

2023 UPDATE ON THE TERRAFAME NICKEL OPERATION

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ABSTRACT

The Terrafame operation started from the bankrupt Talvivaara deposit in August of 2015, continuing mining directly from September of the same year. Since then, Terrafame has been ramping up the production, increasing nickel production year-by-year and with that, is currently the largest nickel mine in Europe. The deposit is also one of the most significant in Europe, with current life-of-mine extending 30 years with plenty of area worthy of further drilling studies, possibly prolonging the life-of-mine by further decades.

The operation is unique being the only heap leach operation for nickel and zinc and the long ramp up a natural result from a several year lasting retention in the heap leaching stage. The process involves open pit mining, crushing to p80 of 8mm, agglomeration of fines to surfaces of larger particles, dynamic primary heap leaching, multi-lift secondary heap leaching, metals recovery with hydrogen sulphide and naturally, a mine area water management. The historical products of the operation are copper sulphide, unparalleled clean zinc sulphide and MSP, mixed sulphide precipitate of nickel and cobalt.

In 2017, Terrafame started to investigate further refining its products. In 2018, a feasibility study of battery chemicals production was completed and then continued by a declaration by the company to invest into the plant. Construction followed 2019 and 2020 and as of fall 2021, the plant moved from commissioning to ramp-up stage which is continuing in 2023. The new refining process turns the nickel-cobalt sulphide into battery grade nickel sulphate and battery grade cobalt sulphate, feeding the hungry and growing electric vehicle industry.

Nickel, Heap leaching, Cobalt, Zinc, Copper, Battery Chemicals