



# Electrochemical Point-of-Use Water Purification System

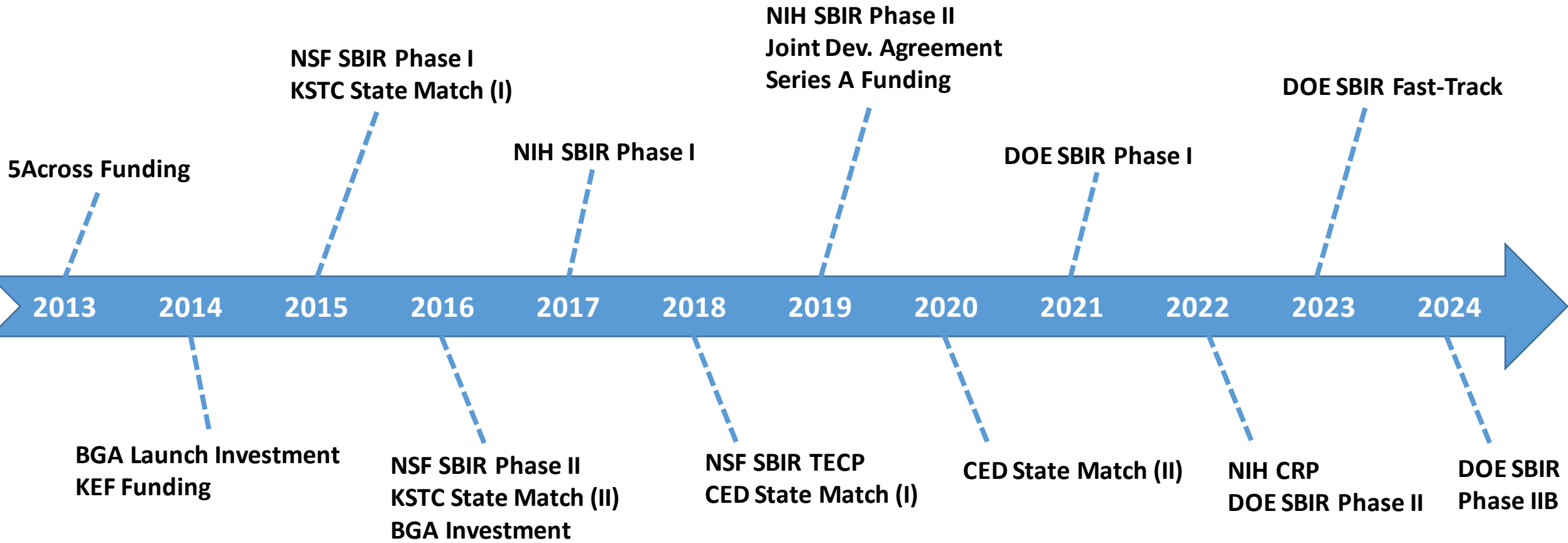
**ElectraMet**<sup>®</sup>

October 28, 2024

Lindsay Boehme, Ph.D.

