

Preliminary Economic Assessment of a Au-Ag Carlin-Type Disseminated Deposit, Churchill River, Manitoba

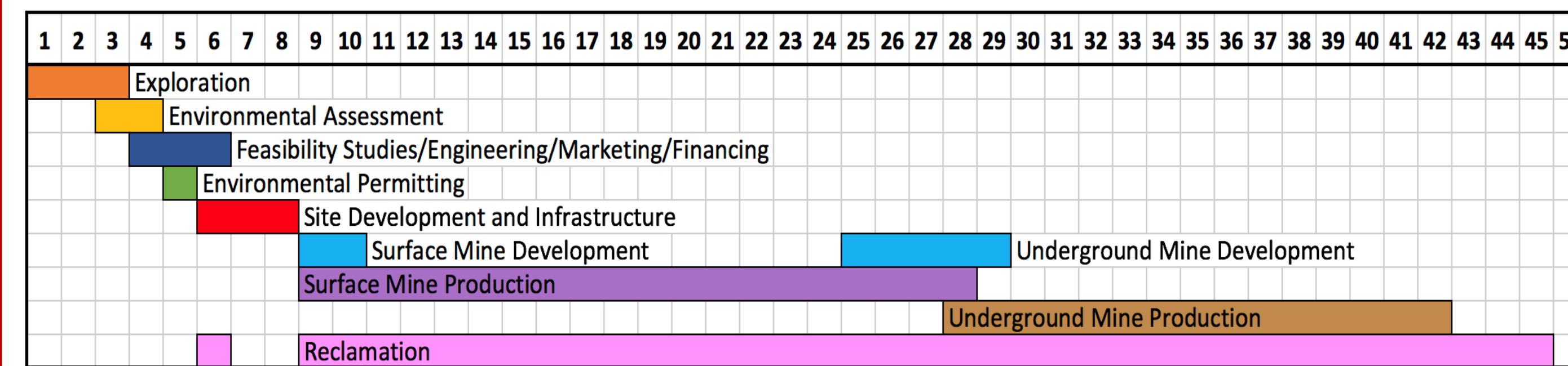
Department of Mineral Resource Engineering

Mohammed Al-Mukhtar, Lucas Kennie, Chengbo Li, Megan Magie

Scope of Work

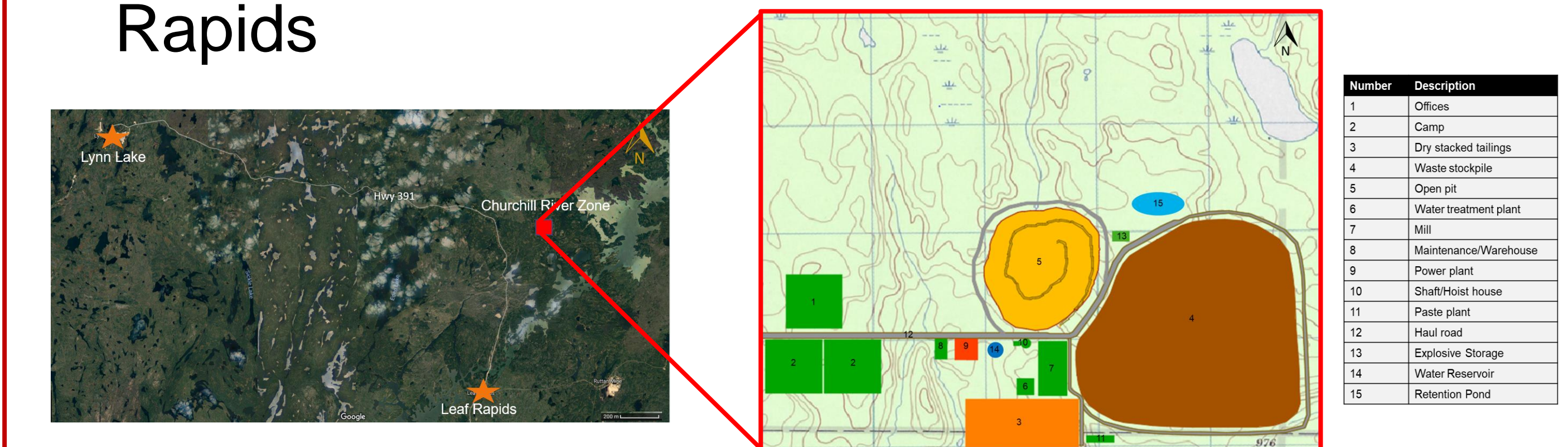
Huntress mining company was tasked with conducting a preliminary economic assessment for a gold-silver deposit in Churchill River, Manitoba. The goal was to interpret the size, shape, grade, and economic viability of the mineralized zone.

