

COBALT BLUE'S BROKEN HILL DEMONSTRATION PLANT – SECOND UPDATE ON THE COB PROCESS DEVELOPMENT

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ABSTRACT

Cobalt Blue is developing the Broken Hill Cobalt Project. As part of feasibility studies, the company constructed and operated a testing facility in Broken Hill. Initially 90 t of ore was processed in batch campaigns in 2021-2022, with scale-up to continuously operating campaigns on up to 5,500 t of ore in 2022-2023.

The patented process flowsheet was designed to concentrate cobalt-pyrite from the ore, convert the pyrite into pyrrhotite through pyrolysis, leach the pyrrhotite, and subsequently recover the cobalt as a precipitated hydroxide.

The Demonstration Plant comprises all the key circuits. In addition to confirming overall process recoveries of >95% of the cobalt from the pyrite concentrate, the plant workstream has enabled COB to improve engineering designs, equipment selection, operating procedures, and recruit and develop staff.

Keywords: cobalt extraction, pyrite ore, process development, decomposition of pyrite, leaching of pyrrhotite