

LUCA REPORTS SUCCESSFUL METALLURGICAL TEST WORK FOR NEW COPPER CONCENTRATE AT CAMPO MORADO

Vancouver, British Columbia, May 02, 2024

Luca Mining Corp. (“Luca” or the “Company”) (TSX-V: LUCA; OTCQX: LUCMF; Frankfurt: Z68) is pleased to report that the metallurgical test work on the copper-lead separation process at Campo Morado has been successfully completed. The test work was primarily carried out by ALS-Kamloops and in parallel with Luca’s onsite lab. Currently, two concentrates are produced, namely, zinc and a bulk concentrate (made up of copper-lead-gold and silver). The result from the metallurgical testing provides confirmation to move forward with the Company’s objective to produce three separate, higher value concentrates: copper (with precious metals), zinc and lead.

The Company has established a successful track record of identifying, testing, and implementing ongoing improvements at Campo Morado:

- The ALS test work has provided a pathway to a copper-lead separation process that can be implemented at Campo Morado by re-configuring existing plant equipment.
- Open circuit, bulk rougher results returned copper recovery of between 80 and 93%.
- Testing indicates that copper grades as high as 28% Cu are achievable compared to current grades of 15-18% Cu in the bulk concentrate.
- The separation results in the lab have been positive with improved grades of gold and silver in the copper concentrate. The work has shown that there is additional upside, and development of a new flowsheet and reagent optimization program has already begun.

Ramon Perez, President, and interim CEO, commented, *“A key milestone we have stated for Luca is to increase cash flow at Campo Morado by producing three high-quality concentrates of copper, zinc, and lead, instead of two concentrates (zinc and a bulk concentrate). Given the results from ALS, we are moving forward to implement the copper-lead separation process and are on track to deliver results in 2H 2024. We are also pleased with the potential of improved grades of gold and silver into the concentrate.”*

Copper-Lead Separation

The copper concentration test work was conducted at ALS, utilizing parent samples sourced from each ore body in the production plan. A composite blend was formulated from these parent composites. The tests conducted were bench-scale open circuit flotation tests. A flowsheet was developed utilizing the pre-flotation and bulk roughing circuits in operation in the Campo Morado plant.

Understanding the mineralogy and the mineral associations has been a critical part of the test work to date. The test work results have guided modifications to the plant, identifying grinding target size and predicting flotation performance. Campo Morado already has sufficient installed grinding capacity that will be utilized to meet target throughput and adequate liberation of copper and lead minerals to achieve the objective of producing three salable concentrates of copper, zinc, and lead concentrates in H2 2024.

Open circuit, bulk rougher results returned copper recovery of between 80 and 93%. The testing indicates improvements to overall recovery and concentrate grades as high as 28% Cu are achievable.

Precious Metal Recovery

The test work has shown that gold and silver behave similar to galena and chalcopyrite in the flotation process with preferential recovery to the copper and lead concentrates. Gold recovery of between 35% and 65% was achieved in open circuit copper rougher circuit testing, depending on ore body mineralogy. The key conclusion is that increasing copper and lead recovery will increase the recovery of gold and silver.

Campo Morado Optimization Plan

In conjunction with Ausenco, formally kicked-off the optimization project, internally called the Campo Morado Improvement Project (CMIP). The CMIP incorporated opportunities identified between the mine and mill. Mine planning, modelling, ore blending, metallurgy, reagent dosing and modernization were all incorporated into the CMIP. The metallurgy program with the external lab (ALS) provided a training opportunity for site metallurgists while at the same time confirming the expected benefits from the project and improving knowledge of the ore body. The metallurgical test work focused on future mining areas to improve both short-range and long-range planning and used to develop an integrated mine-to-mill production plan. In addition, new procedures for ore blending and optimized reagent dosing for improved recoveries were rolled out at site. For the past 6 months

equipment upgrades for the mine and mill have been implemented in phases and are ongoing. The result of these changes includes higher metallurgical recoveries and concentrate grades, particularly for copper in the bulk concentrate where recovery increased from less than 48% at the beginning of the year to over 70% by year end, a 69% increase during Q4 2023.