Project Schedule



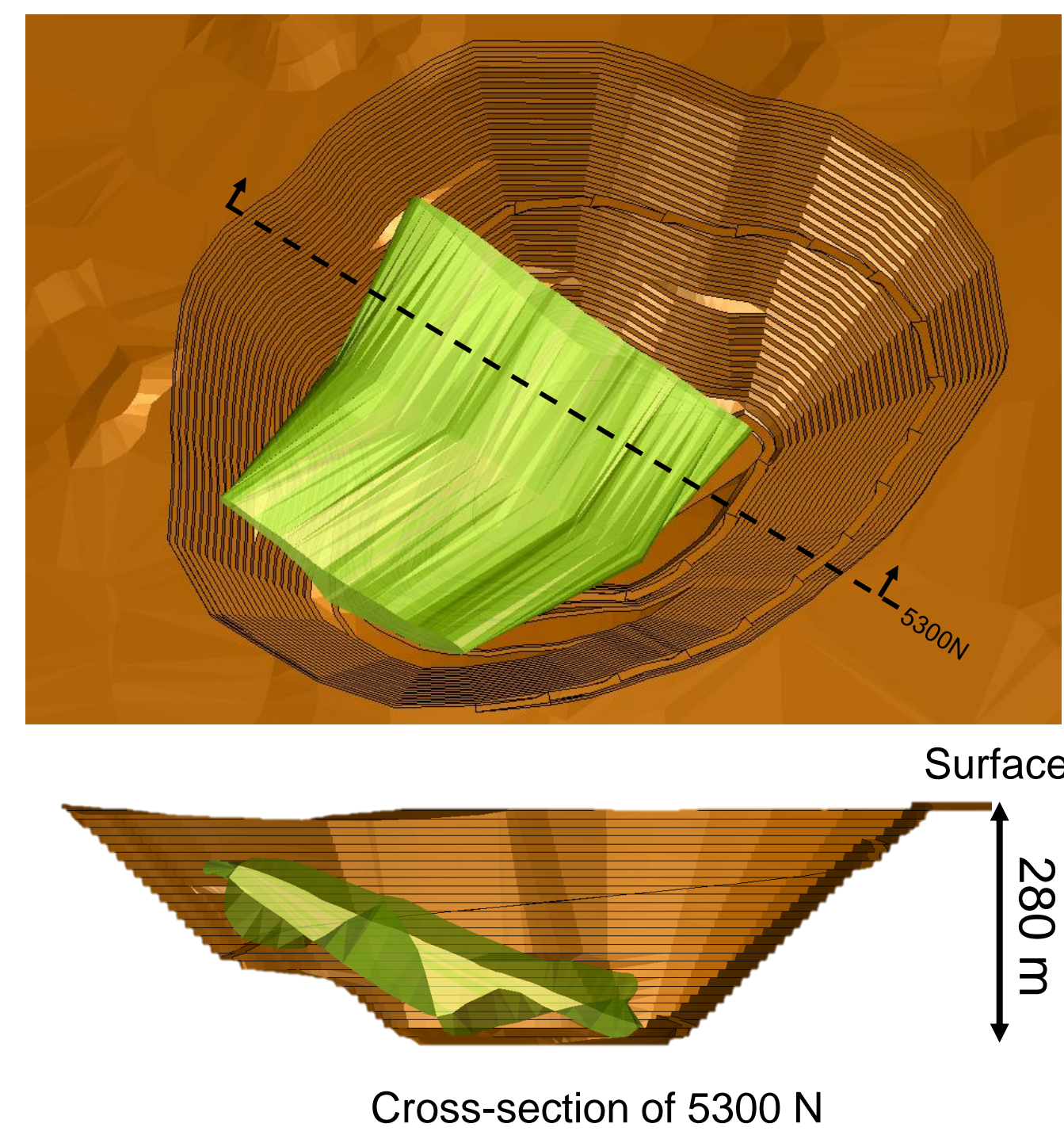
Project Location and Layout

- Churchill River is located approximately 775 km northwest of Winnipeg, Manitoba.
- Nearest communities are Lynn Lake and Leaf Rapids



