

Press release

Stockholm May 5, 2022

## **Bluelake Mineral announces positive PEA for Joma and Stekenjokk-Levi copper and zinc project including post-tax NPV 8% of between USD 90 to 200 million over a 17-Year mine life**

Bluelake Mineral AB (publ) (the "Company" or "Bluelake Mineral") is pleased to announce the results of a Preliminary Economic Assessment ("PEA") for its 100% owned copper and zinc project which comprises the Stekenjokk-Levi deposit, located in Sweden, and the Joma deposit, located in Norway (the "Project"). The PEA considers a target 750 kilo tons per annum ("ktpa") mining operation over a mine life of 17 years. The Company believes the Project has the potential to supply copper and zinc to the growing renewable energy economy of northern Europe.

### **PEA Highlights:**

Bluelake Mineral has consolidated the ownership of these two assets which are approximately 60 km apart by paved road, with the intention of evaluating and implementing a re-start of the two historical mines utilising a single ore processing plant at the Joma project location. Future campaign mine production at Stekenjokk-Levi will be considered during winter months only. A combined Run of Mine ("ROM") production rate of 750 ktpa at Joma processing facilities to produce three separate concentrates (copper, zinc and lead) and doré (gold and silver).

- Commodity price scenarios applied in the PEA include:
  - **LTC Case:** considers median long term consensus ("LTC") market forecast prices during Q2 2022 of USD 7,700/t copper, USD 2,250/t zinc, USD 1,950/t lead, USD1,400/oz gold and USD 18.25/oz silver.
  - **Strategic Case:** considers spot metal prices in Q2 2022 discounted by 12% based on the view of Bluelake Mineral management that prices will remain at these levels for an extended period including USD 8,620/t copper, USD 3,692/t zinc, USD 2,002/t lead, USD1,659/oz gold and USD 20/oz silver.
- Mine life of 17 years based on a combined production rate of 750 ktpa for the first 11 years, ramping down to 500 ktpa till the end of the mine life based on the current Mineral Resource estimate. The Life of Mine ("LoM") production is estimated at 446 kt of copper concentrate, 321 kt of zinc concentrate, 43 kt of lead concentrate, silver (in doré) 3,445 koz and gold (in doré) 21 koz.
- The Mineral Resource estimate for the Joma deposit (effective date 09 December 2021) comprises 6.0 Mt of Indicated Resources grading 1.0% copper and 1.66% zinc as well as 1.2 Mt of Inferred Resources grading 1.2% copper and 0.7% zinc.

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- The Mineral Resource estimate for the Stekenjokk-Levi deposit (effective date 23 November 2021) comprises 11.8 Mt of Inferred Resources grading 0.9% copper, 2.2% zinc, 0.4% lead, 0.2 g/t gold and 40.7 g/t silver.
- Total cumulative LoM EBITDA of USD 583 million for the LTC Case and USD 901 million for the Strategic Case.
- The PEA is based on a conventional underground approach using a combination of electric-powered equipment (such as Jumbo and Longhole Drills) and diesel-powered mobile equipment (for example, loaders and trucks). An additional concept-level 'Green Case' has also been assessed to understand the early-stage potential for a fully electric mine utilising developing battery-electric technologies for underground loaders and trucks.
- Based on the results of this PEA, Bluelake Mineral intends to advance the consolidated Joma and Stekenjokk-Levi projects to the confidence level of a Prefeasibility Study (“PFS”) while continuing its ongoing permitting and stakeholder engagement activities at both projects. The PFS will require further mining technical studies and in parallel detailed environmental and social impact assessment (“ESIA”) studies for final permitting approval.

*"The completion of the PEA is a significant milestone as it displays Joma and Stekenjokk-Levi as financially viable and sustainable projects with potential of producing a high quality copper and zinc concentrate to the European e-vehicle and battery industry as well as other sectors for an extended period of time" says Peter Hjorth, CEO of Bluelake Mineral. "We are committed to commence the next phase of the project with the ambition of developing operations that could enable supply of critical raw materials in the ongoing electrification process which is instrumental to mitigate global climate change. We will work in close collaboration with local and regional stakeholders in order to establish this project in an environmentally sound and socio-economically sustainable way".*

The PEA was prepared by independent consulting firm SRK Consulting (UK) Ltd (“SRK”) and includes the respective Mineral Resource statements reported according to Canadian Institute of Mining, Metallurgy, and Petroleum (“CIM”) Definition Standards for Mineral Resources and Reserves (“CIM Definition Standards”). These standards are internationally recognised and allow the reader to compare the Mineral Resource with that reported for similar projects.

The reader is advised that the PEA summarised in this press release is preliminary in nature and is intended to provide an initial, high-level review of the project's economic potential and development options. The PEA mine schedule and economic model includes numerous assumptions and the use of Inferred Mineral Resources. Inferred Mineral Resources are considered to be too speculative geologically to have economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realised. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

## Economic Analysis

### Introduction

The PEA is based on the combined production from the Joma and Stekenjokk-Levi underground mines over a 17-year period following a 2-year pre-production period for construction, development and commissioning activities. The Joma process facility has a planned production rate of 750 ktpa for the first 11 years, ramping down to 500 ktpa till the end of the mine life.

The commodity price scenarios applied in the PEA are described as follows (see Table 1):

- **LTC Case:** considers median long term consensus market forecast prices during Q2 2022.
- **Strategic Case:** considers spot metal prices in Q2 2022 discounted by 12% based on the view of Bluelake Mineral management that prices will remain at these levels for an extended period.

**Table 1: PEA Metal Price Scenarios**

Commodity Prices	Units	LTC Case	Strategic Case
Copper Price	USD/t Cu	7,700	8,620
Zinc Price	USD/t Zn	2,250	3,692
Lead Price	USD/t Pb	1,950	2,002
Gold Price	USD/oz Au	1,400	1,659
Silver Price	USD/oz Ag	18.25	20

The following general assumptions have been applied in the PEA:

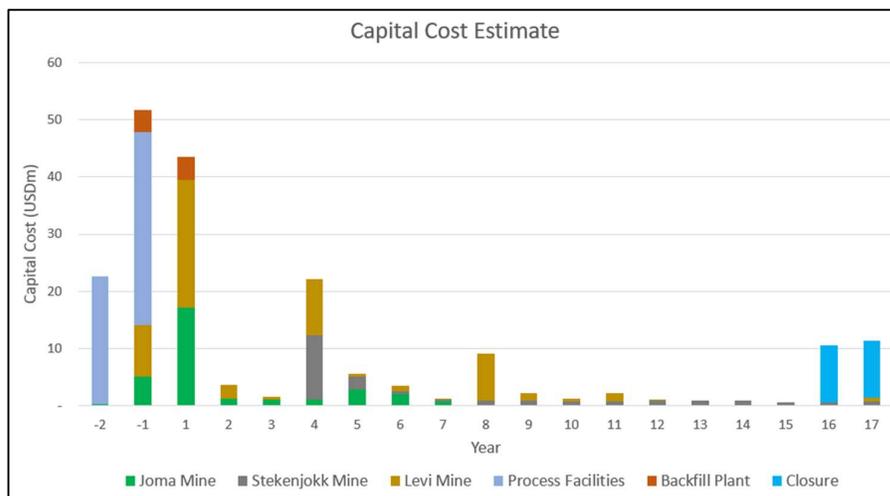
- All costs and revenues are in United States Dollars (“USD”) and are in real money terms.
- Any cash flows prior to the start of construction are considered sunk and have been excluded from the analysis.
- A discount rate of 8% has been applied for NPV calculations.
- Commercial smelter terms for each mine and product are summarised in Table 2;
- Diesel fuel prices are based on average prices and exchange rates during 2021, with an allowance for tax reduction, resulting in USD1.3/litre for Sweden and Norway.
- Electricity prices are based on average prices and exchange rates during 2021, resulting in USD0.05/kWhr for Sweden and USD0.08/kWhr for Norway.
- For the purposes of the PEA an all-inclusive material handling and truck transport cost of USD 0.10/t of concentrate per kilometre has been assumed for moving ROM from the future Stekenjokk-Levi mine to the Joma processing facilities;
- Mine water quality and treatment requirements are not well defined and have not been considered in the economic assessment;
- Royalties payable are based on 0.2% of the NSR; and
- The cash flow model is post-tax (average corporate tax rate of 21.7%) and pre-finance.

