Water Advisory Council
July 9, 2025
8:00 am
AGENDA

1. Call to Order
2. Public Comments on Agenda Items
3. Approval of Minutes – March 12, 2025
4. Approval of Agenda
5. Updates
    a. Lead Reduction Initiatives
        i. Reducing Water Kit distribution in 3rd Ward (Healthy Homes)
        ii. State DHHS Filters
    b. YTD Lead Service Line Replacements map
    c. Lead Service Line Construction Projects
        i. Upcoming Projects
    d. State Drinking Water Advisory Council
    e. Draft Corrosion Control Study
    f. Annual Lead and Copper Rule Sampling
    g. AWWA Conference- Sources of lead in blood, David Cornwell
    h. Member Updates
    i. Community Events
6. Public Comment
7. Next Meeting – September 10, 2025
8. Adjournment

Water Advisory Council
March 12, 2025
8:00 am
MINUTES

Members Present

Izamar Contreras (City of GR), Paul Haan (Muskegon River Watershed), Wayne Jernberg (Chairperson, City of GR), Sara Simmonds (Kent County Health Department), Julius Suchy (Ada Township), and Jennifer Wiliams (GRPS)

Others Present

Kolene Allen (City of GR), Kat Lykins (Healthy Homes), Jameela Maun (Healthy Homes), Hannah Napolillo (Kent County Health Department).

Call to Order

Mr. Jernberg called the meeting to order at 8:08 a.m.

Approval of Minutes – January 8, 2025

Motion to approve the minutes by Ms. Simmonds second by Ms. Contreras.

MOTION CARRIED.

Approval of Agenda

Motion to approve the minutes by Ms. Simmonds second by Mr. Suchy.

MOTION CARRIED.

Updates

Lead Reduction Initiatives

Ms. Contreras pointed out the map included in the agenda packet, "Lead Reducing Water Kits Distributed in the Third Wards 2024-2025" which shows that about 200 kits were distributed. Many of those were in the Garfield Park and Baxter neighborhoods which we intentionally targeted.

Ms. Lykins stated that while January was slow for kit drop offs, she focused on giving out flyers across the city, which included stopping into several churches in the third ward to talk about the program, other community organizations and three branches of the Grand Rapids Public Library. She also attended a few events, sharing program information and giving out some kits. They also continued their weekly pickup hours at SECOM from 9 am – noon.

To date, Healthy Homes have given out 210 kits, mailed out 345 mailers, and gave door hangers to thirteen residents. She also reported that they have received 33calls from residents asking about the program. She also gave an interview with WGVU media radio station about the program.

Mr. Jernberg mentioned that Commission Night out is at Union School on March 25 from 4:30 – 7:00 pm and Healthy Homes could table at that event.

Ms. Contreras also stated that she and Hillary Caron will be attending the next Neighborhood Association Commission to report on the program and try to get a new member from one of the Neighborhood Associations in the Third Ward.

Ms. Maun added that Healthy Homes will be attending events several events geared towards reading month which is March, and will be handing out material at those events.

Ms. Williams thanked Ms. Contreras for giving her the postcards. They were given out to every family in the Third Ward and she will be working on getting the information to themed schools located in the Third Ward and who are bussed in to GRPS schools.

YTD Lead Service Line Replacements map

In the last two months, 229 filters have been given out but that will increase as construction projects start.

The green dots are project replacements, and the contractors are working on those when the weather has been good over the winter. Some of them, on Lincoln and north of Ann Street are rotomill and resurface projects, and the contractors are using those opportunities to do lead service line replacements.

He also stated that it has been a challenge for City employees to talk to residents because many people are distrustful of government employees.

Lead Service Line Construction Projects

- Upcoming Projects - Mr. Jernberg pointed out the Lead Service Line Replacements project list and gave a summary of projects on the list.
- Filter Distribution – Mr. Jernberg said that as the City moves forward on replacements, we will be handing filters out as projects start. Those will be given out by the contractors. It allows the City some flexibility while the construction projects occur as well.