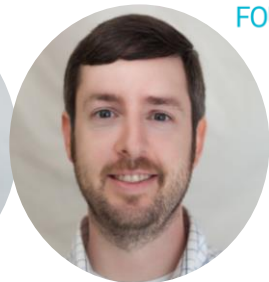


# Meet ElectraMet



Cameron Lippert, Ph.D.  
FOUNDER + CEO

James Landon, Ph.D.  
FOUNDER + CTO



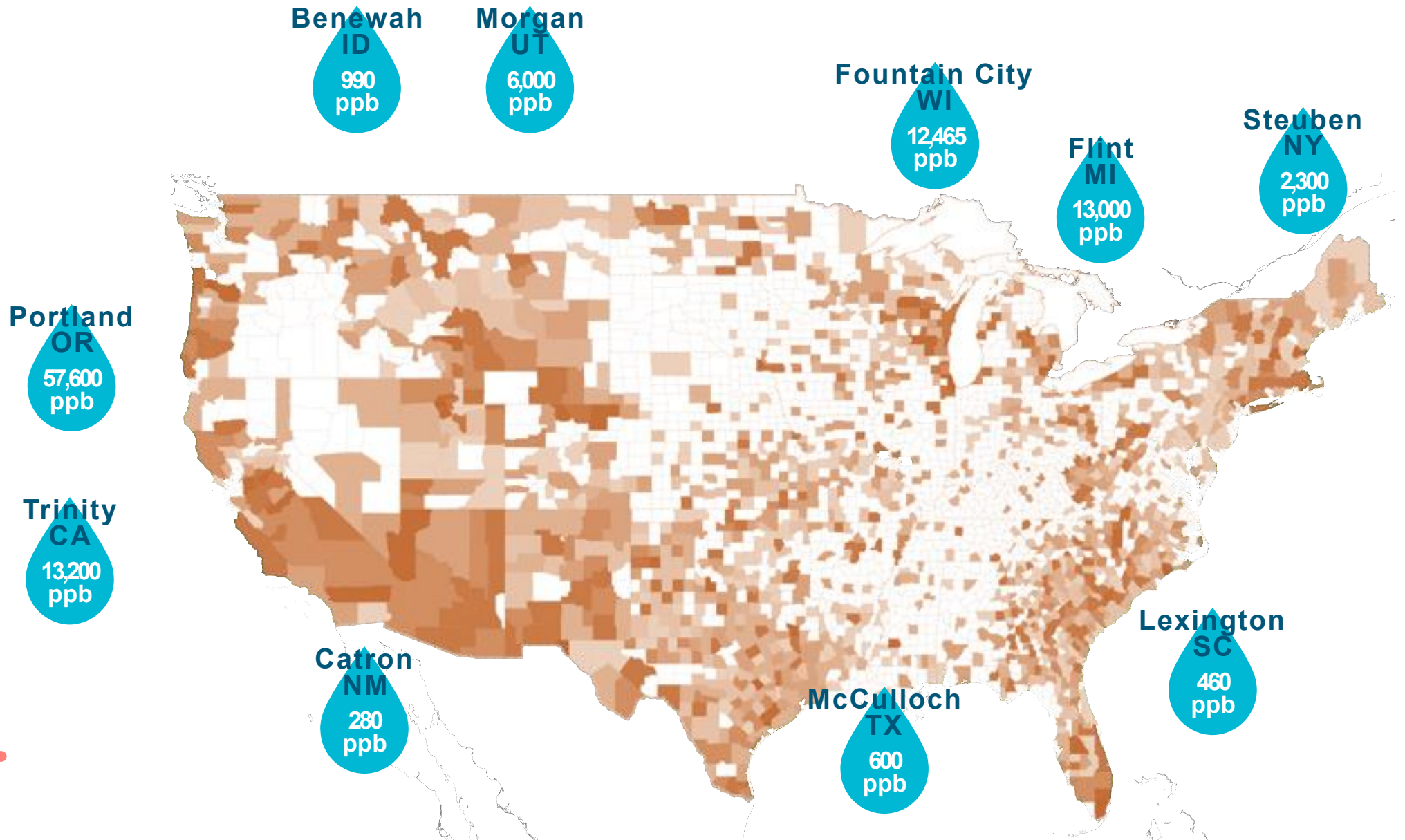
Cabinet for Economic Development

# Metal Pollution is an Immediate Problem

15 ppb

EPA limit

Flint  
is not  
alone.



