



# Annual Report 2024

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# Introduction



*Another year, Pure Earth México reaffirms its commitment to the health of the Mexican people and the preservation of our traditions.*



Through our continuous work at Pure Earth Mexico, we have achieved significant progress in eliminating lead from glazed pottery in Mexico, an ancestral practice that unfortunately puts the health of millions of people at risk both within and beyond the country.

Lead contamination remains a public health issue in Mexico, especially in communities where traditional pottery is a fundamental economic activity. Pure Earth México continues to face this challenge with determination, seeking innovative solutions and working hand in hand with pottery-producing communities.

Thanks to collaboration with artisan communities, government institutions, academic institutions, the private sector, international organizations, and civil society, throughout 2024 we continued advancing our mission to reduce lead exposure in the main glazed pottery-producing states of the country. The results achieved are a testament to the positive impact we can generate when we work together to build a healthier and more sustainable future for all families and communities throughout the country.

This annual report presents our story, achievements, and the progress made over the year, as well as the challenges that remain for us moving forward. Our vision is clear: a lead-free Mexico that protects lives, where ancestral traditions can be preserved and celebrated without putting people's health at risk. To achieve this goal, we will continue working tirelessly to promote safe practices and raise awareness about the risks of lead exposure. Together, we believe it is possible to achieve a lead-free Mexico.

# About Pure Earth en México

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Pure Earth is an international non-profit organization, founded in 1999 by Richard Fuller, dedicated to solving toxic contamination problems, such as heavy metal waste from mine tailings and metal pollution in air, soil, and land that threaten the health and lives of people in low- and middle-income countries, particularly where contaminated areas are inhabited and there is no local regulation to address the problem.

As a global leader in this field, the organization works with governments, the international community, civil society organizations, and local academic institutions to design and implement low-cost, innovative solutions to save lives, protect livelihoods, reduce poverty, and contribute to sustainable development.

Since its founding, Pure Earth has completed more than 110 environmental remediation projects in 27 countries, improving the lives of more than 5 million people, especially women and children.

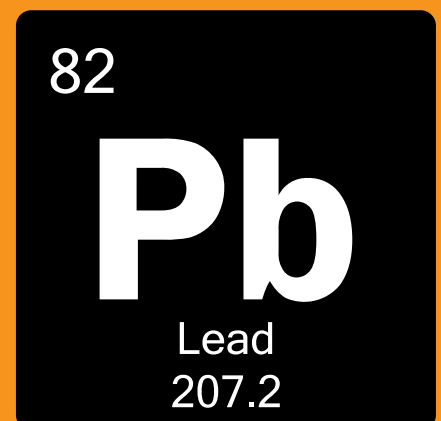
Pure Earth began working in Mexico in 2009 to address the issue of lead in glazed pottery and to seek a definitive solution to lead poisoning among both the producers and the consumers of glazed ceramics in the country.



# Lead Contamination in Mexico



The relationship between Mexicans and lead is a complex and deeply rooted **public health issue**, with historical origins and multiple sources of exposure. Although the use of lead has been reduced or eliminated in various industries, several sources of exposure still persist, causing serious harm to the health of people in Mexico.



According to data published in the 2023 National Health and Nutrition Survey (ENSANUT) by the National Institute of Public Health, “**There is no safe level of lead (Pb) exposure**; even at low doses, it damages every organ and system in the human body where it accumulates. The neurotoxicity of Pb exposure is well known for its effects on the nervous system and the brain, but chronic exposure also has reproductive, cardiovascular, renal, immunological, and endocrine effects, among others. In Mexico, Pb exposure is the second environmental risk factor with the greatest contribution to the national burden of disease, second only to air pollution. The pediatric population is especially vulnerable from the prenatal stage, as Pb crosses the placental barrier and reaches the fetus during a critical phase of organ development. During childhood, Pb is absorbed with an efficiency up to five times higher than in adulthood. Its impact is greater in populations where poverty and malnutrition are also present.”