State Drinking Water Advisory Council

Mr. Jernberg stated that he attended the February meeting and a workshop in March. Mr. Jernberg will remain the chair for 2025. There is a new member, Kaitlyn Defouw from the Department of Health and Human Services. She had several comments regarding their literature and asked why some of the City's literature doesn't match that of DHHS and that ultimately the council is not required to match theirs.

In the summer of 2024, there were eight Allowable Level Exceedances (ALEs) across the state and six for lead and two for copper. The two that stood out were from the City of Riverview and Benton Township. Grand Rapids is six parts per billion and was certified for that. Mr. Jernberg

asked if the action level was twelve parts per billion in 2024, how many ALE communities would there have been. It would have meant that there would have been 20 ALE communities.

GLWA also had concerns regarding the drop from fifteen to twelve. EGLE is working with them to up their phosphate dosage to help the water system reduce their lead levels. He added that most filtration plants add phosphate. If you don't have the proper chlorine amounts and pH mixture, you'll likely fall into a lead two category which means that lead is more likely to flake off.

The City has been testing our method for seven years and expects to get a report on the data soon which will include dosage rates and comparables with recommendations and bench testing that they have done on some harvested lead pipes from our system. When we get the report, we will share it with the group.

Twenty communities in the state are members of the Water Research Foundation. We provide them with funding based on flows. They use this money on research. If anyone wants the studies, we can get them from Jenniefer Warner who has been working on those reports.

LCRI update - The deadline for the state to adopt changes to the LCRI is November 1, 2027.

Lead Service Line Notifications – EGLE has confirmed but has not sent out any formal certification for municipalities that have sent out their lead notification letters. The City sent out its lead notification letter in October 2024. This letter is an annual notification.

Also, the State is requiring that all tier one ALEs must be informed if they are over 12 parts per billion within 24 hours.

The CDSMI – the LCRI proposes that it will get updated annually which we already report on anyway. There was a discussion that if there is a boil advisory related to lead service lines that filters may be required to also be distributed. There may also be a requirement that if a boil advisory goes out that residents are told not to use it for consumption until it's filtered.

The state approved our Consumer Confidence Report and we will be mailing it out starting March 25th.

EGLE is working on improving their CDSMI. They are also developing something called a WIG, which means Wildly Import Goal. Their lead and copper staff are reviewing the CDSMI data and comparing it to the sampling plants. They want to ensure that testing is occurring where the highest level of lead may exist. It will not be a quick or easy process as there are 6 million systems to look at.

Filter First Grant – This grant was $50M set aside for daycare and schools to replace their lead lines. Award letters are going out to 119 childcare centers and 610 schools/school systems.

Corrosion Control

Mr. Jernberg stated that Fishbeck and Cornwell Engineering has been helping the City with this for the last 6-7 years and the City has learned a lot. Based off the data he has seen, he is very hesitant to change the process we are already doing. He doesn't see it being cost effective at this time. We have funds in our budget to remove our transmission lines and the risk we take

and the fluctuations, along with some of the PR we receive, will need to be taken into account and the City Manager would be the one to make that decision.

Member Updates

- **New member needs** - Mr. Jernberg stated that we still need a member from a neighborhood association. He also stated that James Hurt retired last month so we are also in need of another member from the City of Grand Rapids. He is hoping that once we hire a new Assistant Manager that person will become the new member of the City.
- **Fluoride -** Mr. Simmonds stated that Utah is the first state in the country to remove fluoride from their drinking sources. Mr. Jernberg stated that he gets requests about fluoride occasionally and we stand behind the data from the American Dental Association, the health department, CDC and WHO. Grand Rapids has an 80-year history with adding fluoride to our water. The last five to seven years there have been more inquiries than he has ever seen. AWWA notifies us when something comes out regarding fluoride that may affect us. Lake Michigan has between .15 and 2.5 parts of fluoride naturally occurring. We only add about .5 parts to our water.
- **Ada Rate Study** - Mr. Suchy stated that they are going through a full rate study, so when someone wants to open a new restaurant it is dependent on how many seats are in the restaurant which doesn't make a lot of sense so they are doing a study to figure out a more rational way to create a more equitable structure so that small homes and business aren't footing the bill for the larger ones.
- **Water Pool-ooza at the Lakeshore -** Ms. Contreras said that Water Pool-ooza will be on Apil 19th at the Lakeshore. People can tour the Lake Plant and learn about the Urban Drinking Water Cycle.
- **GRPS Water events this summer** - Ms. Williams has been sharing the lead card provided by Izamar and the theme for this year's summer GRPS events is water. They are planning on taking some field trips to the City water facilities, including the Lake Plant and Water Resource Recovery Facility. They also have other STEM activities planned.

