wood Mac, Metal Bulletin) and other sources (bank reports, trader reports, conferences, other trade publications) are used to form a view about future demand and supply and the likely effects of this on both metal prices and concentrate prices.</li> </ul>
The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.  NPV ranges and sensitivity to variations in the significant assumptions and inputs.	<ul> <li>MATSA is an operating mining complex with a focus on operating cash margins. The mine plan and schedule created specifically for the Ore Reserves provides positive cash margins in all years when modifying factors outlined are applied.</li> <li>NPV (8%) sensitivity analysis shows MATSA to be most sensitive to exchange rate and operating costs followed by copper price then zinc price and sustaining capital costs.</li> </ul>
Social  The status of agreements with key stakeholders and matters leading to social licence to operate.	<ul> <li>MATSA is an operating mining complex, and all agreements are in place and are current with all key stakeholders.</li> <li>MATSA has a well-established framework to manage social responsibility. The framework encompasses MATSA employees, local communities and global society and trading partners.</li> </ul>
Other  To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	<ul> <li>MATSA currently holds all key mining exploitation concessions and environmental permits for carrying out its business at the three operating mining sites, plant operations and supporting infrastructure for life of the Ore Reserve except for the above-mentioned TMF replacement which will require permitting.</li> </ul>
Any identified material naturally occurring risks.  The status of material legal agreements and marketing arrangements.	<ul> <li>Diesel particle management strategies are under development to align with an EU directive that requires compliance by 2026.</li> </ul>
The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	



JORC Code Assessment Criteria	Comment
Classification  The basis for the classification of the Ore Reserves into varying confidence categories.  Whether the result appropriately reflects the Competent Person's view of the deposit.  The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	<ul> <li>Ore Reserves have been derived from a mine plan that is based on extracting the 31 December 2021 Measured and Indicated Mineral Resources. Ore Reserves are initially derived from development and stope designs that are evaluated against Mineral Resources. Designs do not inherently honour mineral resource classification boundaries therefore designs contain multiple mineral resource classification material types. Proved Ore Reserves have been derived from designs that contain greater than 50% Measured Mineral Resources. Probable Ore Reserves have been derived from designs that contain greater than 50% Indicated Mineral Resources and less than 50% Measured Mineral Resources.</li> <li>Probable Ore Reserves contain 2.3 Mt of Measured Mineral Resources.</li> <li>Final classification is set after considering all relevant modifying factors.</li> <li>The underground Ore Reserve classification appropriately reflects the competent person's view of the deposit.</li> </ul>
Audits or reviews  The results of any audits or reviews of Ore Reserve estimates.	Ore Reserves have been compiled by MATSA and reviewed by Sandfire Technical Services.
Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.  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	<ul> <li>The Ore Reserve for MATSA has been estimated using accepted industry practices for underground mines, including stope optimisation analysis (Deswik), mine design, mine scheduling and the development of a cash flow model incorporating the Company's technical and economic projections for the mine for the life of the Ore Reserve.</li> <li>There has been an appropriate level of consideration given to all modifying factors, which are established from established operating mines, to support the declaration and classification of Ore Reserves.</li> <li>Ore Reserves with a lower NSR unit value are more sensitive to changes in the main economic parameters therefore have a higher ore reserve risk.</li> </ul>



JORC Code Assessment Criteria	Comment
and the procedures used.	
Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	
It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	