

Jameson Cell Technology Shows Promise in Improving Base and Precious Metals Recoveries at Luca's Campo Morado Mine

VANCOUVER, BRITISH COLUMBIA – 15th June 2023

Luca Mining Corporation (the "Company" or "Luca", formerly Altaley Mining Corporation) is pleased to provide the following update on metallurgical test work to improve precious metals recoveries at its Campo Morado Mine, located in the state of Guerrero, Mexico.

Highlights

- Pilot-scale testing of Jameson Cell technology at Campo Morado, operating at micro-fine grind levels, demonstrates the ability to significantly improve recoveries and concentrate grades across both copper and lead streams, together with moderate improvements in the zinc stream and potential reductions in operating costs.
- Historical testing demonstrated the ability of the Jameson Cell to achieve final concentrate grades of between 13% - 28% copper, at excellent unit recoveries of between 70-90%. For reference, current copper recovery is approximately 51%, with a concentrate grade of 13-16% Cu.
- Luca's recent Jameson pilot plant testing on feed to first lead cleaner on Test 17 returned a recovery of 70.74% lead resulting in a concentrate grade of 37.93% lead, which is a significant improvement from Luca past lead production. By comparison, average lead recoveries of 29% and concentrate grades of 22% Pb were achieved by Luca during all of 2021.

"Both the historical and 2022 pilot-scale Jameson Cell testing generated very encouraging results", said Mike Struthers, CEO. "As we continue to stabilise the overall operation, the next step with the Jameson Cells is to have all the testing reviewed by third party experts, then prepare a study to define how the cells would be added into the existing circuits, the costs and schedule for doing so, and an economic evaluation. We expect to make significant progress towards this goal during the balance of 2023."

Background

Jameson Cell Pneumatic Flotation pilot plant testing was first conducted at Campo Morado by former owner Nyrstar during 2014, investigating the potential to increase recoveries of copper and lead into a bulk copper-lead concentrate, zinc into a zinc concentrate, and to increase corresponding concentrate grades. Results were very positive but, as a result of depressed metal prices in 2015, Nyrstar placed the operation into care and maintenance thereafter the mine was subsequently acquired by Luca.

To expand on this testing, Luca contracted Glencore Technologies to provide a second Jameson Cell pilot plant. This operated for three months during 2022, testing increased recoveries in the zinc roughers and 1st stage lead cleaning, and subsequently successfully tested the ability to make a precious metals-rich pyrite concentrate from both historic and fresh tailings.

Both the 2014 Nyrstar and the 2022 Luca Jameson Cell pilot plant testing returned very encouraging results in all process streams tested, clearly demonstrating that the addition of Jameson Cell technology, processing at micro-fine grind levels, has the potential to significantly improve recoveries and concentrate grades of both copper and lead streams, and could provide moderate improvement to current satisfactory zinc recoveries, all of which have the potential to significantly increase revenues.

A major advantage of the Jameson Cell technology is that the cells are smaller than conventional flotation cells, and they have no moving parts so they can be easily maintained online, without shutdowns. Further information on the principles of the Jameson Cell technology can be found here: Operating principles (glencoretechnology.com)

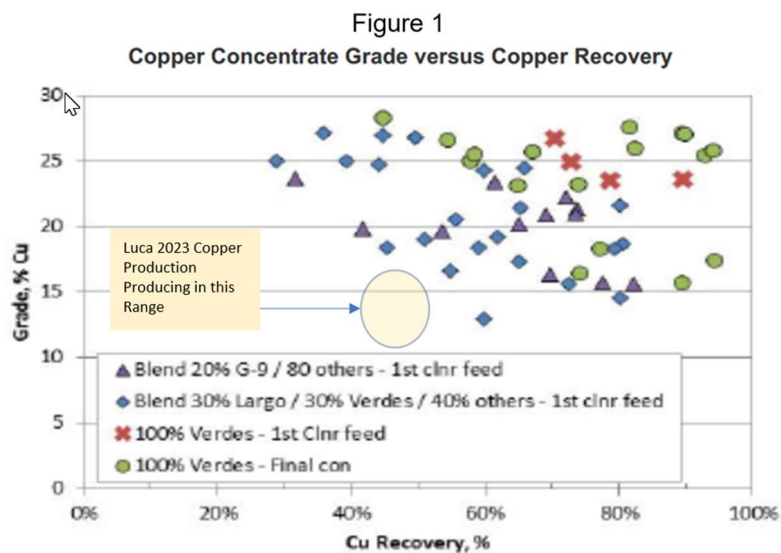
Historic Jameson Cell Pilot Plant Testing, Nyrstar 2014

Copper/Lead Flotation Circuit - 2014

Former owner, Nyrstar undertook substantial metallurgical test work at Campo Morado during their tenure with the mine. The 2014 Jameson Cell pilot plant testing on the copper-lead bulk circuit (as configured at the time) demonstrated the ability of the Jameson Cell to achieve final concentrate grades of between 13% - 28% Cu at excellent unit recoveries of between 70-90% (see Figure 1 below).

