

Crossing Borders and Communities for Healthy Water

**Sponsored by
EPA's Border 2020 Program**

In Partnership with:

NM Water Resources Research Institute

NMSU Chemical Engineering Department

Border Partners (Non-profit)

New Mexico Environment Department

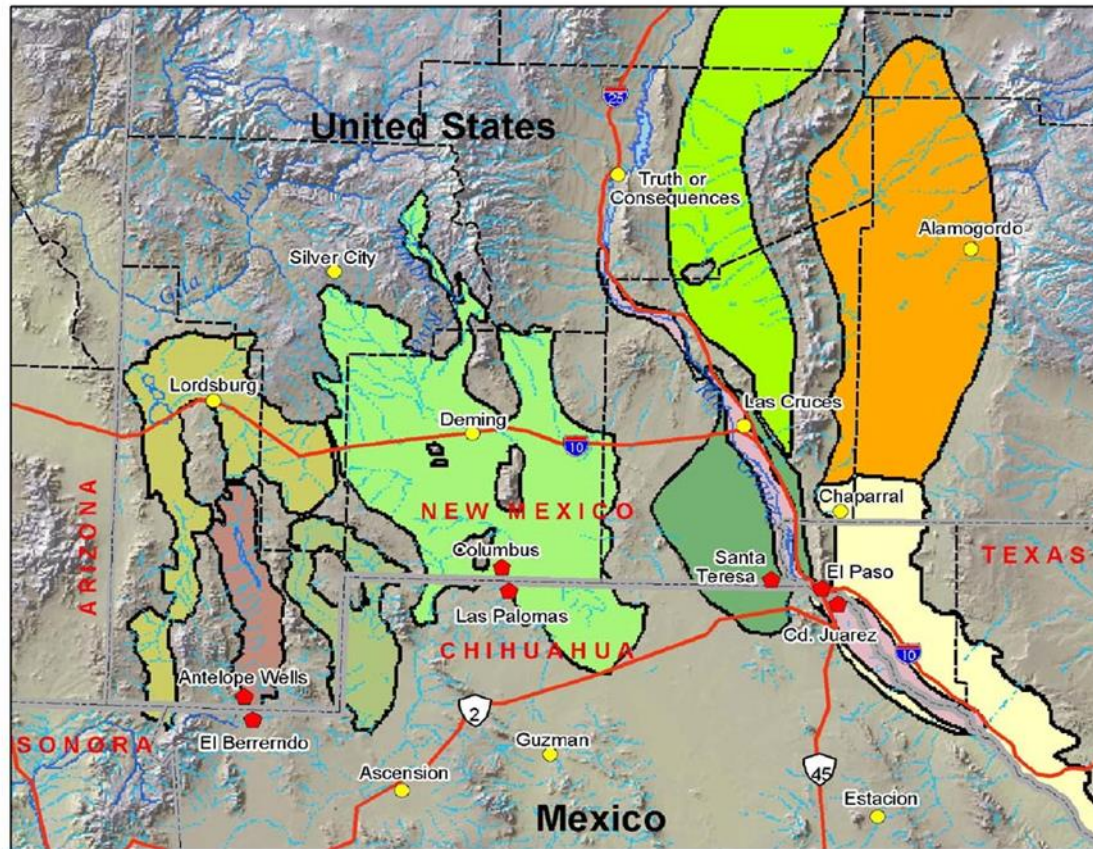
New Mexico State University



Puerto Palomas, Chihuahua

- Located just south of Columbus, NM.
- Population of 4,688.
- Arsenic contamination
 - Horrible Carcinogen.
- Fluoride contamination
 - Bone Fluorosis or neurological damage.
- Depends entirely on well water
 - Naturally occurring concentrations of arsenic and fluoride exceed the permissible limits of Mexico and the U.S.

New Mexico Transboundary Aquifers



Source:
 URRI

0 25 50 100 Miles
0 25 50 100 Kilometers



Key Partners



- Main connection with EPA and Border Partners.



- Community outreach in Palomas



- Worked with several professors to attain a viable solution.
 - Dr. Shuguang Deng
 - Dr. David A. Rockstraw
 - Mark Chidester (Water Quality Lab)
 - Graduate students

Proposed Solution

- Homemade water filter.
 - Low cost
 - Easy to assemble
 - Removes arsenic
 - Improves the taste



What's Working

Hall Environmental Laboratory, Albuquerque

CONTAMINANT	RESULTS	STANDARDS					
		U.S.	Exceeded	%	Mexico	Exceeded	%
Fluoride							
<i>Unfiltered</i>	4.90 mg/L	4.000 mg/L	Y	22.5	1.500 mg/L	Y	226.7
<i>Filtered</i>	0.240 mg/L	4.000 mg/L	N	-	1.500 mg/L	N	-
Arsenic							
<i>Unfiltered</i>	0.030 mg/L	0.010 mg/L	Y	200.0	0.025 mg/L	Y	20.0
<i>Filtered</i>	ND	0.010 mg/L	N	-	0.025 mg/L	N	-

ND = Not Detected

Our Approach



NMSU demonstrated to Palomas science teachers how to assemble a simple water filter.



Science teachers Juan Carlos Huerta and Joel Carreon pose with the filter they assembled for installation at the Palomas primary school.

Next Steps

- Further Development with the filter.
 - Work with people with the proper expertise.
- Reach out to other communities.
 - More partners with good connections to the community.





Thank You!