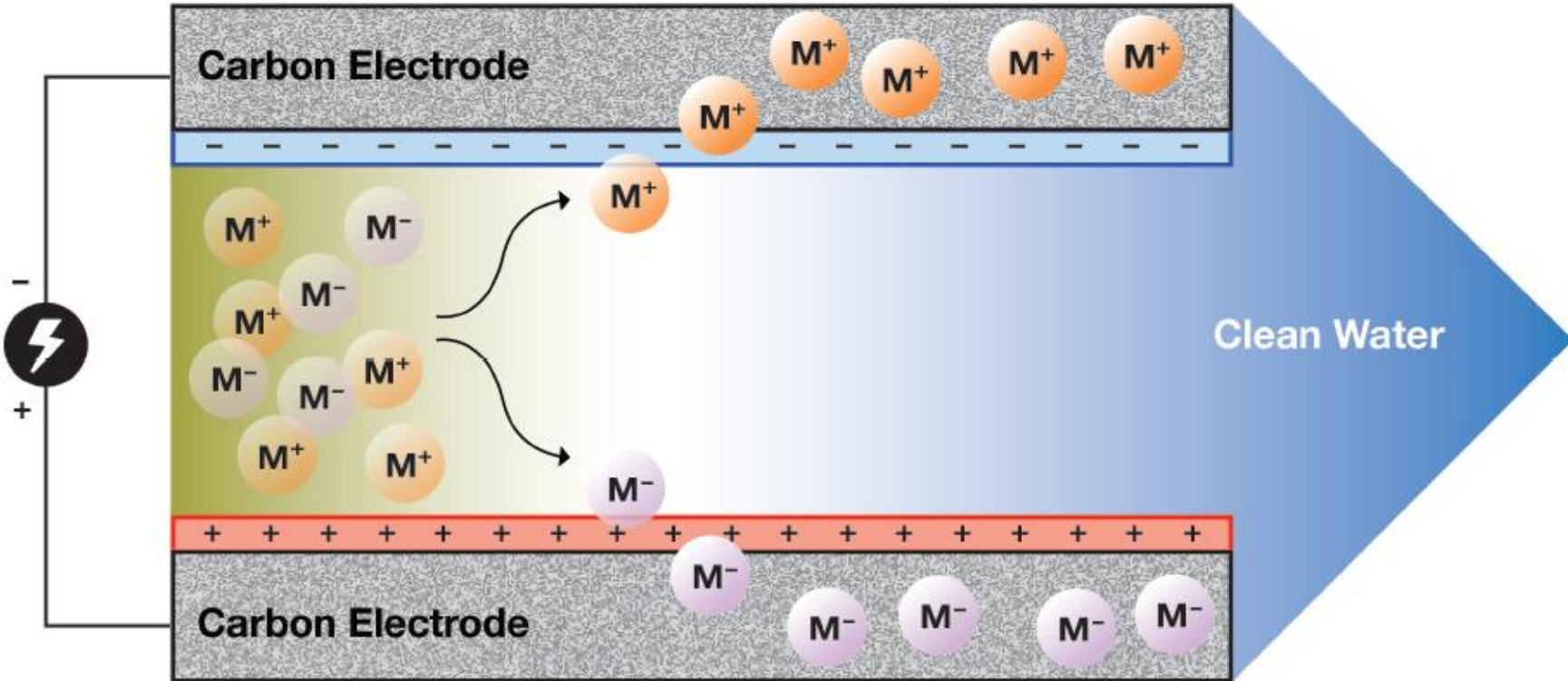
# Sources of Lead in Drinking Water





# ElectraMet Solution

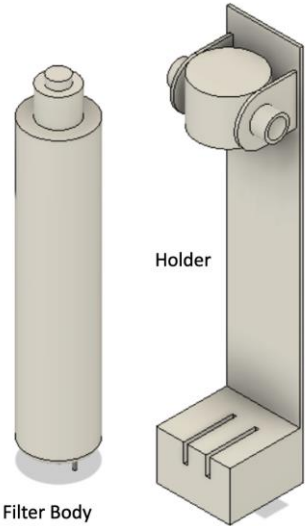
## How it works



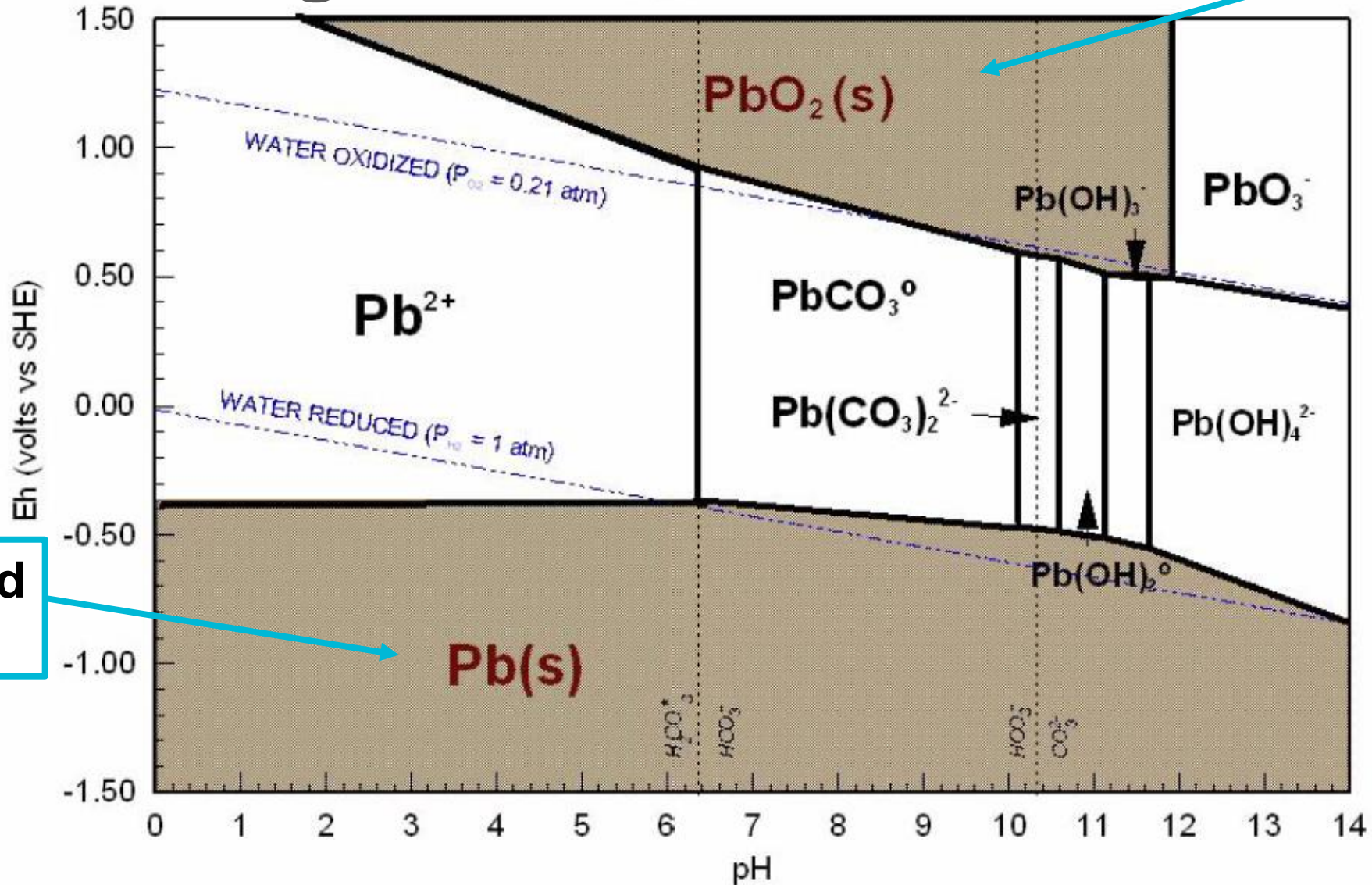
TARGETS NUMEROUS METALS + CONTAMINANTS, INCLUDING:

24 <b>Cr</b> Chromium 51.9961	47 <b>Ag</b> Silver 107.868	48 <b>Cd</b> Cadmium 112.414
29 <b>Cu</b> Copper 63.546	82 <b>Pb</b> Lead 207.2	25 <b>Mn</b> Manganese 54.938
46 <b>Pd</b> Palladium 106.42	27 <b>Co</b> Cobalt 58.933	79 <b>Au</b> Gold 196.967