**There is no safe level  
of lead exposure.**


The same report, based on the findings of Dr. Mara Téllez Rojo, researcher at the Center for Research in Nutrition and Health of the National Institute of Public Health, identified the following results in the Mexican population:

- **1.38 million children between 1 and 4 years of age (17.2% of the total population) present lead poisoning in Mexico** (blood lead levels  $\geq 5 \mu\text{g/dL}$ ), according to the current Official Mexican Standard.
- **The prevalence of lead poisoning is higher among vulnerable groups:** populations with the highest levels of deprivation (23.7%); Indigenous populations (28.7%); and populations with chronic malnutrition (25.2%).
- It is confirmed that **the main source of exposure in the general population is the use of lead-glazed pottery (LBVPb):** the prevalence of lead poisoning among frequent users of LBVPb is 44.3%, compared to 9.8% among those who do not use it.
- Accumulated **conditions of vulnerability increase the risk in these populations, constituting an environmental justice issue:** The population in which the highest levels of deprivation converge — living in rural areas, being Indigenous, having chronic malnutrition, experiencing multiple forms of marginalization, and using lead-glazed pottery — reaches a lead poisoning prevalence of 51.5%; nearly 15 times higher than the population with the lowest level of deprivation.

Based on data from FONART, **only 1% of glazed pottery in Mexico is lead-free.** The remaining 99% causes the **foods and beverages** cooked or served in lead-glazed clay utensils to become **contaminated**, resulting in both physical and cognitive health impacts.

**1.38 million between 1 and 4 years of age children present lead poisoning in Mexico**

**Prevalence of lead poisoning in vulnerable groups, such as Indigenous populations**



**The main source of lead exposure in the general population is the use of lead-glazed pottery.**

**Lead poisoning is an environmental justice issue.**



**Only 1% of glazed pottery  
in Mexico is lead-free**

# Consequences of lead in the body

**Lead is a powerful neurotoxin that can cause serious health harm, especially in young children.** The consequences of lead exposure vary depending on the level of lead in the blood and the duration of exposure.

## Effects of lead in children

### Neurological damage

Lead affects the development of the brain, reducing IQ levels by 5 to 8 points, which can cause learning problems, difficulties with sustained attention, persistent behavioral issues, significantly affecting academic performance and well-being of children.

### Developmental issues

Lead exposure can delay physical growth and development. It can also cause hearing and speech problems.

### Physical damage

Lead can interfere with the production of red blood cells, which can cause anemia; prolonged lead exposure can also damage the kidneys.

### Behavioral disorders

Irritability, aggressiveness, hyperactivity.



## Effects in adults

### Hypertension

Lead exposure can increase blood pressure and the risk of heart disease.

### Kidney problems

Lead exposure can damage the kidneys, which can lead to kidney failure.

### Reproductive problems

In men, lead can reduce sperm count and affect fertility. In pregnant women, lead exposure can increase the risk of spontaneous miscarriage, premature birth of children, and low birth weight.

### Neurological problems

Lead exposure can cause headaches, fatigue, memory and concentration problems, joint and muscle pain, and mood disorders.

## Acute lead poisoning

**Seizures**

**Coma**

**Death**



# FACT: LEAD IS TOXIC

It is harmful to everyone and

**DAMAGES:**



BRAIN



KIDNEYS



LIVER



BLOOD



REPRODUCTIVE SYSTEM

## Young children

are most vulnerable. Their nervous systems are still developing and they absorb **4-5 times more than adults**, which can cause:

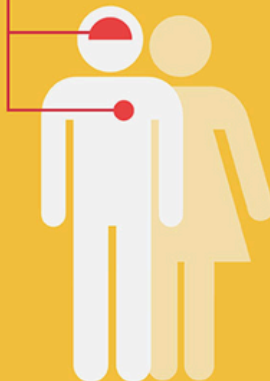
- intellectual disability
- underperforming at school
- behavioural issues



## In adults

lead exposure increases the risk of:

- ischaemic heart disease
- stroke



## In pregnant women

lead exposure damages many organs but also affects:

- the developing foetus



**There is no safe level of lead exposure**



World Health Organization

Official infographic from the World Health Organization



**It is important to note that there is no safe level of lead exposure. Even low levels of lead in the blood can have harmful effects on health.**

If you are concerned about lead exposure, it is important to speak with a doctor and get a blood test that can measure the level of lead in your blood.