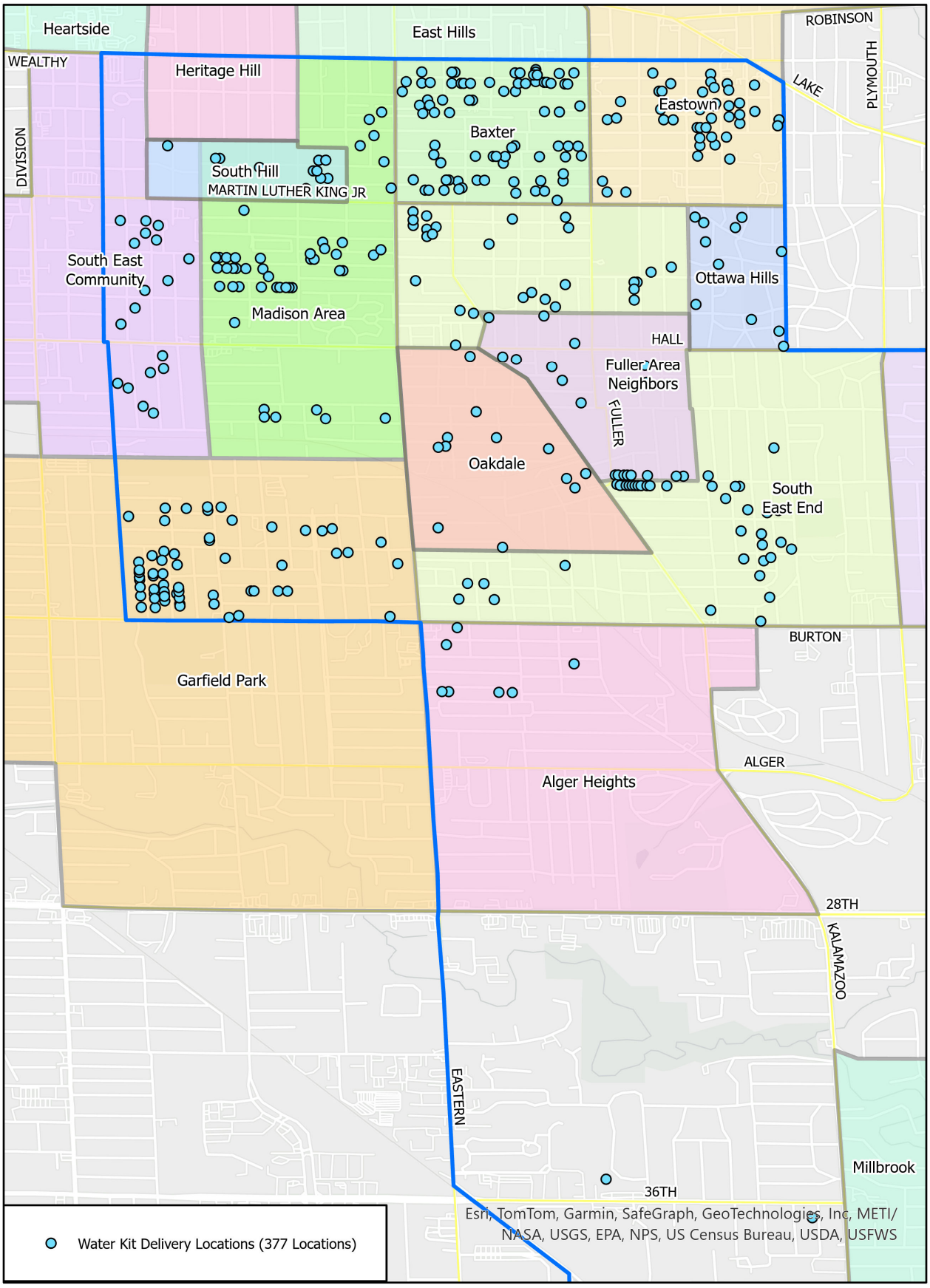
Next Meeting

May 14, 2025

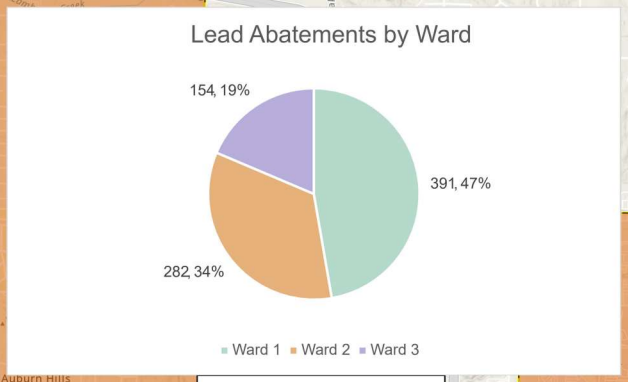
Adjournment

Mr. Jernberg adjourned the meeting at 9:23 am.

Lead Reducing Water Kits Distributed in the Third Ward October 2024- June 2025



January 1st - June 30th, 2025
Lead Service Line Replacements



PROJECT TYPE
- Capital Project (63)
- Emergency Leak (134)
- Project Replacement (632)