### Filter Concept



# Pb Speciation in Drinking Water Pourbaix Diagram



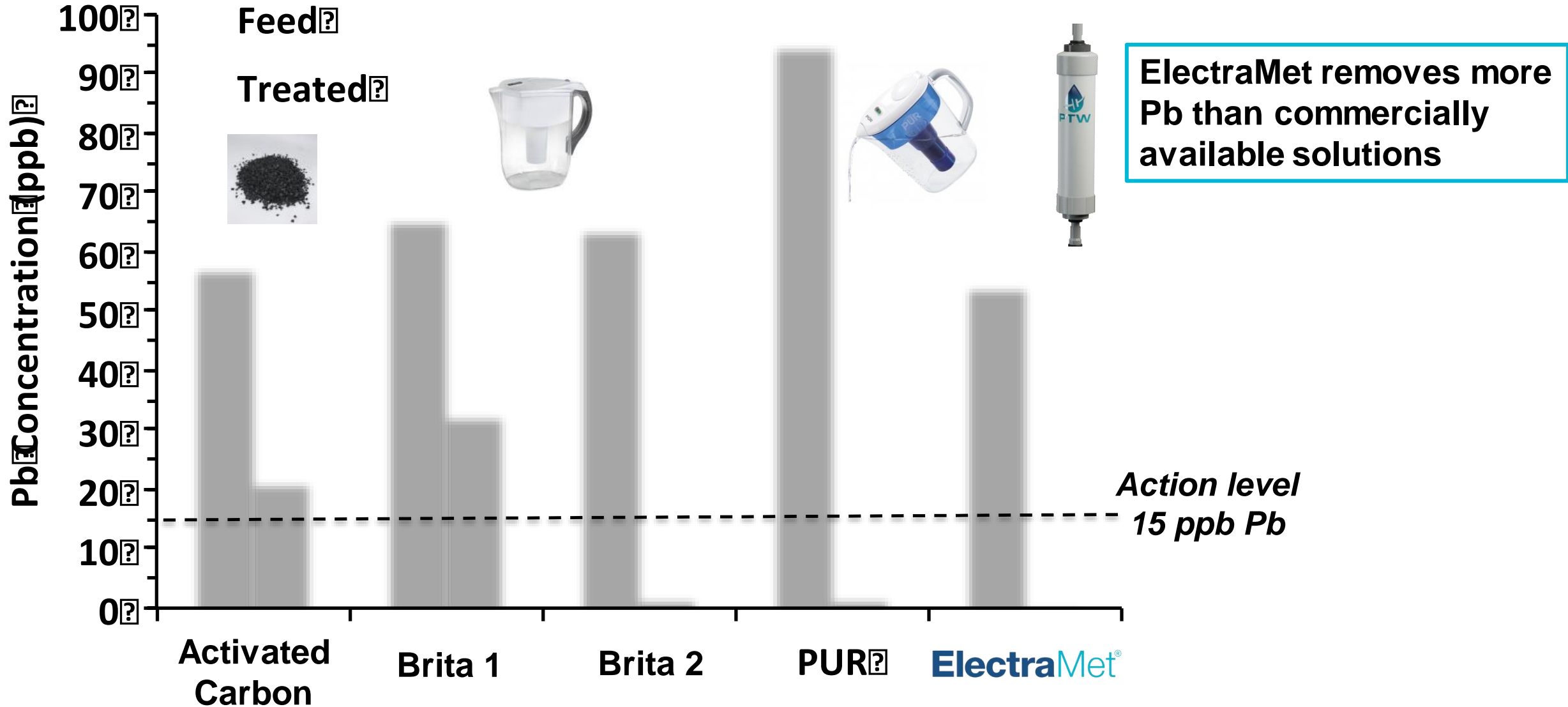
Immobilized Pb

Immobilized Pb

# Current Technologies vs. ElectraMet

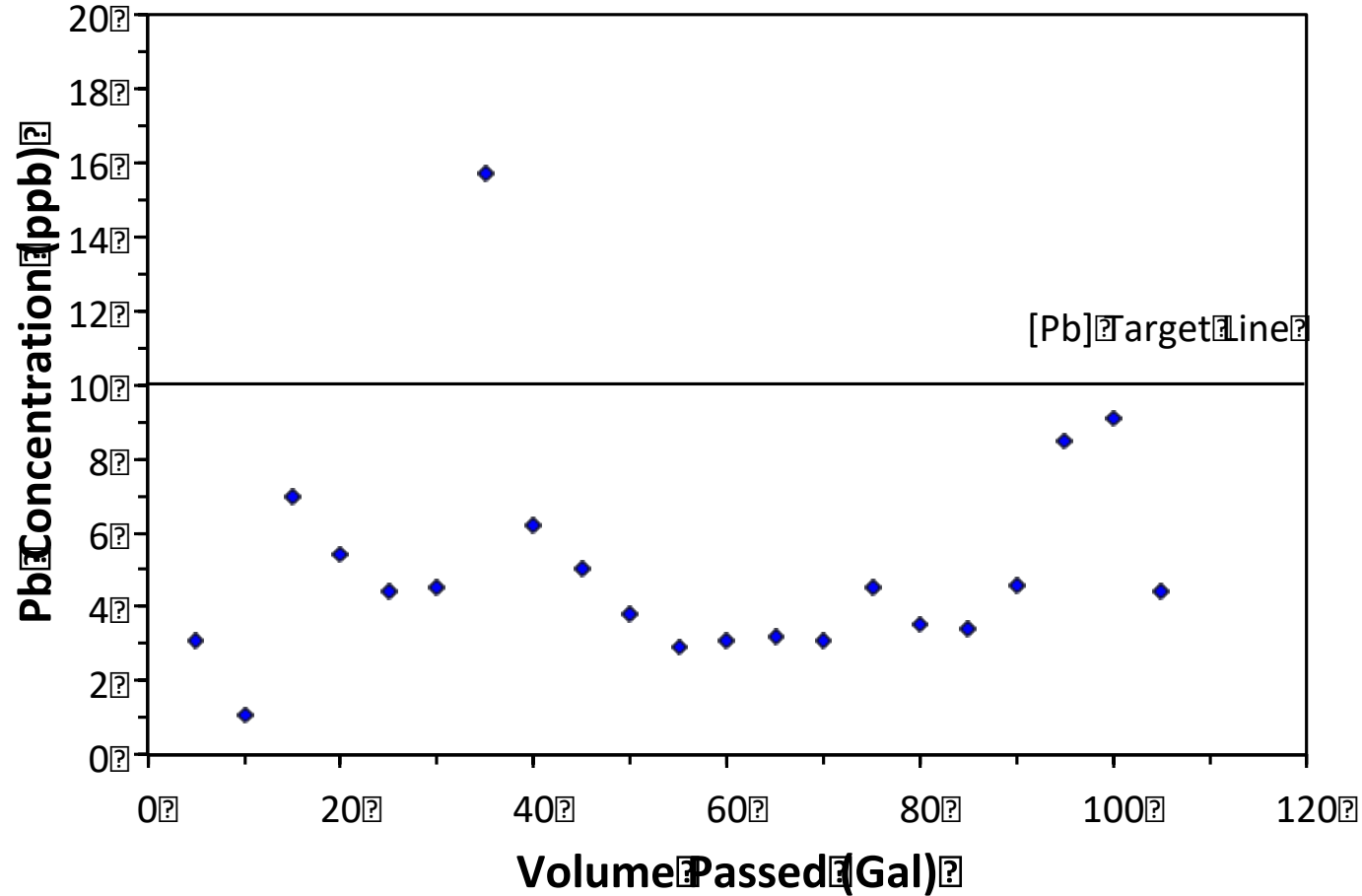
Product Feature	ElectraMet	RO	Adsorbents	Ion-Exchange
Selective Pb removal	✓	X	X	X
Easy Installation	✓	–	✓	✓
Lifetime	✓	X	X	X
Low Annual Cost	✓	X	✓	X
Low Waste	✓	X	X	X
No Consumables	✓	X	X	X