# Programs



# Women Made of Clay Pottery Circles



In 2024, the Women Made of Clay Pottery Circles strengthened its presence in communities such as Tlayacapan, Morelos; San Jerónimo Ocotitlán, Santa María Atzitzintla, Coapexco, Acteopan, and Cohuecan, Puebla, training and supporting more than 40 women in **lead-free pottery production techniques**. New designs were developed and quality processes were implemented to ensure the safety of the products.



Thanks to these efforts, artisans achieved a 20% increase in sales and lead levels in the pottery workshops were significantly reduced.

Among the main activities carried out were:

**Tlayacapan, Morelos:**

Packaging workshop.

**San Jerónimo Ocotitlán:**

Mold Making; Community-Based Participatory Research on Glazes and Application of Egyptian Paste; and Participatory Research on Glaze Innovation and Design.

**Santa María Atzitzintla:**

Application of White Base, Refractory Brick Workshop, Mold Making.

**San Felipe Cuapexco:**

Community-Based Participatory Research on Glazes.

The Women Made of Clay Circle has achieved important progress in the empowerment of women potters and in promoting the production of lead-free ceramics. Through training, research, and development, the program has contributed to improving the quality of life of the women and their communities. It is essential to continue supporting this type of initiative in order to achieve a positive and sustainable impact in the pottery sector in Mexico.



The achievements of **Comunidades de Conocimiento (Knowledge Communities)** were reflected in the exchange of experiences and knowledge among the **129 participants** from the pottery communities working with Pure Earth, fostering collective learning and innovation. Their creative capacities were strengthened, and tools and knowledge were provided to women potters and their families to improve their production techniques, the quality of their products, and their management skills. In addition, practices and techniques for the production of safe pottery were shared, contributing to community health and environmental well-being.



# CENTRO DE RECURSOS ESPECIALIZADOS



## PARA ALFAREROS

In 2024, the CREA platform (Centro de Recursos Especializados para Alfareros) was consolidated as a key tool for training and transforming the pottery sector in Mexico. This resource aims to provide artisans with knowledge, techniques, and safe alternatives for producing lead-free pottery. Through this initiative, Pure Earth México seeks to strengthen the productive and commercial capacities of pottery communities, promoting safer practices for artisans, their families, and consumers. With the potential to benefit more than 5,000 potters in different regions of the country, CREA represents a fundamental step toward the elimination of lead in traditional pottery, ensuring a healthier and more sustainable future for Mexico's artisan sector.

[www.pureearth.org/crea](http://www.pureearth.org/crea)

The CREA (Centro de Recursos Especializados para Alfareros) is a digital platform that aims to train pottery communities in the production of lead-free ceramics and provide them with tools and techniques to improve their production processes and commercialization.

## Blood and soil lead measurements

This report presents a summary of the blood and soil lead measurements carried out by Pure Earth México during 2024. Blood lead measurements are essential for evaluating human exposure to lead, while soil measurements help identify potential sources of contamination within community environments, such as soil, paint, toys, and dust, among others.

Blood lead measurements are conducted using the LeadCare II device, which provides an approximate blood lead level within 3 minutes from a small drop of blood placed on a test reagent. Meanwhile, soil lead measurements are performed using an X-ray fluorescence analyzer, known as an XRF device.