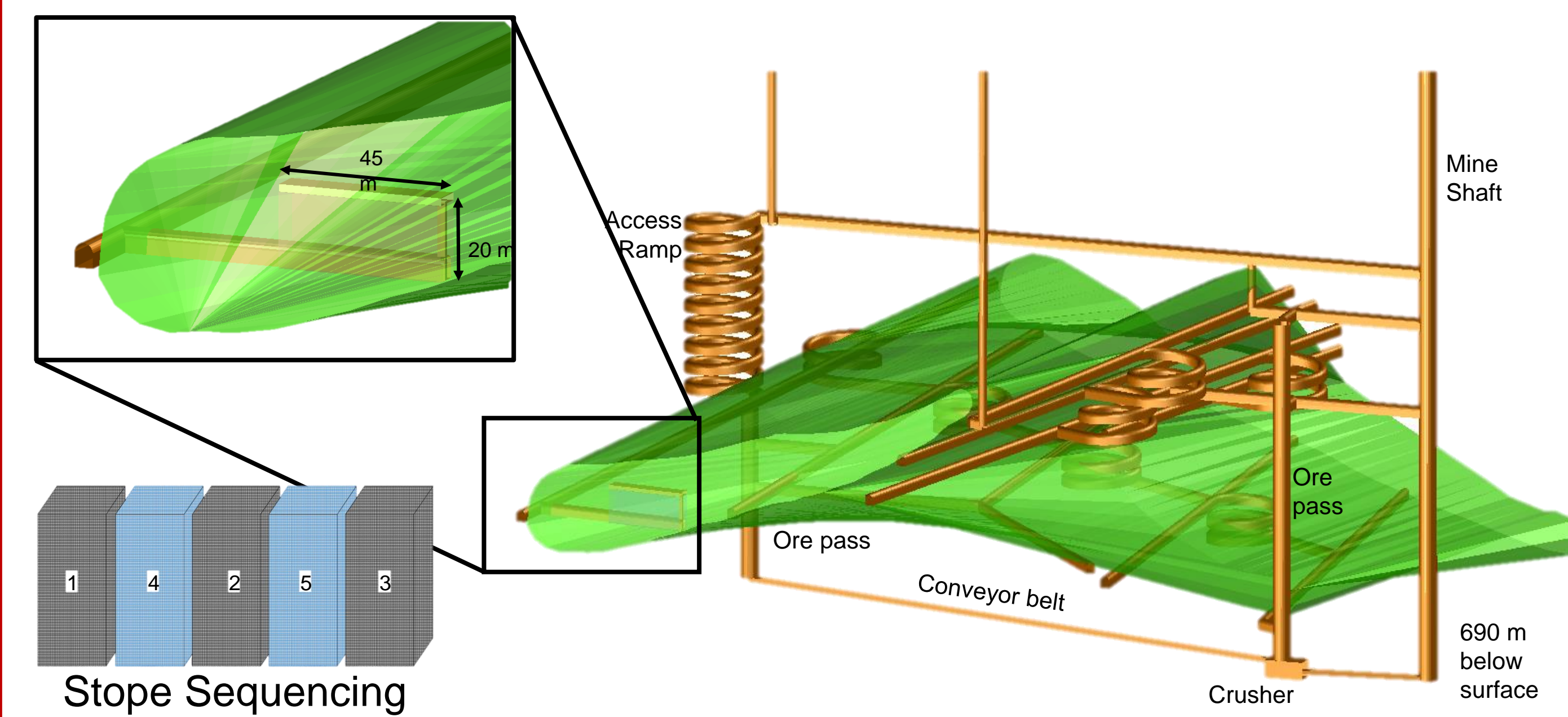
Open Pit Mine

- Mine life: **19 years**
- Production: **4730 tonnes per day**
- Tonnage: **30 million tonnes**
- Pit slope angle: **45°**
- Pit dimension: **1155 m x 1052 m x 280 m**