**Table 2: Commercial Smelter Terms**

Commercial Terms	Units	Joma ROM	Stekenjokk ROM	Levi ROM
<b>Copper Concentrate</b>				
Payable Metal				
Cu	(%)	95.8%	95.6%	95.6%
Au	(%)	90.0%	90.0%	90.0%
Ag	(%)	90.0%	90.0%	90.0%
Unit Treatment/Freight/Refining Charges				
Cu TC	(USD/t)	60.0	60.0	60.0
Cu con freight	(USD/t)	40.5	40.5	40.5
Cu RC (USD/lb payable)		0.06	0.06	0.06
Au RC (USD/oz payable)		5.0	5.0	5.0
Ag RC (USD/oz payable)		0.5	0.5	0.5
<b>Zinc Concentrate</b>				
Payable Metal / Smelter Recovery				
Zn	(%)	84.6%	84.9%	84.9%
Unit Treatment Charges/Freight				
Zn TC	(USD/t)	155.0	155.0	155.0
Zn con freight	(USD/t)	20.2	20.2	20.2
<b>Lead Concentrate</b>				
Payable Metal / Smelter Recovery				
Pb	(%)	-	85.0%	85.0%
Unit Treatment Charges/Freight				
Pb TC	(USD/t)	140.0	140.0	140.0
Pb con freight	(USD/t)	20.2	20.2	20.2
<b>Dore</b>				
Payable Metal / Smelter Recovery				
Au	(%)	99.5%	99.5%	99.5%
Ag	(%)	99.6%	99.6%	99.6%
Unit Freight/Refining Charges				
Au Freight	(USD/kg)	10.0	10.0	10.0
Ag Freight	(USD/kg)	10.0	10.0	10.0
Au RC (USD/oz payable)		0.25	0.25	0.25
Ag RC (USD/oz payable)		0.35	0.35	0.35

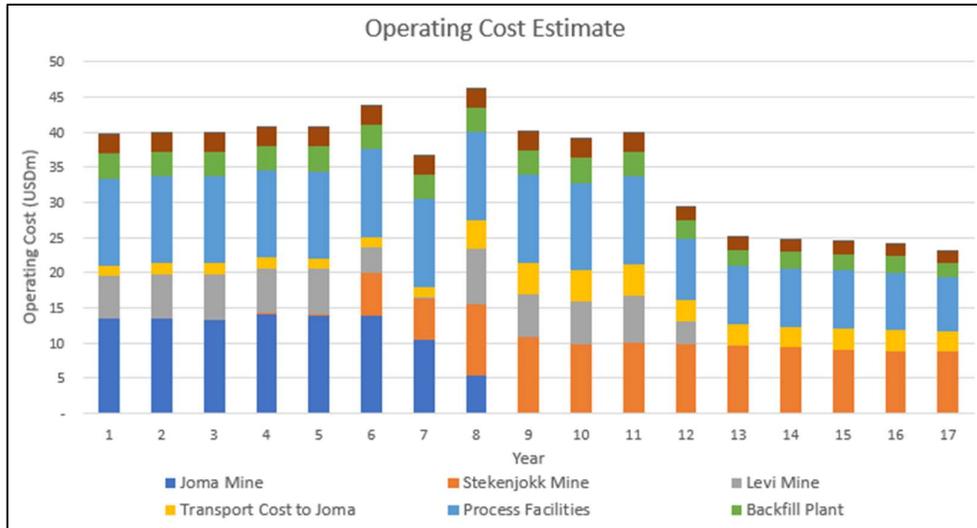
**Capital and Operating Costs**

The annual capital cost estimate over the LoM is shown in Figure 1 with the initial 2-year period of preproduction and also a provision for closure costs at the end of the mine life.

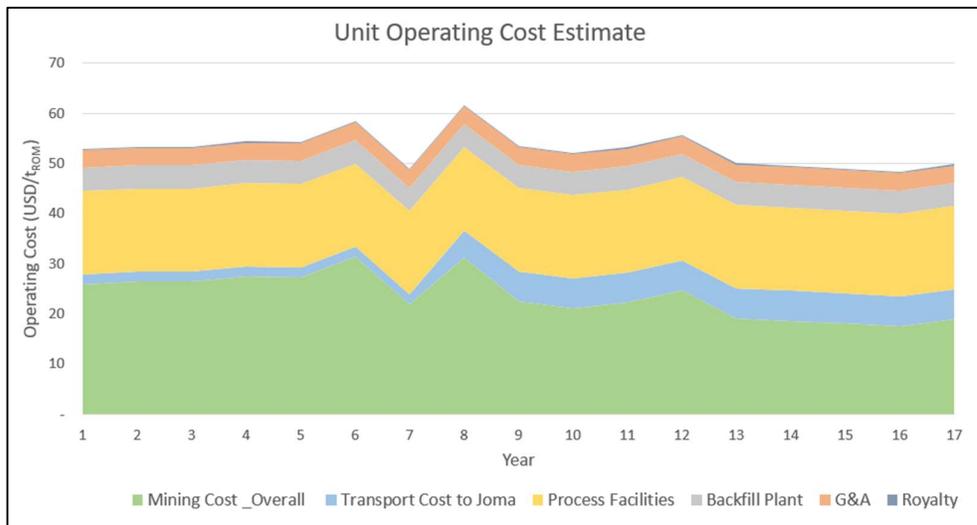


**Figure 1: Capital Cost estimate over the LoM**

The annual operating cost estimate over the LoM is shown in Figure 2 with an initial production rate of 750 ktpa in Year 1, ramping down to 500 ktpa after Year 11 till the end of the mine life. The operating cost is variable based on the underground truck haulage distance which typically increases with the depth of mining and additional costs for transport of ROM from the Stekenjokk-Levi mines to the Joma processing facility. Figure 3 shows the annual split of unit operating cost (USD/t<sub>ROM</sub>) over the LoM.



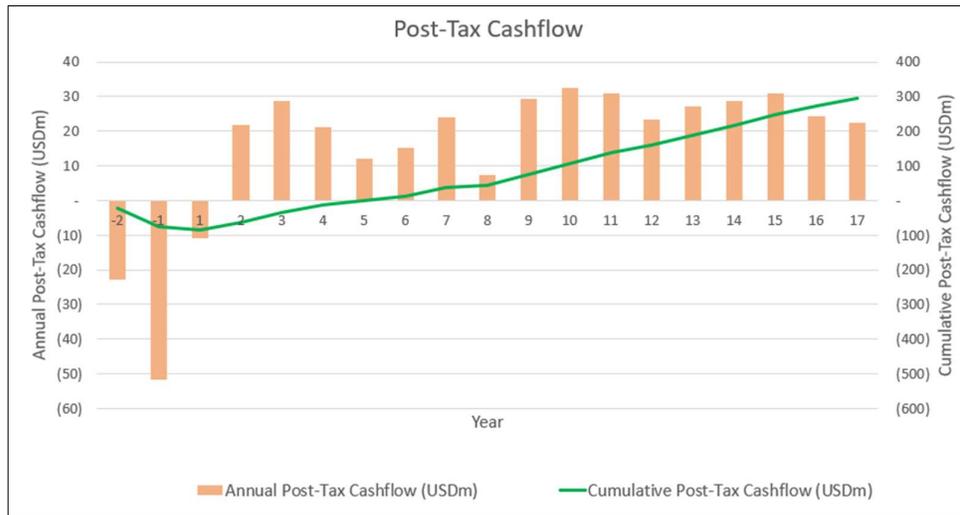
**Figure 2: Operating Cost estimate over the LoM**



**Figure 3: Unit operating Cost estimate over the LoM**

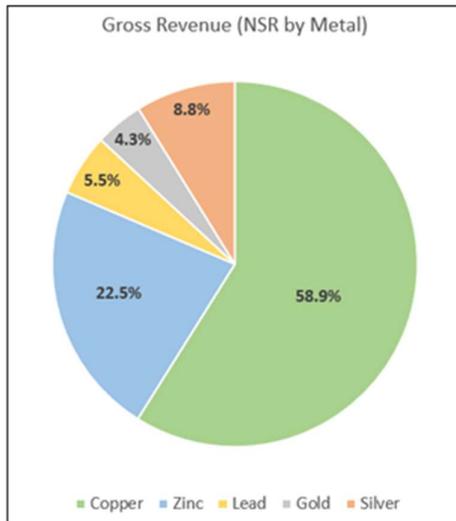
**Economic Analysis – LTC Case**

The annualised and cumulative post-tax cashflow for the LTC Case is provided in Figure 4 with an average annual post-tax cashflow of USD 21.7 m during the production Years 1 to 17 and payback in Year 6. The cashflow is variable mainly based on the annual production rate, grade variation, operating costs and ROM tonnage transported from Stekenjokk-Levi to the Joma processing facilities.



**Figure 4: LTC Case: Post-Tax Cashflow over LoM**

The percentage of gross revenue by metal is provided in Figure 5, with approximately 58.9% estimated for copper, 22.5% from zinc, 8.8% from silver, 5.5% from lead and 4.3% from gold.

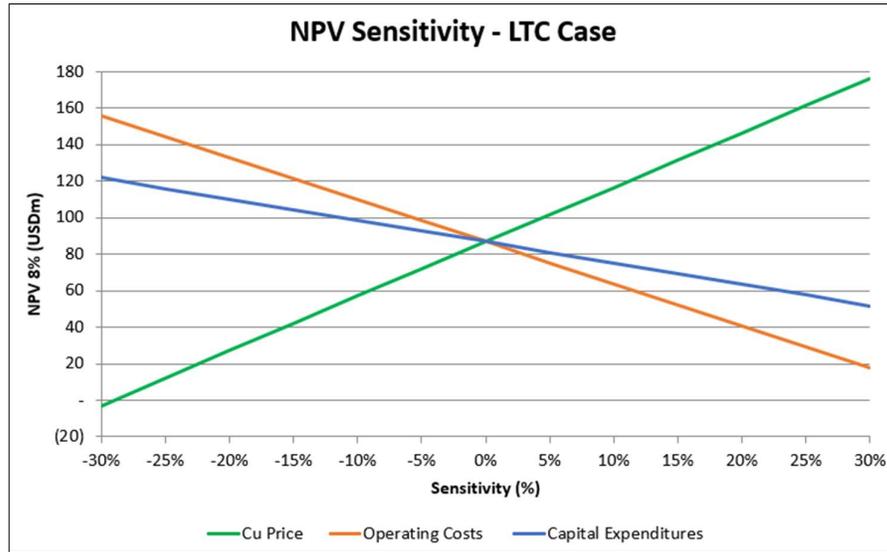


**Figure 5: LTC Case: Percentage of Gross Revenue by Metal**

A summary of the post-tax cashflow analysis results from the PEA including Net Present Value (“NPV”) and Internal Rate of Return (“IRR”) is provided in Table 3. Figure 6 provides a sensitivity of the NPV for the Base Case Copper price Capital and Operating costs for the Project.

