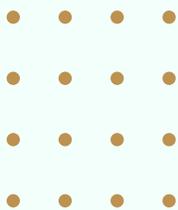


MERCURY FREE MINING IMPACT REPORT

2021-2022:

Nourishing Deep Roots and
Producing Beautiful Leaves



mercuryfreemining.org

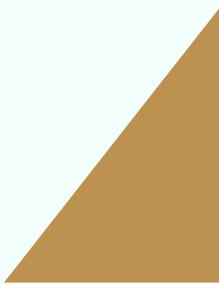


Table of Contents

1. Introduction: Cultivating Our Community
2. Board Of Directors
3. Our Supporters
4. Quantitative Change
5. Programs
6. Our Future
7. Conclusions: Join Us!



1: Introduction

Extending Our Roots and Leaves

Welcome to Mercury Free Mining's first annual impact report! After several years of perseverance and growth, our team found it critical we communicate the impact of Mercury Free Mining in a transparent and objective way, hence this report. We ought to be honest and clear about where there is room to improve and where we are steering the organization.

Much of Mercury Free Mining's history has occurred within a period of creative chaos. As a start-up with goals on a global scale, these global fluctuations were like a windstorm threatening to upend our roots. Yet, with each gust, MFM has been resilient, strengthening our core values and identifying our strengths.

The first major shift has been the skyrocketing gold price. In January 2019, spot price for gold was \$1270/ounce which rose to a high of \$2070/ounce in mid 2020. This had two effects; first, more miners and more mercury, and second, it tightened the budgets of quantity of gold buyers. These effects were further exacerbated by COVID-19 where ASGM helped millions and jewelery stores went online.

Social movements have also shaped our trajectory. We have witnessed a near exponential interest in responsible sourcing and sustainability which has been driven by wars, climate change, and human rights violations. A recent study by Joana de Susa found that, "Today, nearly 90% of Gen X consumers said that they would be willing to spend an extra 10% or more for sustainable products, compared to just over 34% two years ago."^[1] Consumers are recognizing the power of their purchases. MFM has pivoted, recognizing the opportunity. We urge partners and supporter to leverage our organization to build trust among consumers.

Throughout the turbulence, Mercury Free Mining has recognized that we have an opportunity to fill a niche as a leader for connecting others and forging relationships that make a positive impact. We want to bolster these initiatives by offering our expertise as a service to those who want to stand with the miners supplying their gold. Increased demand and relevance has not been seamless for our organization and we have, "experienced growing pains". We have hired our first staff, involved a communications coordinator, and forged countless relationships. Unfortunately, we have not been able to keep up with the accelerating and changing demands for our knowledge and resources.

Lastly, we want to thank our supporters who have continued to support us throughout this period. We are proud to be able to stand with the miners thanks to you.

[1] <https://www.forbes.com/sites/gregpetro/2022/03/11/consumers-demand-sustainable-products-reshaping/>



2: Our People

2.1 MFM Board of Directors

In 2021 MFM added Avi Levy, President of IGI and Mark Hannah of the Richline Group. Both represent significant organizations within the jewelry industry and we welcome their guiding wisdom.



Bill Boyajian
Board Chairman



Toby Pomeroy
Founder & Executive Director



Mariel Diaz
Founder & Managing Director
Accounting for Jewelers



Ronnie VanderLinden
President
Diamex Inc.



Avi Levy
President
IGI



Eric Laker
Founder and CEO
Lashbrook



Mark Hannah
Chief Marketing Officer
Richline Group



Brandee Dallow
Founder & President
Fine Girl Luxury



2.2 Our Team

MFM is still growing and developing a true team dynamic is high priority for 2023. We have members who are specialists who are not being maximized due to lacking the efficiencies of scale.

Toby Pomeroy – Executive Director

Function: MFM's visionary, directs outreach & education program, PR relations, and delivers market-side services

Caelen Burand – Director of Operations

Functions: Develops the means to reach our goals, conducts research program, business strategy, IT, and advertising

Ruth Epwoka – Communications Expert

Ruth volunteers her time and expertise to help us communicate our goals, mission, and accomplishments to others.

Jerry Buckley – Director of Global Initiatives

Jerry consults with MFM on the development of fundraising programs, proposals, and other donations efforts.

Mariel Diaz – Accounting Extraordinaire

In addition to being a board member, Mariel volunteers her time tracking and analyzing MFM's finances.

You and Your Organizations –Our Support

MFM relies on our community of support, you are the reason we are able to make real-world impact throughout the globe and are the most critical MFM team members.

