

Goro Mine

Lucy 2.0 dump design

VNC

PRE-FEASIBILITY
(FELL2)

2021

Project fees :
43 500 Euros


INGÉNIERIE

Project description

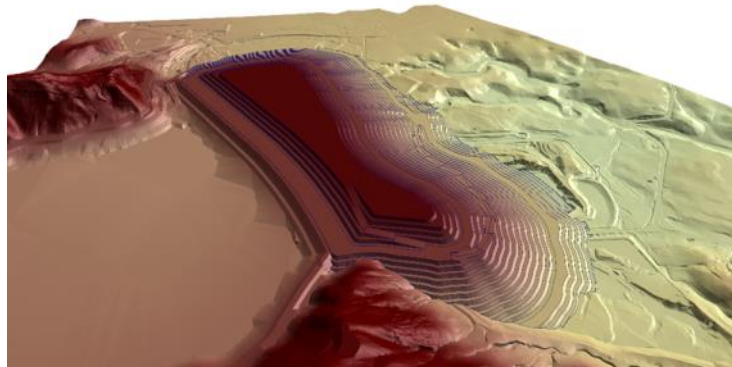
The project consists in providing the design of Lucy 2.0 dump for the storage of dewatered residue at VNC Nickel Laterite Mine Site.

The project LUCY 2.0 is a modification of the previous project Lucy 1.0 scope and comprises a dewatered residue storage facility downstream of the existing KO2RSF.

A first design of the dump Lucy 2.0 was proposed by Hatch, consisting of storing dewatered residue downstream of the KO2 berm with intermittent slurry deposition during the wet season within the KO2 facility upstream of the existing berm. The bypass has been estimated to occur 30% of the year.

Mecater proposed an optimized design, which aims to:

- Increase the storage capacity of the dump
- Propose a storage method that allows the storage of dewatered residue during the dry and wet seasons. The method consists in storing in cells limited by internal and external fingers.
- Reduce the bypass time and increase the storage of residue in its dewatered form during both wet and dry seasons.
- Increase KO2 TRS lifetime.



Key data

- Capacity of 33 Mm³, footprint of 86 ha, height of 108 m, slope 14°.

Scope of work

- Design of the residue dump in its ultimate layout including access roads, preparatory works, construction method and drainage.
- Numerical simulation of rainwater infiltration within the dump using Feflow
- Water balance using Goldsim
- Design of contact water ponds
- Dump stability in static, pseudo-static, post seismic conditions with deformation estimation
- Consolidation analysis using plaxis
- Design of a monitoring plan of the dump.
- Progressive rehabilitation considerations.
- Construction cost estimate of the dump.
- Construction, Fell 3 and Fell 4 studies planning .