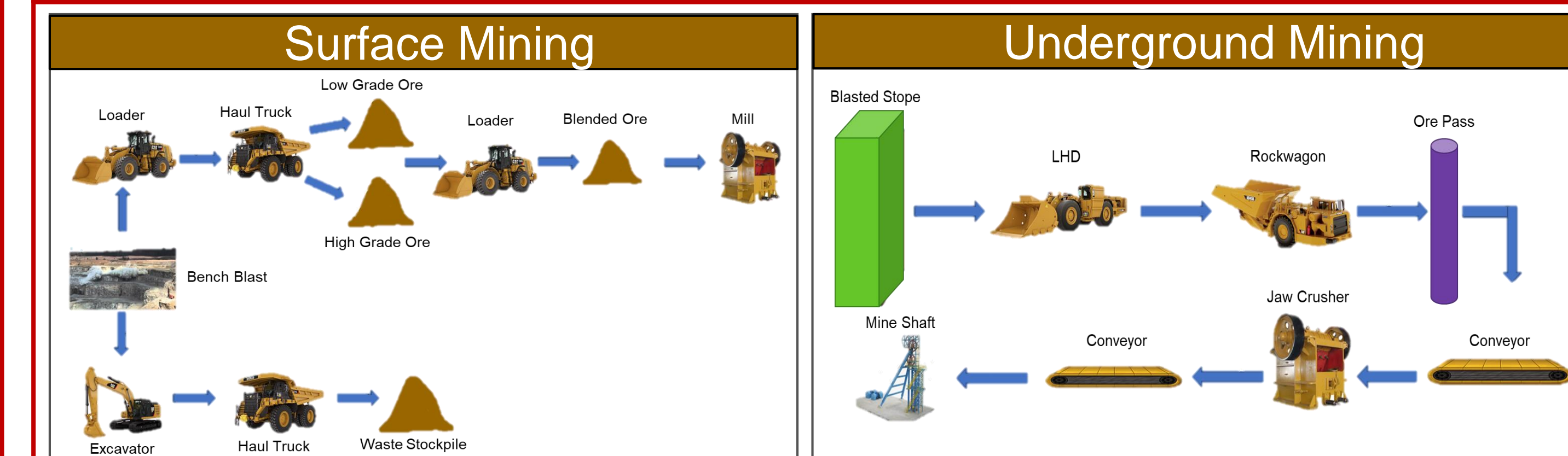


Underground Mine

- Mine life: **15 years**
- Production: **4264 tonnes per day**
- Tonnage: **20.1 million tonnes**
- Mining Methods Used:
 - Transverse Sublevel Longhole Stopping**
 - Post-Pillar Cut and Fill**

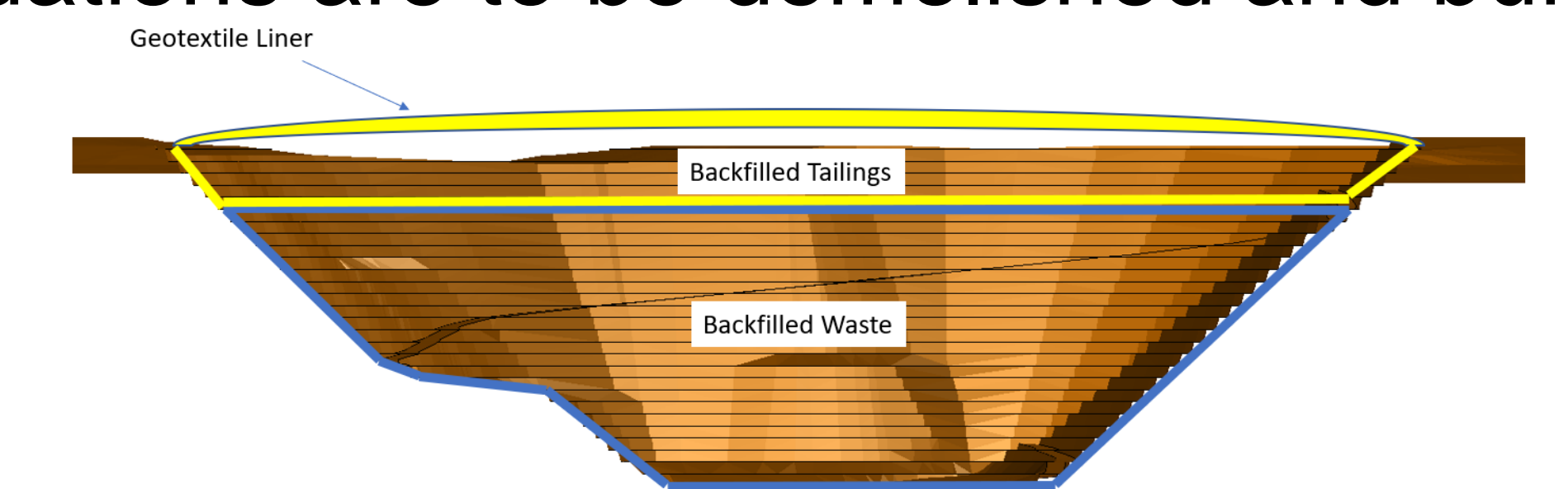


Materials Handling



Reclamation and Closure

- The open pit will be backfilled with mine waste, then covered with the dry-stacked tailings along with a geotextile liner
- The pit and surrounding area will be revegetated
- Haul roads will be scarified, and building foundations are to be demolished and buried