**Table 3: LTC Case: PEA post-tax cashflow analysis results**

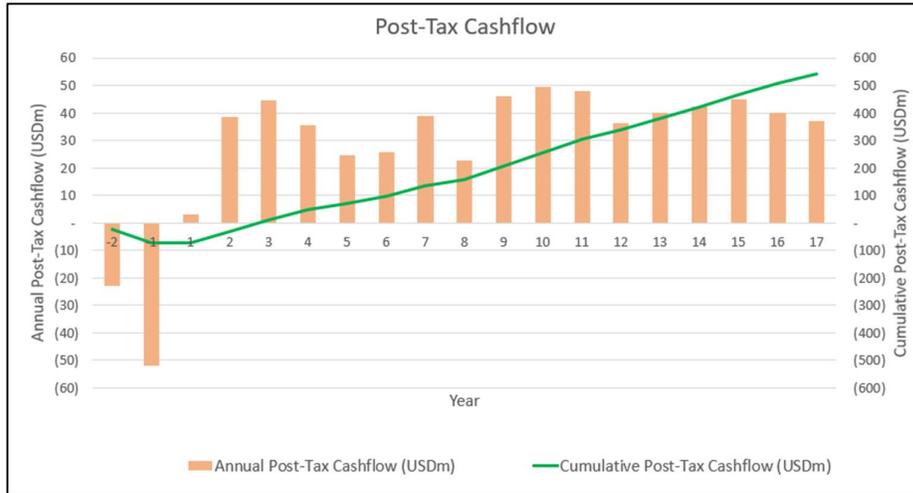
PEA Summary - LTC Case	Units	Value
Net Free Cash	USDm	294
NPV (8%)	USDm	87
IRR	%	19.8%



**Figure 6: LTC Case: NPV Sensitivity Analysis**

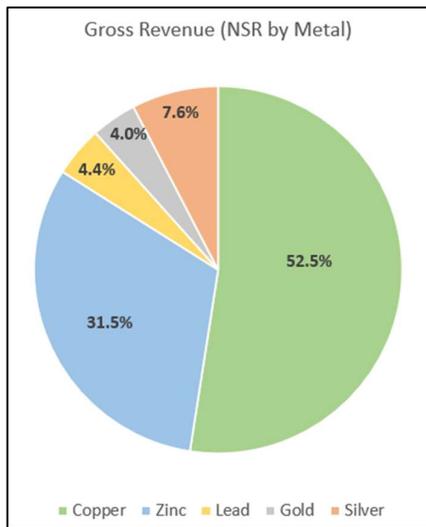
**Economic Analysis – Strategic Case**

The annualised and cumulative post-tax cashflow for the Strategic Case is provided in Figure 7 with an average annual post-tax cashflow of USD 36.3 m during the production Years 1 to 17 and payback in Year 3. The cashflow is variable mainly based on the annual production rate, grade variation, operating costs and ROM tonnage transported from Stekenjokk-Levi to the Joma processing facilities.



**Figure 7: Strategic Case: Post-Tax Cashflow over LoM**

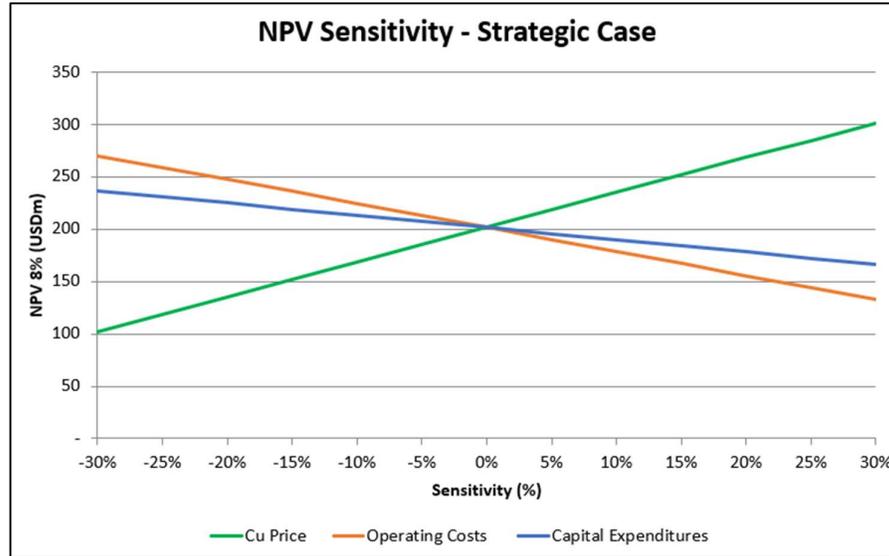
The percentage of gross revenue by metal is provided in Figure 8, with approximately 52.5% estimated for copper, 31.5% from zinc, 7.6% from silver, 4.4% from lead and 4.0% from gold.



**Figure 8: Strategic Case: Percentage of Gross Revenue by Metal**

**Table 4: Strategic Case: PEA post-tax cashflow analysis results**

PEA Summary - Strategic Case	Units	Value
Net Free Cash	USDm	543
NPV (8%)	USDm	201
IRR	%	34.0%



**Figure 9: Strategic Case: NPV Sensitivity Analysis**

## Environmental, social and governance

Demonstrating good environmental, social and governance (“**ESG**”) practice is central to Bluelake Mineral’s vision of the Project. The Joma and Stekenjokk-Levi deposits have the potential to provide a secure, local source of low-carbon intensity critical raw materials to a rapidly expanding green technology manufacturing industry in northern Europe. The following highlights the key positive ESG credentials of the Project:

- Active engagement with Sámi reindeer herding communities;
- Electrical grid dominated by renewable energy – with abundant hydroelectric and wind power in the region;
- European Union Green Deal - including carbon border adjustment mechanism (“**CBAM**”) – will incentivise the use of locally-sourced, low-carbon intensity materials for manufacturing;
- Brownfield Project – both areas have been mined in the recent past with local expertise and existing infrastructure in place; and
- Source of employment and opportunity to improve local infrastructure.

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The Company will need to work closely with local stakeholders including land owners to reduce the Project's impact and ensure the Project provides long-term benefits to the local area. This is particularly relevant to Sámi reindeer herding communities, with collaboration required to ensure access to pastureland and migration routes. For example, through ongoing discussions subsequent to submitting an exploitation concession application for Stekkenjokk-Levi, the Company adjusted the previous operational plan in collaboration with the Sámi community to ensure both land users can work in tandem. The Company is committed to continued engagement with all key stakeholders and in cooperation with the authorities.

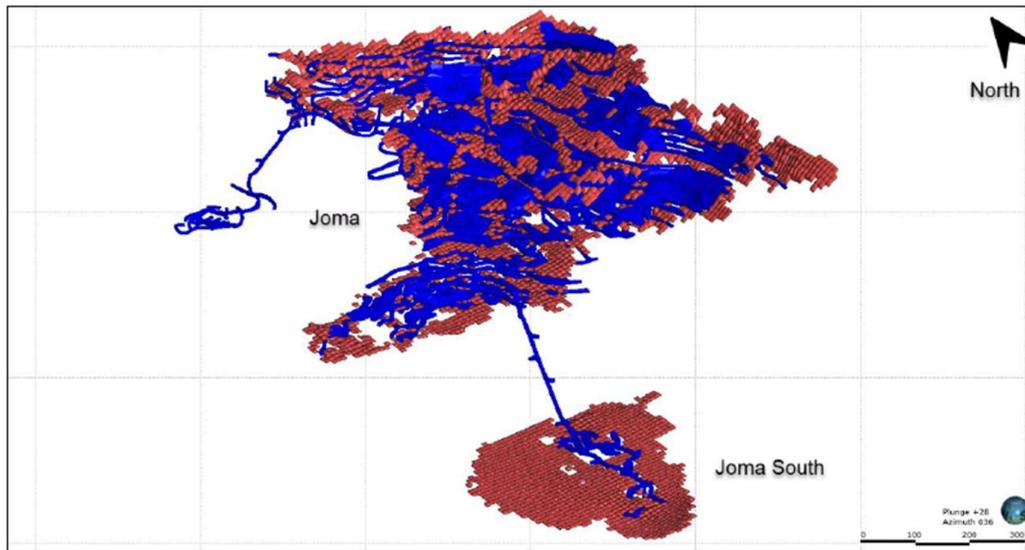
The PEA outlined a number of options to reduce the impacts of the Project on the environment that will be explored further in future technical studies. This includes the use of electric vehicles, conveyor systems and the use of existing already modified brownfield sites.