Shifts: In 2021 our social media intern, Caelen Burand, transitioned to a technical role operating our research program to maximize his background in mining engineering and geology. He is looking forward to using the research MFM is conducting now to create a doctoral dissertation in the years to come.

MFM has been fortunate to add, Ruth Epwoka to our team as our communications specialist. Based out of Nairobi Kenya, Ruth has years of experience with notable groups like PlanetGold. She helps MFM tell the stories of miners across the globe and engage with stakeholders.



3. Our Supporters

Mercury Free Mining is proud to have rallied together over 100 different donors from throughout the world with thousands of others supporting us on social media. Supporting MFM is the opportunity to stand with miners and take on the grand challenge of mercury eradication.

3.1 Premier Sponsors

Premier sponsors are MFM's strongest supporters donating more than \$25,000. These organizations and their leaders are propelling large-scale programs with global impacts.



3.2 Corporate Sponsors

Corporate sponsors donate between \$2,500-\$10,000. Corporate sponsors are able to sponsor appearances at trade shows, educational programs, and auxiliary research costs.



3.3 Leadership Council Members

Leadership council members make up the bulk of MFM donors and their funds accumulate to be able to catalyze ground-breaking research, global advocacy, and powerful story-telling

CHAIRMAN'S CIRCLE

MANU

DIAMEX[®] INC.

KC KRAINZ
CREATIONS

BERND
WOLF

TOBY POMEROY

BILL
BOYAJIAN

MARK
HANNA

JOHN
RICHMOND

AMBASSADOR'S CIRCLE

ACCOUNTING
— FOR —
JEWELERS

MCC
Master Casting & Cad

FTJ Co

zillion

NIESSING
Seit 1873

DANA BRONFMAN

RICHARD M GRETZ
Gold & Platinumsmiths

PLETTENBERG
Fine Jewelry



4. Quantitative Change

4.1 Fundraising and Growth

MFM has annually doubled our programs' impacts which necessitates doubling funding and expenses. Ideally, we optimize with scale and decrease the marginal inputs.

Mercury Free Mining Operating Expenses

The table below shows the evolution of operating expenses for Mercury Free Mining since its start in 2019.

Year of Operation	Other	Outreach and Education	Payroll Expenses	Professional Fees	Research	TOTAL
2021	4,203	12,768	67,309	29,866	12,004	126150
2020	3,970	12,350	38,432	10,456	2,530	67738
2019	1,877	9,658	5,000	1,715	50	18300

Table: Created by Caelen Burand • Created with Datawrapper

4.2 Fund Allocation (% total) FY 2021

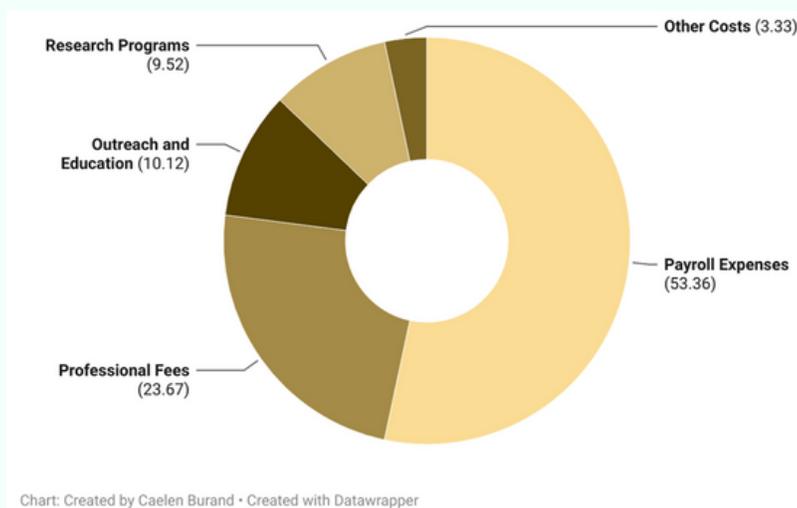


Chart: Created by Caelen Burand • Created with Datawrapper

- The majority of 2021 expenses supported our people designing the systems being piloted in 2022
- Research program was launched in late 2021 but the associated costs are apparent in 2022
- Outreach and education costs were minimized in the prior two years due to COVID



4.3 On-The-Ground Efforts

The map below shows the areas our team has been able to reach in-person. This includes all MFM activities from 2019 until mid-2022. Future plans focus on increasing mercury eradication projects and connecting with communities



4.4 Our Audience

2019 2020 2021 2022

MFM Followers per Year per Platform

This chart shows the annual change of MFM's following on social media starting on January 1st of each year. Of note:

- Different demographics are reached through different platforms and we plan tailor content to fit the specific audience
- 2020 saw the greatest growth in followers because MFM brought on a social media intern to grow the following
- Future plans to more frequently share our activities are expected to enhance our following.