Investor Relations Agreement

The Company has entered into an agreement with Triomphe Holdings Ltd. (dba Capital Analytica) (“Capital Analytica”) for investor relations and communication services (the “Consulting Agreement”). The Consulting Agreement has an initial term of six months, commencing May 1, 2024, under which the Company will pay to Capital Analytica an aggregate of \$120,000 at a rate of \$20,000 per month, and has an option to renew the Consulting Agreement for an additional 6 months at a rate of \$10,000 per month, unless terminated earlier in accordance with the Consulting Agreement. The Company has granted Capital Analytica incentive stock options to purchase 200,000 common shares at an exercise price of \$.45 per share for a period of 2 years. The stock options will be subject to standard IR vesting provisions.

Pursuant to the terms of the Consulting Agreement, Capital Analytica will provide ongoing capital markets consultation, ongoing social media consultation regarding engagement and enhancement, social sentiment reporting, social engagement reporting, discussion forum monitoring and reporting, corporate video dissemination, and other related investor relations services.

Capital Analytica is a Nanaimo based company owned and operated by Jeff French who is arm’s length to the Company and holds no securities, directly or indirectly of the Company.

For more information, please visit: www.lucamining.com

On Behalf of the Board of Directors

(signed) “Ramon Perez”

Ramon Perez
President and Interim CEO

Qualified Persons

The technical information contained in this News Release has been reviewed and approved by Mr. Chris Richings, Vice-President Technical at Luca Mining as the Qualified Person for the Company as defined in National Instrument 43-101.

Cautionary Note Regarding Production Decisions and Forward-Looking Statements

It should be noted that Luca declared commercial production at Campo Morado prior to completing a feasibility study of mineral reserves demonstrating economic and technical viability. Accordingly, readers should be cautioned that Luca's production decision has been made without a comprehensive feasibility study of established reserves such that there is greater risk and uncertainty as to future economic results from the Campo Morado mine and a higher technical risk of failure than would be the case if a feasibility study were completed and relied upon to make a production decision. Luca has completed a preliminary economic assessment ("PEA") mining study on the Campo Morado mine that provides a conceptual life of mine plan and a preliminary economic analysis based on the previously identified mineral resources (see news releases dated November 8, 2017, and April 4, 2018).

Positive operating cash flow is defined as excluding capital, debt repayment and Trafigura financing.

Statements contained in this news release that are not historical facts are "forward-looking information" or "forward-looking statements" (collectively, "Forward-Looking Information") within the meaning of applicable Canadian securities laws. Forward Looking Information includes, but is not limited to, disclosure regarding the planned program to improve mining operations at Campo Morado; and other possible events, conditions or financial performance that are based on assumptions about future economic conditions and courses of action; the timing and costs of future activities on the Company's properties, such as production rates and increases; success of exploration, development and bulk sample processing activities, and timing for processing at its own mineral processing facility on the Tahuehueto project site. In certain cases, Forward-Looking Information can be identified using words and phrases such as "plans," "expects," "scheduled," "estimates," "forecasts," "intends," "anticipates" or variations of such words and phrases. In preparing the Forward-Looking Information in this news release, the Company has applied several material assumptions, including, but not limited to, that the current exploration, development, environmental and other objectives concerning the Campo Morado Mine and the Tahuehueto Project can be achieved; that the program to improve mining operations at Campo Morado will proceed as planned; the continuity of the price of gold and other metals, economic and political conditions, and operations. Forward-Looking Information involves known and unknown risks, uncertainties and other factors which may cause the actual results, performance, or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the Forward-Looking Information. There can be no assurance that Forward-Looking Information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on Forward-Looking Information. Except as required by law, the Company does not assume any obligation to release publicly any revisions to Forward-Looking Information contained in this news release to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

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