For comparison, the plant performance with conventional mechanical flotation cells (as configured in the plant at the time) for the six months ending June 30, 2014, immediately prior to Jameson Cell testing, averaged 13.94 % copper concentrate grade with average copper recoveries in the 70% range.

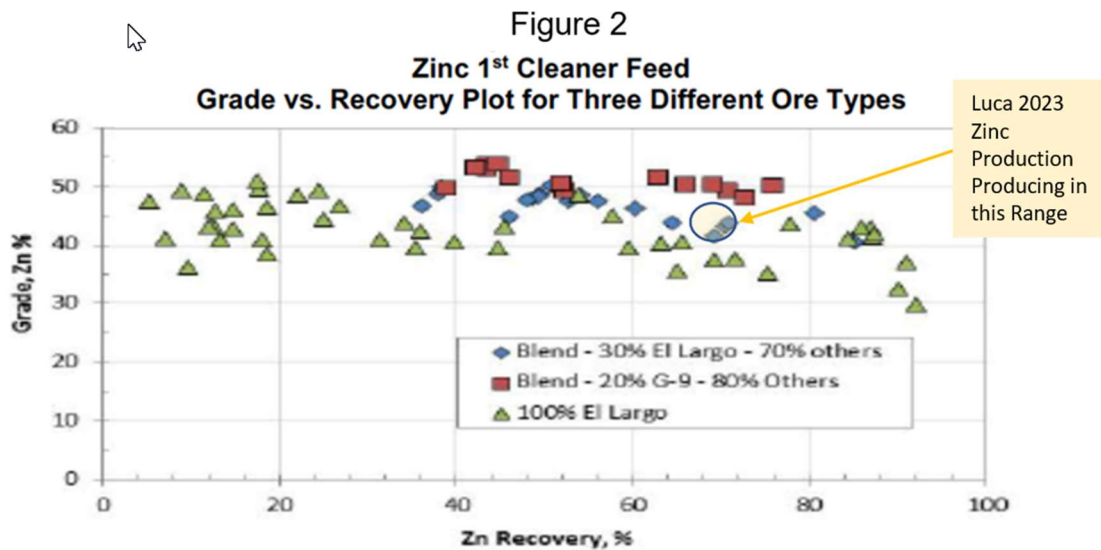
Recently, with the addition on Sub-A cleaning cells in the copper circuit, the mine is achieving 16% copper concentrate grades, and up to 55% recovery.



Zinc Flotation Circuit – 2014

Jameson Cell tests were also conducted on the zinc 1st cleaner feed stream in three different periods of time with the objective to evaluate the performance of the Jameson Cell to different ore types.

Figure 2 illustrates the results achieved, demonstrating the ability to moderately increase zinc recoveries and concentrate grades by adding extra cleaning capacity behind a Jameson Cell. A key benefit however, is the potential to reduce operating costs by reducing the cleaning stages.



The current plant configuration for the zinc circuit includes Sub-A cleaner cells, and the mine typically achieves 45-47% zinc concentrate grades, and 75-80% recoveries.

Luca Jameson Cell Pilot Plant Testing 2022

During 2022 the Company embarked on a metallurgical testing program to expand on the 2014 Nyrstar pilot plant testing at Campo Morado. Luca's testing was designed to investigate the possibility of increasing zinc and lead recoveries and concentrate grades using Jameson Cells at micro-fine grinding levels. The company also successfully tested the Jameson Cell's ability to produce a precious metal rich pyrite concentrate from micro-fine regrinding of both historic 2010-2015 produced tailings stored in the Naranjo Bajo tailings storage facility, and fresh tailings from then current processing of the El Largo ore zone.

All process streams tested by Luca using the Jameson Cell pilot plant returned encouraging results demonstrating the ability to increase recoveries of lead and zinc, increase concentrate grades, as well as the ability to successfully produce a pyrite concentrate from both historic and fresh tailings containing significant enrichment of gold and silver.

Feed to 1st Lead Cleaner - 2022

Eighteen tests were conducted on the feed to the first lead cleaner using pre-determined pilot plant settings provided by Glencore, with the best results obtained on Test 17 returning a recovery of 70.74% lead resulting in a concentrate grade of 37.93% lead with the lowest mass pull of 16.5%. See Table 1 below which shows other significant testing results at higher mass pulls.

By comparison, average lead recoveries of 29% and concentrate grades of 22% Pb were achieved by Luca during all of 2021 processing with mechanical flotation at then normal grinding sizes above micro-fine levels. The company suspended lead concentrate production during 2022, switching to copper, to take advantage of increasing copper head grades and increased copper prices.

The pilot plant testing results obtained by Luca for the feed to the first lead cleaner clearly demonstrate that the addition of Jameson Cell technology into the processing plant could significantly increase lead recoveries and lead concentrate grades at micro-fine grind levels.

