

Press release

Stockholm February 11, 2022

Bluelake Mineral announces results from life cycle assessment of the Rönnbäcken nickel project in Sweden

Bluelake Mineral AB (publ) (“Bluelake Mineral” and “the Company”), has as previously announced, via its Swedish subsidiary Nickel Mountain AB (“Nickel Mountain”) entered into an agreement with consultant Minviro Ltd (“Minviro”) to conduct a so called life cycle assessment (“LCA”) including analysis of CO₂ footprint and other environmental impact from Nickel Mountain’s Rönnbäcken nickel project in Sweden (the “Project”). The LCA has now been completed and shows a promising potential for decarbonisation of the planned mining operations with use of new technology, natural sequestration via tailings and through other measures.

Minviro has completed a preliminary life cycle assessment (“LCA”) for the Rönnbäcken nickel project in order to quantitatively assess the global warming potential (“GWP”) associated with the proposed mining and processing operations. The main aim of the LCA was to highlight the key sources of greenhouse gas (“GHG”) emissions, predominantly carbon dioxide (“CO₂”) to help develop a decarbonisation strategy for the Project in future. Minviro’s approach has been to quantify the GWP (in terms of kilogrammes of CO₂ equivalent, “kg CO₂ eq.”) in relation to 1 kg of nickel metal in concentrate (in the LCA referred to as the “functional unit”). The scope of the LCA (in the LCA referred to as the “system boundary”) was confined to ‘cradle-to-gate’, i.e. up to the point of selling concentrate at the mine gate and not including processes subsequent to production of concentrate (such as concentrate transport, smelting, manufacturing and use of products). The GWP calculations were confined to scope 1 (direct site emissions from vehicles and machinery), scope 2 (emissions related energy consumption from the Swedish grid) and scope 3 (upstream indirect emissions relating to extraction and production of purchased materials and fuels). In addition to the production of emissions, the carbon sequestration potential of the processing waste material (tailings) was also considered. This is due to the mineralogy of the material being favourable for carbon mineralisation, where CO₂ is sequestered from the atmosphere by reactions between CO₂ and unstable minerals to form stable carbonate minerals; further details will be provided in the Preliminary economic assessment (“PEA”) estimated to be completed later in February 2022.

Two main scenarios were considered for the LCA, which are also being assessed in the PEA:

- “Base Case” – assumes that current technology is used at the start-up of operations (diesel-based mining fleet) before transitioning to electric vehicles after 10 years’ operation; and
- “Electrified Case” – assumes that electric vehicles can be utilized from start-up of operations.

The results were reported according to the international ISO 14040 and ISO 14044 standards. At this stage, a third party review has not been completed in order to compare the results with other similar operations. It is also noted that due to the inherent uncertainty of the input data at this stage of study, the results are preliminary and based on global averages and can be refined once detailed technical studies and direct quotes from manufacturers can be utilised.

The results of the LCA showed in the Base Case an expected GWP of 10.0 kg CO₂ eq. per kg nickel in concentrate. This is split into three main areas: 3.8 kg from mining, 6.4 kg from processing and an offset of -0.2 kg from carbon sequestration. For the Electrified Case, the GWP was reduced by 25% to 7.5 kg CO₂ eq. per kg nickel in concentrate purely through the reduction in emissions from diesel. In addition to diesel and electricity, the main contributors to GWP were from reagents (such as collectors and dispersants) used in the flotation process through embodied scope 3 emissions. The scope 2 emissions related to the energy usage are considered relatively low due to the high proportion of the grid fed by renewable energy sources such as hydroelectric and wind power.

“This study has provided valuable insight into the global warming potential of the mining and processing activities of the proposed operation and where we can focus efforts for a decarbonisation strategy. As part of further detailed technical studies electrification of the mining fleet along with sourcing of low-emission consumables will be investigated,” says CEO of Bluelake Mineral Peter Hjorth.

Stockholm, February 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 February 11, 2022, at 08.40 am CET, by the contact person above.

Additional information

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General information about the Company

Bluelake Mineral AB (publ) 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 (November 2021) Mineral Resource estimate by SRK Consulting, contains 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/tonne).

In addition, the Company owns the nickel projects Rönnbäcken (which is Europe's largest known undeveloped nickel resource) and Orrbäcken in Sweden. According to the mining consulting company SRK, the Rönnbäcken project contains a mineral resource of 668 million tonnes with an average grade of 0.176% nickel (“measured and indicated”). The preliminary economic assessment that SRK completed predicts a production of 26,000 tonnes of high-grade nickel concentrate 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