## The Joma Deposit

### Overview

The Joma deposit is a brownfields project with Cu-Zn mineralisation of Caledonian volcanogenic massive sulfide (“VMS”) style. The individual lenses vary greatly in thickness and length with the massive zone attaining a maximum thickness of about 50 m. The orebody forms a folded, plate-like body that dips steeply to the west-southwest from the surface and flattens out at depth. This project was a historical underground mine in production during the period 1972 to 1998 with approximately 11 Mt of processed ore (Grong Gruber AS). Residual and unmined zones of this deposit have been the topic of previous historical resource estimates.

SRK ran a mineable stope optimiser (“MSO”) using the minimum stope dimensions of 10m x 10m x 3m in order to define potential realistic mining targets to be generated. The resultant MSO shapes were used to constrain the reporting of the Mineral Resource. Furthermore, SRK notes that the majority of the defined MSO shapes occur within 50m of the depletion survey for the mine as shown in Figure 10, other than at Joma South.



**Figure 10: North-east view of the MSO shapes (red) in relation to the depletion survey (blue). The MSO shapes have been used to constrain the reporting of the Mineral Resources**

The Mineral Resource Estimate (“MRE”) for the Joma deposit, used as a basis for the PEA, is presented in Table 5. The MRE is reported and classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) and NI43-101 Standards of Disclosure for Mineral Projects (May 2016).

**Table 5: SRK December 2021 Mineral Resource statement for the Joma Project\***

Deposit	Classification	Tonnes (Mt)	Cu %	Zn %	NSR (USD/t <sub>ROM</sub> )	Cu tonnes (kt)	Zn tonnes (kt)
Joma	Measured	-	-	-	-	-	-
	Indicated	6.0	1.00	1.66	95.95	60.0	99.6
	Inferred	0.3	0.9	1.4	81.3	3	4
Joma South	Measured	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-
	Inferred	0.9	1.3	0.5	102.2	12	5
<b>Total Indicated Mineral Resource</b>		<b>6.0</b>	<b>1.00</b>	<b>1.66</b>	<b>95.95</b>	<b>60.0</b>	<b>99.6</b>
<b>Total Inferred Mineral Resource</b>		<b>1.2</b>	<b>1.2</b>	<b>0.7</b>	<b>97.0</b>	<b>15</b>	<b>9</b>

\*In reporting the Mineral Resource Statements, SRK notes the following:

- Mineral Resources have an effective date of 09 December 2021 and have been depleted to reflect the current understanding of the mining completed up to the date of the mine closure (1998). The depletion is based on the digitised development plans, as held by the mine at the time of closure. The digitisation exercise was completed by the Company.
- The Qualified Person for the declaration of Mineral Resources is Dr Lucy Roberts, MAusIMM(CP), of SRK Consulting (UK) Ltd. The MRE was authored by a team of consultants from SRK.
- Three primary lenses of mineralisation were interpreted and modelled, alongside nine smaller lenses. The majority of the smaller lenses are interpreted to be separate to the larger mineralisation volumes. The larger lenses are interpreted to coalesce and bifurcate. For reporting the Mineral Resource, SRK has combined all of the modelled domains across the entire deposit.
- Mineral Resources are reported as in-situ and undiluted. The Mineral Resources are reported within mineable stope optimiser shapes, generated using a net smelter return of USD 50/t<sub>ore</sub>, with a minimum stope shape of 10mX x 10mY x 3mZ using a Cu and Zn price of USD 9,100/t and USD 2,800/t respectively and include royalty reductions. The recoveries used in the net smelter return calculations were based on the historical performance of the Joma plant being:
  - For the Cu concentrate: Cu recovery 87%, Zn recovery 5%, for an average Copper concentrate grade of 24%Cu; and
  - For the Zn concentrate: Zn recovery 76% for an average Zinc concentrate grade of 52%Zn.
- Assumed operating costs include:
  - Mining at USD31.8/t<sub>RoM</sub>
  - Processing cost of USD14.5/t<sub>RoM</sub>
  - Copper Concentrate transport charges of USD40.5/t<sub>conc</sub> and treatment charges of USD80/t<sub>conc</sub>
  - Zinc Concentrate transport charges of USD20.2/t<sub>conc</sub> and treatment charges of USD140/t<sub>conc</sub>
  - Metal Payability of 95.8 % (copper) and 84.6% (zinc)
  - Refining Charges of USD0.08/lb payable copper,
  - G&A cost of USD3.5/t<sub>RoM</sub>
- Given these parameters and the results of the MSO assessment, SRK considers there to be reasonable prospects for eventual economic extraction, and as such, fulfil the requirements for reporting a Mineral Resource.
- Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability, nor have any mining modifying factors been applied.
- In order to verify the historical data, SRK has reviewed the digital database, reviewed a re-sampling programme of historical core, reviewed core photographs, and has reviewed the available quality control and quality assurance data from the 2021 re-sampling. SRK is unaware of any issues at Joma which could materially affect the reporting of Mineral Resources by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors.
- Tonnages are reported in metric units, with metal grades in percent (%). Tonnages and grades are rounded appropriately. Rounding, as required by reporting guidelines, may result in apparent summation differences between tonnes, grade and contained metal content. Where these occur, SRK does not consider these to be material.

## Permitting

The Company holds nine mineral permits in the Joma region, including six permits overlying the Joma deposit, and three covering separate deposits. The Joma mine and plant areas are covered by 'extraction' permits (Norwegian: *Utvinningsrett*) that were approved in April 2021 for an indefinite period of time.

For environmental approval, the Company recently finalised an ESIA, which is currently under review by the authorities (Røyrvik municipality) to gain zoning plan approval (under the Planning and Building Act 2008). Prior to commencing operation, the Company must also gain approval through a discharge/emissions permit (under the Pollution Control Act 1981), operating permit (under the Minerals Act 2009) and building permit (under the Planning and Building Act 2008).

### **Mining**

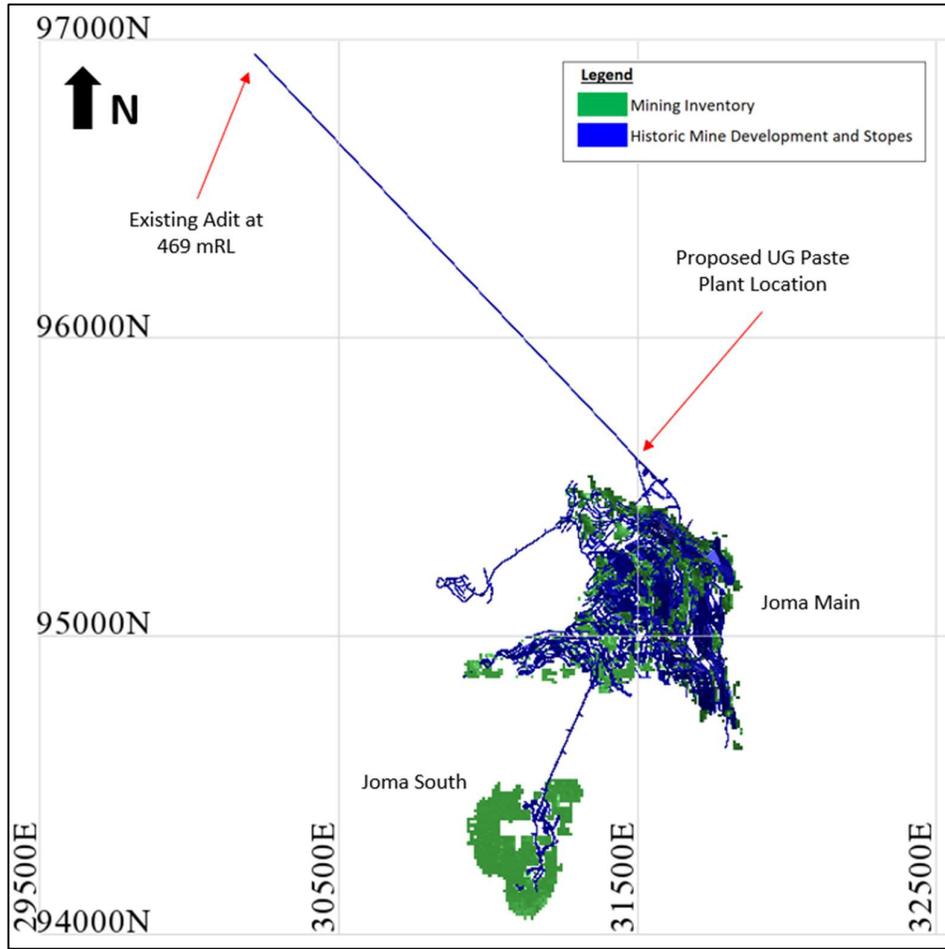
The mining inventory for Joma was estimated using a similar approach as for mineral resources. NSR values were estimated into the block model using lower consensus market forecast (“CMF”) prices of 7,000 USD/t for copper and 2,150 USD/t for zinc. Minimum MSO stope shapes of 10mX x 10mY x 3mZ were used as a mining target with an NSR cut-off of 50 USD/t<sub>ROM</sub>. The mining inventory totals 3.6 Mt with the following mining methods and modifying factors applied:

- Room & Pillar method (85% of mining inventory) with no additional external dilution and 35% losses.
- Longhole mining of crown pillar (15% of mineral inventory) at the end of the mine life with 5% dilution and 5% losses.

