

MERCURY CAPTURE SYSTEM

Recover, Reuse, Remediate

B2C



An **inexpensive, easily modifiable, and innovative induction heating system connected to a condenser for mercury recovery**. The Mercury Capture System (MCS) is designed for gold shops, miners, and anybody refining gold to which mercury was added. It prevents the release of dangerous mercury vapors during the amalgam burning process.

This B2C system can provide economic, environmental and public health benefits to miners, intermediaries, and governments. Prior to 2020, the team has completed some initial user-testing in Ecuador, Peru, and Guyana, and received positive feedback and a willingness to pay for the system from gold shops and miners, but continues to seek specific use cases that adhere to country-specific regulatory requirements concerning mercury.

CLEANER MINING TOOL

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Problem

When gold is concentrated with mercury and an open heat flame is used to evaporate the mercury from the amalgam (or sponge gold), **toxic mercury vapor is released into the gold shop, the streets, and miners' lungs, representing a massive threat to human health and the environment.** Additionally, ASGM operations employing whole-ore amalgamation discharge mercury-contaminated tailings into the environment, representing a high risk for local communities, the surrounding environment, and the Amazon rainforest biome.

Solution

A patented, induction heating system that:

- Rapidly separates gold from mercury in seconds.
- Retorts >95% of mercury to reuse.
- Reduces over 99% of mercury emissions.

Market

Gold shops, miners, and organizations interested in reducing mercury emissions from the burning of amalgams and smelting of sponge gold, as well as those interested in remediating mercury-contaminated tailings prior to reprocessing with cyanide.

There are +50K gold shops worldwide that could apply this easy-to-use technology.



The MCS has been demonstrated in gold shops throughout South America.

It is looking for a mercury-contaminated tailing site to demonstrate MCS' efficiency in capturing mercury.

Key Facts

- Seeking \$50,000K in funding
- Dramatic and quantifiable decreases of mercury vapor to the atmosphere
- Cost of implementation is approx. \$4k
- Retorts >95% of mercury to reuse
- Reduces over 99% of mercury emission

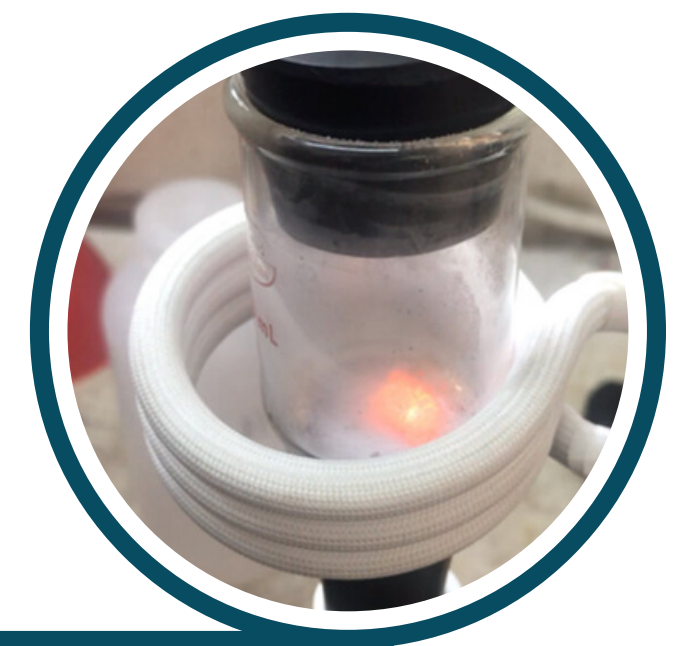
Competitive Landscape

Compared to conventional retorts, the MCS **captures mercury without oxidation and in high enough efficiency that the mercury can be immediately reused.** It's easy and fast to use, encouraging gold buyers to use it. Further, it removes all mercury safely and efficiently, reducing contamination concerns in work space and decreasing the risk to operators and equipment.

Funding Needs

Seeking a \$50,000 USD investment and partners to:

Apply MCS technology in a contaminated tailings site to demonstrate technology effectiveness in the field



The Artisanal Mining Grand Challenge is a global competition first launched in 2019 by Conservation X Labs. This Challenge seeks to advance innovative solutions that transform artisanal and small-scale gold mining into a more environmentally responsible and socially equitable practice. Mercury Capture System is field-testing its solution in the **Amazon CoLab**, the Challenge acceleration program.

www.artisanalminingchallenge.com