1
2
3

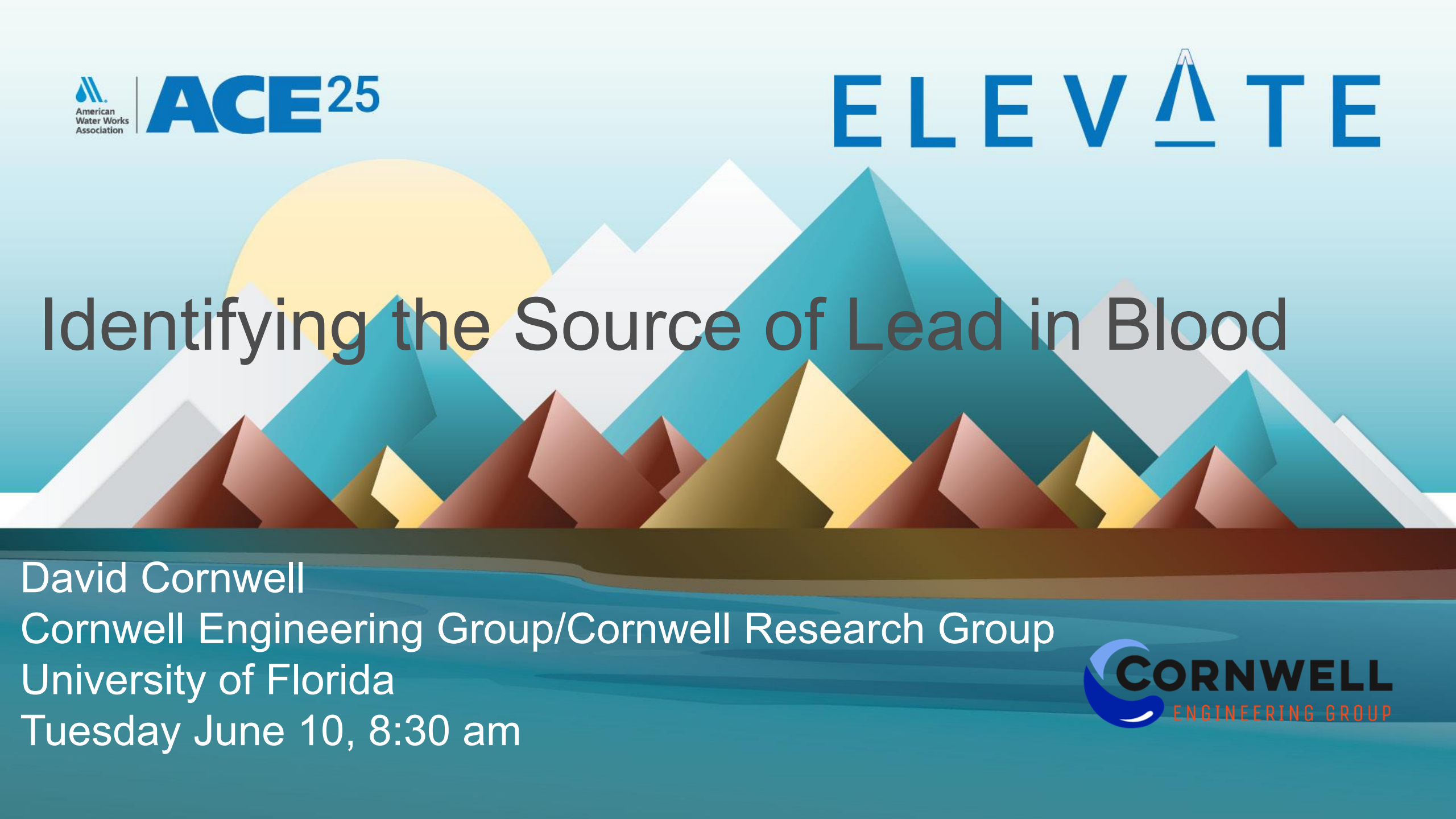
N
W
E
S

0 0.5 0.9 1.9 2.8 Miles

Lead Service Line Replacements

July 07, 2025

Project	Fiscal Year	Private-side LSLRs	Agreements in Hand	Outstanding Agreements	% Agreements in Hand	Contacts per Agreement	Total LSLRs	Neighborhood	Ward	Contractor/Notes
2025 Construction Season										
Capital Projects										
Boston (Fuller to Plymouth)	2025	33	30	3	91%	0.00	55	Southeast End	3	Wyoming Excavators / Brik Plumbing
Burton (Division to Kalamazoo)	2025	110	41	69	37%	0.00	141	Garfield Park, East Burton, Alger Heights, Southeast End	1,3	Kamminga & Roodvoets Inc
Cesar E Chavez (Hall to Tenhaaf)	2025	22	22	0	100%	2.00	25	Grandville	1	
Garfield (Butterworth to Fulton)	2025	15	14	1	93%	0.00	23	John Ball Park	1	Kamminga & Roodvoets Inc
Leonard (Powers to Alpine)	2025	14	12	2	86%	1.58	14	West Grand	1	
Valley (Fulton to Bridge)	2024	54	53	1	98%	0.04	54	John Ball Park	1	
Wealthy (Richard Ter to East City Limits)	2025	16	9	7	56%	3.22	16	Eastown	2,3	
TOTAL		**264**	**181**	**83**	**69%**		**328**			
DWRF Resurfacing Projects										
Resurfacing Public CY2024-1	2024	455	340	115	75%	1.23	455	Various	1,2,3	SPS Pro
Resurfacing Public CY2024-2	2024	412	276	136	67%	1.34	438	Various	1,2,3	Groundhawg