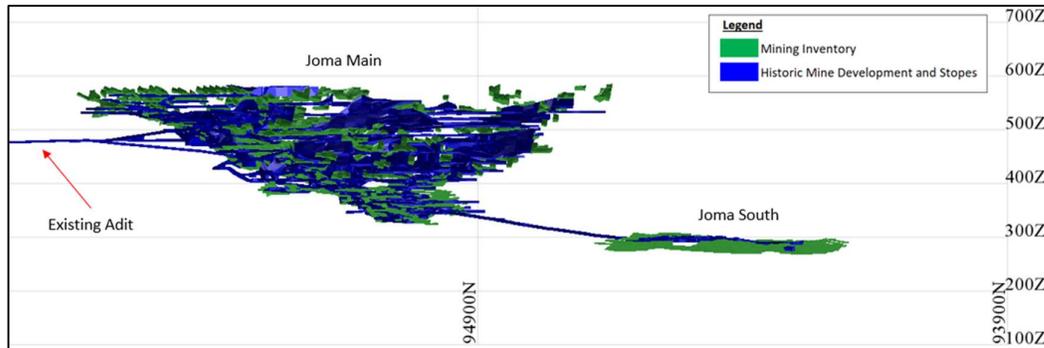
Figure 11 and Figure 12 provide respective plan and long views of the mining inventory (green) and historical mine development which will need to be rehabilitated to restart mining. The historical mine is currently flooded with a bulkhead blocking the entrance of the existing adit at the 480 mRL and a staged dewatering program is required during the preproduction period.

The mine plan for Joma considers storage underground of all future tailings from the process facilities as a paste backfill in the historic (and future) mining voids. This also includes future ore processed from the Stekenjokk-Levi deposit at the Joma process facility.

Materials handling at Joma considers truck haulage to surface with tailings sent back underground as slurry to an underground paste plant. Paste backfill will be moved to stopes with a combination of reticulation piping and agitator trucks as required.



**Figure 11: Plan view of the Joma Mining Inventory and historical mine development and stopes**

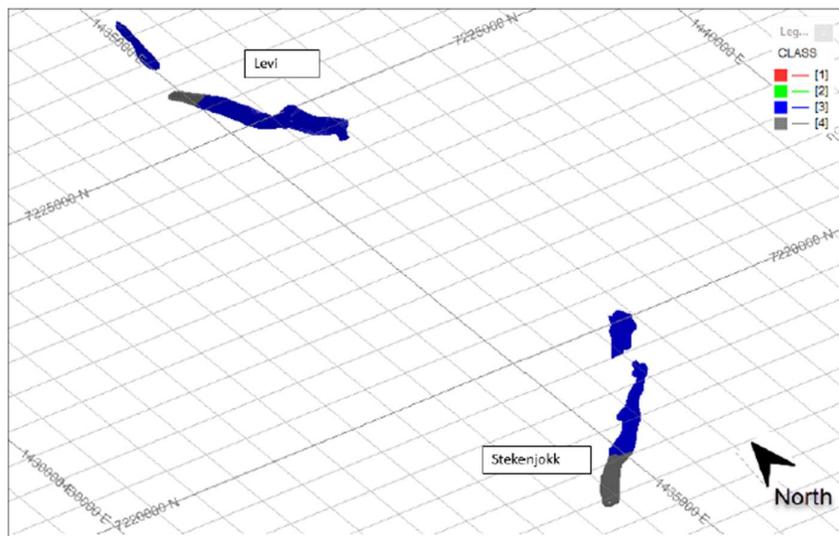


**Figure 12: Long view of the Joma Mining Inventory and historical mine development and stopes, looking northeast**

## The Stekenjokk-Levi Deposit

### Overview

The Stekenjokk-Levi deposit (Figure 13) is a brownfields project with Zn-Cu-Pb-Ag-Au mineralisation of Caledonian VMS style. This project was a historical underground mine in production during the period 1976 to 1988 with approximately 7 Mt of processed ore (Boliden). The ore is typically shallow dipping to flat with thickness between 2 and 20 m. All mining took place underground as cut-and-fill mining using the coarse fraction of the flotation tailings as back-fill material with high percentage ore recovery achieved. Flatter areas used the room and pillar method with the coarse tailings backfill as a working floor in thicker areas. Unmined zones of this deposit have been the topic of previous historical resource estimates.



**Figure 13: View of the Resource block model for the Stekenjokk-Levi deposit coloured by Classification, blue = Inferred material**

The MRE for the Stekenjokk-Levi deposit, used as a basis for the PEA, is presented in Table 6. The MRE is reported and classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) and NI 43-101 Standards of Disclosure for Mineral Projects (May 2016).

**Table 6: SRK Mineral Resource Statement for the Stekenjokk Project, Sweden, as of 23 November 2021\***

Area	Classification	Tonnes (Mt)	Cu %	Zn %	Pb %	Ag g/t	Au g/t	NSR (USD/t ore)	Contained Metal: Cu (kt)	Contained Metal: Zn (kt)	Contained Metal: Pb (kt)	Contained Metal: Ag (koz)	Contained Metal: Au (koz)
Stekenjokk	Measured Mineral Resources	-	-	-	-	-	-	-	-	-	-	-	-
	Indicated Mineral Resources	-	-	-	-	-	-	-	-	-	-	-	-
	Inferred Mineral Resources	6.7	0.9	2.7	0.6	55	0.2	128	60	181	40	11,763	43
Levi	Measured Mineral Resources	-	-	-	-	-	-	-	-	-	-	-	-
	Indicated Mineral Resources	-	-	-	-	-	-	-	-	-	-	-	-
	Inferred Mineral Resources	5.1	1	1.5	0.1	22	0.2	105	51	77	5	3,640	33

\*In reporting the Mineral Resource Statements, SRK notes the following:

- Mineral Resources have an effective date of 19 November 2021.
- Qualified Person for the declaration of Mineral Resources is Dr Lucy Roberts, MAusIMM(CP), of SRK Consulting (UK) Ltd. The MRE was authored by a team of consultants from SRK.
- Four primary lenses of mineralisation were interpreted and modelled, alongside two smaller lenses. The two smaller lenses are interpreted as internal high-grade domains in the larger lenses and are associated with elevated Cu and Zn grades. For reporting the Mineral Resource, SRK has combined all of the modelled domains across the entire deposit
- Mineral Resources are reported in situ and undiluted. It is assumed that all mineralised material will be transported 75 km to the future Joma process facilities in Norway. The Mineral Resources are reported within mineable shapes, generated using a net smelter return of 60 USD/t ROM, with a minimum mining width of 2m where the dip of the mineralisation is in excess of 40° and a minimum mining width of 3m where the dip of the mineralisation is less than 40°. The Cu, Zn, Pb, Ag and Au prices used in the NSR calculation were of 9,100 USD/t, 2,800 USD/t, 2,400 USD/t, 2,600USD/t, 25/oz and 1,790/oz respectively and include royalty reductions. Given these parameters, SRK considers there to be reasonable prospects for eventual economic extraction, and as such, fulfil the requirements for reporting a Mineral Resource.
- Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability, nor have any mining modifying factors been applied.
- SRK is unaware of any issues at Stekenjokk-Levi which could materially affect the reporting of Mineral Resources by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors
- Tonnages are reported in metric units, with metal grades in percent (%) and grams per tonne (g/t). Tonnages and grades are rounded appropriately. Rounding, as required by reporting guidelines, may result in apparent summation differences between tonnes, grade and contained metal content. Where these occur, SRK does not consider these to be material.

## Permitting

The Stekenjokk-Levi deposit is currently covered by two exploration licences. Applications for exploitation concessions were submitted to the authorities in 2019 and currently under review. Although the Jämtland County Administrative Board (“**CAB**”) agreed to authorising the Stekenjokk K nr 1 permit, the Västerbotten CAB requested the Company to conduct more detailed environmental studies into the impact of the potential mine on the Natura 2000 protected area of Vardo-, Laster- och Fjällfjällen surrounding the Levi K Nr 1 permit area. This study was completed in 2021 and submitted to the authorities for review.

In addition to the exploitation concession, mining activities require an environmental permit (under the Swedish Environmental Code, 2000). For this environmental approval, the Company is required to undertake a more detailed ESIA, which will be reviewed by Swedish Environmental Protection Agency in conjunction with the Västerbotten/Jämtland CAB. In addition, a building permit (under the Planning and Building Act 2010) and land designation (under the Minerals Act, 1991) are required.

