



NEWS RELEASE

Excelsior Mining Announces Johnson Camp Stage 1 Drilling with Nuton, a Rio Tinto Venture

August 16th, 2023

Excelsior Mining Corp. (TSX: MIN) (FSE: 3XS) (OTCQB: EXMGF) ("Excelsior" or the "Company") is pleased to announce that it has commenced drilling at Johnson Camp with Nuton LLC ("Nuton"), a Rio Tinto venture, to further evaluate the use of its Nuton™ copper heap leaching technologies at Excelsior's Johnson Camp mine in Cochise County, Arizona. The program consists of drilling 6,000 feet of PQ core for the purposes of further metallurgical evaluation. Once completed the samples will be processed for mineralogy and tested using the Nuton™ process. Results are expected late Q3, 2023. The program is being funded by Nuton and carried out in connection with the previously announced [Option Agreement](#).

"Excelsior is now aggressively moving the Johnson Camp mine forward with the next stages of the work program with Nuton. The sulfide potential at JCM is significant and we are pleased to be working with Nuton to realize that potential. In parallel we continue to progress Gunnison towards well stimulation trials later this year," comments Robert Winton, Senior Vice President & General Manager of Operations of Excelsior.

Rio Tinto has developed the Nuton™ Technologies, an extensive portfolio of advanced copper heap leaching technologies targeted at primary sulfide minerals (including lower grade mineral deposits), which could not otherwise be processed using traditional leaching or sulfide processing technologies. These technologies offer the potential to produce additional copper in a cost-effective manner that has significant environmental benefits and reduces waste from new and ongoing operations.

ABOUT NUTON

Nuton is an innovative new venture that aims to help grow Rio Tinto's copper business. At the core of Nuton is a portfolio of proprietary copper leach related technologies and capability – a product of almost 30 years of research and development. The Nuton technologies offer the potential to economically unlock known low-grade copper sulfide resources, copper bearing waste and tailings, and achieve higher copper recoveries on oxide and transitional material, allowing for a significantly increased copper production outcome. One of the key differentiators of Nuton is the potential to deliver leading environmental performance, including more efficient water usage, lower carbon emissions, and the ability to reclaim mine sites by reprocessing mine waste.

ABOUT THE JOHNSON CAMP MINE

The Johnson Camp Mine is a past producing open pit, heap leach operation. The operation includes two open pits, a two-stage crushing-agglomerating circuit, a fully functioning SX-EW plant capable of producing 25 million pounds of cathode copper per year, a complete set of PLS and raffinate ponds, and full infrastructure (ancillary facilities, access, power, water, and communications).

An updated Preliminary Economic Assessment (PEA) incorporating sulfide leaching technology was [announced February 22nd 2023](#). Mining of JCM would be by traditional open pit. The highlights of the PEA financial model, using a copper price of \$3.75/lb, shows an **after-tax NPV of US\$180 million** (7.5% discount rate), and an **after-tax IRR of 30.4%**. The results are tabulated below.

Mine Life and post mining processing	~20 years
Heap Leach Material Mined	85.2 M ton
Total Copper Grade (CuT%)	0.37%
Average LOM Total Copper Recovery*	77%
Cu Produced	492 M lb
Total Tonnage Mined	196 M ton
Initial Mine Capital	\$58.9 million
Total Operating Cash Cost (\$/lb Cu)**	\$2.24
After-Tax NPV/IRR (7.5% discount rate)	\$180.0M / 30.4%
*Total copper recovery includes a combination of oxide, transition and primary sulfide mineral recoveries. ** Includes all operating costs, site G&A, royalties, non-income taxes, salvage, reclamation and closure.	

The PEA is preliminary in nature and includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the conclusions reached in the PEA will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

ABOUT EXCELSIOR MINING

Excelsior “*The Copper Solution Company*” is a mineral exploration and production company that owns and operates the Gunnison Copper Project in Cochise County, Arizona. The project is a low cost, environmentally friendly in-situ recovery copper extraction project that is permitted to 125 million pounds per year of copper cathode production. Excelsior also owns the past producing Johnson Camp Mine and a portfolio of exploration projects, including the Peabody Sill and the Strong and Harris deposits.

