Scale of the proposed mine at Cochrane Hill

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Information below is taken from the full project description, but numbers and calculations in *italics* are my own.

Mine is currently proposed to operate from 2021 to 2027 (six years), and may employ up to 220 people.

Size of the pit:

- 950m long x 450m wide x 170m deep (at current mining scenario). *Volume = 72,675,000 meters^3 if calculated as a cube.*
- *An Olympic-size swimming pool = length 164 feet (50 meters) x width 82 feet (25 meters) x depth 7 feet (2 meters)(minimum). It contains about 500,000 gallons of water (= 1892706 liters, = 1892.706 m^3). So the proposed open pit = 72,675,000 m^3 / 1892.706 m^3 = 38 Olympic-sized swimming pools.*

Amount of ore removed:

- 43.1 million tonnes of rock will be excavated
- 22,086 tonnes per day
- Will produce 2 million tonnes of gold-bearing ore per year (= 11.2 million tonnes of ore at 1.10g/t Au?).
- *How much gold will be produced? 11.2 million tonnes x 1.1 g/tonne = 12,320kg of gold. 1 gold bar = 12 kg, so 12,320kg = approx. 994 gold bars. Currently, 1 gold bar = approx. $46,939, so 994 gold bars = approx. $46,093,690.*

Amount of tailing created at Cochrane Hill:

- A waste rock storage facility with the capacity to hold 11.6 million tons, as well as a tailings management facility with a design storage capacity of 8.6 Mm^3 of tailings solids
- The waste rock pile will be between 10m and 40m above the existing ground surface
- There will also be a low-grade ore pile during the life of the project, up to 25m in height and 2.1 million tons in capacity.

Amount of blasting:

- Blasting will occur 2 – 3 times per week
- Noise and vibration from blasting and equipment to be modelled

Number of trucks:

- 175 tons per day of gold concentrate to be transported
- Trucks will travel along Highway 7 (97km), through Sherbrooke and Sheet Harbour, then additional 41km on secondary highway and roads.
- A 2.9km section of highway 7 is proposed to be moved

Amount of water needed:

- Start up will require 300,000m^3 to 500,000 m^3
- Daily raw water withdrawal is expected to be in the range of 50m^3/day *(= 50,000L/day)*
- A water withdrawal approval is needed for water withdrawals greater than 23,000L/day.
- Water to be taken from Archibald Lake or the St. Mary's River

Power needed:

- Upgrade needed to 4km of existing power line, plus 9km of additional line needed

Acid rock drainage: Occurs when sulphite minerals (e.g. pyrite) are brought to the surface, and interact with water and oxygen. This reaction leads to sulfuric acid and metal oxides, which can then decrease pH (= more acidic) and release heavy metals (e.g. arsenic) in water bodies that receive runoff.