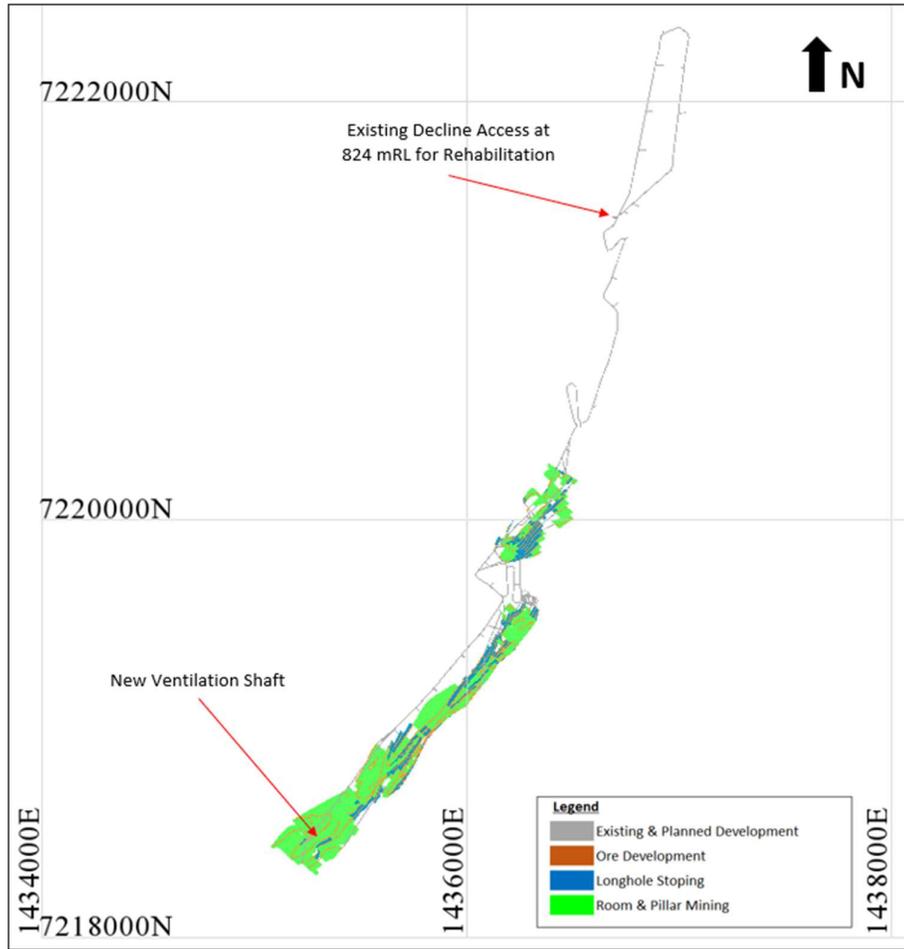
## **Mining**

The Stekenjokk-Levi deposit is separated into two mines with shared surface infrastructure. All future ore from the Stekenjokk and Levi mines will be transported from Sweden 60 km to the Joma process facilities in Norway. All tailings from the processing of Stekenjokk-Levi will be stored underground as a paste backfill in the substantial historic voids at the Joma mine.

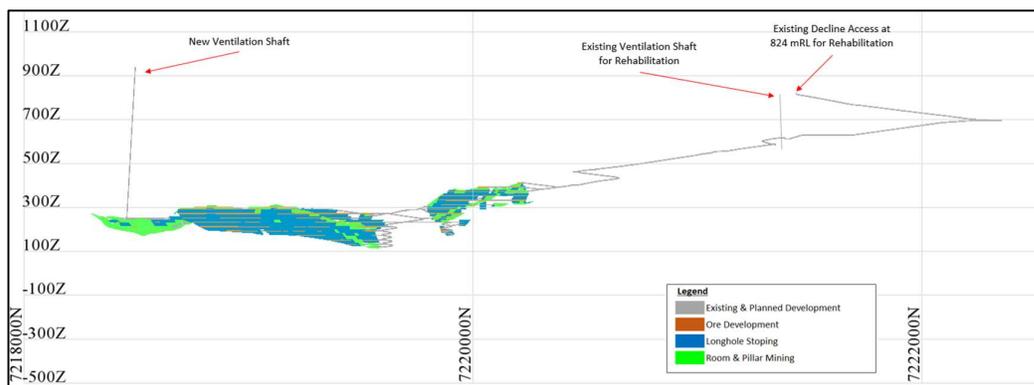
The mining inventory for both the Stekenjokk and Levi mines were estimated using a similar approach as for the mineral resources. NSR values were estimated into the block model using lower CMF prices of 7,000 USD/t for copper, 2,150 USD/t for zinc, 1,850 USD/t for lead, 1,380 USD/oz for gold and 19.3 USD/oz for silver. Mineable shapes were defined using a minimum mining width of 2 m where the dip of the mineralisation is in excess of 40° and a minimum mining width of 3 m where the dip of the mineralisation is less than of 40° with an NSR cut-off of 60 USD/tROM.

The mining inventory for Stekenjokk totals 5.4 Mt with a combination of R&P and longhole open stoping mining methods applied with modifying factors of 5% dilution and 15% losses.

Figure 14 and Figure 15 provide respective plan and long views of the mining inventory by method as well as existing development that will need to be rehabilitated to restart mining and future planned development. The historical Stekenjokk mine is currently flooded and a staged dewatering program is required during the preproduction period. Materials handling at Stekenjokk considers truck haulage to surface prior to contract transportation to the Joma process facilities.



**Figure 14: Plan view of the Stekenjokk Mining Inventory by mining method and existing and planned development**



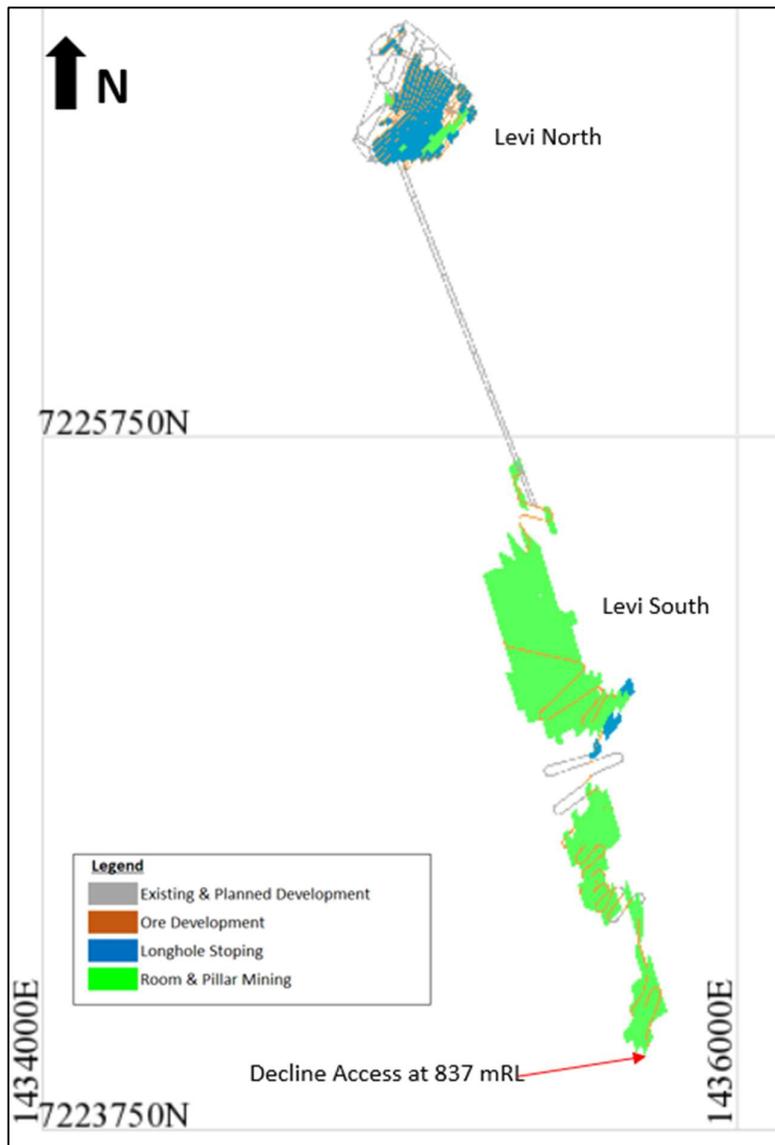
**Figure 15: Long view of the Stekenjokk Mining Inventory by mining method and existing and planned development, looking northwest**

# BLUELAKE MINERAL

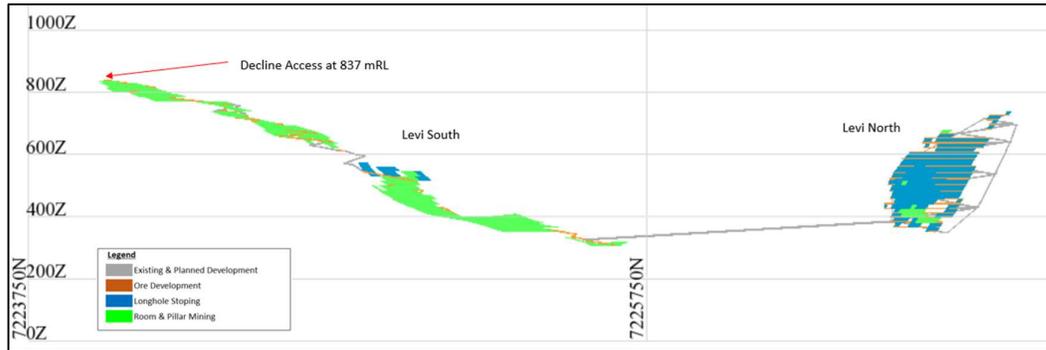
The mining inventory for Levi totals 2.3 Mt (57% tonnes from Levi South and 43% tonnes from Levi North) with the following mining methods and modifying factors applied:

- Room & Pillar method (67% of mining inventory) with no additional external dilution and 35% losses.
- Longhole open stoping (32% of mining inventory) with 5% dilution and 15% losses.