Resurfacing Public CY2025-1	2025	344	165	179	48%	0.00	344	Various	1,2,3	SPS Pro
Resurfacing Public CY2025-2	2025	324	186	163	53%	1.01	349	Various	1,2,3	Miller Pipeline & BriK
TOTAL		**1535**	**967**	**593**	**63%**		**1586**			
Private-Only Projects										
LSLR CY2024-3 Private-Only	2024	240	224	16	93%	0.80	240	Creston	2	Brik Plumbing
LSLR CY2024-4 Private-Only	2024	122	111	11	91%	0.80	122	West Grand	1	McDonald Plumbing
TOTAL		**362**	**335**	**27**	**93%**		**362**			



Identifying the Source of Lead in Blood

David Cornwell
Cornwell Engineering Group/Cornwell Research Group
University of Florida
Tuesday June 10, 8:30 am

dcornwell@cornwellinc.com

Dr. David Cornwell is CEO of Cornwell Engineering Group, a consulting engineering firm specializing in water. He received his doctoral degree from the University of Florida where he is currently an Adjunct Professor. He is working closely with many utilities, the Water Research Foundation and AWWA on reducing lead levels in water. Dr. Cornwell has over 75 publications, has served on many AWWA committees and is recipient of the A. P. Black Research Award, the WRF Research Award and AWWA Honorary Member Award