5. Programs

MFM is the go-to group for miners and jewelers

Mercury Free Mining was founded because goldsmith and jewelry designer, Toby Pomeroy, believed that his art was tainted with environmental and social degradation associated with mercury. We have helped to educate the world about ASGM and mercury use and have expanded our programs to include full mine-to-market coverage.

Interested in having our team work with you? Contact us.

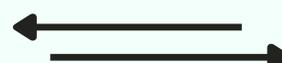


Above: Kenyan miners dig shallow trenches to follow gold veins filling sacks with ore to be processed.

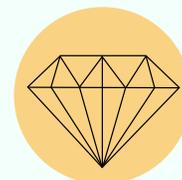
Mines



MFM
TEAM



Markets



OUR SERVICES

Research Mercury Alternatives
Provide Technical Insight
Scale and Deploy Innovation
Investigate Solutions

Write, Speak, Present, and Post
Provide Free Resources & Information
Forge Positive Relationships
Engage Stakeholders



Maria Eloisa Garcia of Zaragoza Colombia in 2018. Her years of mercury use are causing blindness; her husband has been blind for years. Lacking other employment opportunities, the Garcia's children are gold miners who use mercury, as predictably, will their grandchildren.

MFM connected with Maria to tell her story and rally support for finding mercury alternatives through our testing.



5.1 Propelling Sustainable Sourcing

We cultivate positive relationships between actors throughout the gold supply chain through advocacy, educational efforts, and consultations with stakeholders



Articles & Appearances

MFM's communications have reached millions through being featured in notable publications like JCK, Rapaport, and InStore Magazine, we have been invited to speak at events like Inhorgenta and JCK Las Vegas, and showcase research through major events like PDAC and Gems and Gemology.

Please see our [news section](#) for a full list of publications.

MFM Annual Reception

At JCK Las Vegas 2021, MFM hosted its first annual donor reception. The event is growing to become a notable occasion for jewelry industry leaders to tackle the issues of mercury in the gold supply while recognizing our progress.



Providing Market Expertise

MFM's Toby Pomeroy is organizing the development of a sustainability rated for ASGM gold supply with SCS Global Services and the Alliance for Responsible Mining

San Antonio Colombia: The Batea

To tell the story of the elegant wooden batea, Toby travelled to San Antonio Colombia to learn about ASGM culture and document the development of the wooden batea helping connect compassion to the people we care deeply about.



5.1 Continued

Media Toolkit

In 2021 MFM developed our [media toolkit](#), designed for supporters to share their commitment to stand with the miners.

Please take advantage of these opportunities to show customers your allegiance with Mercury Free Mining earning their trust and confidence.

Mercury in Mining Video Series

During the pandemic, Toby experimented with a series of informational videos with subject matter experts.

It was discontinued due to a cost-benefit analysis of the project and we shifted focus towards other forms of communications.

Major Partnerships of 2021

MFM works with scientists, humanitarians, legal experts, and many others to facilitate mercury eradication. Here we highlight our new partnerships that enable us to share our expertise and more efficiently reach our goals.



The Alliance for Responsible Mining has been a pioneer in efforts to connect miners to formal markets and we use their expertise when working with mining communities



MFM proudly joined the Global Mercury Partnership in 2021 and are looking forward to collaborating with others in the cohort.



The University of Arizona is a world-leading research institute for mining and geoscience. Our partnership leverages their facilities and subject matter experts to complete our research programs.



The Artisanal Mining Grand Challenge: The Amazon is helping scale innovations to help solve the negative impacts of ASM on Amazonia. MFM provides technical consultation and CXL enables us to access novel technology and innovation.



5.2 Research & Deployment

MFM is dedicated to substantial, real-world positive impact. Our research and deployment of mercury alternatives converts our efforts to increase awareness and understand the issues into ground-breaking advances in science and engineering for ASGM.

Why Scientific Research is Necessary to Eradicate Mercury:

- Every mine differs. Solutions are highly dependent on geographic features like ore type, mine throughput, and surrounding infrastructure. There is no single solution.
- Mercury alternatives exist. Miners and organizations lack the information needed to make educated decisions about mercury alternatives.
- Mercury is a means to survival. Alternatives must recover as much or more gold as mercury and miners need to be able to trust that the alternatives will be effective.

Ultimately, this necessitates interdisciplinary research that discovers the information necessary to eradicate mercury in ASGM.

Our Process:

1.

Develop trust with partner mining communities. Learn how we can help. Share experiences to gather support.

2.

Understand current mining methods and robustly sample ores, waste and surrounding soils/rocks.