## Blood lead measurements

Month	Community	# of Tests
January	Tlayacapan, Morelos	14
January	San Bartolo Cohuecan	11
January	San Jerónimo Ocotitlán, Puebla	12
January	Santa María Atzitzintla, Puebla	8
January	San Marcos Acteopan	7
January	San Felipe Cuapexco, Puebla	11
April	Tlaxcala	96
September	San Marcos Acteopan	10
September	San Jerónimo Ocotitlán	5
September	Tlayacapan	10
October	San Bartolo Cohuecan	9
October	Hueyapan	8
October	Apizaco, Tlaxcala	54
October	Centro, Tlaxcala	15
October	San Felipe Cuapexco	6
		<b>TOTAL: 276</b>

## Soil lead measurements

Community	# Soil Samples
Acteopan	31
Atzitzintla	8
Tlayacapan	23
Cuapexco	19
Cohuecan	22
Ocotitlán	17
<b>TOTAL</b>	<b>120</b>

## Lead-free establishments

In 2024, Pure Earth México achieved a significant milestone in its commitment to reducing lead exposure. Thanks to the joint efforts of artisans, communities, and local authorities, we reached out to 61 establishments and granted the “Lead-Free Establishment” recognition to 102 establishments across the country.

This achievement is the result of extensive work and reflects our dedication to the health and well-being of communities. Recognitions were awarded in several states, including Oaxaca, Michoacán, Puebla, Morelos, Yucatán, Quintana Roo, the State of Mexico, and Mexico City, strengthening our network of lead-free establishments and promoting the production of safe pottery throughout the country.



Por la salud de todos



# Alliances



During 2024, strategic partnerships were a key pillar in amplifying the impact of Pure Earth México, allowing us to expand the reach of our initiatives and strengthen the fight against lead contamination. Collaboration with government entities, international organizations, academia, and the private sector made it possible to implement innovative projects, develop specialized training, and generate sustainable solutions for vulnerable communities. Thanks to these partnerships, we were able to broaden our efforts, benefit a greater number of families, and reinforce collective work toward eliminating lead in traditional pottery, protecting public health, and promoting safer and more sustainable environments.

### **In particular, we would like to highlight the following results:**

- **Tec de Monterrey Campus Lago de Guadalupe**
  - Delivery of a Manual to Improve the Temperature of Upgraded Kilns in Communities.
- **Tec de Monterrey Campus Sur**
  - Through the Socio-Formadores program, we collaborated on a project with finance students, who developed and delivered a costing manual.
- **Ibero Puebla**
  - Tools Manual.
  - Nutrition surveys conducted with pregnant women.
  - Nutrition Manual for Pregnant Women.
  - Museum Exhibition Presentation and Catalog.
  - Innovation and Design Project in the Community of Coapexco, Puebla.

- **Ibero Santa Fe**
  - Delivery of a carbon footprint impact manual.
  - Lead and preeclampsia project in coordination with Dr. Alejandra Carvajal.
  - Project to measure the bioavailability of lead in clay pots.
- **Secretaría de Cultura Puebla**
  - Joint organization of the Comunidades de Conocimiento project in the community of Cohuecan, Puebla.
- **Dirección de artesanías de Tlayacapan, Morelos**
  - Provision of space, organization, and logistics for the 4th Lead-Free Artisans Gathering in Tlayacapan, Morelos. Where we welcomed more than 300 artisans and individuals interested in the production, promotion, and dissemination of lead-free pottery.
- **Dirección de Cultura del municipio de Cuernavaca**
  - Dissemination of activities from the 4th Potters' Gathering in Tlayacapan, Morelos.
- **Cine Morelos**
  - Screening of the documentary arte/sano in collaboration with the IMSS in Tlaxcala.
- **Museo Morelense de Artes Populares**
  - Distribution of the Pure Earth's Kitchen recipe books.
- **Universidad Autónoma del Estado de Morelos (UAEM)**
  - Collaboration with social service programs and support in the dissemination of the 4th Lead-Free Artisans Gathering.