Figure 16 and Figure 17 provide respective plan and long views of the mining inventory by method as well as the future planned development through decline access at Levi South. Materials handling at Levi considers truck haulage to surface prior to contract transportation to the Joma process facilities.



**Figure 16: Plan view of the Levi Mining Inventory by mining method and existing and planned development**



**Figure 17: Long view of the Levi Mining Inventory by mining method and existing and planned development, looking southwest**

## Mining Inventory and Schedule

The PEA mining inventory is provided in Table 7 showing the contribution of ROM tonnes and grades from the individual mines of Joma, Stekenjokk and Levi.

**Table 7: Mining Inventory for the Joma, Stekenjokk and Levi mines**

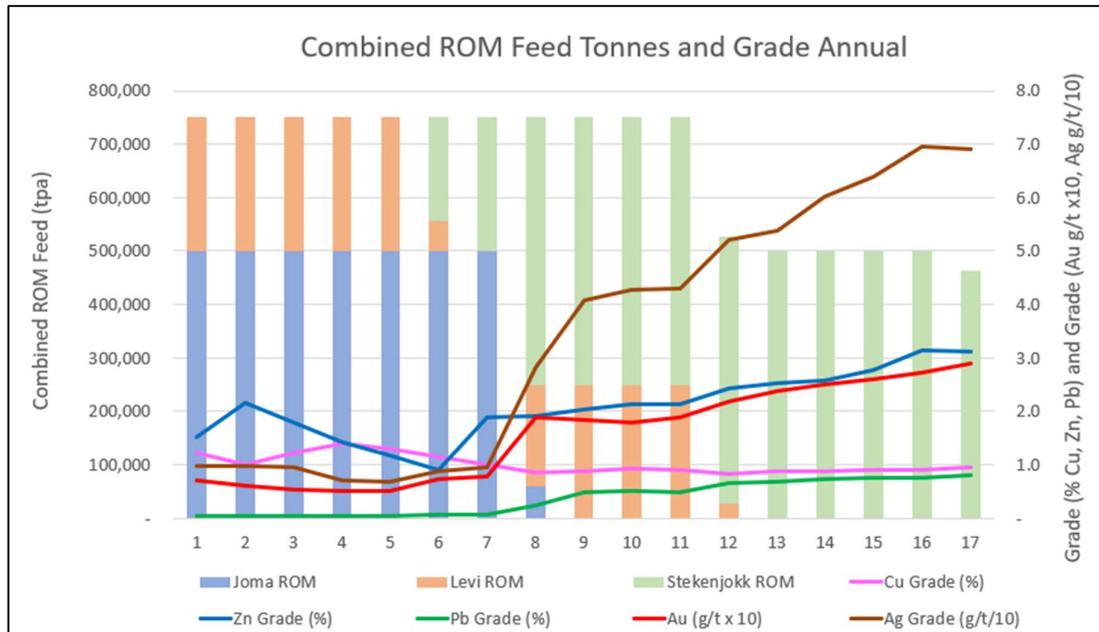
Mine Inventory	Units	Total	Joma ROM	Stekenjokk ROM	Levi ROM
Mine Feed	t	<b>11,240,031</b>	3,558,695	5,407,789	2,273,548
Grade					
Cu	%	<b>1.03</b>	1.20	0.87	1.15
Zn	%	<b>2.00</b>	1.37	2.60	1.58
Pb	%	<b>0.33</b>	-	0.64	0.11
Au	g/t	<b>0.15</b>	-	0.23	0.17
Ag	g/t	<b>30.76</b>	-	53.96	23.72
Metal Content					
Cu	t	<b>115,530</b>	42,549	46,851	26,131
Zn	t	<b>225,096</b>	48,713	140,486	35,897
Pb	t	<b>37,048</b>	-	34,456	2,592
Au	g	<b>1,642,983</b>	-	1,257,009	385,973
Ag	g	<b>345,733,991</b>	-	291,800,306	53,933,684

The combined mining schedule for the Project is shown in Figure 18 considers the following:

- Mine production at Stekenjokk-Levi is only considered during winter months only (6 months a year) due to the limitation of the exploitation concession. Mine production at Joma is considered over the full year in the PEA.
- Overall combined target production of 750 ktpa from Year 1 of production, sourced from Joma (500 ktpa) and Levi South (250 ktpa).

# BLUE LAKE MINERAL

- Production from Stekenjokk commences from Year 6 when the Levi South mining inventory is exhausted at a rate of up to 500 ktpa.
- Production from Levi North commences from Year 8 when the Joma mining inventory is exhausted at a rate of up to 250 ktpa.
- The overall combined target production rate reduces from 750 ktpa down to 500 ktpa after Year 11 when the Levi North mining inventory is exhausted.
- Mining is completed in Year 17 when the Stekenjokk mining inventory is exhausted.



**Figure 18: Annual combined mining schedule**

Table 8 provides a summary of the main development and rehabilitation milestones to be achieved prior to and during production for the Joma, Stekenjokk and Levi mines. The mine plan also includes a provision to commence dewatering of the Joma mine from Year -2 and dewatering of the Stekenjokk mine from Year 4.

**Table 8: Development and Rehabilitation milestones for the Joma, Stekenjokk and Levi mines**

Development by Mine	Units	Quantity	Profile	Start	Complete
<b>Joma Mine</b>					
Rehabilitate Adit	m	2,074	5mWx5mH	start Year -1	end Year -1
Rehabilitate Decline	m	1,383	5mWx5mH	start Year 2	end Year 4
Shaft Excavation	m	357	4.0m dia	start Year 5	end Year 5
South Access Development	m	330	5mWx5mH	start Year 4	end Year 4
<b>Stekenjokk Mine</b>					
Decline Rehabilitation	m	3,798	5mWx5mH	start Year 4	end Year 4
Shaft Rehabilitation	m	280	4.0m dia	start Year 4	end Year 5
Diamond Drill Drive Stripping	m	2,575	5mWx5mH	start Year 4	end Year 5
Shaft Excavation	m	695	4.0m dia	start Year 5	end Year 5
<b>Levi South</b>					
Portal Box Cut				start Year -1	end Year -1
Vent Adit 1				start Year -1	end Year -1
Vent Adit 2				start Year -1	end Year -1
<b>Levi North</b>					
Connection Drive from Levi South	m	1,090	5mWx5mH	start Year 8	end Year 8
Return Vent Drive	m	930	5mWx5mH	start Year 8	end Year 8

## Mineral Processing

The PEA assumes that a single beneficiation plant will be built on the site of the previous Joma concentrator with a capacity of 750 ktpa. Due to differing head grades and historical metallurgical responses, the ores from Joma, Stekenjokk and Levi will be processed in individual campaigns.

The flowsheet will consist of crushing and grinding ahead of flotation to produce separate concentrates. Joma ore will produce copper and zinc concentrates, and Stekenjokk and Levi will produce copper, zinc and lead concentrates. Precious metals (gold and silver) will report to the different concentrates according to their specific metallurgical responses.

Concentrate grades and metal recoveries used in the PEA are shown in the Table 9 below which are based on historical production performance.

**Table 9: Processing recoveries and concentrate grades**

Mineral Processing	Units	Joma ROM	Stekenjokk ROM	Levi ROM
<b>Copper Concentrate</b>				
Process Recoveries				
Cu	%	87%	90%	90%
Zn	%	5%	5%	5%
Au	%	29%	32%	32%
Ag	%	38%	25%	25%
Concentrate Grade	% Cu	24%	23%	23%
<b>Zinc Concentrate</b>				
Process Recoveries				
Zn	%	76%	75%	75%
Concentrate Grade	% Zn	52%	53%	53%
<b>Lead Concentrate</b>				
Process Recoveries				
Pb	%		70%	70%
Concentrate Grade	% Pb		60%	60%
<b>Precious Metals</b>				
Au	%	40%	40%	40%
Ag	%	31%	31%	31%
Dore Precious Metal Grade	%	90%	90%	90%
<b>Total Metal Recovery</b>				
Cu	%	87%	90%	90%
Zn	%	81%	80%	80%
Pb	%	0%	70%	70%
Au	%	69%	72%	72%
Ag	%	69%	56%	56%

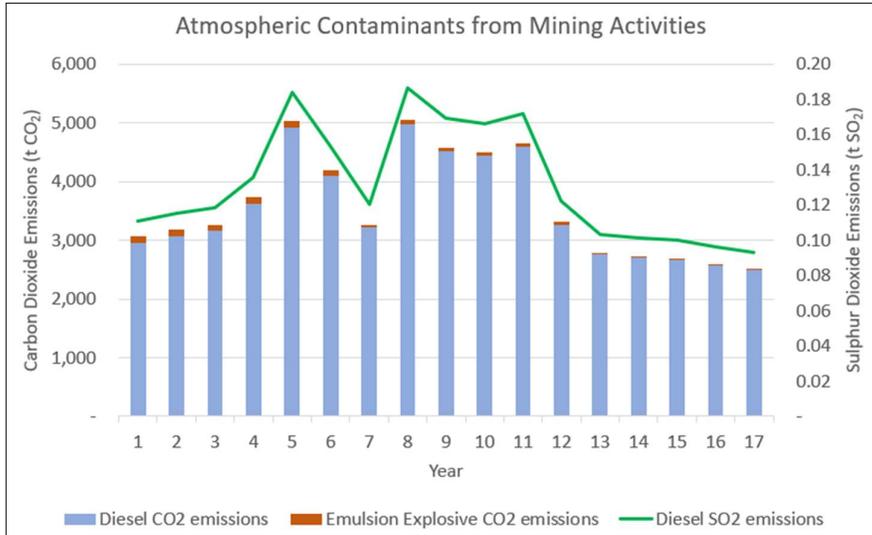
## Green Case Assessment

An additional concept-level 'Green Case' has been assessed to understand the early-stage potential for a fully electric mine utilising developing battery-electric technologies for underground loaders and trucks. The main atmospheric contaminants from underground mining are emissions from diesel-powered equipment, primarily loaders and trucks. Table 10 provides a summary estimate of the LoM diesel fuel and lubricant usage for each mine.