Additional information about the Gunnison Copper Project and Johnson Camp Mine can be found in the technical report filed on SEDAR at www.sedar.com entitled “Gunnison Copper Project Prefeasibility Study Update and JCM Heap Leach Preliminary Economic Assessment”, dated effective February 1, 2023.

Excelsior’s exploration work on the Gunnison Property and Johnson Camp properties is supervised by Stephen Twyerould, Fellow of AUSIMM, President and CEO of Excelsior and a Qualified Person as defined by National Instrument 43-101. Mr. Twyerould has reviewed and approved the technical information contained in this news release.

For more information on Excelsior, please visit our website at www.excelsiormining.com.

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Cautionary Note Regarding Forward-Looking Information

This news release contains "forward-looking information" concerning anticipated developments and events that may occur in the future. Forward looking information contained in this news release includes, but is not limited to, statements with respect to: (i) the potential of well stimulation to improve performance of the Company's mineral projects; (ii) the intention to deploy the Nuton® technology at the Johnson Camp mine and future production therefrom; (iii) the details of the drill program, including number of feet expected to be drilled; (iv) the results of the preliminary economic assessment on Johnson Camp; and (v) future production and production capacity from the Company's mineral projects.

In certain cases, forward-looking information can be identified by the use of words such as "plans", "expects" or "does not expect", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might", "occur" or "be achieved" suggesting future outcomes, or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance. Forward-looking information contained in this news release is based on certain factors and assumptions regarding, among other things, the amended permit will not be appealed, work plans will be approved in a timely manner, the availability of financing to implement the Company's operational plans, the estimation of mineral resources and mineral reserves, the realization of resource and reserve estimates, expectations and anticipated impact of the COVID-19 outbreak, copper and other metal prices, the timing and amount of future development expenditures, the estimation of initial and sustaining capital requirements, the estimation of labour and operating costs (including the price of acid), the availability of labour, material and acid supply, receipt of and compliance with necessary regulatory approvals and permits, the estimation of insurance coverage, and assumptions with respect to currency fluctuations, environmental risks, title disputes or claims, and other similar matters. While the Company considers these assumptions to be reasonable based on information currently available to it, they may prove to be incorrect.

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. Such factors include risks inherent in the construction and operation of mineral deposits, including risks relating to changes in project parameters as plans continue to be redefined including the possibility that mining operations may not be sustained at the Gunnison Copper Project, risks relating to an appeal of the permit amendment that delays its effectiveness, risks related to the delay in approval of work plans, variations in mineral resources and reserves, grade or recovery rates, risks relating to the ability to access infrastructure, risks relating to changes in copper and other commodity prices and the worldwide demand for and supply of copper and related products, risks related to increased competition in the market for copper and related products, risks related to current global financial conditions, risks related to current global financial conditions and the impact of COVID-19 on the Company's business, uncertainties inherent in the estimation of mineral resources, access and supply risks, risks related to the ability to access acid supply on commercially reasonable terms, reliance on key personnel, operational risks inherent in the conduct of mining activities, including the risk of accidents, labour disputes, increases in capital and operating costs and the risk of delays or increased costs that might be encountered during the construction or mining process, regulatory risks including the risk that permits may not be obtained in a timely fashion or at all, financing, capitalization and liquidity risks, risks related to disputes concerning property titles and interests, environmental risks and the additional risks identified in the "Risk Factors" section of the Company's reports and filings with applicable Canadian securities regulators.

Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Accordingly, readers should not place undue reliance on forward-looking information. The forward-looking information is made as of the date of this news release. Except as required by applicable securities laws, the Company does not undertake any obligation to publicly update or revise any forward-looking information.