

OroClean

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THE PROBLEM

Mercury pollution is on the list of the top ten pollution problems of the world. Mercury travels the atmosphere, gets into the food chain and is the most toxic of non-radioactive materials that exist. Surprisingly 30% of all mercury pollution comes from artisanal small-scale gold mining in rural areas such as South America, Africa and Asia. In these areas the miners use mercury to extract gold. 95% of all the mercury used in small-scale mining is disposed right back into the environment. In the world there are approximately 15-20 million miners; this including about 4.5 million women and 1 million children – all at risk of suffering from kidney problems, memory loss, learning disabilities, miscarriage, deformities of children, psychic reactions, neurological damage etc. Their core blood mercury levels are up to 50 times higher than the level recommended by WHO. High levels of mercury are not only found in the bodies of the miners and their families that are in direct contact with mercury but occur all over the world and affect billions of people. In the US, more than half of the mercury pollution comes from outside the country. Calculations show that the US alone spends \$ 8.7 billion each year due to the lifetime loss in productivities of children born with learning disabilities.¹ Roughly 300,000-600,000 children are born each year in the US with a high concentration of mercury. The UN believes that small-scale mining is *“the single largest intentional-release of mercury in the world.”*

THE SOLUTION

To accommodate this need, we have created OroClean, a centrifuge that builds on well-known, and proven technology. The centrifuge is intended to be used by the small-scale miner as a replacement for using mercury in the gold extraction process and thereby potentially eliminating 30% of all mercury pollution in the world. The centrifuge will be human-powered, more effective than existing technologies, easy to use and will be made by combining already existing methods. The centrifuge is a small-scale device that due to difference in densities will make the heavy gold particles separate from the lighter silt particles. To heighten the efficiency fluidizational principles are integrated in the centrifuge. It can be produced at a very low cost, which makes it feasible to set up a sustainable business model that will generate profit throughout the value chain. With OroClean we will be able to eliminate 30% of one of the top ten pollution problems in the world.