# Pb Removal Comparison



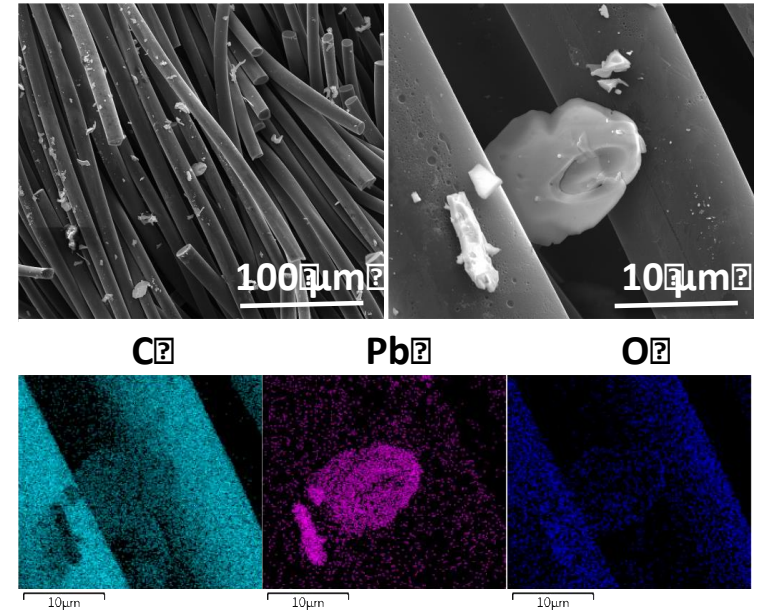


# ElectraMet Performance



Average Feed [Pb] = ~150 ppb  
 Average Product [Pb] = ~ 5.07 ppb

## Pb Precipitates



## Selectivity

Species	Feed	Product
Ca (ppm)	44.39	44.99
Mg (ppm)	17.11	17.06
Pb (ppb)	126	2.4

# Acknowledgements

## Award



### NIEHS SBIR CRP

**Grant Number:** SB1ES028171

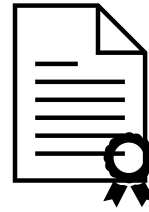
**Project Title:** Electrochemical POU  
Water Purification System

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[www.electramet.com](http://www.electramet.com)

## Patents



### FARADIC POROSITY CELL

- US11117818
- EP3826745
- CN112543671
- JP2021531158
- IN202137001834

## Team