- **Instituto de Artesanías de Tabasco**

- Construction of an improved traditional kiln in the community of Monte Grande, Jonuta, Tabasco, in collaboration with the Institute for the Promotion of Handicrafts (IFAT) and the Kaj Buch Foundation, benefiting 23 artisans in the production of lead-free pottery.

# Fundraising



Pure Earth México has made significant progress in eliminating lead from traditional pottery, thanks to the commitment and generosity of our donors. Their support has been essential in empowering pottery communities, promoting safe practices, and protecting the health of millions of people in Mexico. We deeply appreciate each of our donors, whose trust in our mission drives us to continue working tirelessly for a future free from environmental toxins such as lead.

During 2024, we continued our work thanks to the invaluable support of **Fundación Clarios**, with whom we have been jointly advancing efforts to eradicate lead contamination in pottery-producing communities across the country. Their essential support in research and development has also enabled the continuation of studies needed to determine the relationship between lead exposure and various diseases and health conditions in the Mexican population.

The importance of supporting the health of women potters and their families was recognized by the **Women's Association of Diplomatic Spouses A.C.**, who committed to providing 3 improved traditional kilns to 3 pottery families in the communities of Acteopan and Cohuecan, Puebla. This support enables them to continue producing lead-free pottery in the region and to reach new markets with their non-toxic ceramic pieces.



The **Australian Embassy in Mexico** joined the effort in 2024 to reduce blood lead levels among women potters in Coapexco, Puebla. Recognizing the importance of working in lead-free environments, the Embassy supported their training in the use of lead-free glazes, design and innovation, as well as the improvement of 5 traditional kilns to enable them to reach higher firing temperatures.

Through the program “Scaling up Climate Change and Environmental Policies and Programmes and their effectiveness by integrating gender perspectives” of **UN Women**, Pure Earth México will work throughout 2025 to implement the digital platform “Centro de Recursos Especializados para Alfareros y Alfareras” (**CREA**), with the goal of digitizing training for lead-free pottery production. This project seeks to elevate a solution designed by women potters to support pottery communities in Mexico, promoting the production of lead-free ceramics and contributing to public health, women’s economic empowerment, and environmental sustainability. In addition, the platform aims to strengthen the leadership of women potters and their participation in local decision-making processes.



Centro de Recursos Especializados para Alfareros

# Communications



The communications area of Pure Earth México plays a fundamental role in disseminating information about toxic contamination and its effects on human health, particularly in the pottery-producing communities where we are present. Through various communication strategies, this area seeks to raise public awareness about this issue, promote the adoption of more sustainable practices, and generate social change that drives more effective public policies.

On social media, Pure Earth México has succeeded in building a community committed to addressing lead exposure in the country. By sharing inspiring stories from communities undergoing change, studies on the effects of lead on the health of the Mexican population, and calls to action, the organization has helped make the issue of toxic lead contamination visible and has generated a significant impact on public awareness. Social media allows Pure Earth México to interact directly with its audience, answer questions, clarify concerns, and mobilize people to take action.

In addition to raising awareness, social media serves as a platform to share the achievements of Pure Earth and its partners. By highlighting project results, testimonials from beneficiary communities, and advances in research, the organization strengthens its credibility and demonstrates the tangible impact of its work. This, in turn, attracts new donors and collaborators, allowing the reach of its efforts to expand.

**During 2024, our followers increased by more than 15% on each social media platform.**



**@PureEarthMx**  
4433 followers



**@pureearthmexico**  
1272 followers



**@pureearthmexico**  
332 followers



**@ Pure Earth México**  
43 followers



**@PureEarthMéxico**  
63 followers

At Pure Earth México, we would like to express our most sincere and profound gratitude to all media outlets in Mexico, both at the national level and in the local regions where we are present, for their invaluable support and commitment to our cause. Thanks to their collaboration, we have been able to amplify our message, raising awareness and sharing crucial information with thousands of people about the risks of lead to human health and the actions needed to eliminate it.