**Table 10: Summary of diesel fuel and lubricant usage over LoM**

<b>Diesel Fuel Usage</b>			
Joma Mine	M.Litres		7.1
Stekenjokk Mine	M.Litres		14.1
Levi Mine	M.Litres		5.8
<b>Total</b>	<b>M.Litres</b>		<b>27.0</b>
	<b>t</b>		<b>22,490</b>
<b>Lubricant Usage</b>			
Joma Mine	kL		534
Stekenjokk Mine	kL		709
Levi Mine	kL		341
<b>Total</b>	<b>kL</b>		<b>1,584</b>

Figure 18 shows a high-level estimate of the carbon dioxide and sulphur dioxide emissions from the diesel equipment and emulsion explosive usage over the PEA mine plan for Joma and Stekenjokk-Levi.



**Figure 18: Atmospheric Contaminants from Mining Activities**

Table 11 provides a comparison of the concept-level capital and operating costs which indicates higher capital costs for the electric mine approach but opportunities for a lower operating cost over the LoM.

**Table 11: Green Case – LoM Capital and Operating Cost comparison**

			LOM CAPEX	LOM OPEX	TOTAL (CAPEX+OPEX)
<b>Diesel Mine</b>					
	Joma Mine	MUSD	14.7	29.5	44.2
	Stekenjokk Mine	MUSD	32.0	39.3	89.5
	Levi Mine	MUSD		18.2	
	<b>Total</b>	<b>MUSD</b>	<b>46.7</b>	<b>87.0</b>	<b>133.7</b>
<b>Electric Mine</b>					
	Joma Mine	MUSD	17.0	31.9	48.8
	Stekenjokk Mine	MUSD	37.8	22.2	79.3
	Levi Mine	MUSD		19.4	
	<b>Total</b>	<b>MUSD</b>	<b>54.7</b>	<b>73.4</b>	<b>128.1</b>

The results from the Green Case Assessment provide an early indication of the potential for reducing atmospheric contaminants in the mine plan for Joma and Stekenjokk-Levi and the indicative costs. It is recommended that future more detailed planning is undertaken with consultation with equipment suppliers to understand the requirements (and costs) of reducing diesel-powered mobile equipment and practically implementing developing battery-electric and trolley assist technologies at the individual mines.

## Future Work

Based on the results of this PEA, the Company intends to advance the consolidated Joma and Stekenjokk-Levi projects to the confidence level of a PFS while continuing its ongoing permitting and stakeholder engagement activities at both projects. The PFS will require further mining technical studies and in parallel detailed ESIA studies for final permitting approval. The key aspects of the future work program include:

1. Update the Mineral Resource Estimates to convert a strategic amount of the current inferred resource to Indicated confidence level for the PFS.
  - a) To include a drilling program and drill core re-logging.
  - b) Drill program to include data collection for the PFS including geotechnical, hydrogeology and metallurgical test work samples.
2. PFS to increase confidence levels in mine planning, ore processing, costs, and to include;
  - a) Process testwork on representative samples to identify opportunities to improve process recoveries. This also extends to ore sorting to reduce material transport costs from Stekenjokk-Levi to Joma.
  - b) Geochemical investigation, analysis and modelling to estimate dewatering water quality and treatment requirements prior to discharge.
  - c) Identify engineering solutions and complete trade-off studies to reduce reliance on fossil fuels and the carbon footprint of the project considering opportunities for electrification of the equipment fleet through battery-electric and trolley assist technologies.
3. ESIA Studies to advance during the PFS technical studies;
  - a) Baseline environmental and social studies
  - b) Impact assessment of the project to include closure plan

The PFS and supporting investigation and technical work will be used as a basis for future permitting applications that must be obtained after the zoning plan has been adopted:

- Operating license from the Directorate for Mineral Management.
- Emission permit from the Norwegian Environment Agency.
- Building application (framework application and IG) from Røyrvik municipality.

The PEA will be used as a basis for detailed project planning and estimating the cost of future studies (including the ESIA) and permitting for the Project.

### **Stakeholder Engagement**

The Company continues to work in partnership with the local authorities and understands the importance of strong local support and partnerships with all stakeholders. The Company will use the PEA as a communication tool to continue dialogue with project-affected people, particularly Sámi representatives.

The Project is expected to provide approximately 200 jobs during the life of mine operation with a significant socio-economic impact on the region expected.

### **Independent Qualified Person**

The PEA was prepared by SRK for Joma Gruver AS (part of the Bluelake Mineral Group), managed by Mr Chris Bray (MAusIMM(CP) who is a Qualified Persons (“QP”) as defined in CIM Definition Standards. The Mineral Resources used as a basis for the PEA were the responsibility of Dr Lucy Roberts MAusIMM(CP) of SRK who is defined as a QP under the CIM definition standards.

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Stockholm, May 2022

**Bluelake Mineral AB (publ)**

*The Board of Directors*

### **Publication of information**

This information is inside information which Bluelake Mineral AB (publ) is required to publish in accordance with the EU Market Abuse Regulation. The information was submitted, for publication on May 5, 2022, at 8.50 am CET, by the contact person below.

### **Additional information**

For additional information, please contact:

Peter Hjorth, CEO, Bluelake Mineral AB (public), phone +46-725 38 25 25

Email: [info@bluelakemineral.com](mailto:info@bluelakemineral.com)

## **General information about the Company**

*Bluelake Mineral AB (pull) is an independent Swedish company active in exploration and mine development of copper, zinc, nickel and gold resources.*

*The Company owns approximately 99% of the subsidiary Vilhelmina Mineral AB, which is focusing on development of copper and zinc deposits in the Nordic region. In Sweden, the Company owns Stekenjokk-Levi project, where a total of approximately 7 million tonnes of ore were mined between 1976 and 1988 with an average grade 1.5% Cu and 3.5% Zn. Stekenjokk-Levi is, according to a recent Mineral Resource Estimate by SRK Consulting, containing inferred mineral resources of approximately 6.7 million tonnes with 0.9 % Cu, 2.7 % Zn, 0.6 % Pb, 55 Ag g/t and 0.2 g/t Au for Stekenjokk and inferred mineral resources of 5.1 million tonnes with 1.0 % Cu, 1.5 % Zn, 0.1 % Pb, 22 Ag g/t and 0.2 g/t Au for Levi (at a NSR cut-off of 60 USD/t). In Norway, the Company is owner in the Joma field, where approximately 11.5 million tonnes of ore were processed between 1972 and 1998 with an average grade of 1.5% Cu and 1.5% Zn. The Joma field (excluding Gjersvik) is, according to a recent mineral estimate by SRK Consulting, containing indicated mineral resources of approximately 6 million tonnes with grades amounting to 1.00 % Cu and 1.66 % Zn and inferred resources of 1.2 million tonnes with grades 1.2 % Cu and 0.7 % Zn (at cut-off of 50 USD/t).*

*In addition, the Company owns the nickel projects Rönnbäcken (which is Europe's largest known undeveloped nickel resource) and Orrbäcken in Sweden. According to a recently updated mineral resource update in by the mining consulting company SRK, the Rönnbäcken project contains a mineral resource of 600 million tonnes with an average grade of 0.18% Ni, 0.003% Co and 5.7% Fe ("measured and indicated"). The updated preliminary economic assessment that SRK completed predicts a production of 23,000 tonnes of nickel, 660 tonnes of cobalt and 1.5 million tonnes of iron per year for 20 years, which would be a significant proportion of Sweden's total annual use of nickel which thereby has a strategic value. Orrbäcken is an exploration license that is considered to have potential as a nickel deposit.*

*The Company owns the gold project Haveri, through its subsidiary Palmex Mining Oy, which in 2014 carried out a so-called Preliminary Economic Assessment (PEA) prepared by SRK Consulting. This report estimates 1.56 million oz. historically inferred mineral resource of gold equivalents with a grade of 0.93 g/t gold.) Kattisavan is mainly considered to have potential as a gold resource and is located within the so-called gold line, close to projects such as Svartliden, Fäboliden and Barsele.*