Table 1
Jameson Cell Pilot Plant Testing on the Feed to the Pb 1st Cleaner

Test No	Mass Pull (%)	Jameson Concentrate Grade						Jameson Recovery (%)					
		Ag (g/t)	Au (g/t)	Fe (%)	Zn (%)	Cu (%)	Pb (%)	Ag	Au	Fe	Zn	Cu	Pb
17	16.5	892	5.90	21.09	7.94	1.29	37.93	36.33	31.57	10.99	20.24	21.62	70.74
15	39.0	444	5.38	27.03	6.46	0.80	21.01	55.78	50.25	33.62	44.52	38.41	63.51
11	24.4	534	6.52	25.21	5.89	0.87	29.17	45.38	44.26	18.32	26.24	26.04	69.87
8	32.7	518	5.48	25.47	6.95	0.50	25.99	54.34	50.46	25.17	37.40	30.63	83.35
9	27.8	497	5.78	24.48	6.73	0.73	27.46	42.23	42.27	21.32	31.54	26.08	76.44

Feed to Primary Zinc Scavenger Flotation - 2022

Luca conducted 17 tests of the feed to the primary zinc scavenger flotation stream with the Jameson Cell pilot plant under different operating parameters supplied by Glencore. Historic zinc recoveries at Campo Morado have been reasonable, averaging for 2021 and 2022, approximately 70% zinc recovery and 46% zinc concentrate grade.

Luca's Jameson Cell Pilot Plant testing of feed to primary zinc scavenger returned positive results in 10 of the 17 tests, showing increased concentrate grade produced by the Jameson Cell Pilot Plant acting as a primary zinc scavenger when compared to the concentrate concurrently produced by the same feed in industrial plant primary zinc scavenger as shown in the table below.

Table 2

Test No	Feed of the Primary Zn Scavenger Flotation					Concentrate of Industrial Plant						Concentrate of the Jameson Cell					
	Ag (g/t)	Zn (%)	Cu (%)	Pb (%)	Fe (%)	Ag (g/t)	Zn (%)	Cu (%)	Pb (%)	Fe (%)	Au (g/t)	Ag (g/t)	Zn (%)	Cu (%)	Pb (%)	Au (%)	Au (g/t)
19	73	1.24	0.35	0.55	30.68	187	6.44	1.08	1.11	37.04		536	18.93	2.75	1.46	30.00	
20	69	1.05	0.35	0.54	33.17	190	7.10	1.28	1.15	36.49		550	19.88	2.71	1.47	27.36	
21	71	1.31	0.30	0.51	31.14	209	7.65	1.12	1.14	33.95		606	17.71	3.47	1.34	30.06	
23	56	0.88	0.26	0.45	30.41	188	6.88	1.09	1.00	35.54	1.59	609	23.68	2.67	1.57	24.65	1.82
25	64	1.00	0.25	0.46	28.60	185	5.21	0.95	0.96	30.28	1.53	353	11.11	1.82	1.20	31.94	1.77
27	81	1.58	0.32	0.60	31.36	250	10.36	1.02	1.41	33.71	1.59	606	20.85	2.15	2.39	27.37	2.22
28	77	1.57	0.34	0.55	29.25	231	9.83	0.96	1.33	32.54	1.54	443	16.38	1.72	2.15	28.82	2.29
29	92	1.58	0.23	0.67	26.93	299	8.70	0.79	1.39	31.68		784	22.20	1.67	2.05	26.18	
30	88	1.42	0.26	0.62	28.86	267	8.10	0.94	1.32	33.25		582	18.14	1.61	1.70	30.04	
31	92	1.23	0.24	0.63	27.75	243	6.64	0.95	1.21	32.01		527	15.24	1.60	1.61	28.93	

This data corroborates the Nyrstar 2014 testing which determined that the addition of Jameson Cell technology in the zinc recover circuit with increased cleaning capacity would increase overall zinc recoveries.

About Luca Mining Corp.

Luca Mining Corp. is a Canadian based mining company with two 100% owned Mexican gold, silver, and base metal mining projects.

Luca's Tahuehueto Gold Mine Project is in north-western Durango State, Mexico where construction of an initial 500 tonnes per day ("tpd") operation is well advanced. The second stage, the 1000 tpd project, will follow immediately after commissioning the initial stage. The operation is generating gold, silver, lead, and zinc in concentrates.

Campo Morado is an operating polymetallic base and precious metals mine currently producing at an average of 2,400 tpd, generating zinc and copper concentrates with significant precious metals credits.

Visit: www.Lucamining.com

On Behalf of the Board of Directors

(signed) "Mike Struthers"

Mike Struthers, CEO and Director

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 Release dated November 8, 2017, and April 4, 2018).

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 recommencement of 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 recommencement of 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.

For further information about Luca Mining Corp., please contact:

Glen Sandwell

Corporate Communications Manager

ir@lucamining.com

Tel: +1 (604) 684-8071