Through interviews, special reports, published articles, and opinion pieces, we have been able to inform a wider audience about lead poisoning in blood, its health effects, and the solutions we promote to build a lead-free Mexico. Their willingness to provide us with space and help disseminate our initiatives has been fundamental to the impact of our work.

Thanks to this joint effort, in 2024 we succeeded in positioning more than 60 key messages in print and digital media, in addition to achieving extensive coverage of our press releases. We deeply appreciate that media outlets also used their social networks to amplify and give greater reach to these messages, which are of high importance to Mexican society.

Your commitment to sharing information that serves the public interest is key to achieving real change. Thank you for being part of this effort to build a healthier, lead-free Mexico!

None of this would be possible without the support of the media, who have been essential allies in amplifying our voice and sharing stories that inspire action and change.

We thank each and every one of them for providing these spaces, and we hope to continue counting on their support throughout 2025.

In particular, we extend our sincere thanks to El Financiero, El Sol de México, El Universal, Estampas de México, YoInfluyo, Salud 180, Noroeste, Enfoque Noticias, France24, Expok, Luces del Siglo, Despierta TV, Periódico Central, UNO TV, N+, Milenio Noticias, and 88.9 Noticias for their coverage and support throughout the year, consistently helping ensure that our information is recognized as a priority for all.



# Administration



At Pure Earth México, we have a team of professionals across various areas, including administration, finance, programs, communications, and development. Our team works collaboratively to implement the organization's projects and activities throughout the country.

Pure Earth México is funded through various sources, such as donations from individuals, foundations, and companies, as well as grants from governments and international organizations. We are committed to using these funds in a transparent and efficient manner to achieve our objectives.

Each year, we maintain high standards of transparency and accountability in all our operations, publishing annual and financial reports that detail our activities and the use of the resources we receive.

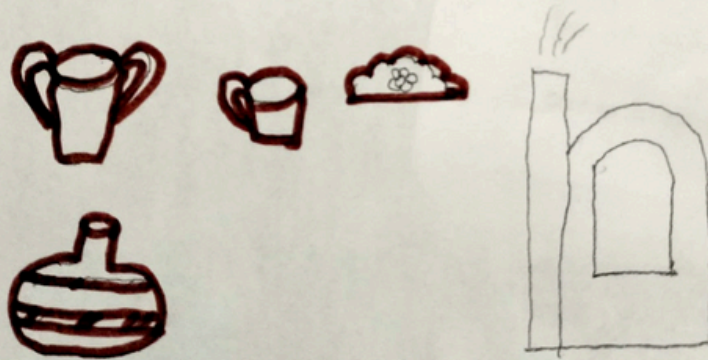
Additionally, we undergo external audits to ensure the integrity and efficiency of our financial management. Every year, we submit declarations to the SAT, the CLUNI registry, and the transparency report in a timely manner and without observations. The organization's board meeting minutes were updated, and tax filings and payments were completed accurately and on time.

# Testimonials



## Pure Earth

Estoy agradecida de pertenecer a este grupo es una experiencia bonita en aprendido mucho acerca de los pigmentos y esmaltes espero que el grupo sigan adelante porque es un taller sano y es el futuro de nuestros hijos, tambien me gustaria tener mi propio taller, ya que este material es libre de plomo y es el bienestar de mi familia ya que teniendo el horno en casa mi economia creceria para el bienestar de mis hijos. Es un honor pure earth pertenecer a su grupo, ya que las artesanias pertenecemos toda la vida.