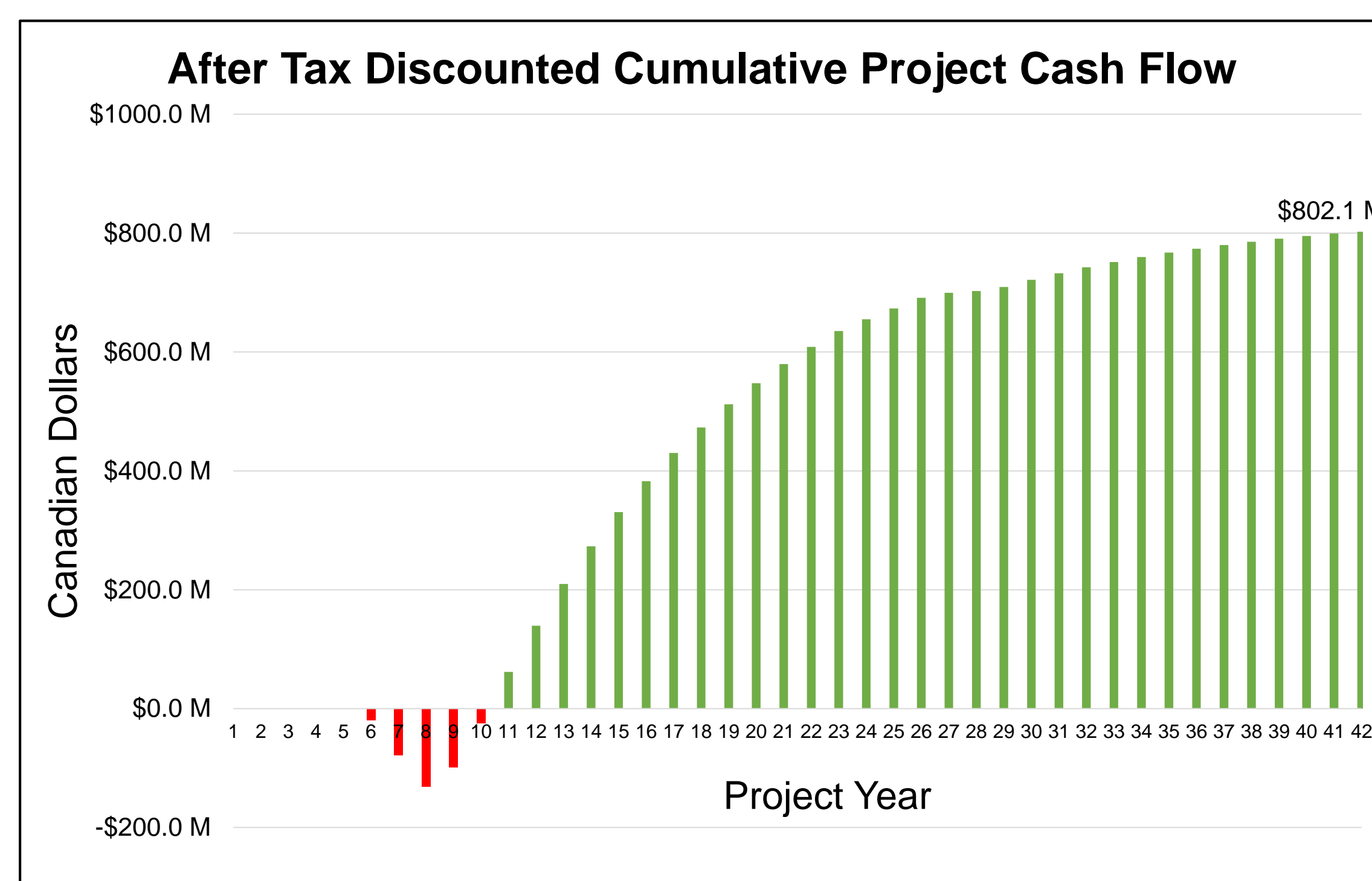


Project Economics

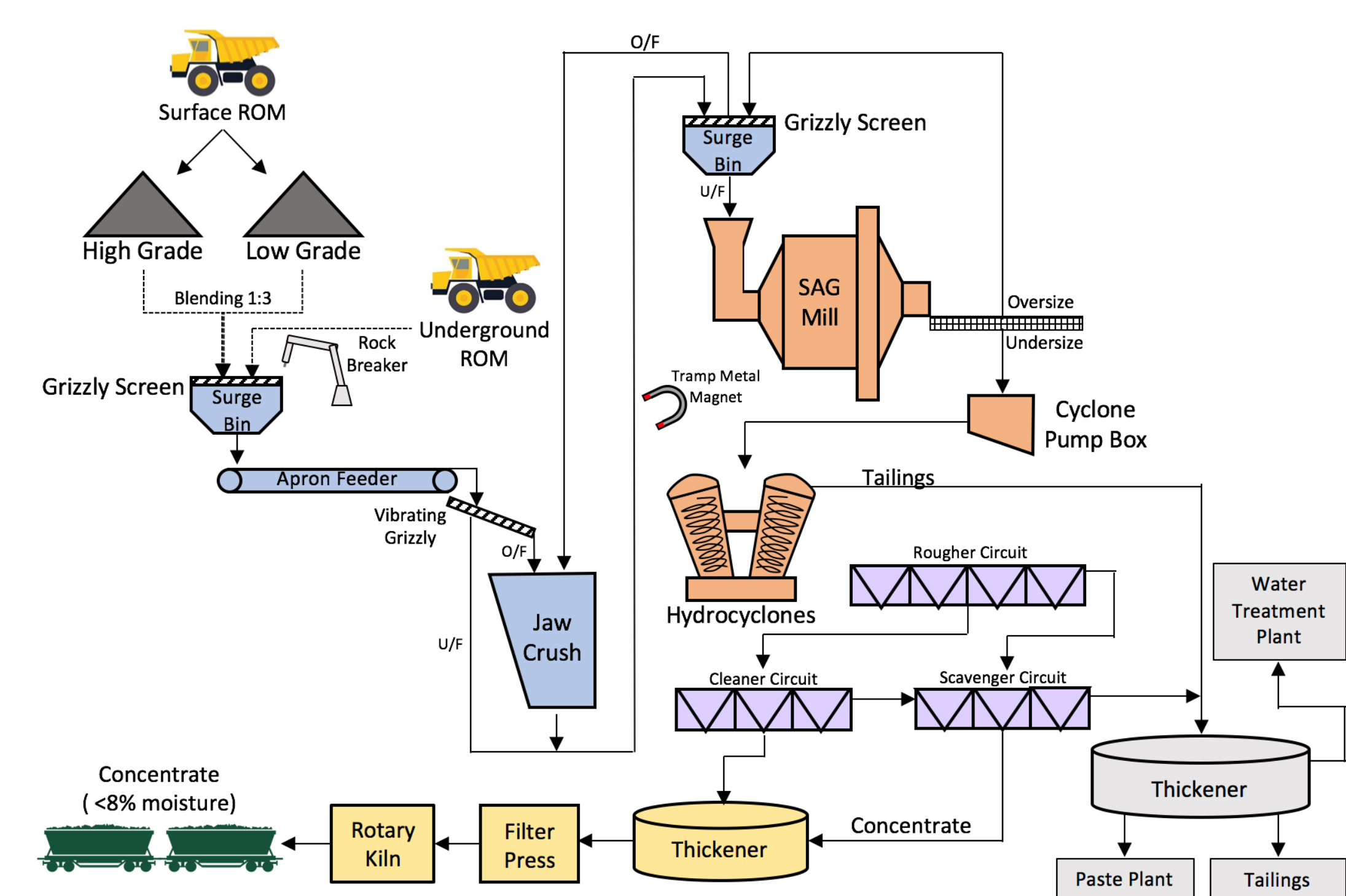
NPV: **\$802.1 M**

IRR: **49%**

Payback Period: **10 years**



Mineral Processing



References

- Darling, P. (2011). SME Mining Engineering Handbook. Society for Mining, Metallurgy, and Exploration.
- Infomine. (2018). Costmine Mine Cost Estimating. Infomine USA.
- Wills, B. A. (2011). Will's Mineral Processing Technology. Butterworth-Heinemann.