

## Blackstone to Commence Ta Khoa Refinery Piloting

### Feed Stocks Delivered and Ready for Piloting

Blackstone Minerals Limited (“Blackstone” or the “Company”) is pleased to inform investors that key nickel and cobalt feed stocks for the Ta Khoa Refinery Piloting Program have been delivered to the ALS Metallurgical Laboratory in Balcatta Western Australia, and the contractor is in final preparation to commence piloting in April.

Key piloting preparation activities recently completed include:

- Safe completion of 541m of underground development for the ongoing bulk sample project delivering 2,088t of disseminated sulfide (DSS) sample to the mill for processing
- Successful restart and operation of the Ban Phuc nickel concentrator, and processing of 1,400t of DSS sample ore (refer Figure 1)
- Delivery of 24.5t of samples to ALS Laboratories including:
  - 7.5t of Ban Phuc sulfide flotation product
  - 10t of sulfide flotation products from Trafigura
  - 6t of sulfide flotation products from other third-party sources
  - 1t of Cobalt Hydroxide (from Trafigura) as low-cost alternative to battery grade cobalt sulfate
- Fabrication and installation of the Ta Khoa Upstream Pilot plant at Ban Phuc.



Figure 1 - Nickel Sulfide Flotation, operating at Ban Phuc

Scott Williamson, Blackstone's Managing Director, said:

*"The Ban Phuc mining, processing and maintenance teams have worked tirelessly to refurbish and recommission the Ban Phuc nickel concentrator. Blackstone is excited to commence the Ta Khoa piloting program with ALS, as we continue to de-risk the project.*

*"Blackstone is committed to sustainable mining and its development plans to recommence full commercial scale operations in Vietnam. As we progress further into pilot plant testing and feasibility studies, we will continue to advance our engagement and collaboration with potential partners and customers for our vertically integrated development strategy."*



Figure 2 - In Progress Development Drive

### Mining Program

In December 2021, Blackstone was granted approval to recommence mining activities as part of our ongoing development of the Ta Khoa Nickel Project. Approval was received to perform mining works that will involve completion of ~1,000m of lateral development (refer ASX announcement 9 December 2021).

To 29 March 2022, Blackstone had successfully completed 541m of development, delivering 2,088t of ore to the surface, and averaging 136m a month (refer Figure 2).

### Ban Phuc Nickel Concentrator

The existing 450ktpa Ban Phuc nickel concentrator was recommissioned in January 2022. Recommissioning works were completed by the skilled Ban Phuc operating and maintenance team, many of whom were part of the original team who operated the plant back in 2013-16. The plant was placed on care and maintenance in September 2016 and has been meticulously maintained. The efficiency of recommissioning activities, and successful operation of the crushing circuit (refer Figure 3) and concentrator, gives Blackstone great confidence in its suitability for treating regional massive sulfide vein (MSV) ore bodies. Blackstone has the optionality to turn on the Ban Phuc nickel concentrator and process MSV orebodies, particularly in an elevated nickel price environment.



Figure 3 - Ban Phuc Secondary Crushing Circuit

Approximately 7.5t Ban Phuc flotation samples were packed and shipped to ALS Laboratories in Balcatta WA, ready for pilot program kick-off in April (refer Figure 4).



Figure 4 - Ban Phuc Flotation Samples

### Piloting Program

The Main purpose of the piloting program is to replicate the full scale TKR flowsheet to confirm preliminary test work conditions and provide an insight into the operation conditions of the continuous plant. Evaluation of the pilot plant data will help to further develop engineering data required for the TKR design and close gaps from previous testwork.

The pilot plant program is broken up into two phases of the downstream refinery flowsheet: the Extraction Phase, and Refining Phase.

**The Extraction Phase** will consist of four campaigns of between seven to ten days and will cover the front end of the downstream refinery flowsheet entailing the feed concentrate handling/feed to POX up to the production of MHP. The focus of this campaign will be to

test the design envelope for the POX Autoclave to maximise extraction of nickel, cobalt, and manganese.

**The Refining Phase** will focus on the second half of the flowsheet, including MHP Releach, electrolyte purification (SX), through to NCM Precursor precipitation and drying. The refining solvent extraction stages will be tested over a combined 34 days.



Figure 5 - Pilot Plant Autoclave

Authorised by the Managing Director on behalf of the Board.

For more information, please contact

**Scott Williamson**

Managing Director  
+61 8 9425 5217  
scott@blackstoneminerals.com.au

**Dhanu Anandarasa**

Manager Corporate Development  
+61 8 9425 5217  
dhanu@blackstoneminerals.com.au

**Patrick Chang**

Executive  
+61 8 9425 5217  
patrick@blackstoneminerals.com.au

## About Blackstone

Blackstone Minerals Ltd (ASX: BSX / OTCQX: BLSTF / FRA: B9S) is focused on building an integrated upstream and downstream battery metals processing business in Vietnam that produces NCM Precursor products for Asia's growing Lithium-ion battery industry.

The Company owns a 90% interest in the Ta Khoa Nickel Project (TKNP). The TKNP is located 160km west of Hanoi in the Son La Province of Vietnam (refer Figure 6) and includes an existing modern nickel mine built to Australian standards, which is currently being used to process nickel ore delivered by the underground bulk sample program. The Ban Phuc nickel mine successfully operated as a mechanised underground nickel mine from 2013 to 2016.

Blackstone's TKNP and Ta Khoa Refinery (TKR) are the two major cogs in Blackstone's vertically integrated development strategy (together the Ta Khoa Project). The Company's development strategy is underpinned by Blackstone's ability to secure nickel concentrate and Ta Khoa is emerging as a nickel sulfide district of enviable scale with several exploration targets yet to be tested.

In February 2022, Blackstone completed a Pre-Feasibility Study for the TKNP, and presented this on an integrated basis with the proposed TKR development (refer ASX announcement 28 February 2022). The TKR is being designed to have a refining capacity of 400ktpa, with feedstock provided from a combination of concentrate from the TKNP and third-party feed sources (3PF). Pilot Plant testing and Definitive Feasibility Studies are underway and will continue to technically de-risk the Ta Khoa Project.

At both the mine (upstream) and refinery (downstream) level, Blackstone is focused on a partnership model and is collaborating with groups who are focused on sustainable mining, minimising carbon footprint and implementing a fully vertically integrated supply chain.



Figure 6. Ta Khoa Nickel Project Location

## Forward Looking Statements

This report contains certain forward-looking statements. The words "expect", "forecast", "should", "projected", "could", "may", "predict", "plan", "will" and other similar expressions are intended to identify forward looking statements. Indications of, and guidance on, future earnings, cash flow costs and financial position and performance are also forward-looking statements. Forward looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward looking statements may be affected by a range of variables that could cause actual results or trends to differ materially. These variations, if materially adverse, may affect the timing or the feasibility of the development of the Ta Khoa Project.

The project development schedule assumes the completion for the TKNP of a Definitive Feasibility Study (DFS) in 2023. A DFS for the Ta Khoa Refinery is also assumed to be completed in 2022. Development approvals and investment permits will be sought from the relevant Vietnamese authorities concurrent to studies being completed. Delays in any one of these key activities could result in a delay to the commencement of construction of the TKNP (planned in 2023). This could lead on to a delay to first production, currently planned for 2025. It is expected that the Company's stakeholder and community engagement programs will reduce the risk of project delays. Please note these dates are indicative only.