Araceli Cordero Ariza

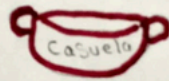
“Pure Earth. I am grateful to belong to this group. It is a beautiful experience; I have learned a lot about pigments and glazes. I hope the group continues moving forward because it is a healthy workshop and it is the future of our children. I would also like to have my own workshop, since this material is lead-free and it supports the well-being of my family. By having the kiln at home, my economy would grow for the well-being of my children. It is an honor, Pure Earth, to belong to this group, because as artisans, we are connected to this work for life.” - Araceli Cordero Ariza

Pure Earth 27/01/25

Hola: buen dia

Mis mas sinceros agradecimiento con las  
compañeras operadoras que si son muy  
buenas con nosotras porque nos apoyan y  
nos explican bie cuando les preguntamos algo

"muchas gracias alas operadoras"



Silvia Adorno Cuellar

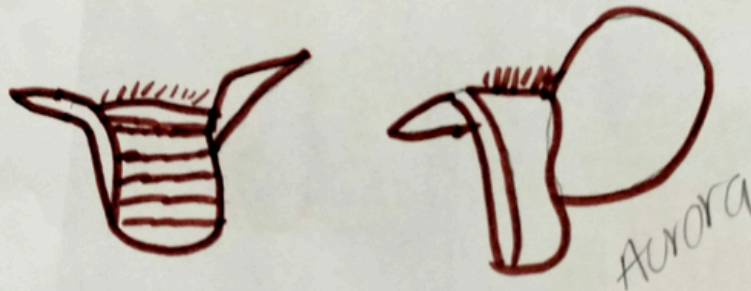
"Hello: good day.

My most sincere thanks to the women field operators, who are very kind with us, because they support us and explain things well when we ask something. Thank you very much to the operators." - Silvia Adorno Cuellar

Saludos y Buen día a la  
Embajada Pure Earth

les agradecemos mucho y de todo  
Corazón por el apoyo que nos  
brindan con la capacitación y  
enseñanza de nuestras operadoras  
que nos tratan muy bien nos tienen  
mucho paciencia y nos enseñan muy  
bien dan lo mejor de ellas

Muchas Gracias



“Greetings and Good Day Pure Earth.

We thank you very much, with all our hearts, for the support you give us through the training and teaching from our instructors, who treat us very well. They have a lot of patience and teach us with great care. They give us the best of themselves. Thank you very much.” - Aurora

Pure Earth

es fox muy agradecida  
con ustedes por su paciencia  
Gracias a ustedes por todo lo que  
emos aprendido mucho  
agracias a toda su equipo  
Si vamos Trabajando

Juntos



Mo. Vianey

“Pure Earth,  
I am very grateful to you for your patience. Thank you for everything — we have learned so much. Thanks to all of your team. Let’s keep working together.” Vianey

# Acknowledgements



# Our Commitment 2025: Saving Lives, Protecting Families



2024 was a year of major progress, but it also made clear that challenges remain. In 2025, we reaffirm our commitment to continue working tirelessly to save lives and protect Mexican families from lead poisoning. We will maintain our focus across each of our areas of action: advancing research on glazes, improving the use and performance of high-temperature kilns, and taking a crucial step forward with the launch of Home-Based Assessment research, which will allow us to strengthen our strategies and more effectively address different sources of contamination. With the support of our partners and communities, we will continue moving toward a safer, lead-free Mexico.

**¡Gracias!**



**[Watch our video Making a Difference Together: The Impact and Partnerships of Pure Earth México in 2024](#)**

# Pure Earth Mexico Team



**Agustín Gama**  
Country Director of  
Pure Earth Mexico



**Jesús Solís**  
Operations Director  
Pure Earth Mexico



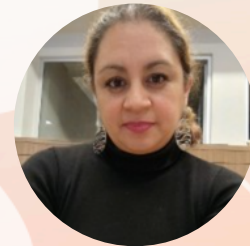
**Netzy Peralta**  
Programs Director of  
Pure Earth Mexico



**Carmina Jure**  
Institutional  
Development  
Coordinator



**Elissa Rascón**  
Communications  
Coordinator



**Wendy Sarmiento**  
Public Relations  
Coordinator