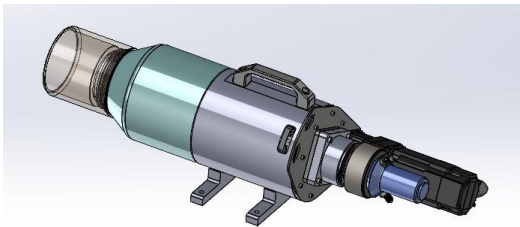


## **Multi-Kilowatt Laser in Mining and other Applications**

We are a pioneer in developing disruptive and transformative technology utilizing commercial lasers to improve the efficiency of the mining industry while simultaneously reducing the negative impact on the environment. The design and assembly of the first laser miner test unit is complete. Testing will be completed at Colorado School of Mines. The testing process has been coordinated with the assistance of IPG Photonics and will utilize the 4 KW IPG Photonics laser housed at CSM. With the assistance of the team at CSM, our engineering team will test our newly designed unit that is configured so that a variety of specialty directional laser pointing devices and their inherent custom software control are interchangeable for use in various mining operations. Testing will evaluate the ability to cut, fracture, and spall various samples of geologic materials. The patent pending technology is designed for use mining operations such as explosive installation preparation, rock bolting operations, drifting, expanding raises, winzes and stope mining.

We believe the anticipated successful testing will accelerate the commercialization of the versatile and low environmental impact equipment designed to transform the mining industry and the ability to recover valuable commodities including Gold, Silver and the critical minerals supply chain feeding the clean energy transition.



Testing at the Colorado School of Mines is a major step forward Sidney Resources in their pursuit of technology that will provide tremendous value for not just Sidney Resources itself but for the mining industry as a whole and has the ability to be deployed across multiple verticals. We are exploring additional transformative and disruptive technologies to expand our impact on the mining industry while reducing the impact on the environment. We are committed to protecting the environment and reducing our impact on the Anthropocene, our human centered planet, as a shared passion for our team, and look forward to building additional partnerships with institutions like the Colorado School of Mines that shares these same values.



# Sidney Resources Corporation

## Reducing the Cost of Mining

According to a recent article in Mining.Com, top gold CEOs say soaring costs will hobble the mining industry into 2023. According to the article, “The world’s top gold mining executives see cost pressures sticking around into the next year, adding to industry headwinds fueled by economic and political uncertainty, supply-chain disruptions and surging interest rates. Our engineers completed a cost comparison analysis between traditional mining methods and using our laser mining. They estimate the following cost savings:

### **CONVENTIONAL MINING**

- Cost to mine out stope block: 12,404 tons x \$57.47 = \$712,858
- Time to mine = 126 days (2 shifts per day)

### **LASER MINING**

- Cost to mine out stope block: 12,404 tons x \$19.91 = \$246,963
- Time to mine = 50 days (continuous)

Potential savings: **\$465,895**

Reduced operational costs will allow for the exploration and development of deposits previously viewed as not being economically viable to mine. This will play a critical role in not only gold and silver but in the rare earth minerals that are essential to the development of battery storage technologies and help to ensure our national security by reducing the dependency on foreign sources.

## Multiple Uses and Versatility

### **Mining applications:**

- Opening Adits or Portals (the opening or entry to a mine).
- Drilling tunnels (three to seven feet wide by six to eight feet tall) in narrow vein mining situations.
- Smoothing or vitrifying existing tunnels (to prevent or lessen groundwater seepage and enhance air flow in underground ventilation).



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- Material removal when drifting (following) along a narrow vein of precious metals.
- Removing material in a vertical stope or raise (between two tunnels).
- Drilling holes two to three inches in diameter by two to eight feet deep to place blasting materials (may be eliminated or reduced in scope by laser cutting the material).
- Drilling holes for safety rock bolting (two to six feet long steel, hollow, slotted rods) (protection from falling rock from prior blasting or residual stress build-up in the rock).

### **In commercial applications:**

- Easily transportable.
- In construction projects for the preparation of blast holes two to three inches in diameter by two to eight feet deep.
- Safety rock bolting along highways (falling rock).
- In constructions projects where blasting is prohibitive (near habitation).
- In trenching for foundations in solid rock structures.
- In trenching for cables or piping through rock structures.
- In construction of by-pass tunnels in dam building projects.

### **In rescue operations:**

- Easily transportable by helicopter.
- Cutting through concrete in building collapses.
- Tunneling in the case of a mine collapse.
- Rescue in spelunking misadventures.

### **In military applications:**

- Easily transportable by truck or helicopter.
- In road or airfield construction or repair functions where small rock shapes are desired or required.

- Excavation of revetments in rocky terrain.
- Preparation of approaches to streams or washes in rocky terrain where the sound of blasting is prohibitive.
- Any construction where the sound of blasting is prohibitive.

## NASA:

- Mining on Mars (proposed several years back).
- Mining on Asteroids.