3.

Conduct transparent analyses of alternatives and ores. Develop key performance indicators for success.

4.

Holistically deploy the optimal mercury alternative and use the research to advise others.

*With this research, we will be able to be given a set of parameters and **know** what effective, safe, and mercury-free processes will work*



Pilot Research Program - Puno District Peru



Cruz Pata is one of two partner mines that MFM is working with in the Puno District of Peru. Although they have reduced their mercury use in the Fairmined program, they would like to eliminate mercury. MFM's research is helping find the optimal mercury-free equipment for Cruz Pata.

MFM and the Alliance for Responsible Mining launched the mercury eradication research pilot in late 2021. With a \$50,000 grant from the GIA, we are experimenting with a system to collect valuable information on mercury-free processors and want to use this as the launch-point for many years of future investigations.

We have partnered with CECOMIP and Cruz Pata Chaquiminas, mining cooperatives who mine glacial alluvial gold ores.

With ARM team members, we collected over 100 kg of samples, the quantity needed to properly evaluate 5 different processors across the globe.

Currently, we are in the process of completing engineering, scientific, and economic analyses and will result in a public report outlining key performance indicators.

Ideally, the testing will enable the miners to implement a mercury alternative and we can use the pilot to develop a refined system for repeating these analyses across the globe.

This research is generously sponsored by the Gemological Institute of America



GIA®



6. Our Future

2022 and Beyond

MFM has been able to advance but we want to improve and expand. Our visionaries dream big and our engineers find ways to make it a reality.



A photo of the Cruz Pata Chaquiminas ores within scientific siezes to analyze grain size. The size distribution of materials in gold ores is a key component that impacts the effectiveness of gravimetric mercury alternatives.

6.1 Our 5-Year Plan

Major Goals

Outcomes

2023: Grow Our Roots

Build a Strong Community & Our Reputation

Advertise the Services we Offer Markets and Miners

- Expand research by engaging another community and formally integrate into academic research
- Hire communications expert Ruth Epwoka to disseminate knowledge to our community
- Transition from being a leading advocate to a leading actor

2024: Scale and Expand

Reach Steady State Research & Deployment (2 projects/year)

Pioneer a Mercury-Free Gold Supply

- Conduct 2 research programs annually
- Use research knowledge to advise others on mercury-alternatives
- Be able to direct supporters to mercury-free ASGM gold

2025: Branch Out

Become "Well-Rounded" in Building a Diverse Team

Introduce MFM to Other Gold Dependent Industries

- Add new team members that can focus on other relevant ASGM issues like governance or blockchain.
- Gather support from technology companies and from asset traders

2026: Scale and Expand

Reach Steady State Research & Deployment

Pioneer a Mercury-Free Gold Supply

- Conduct 2 research programs annually creating two unique funding opportunities per year
- Consult with miners on mercury-alternatives
- Be able to direct supporters to mercury-free ASGM gold



Conclusions

As 2023 approaches there are key lessons for MFM and our partners directing our plans and ambitions based on the impacts recited. These are recorded below.

Demand is Growing

Markets and consumers are demanding the materials that make their products are produced sustainably.

- Government regulations are beginning to mandate responsible sourcing
 - Our ability to double in size annually attests to the increased demands
 - MFM needs to be ahead of the curve. We need to assert our organization's ability to lead the inevitable change.
-

We Answer "How" Questions

Mercury eradication is no longer an if but a how. It is a grand and global challenge we must face together. We have been able to make a difference when answering questions like.

- How will jewelers tell the story of their gold?
 - How can we minimize the risk for miners to use mercury alternatives?
 - How will we bridge together shared resources to prevent further degradation of health and our planet?
-

MFM is a Movement

MFM has established our track record with services like creating positive connections, researching mercury alternatives, and connecting miners to jewelers.

- Mercury eradication will be achieved by holistic action that integrates the whole supply chain
 - We have made the greatest impact in areas where we are working to create a community of advocates
-

With every experiment, MFM has been able to gather valuable information and wisdom that is helping us push the boundaries on how grand challenges can be solved.



Acknowledgements

Thank you for all of the MFM supporters who are making our work possible.

Special thanks to the following person/s for making this possible:

Those responsible for **concept and coordination**: Toby Pomeroy and Bill Boyajian
The **writers** behind the impact report: Caelen Burand and Ruth Epwoka
The **designers** of the impact report: Caelen Burand and Ruth Epwoka
Our **colleagues** from Partner Organizations: Kim Cino, Susan Jacques, Victor Hugo Pachas, David Guzman, and many others.

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We thank you for your continued support in our dedication to contribute to the UN SDGs.