Acknowledgements

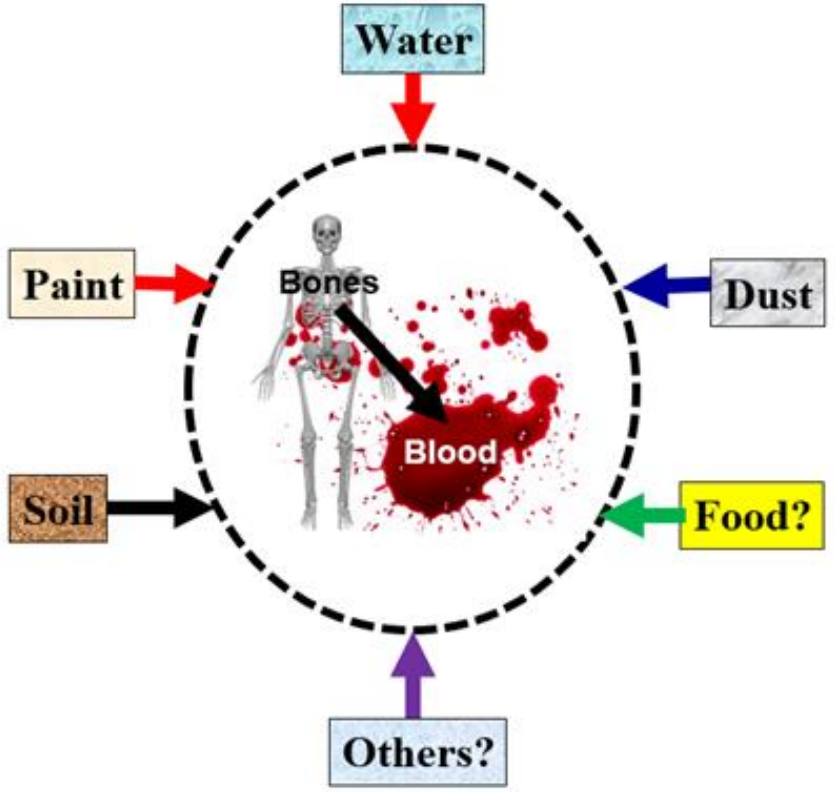
- Dr. George Kamenov at UF is our lead isotope expert and ran all the analyses
- Dr. Jean-Claude Bonzongo at UF was the coordinator for research
- Nancy McTigue of Cornwell located the children and coordinated blood and environmental sampling
- Dr. Ben Swaringen was a UF PhD student and prepared the samples and now is with Cornwell
- Special thanks to Jeff Raiche-Gill at the Wisconsin Department of Health, University of Wisconsin, for collaborating and sharing their data

Our research was funded by EPA and WRF through WRF 4965

Where Does Blood Lead Come From?

According to the USEPA SHEDS Model (Stochastic Human Exposure and Dose Simulation Model):

- Infants (0-6 mo) using tap water for formula
  - Soils and Dust 52%
  - Drinking Water 39%
- Toddlers
  - Soil and Dust 77%
  - Food 16%
  - Water 7%



Lead Blood Cycle

- Lead has a half-life of 30 days in the blood
- Lead moves from blood to soft tissues and bones
- Lead has a half life of 1-2 mo in soft tissues
- Lead has a half-life of 25 to 30 years in the bones
- Lead in children's blood can travel to the brain as the blood/brain barrier is not fully developed where connections between brain cells are weakened
- Blood reflects recent or on-going exposure
- However, if lead source is mitigated, lead can sometimes move from bones to blood

Source of Blood Lead

- Typically, when a child tests high for blood lead level (BLL) a home inspection is done to test lead levels in paint, dust, soil, food, sometimes water, etc.
- The certified Lead Risk Assessor makes a logical "guess" as to the source
- The actual source cannot be identified
- Lead is characterized by distinct isotopes—which are unique to each source
- By comparing the blood isotopes to source isotopes, the true source can be often identified

Lead Isotopes

There are 4 naturally occurring isotopes - 3 are product of U and Th decay which have very long half-lives (By=billion years):

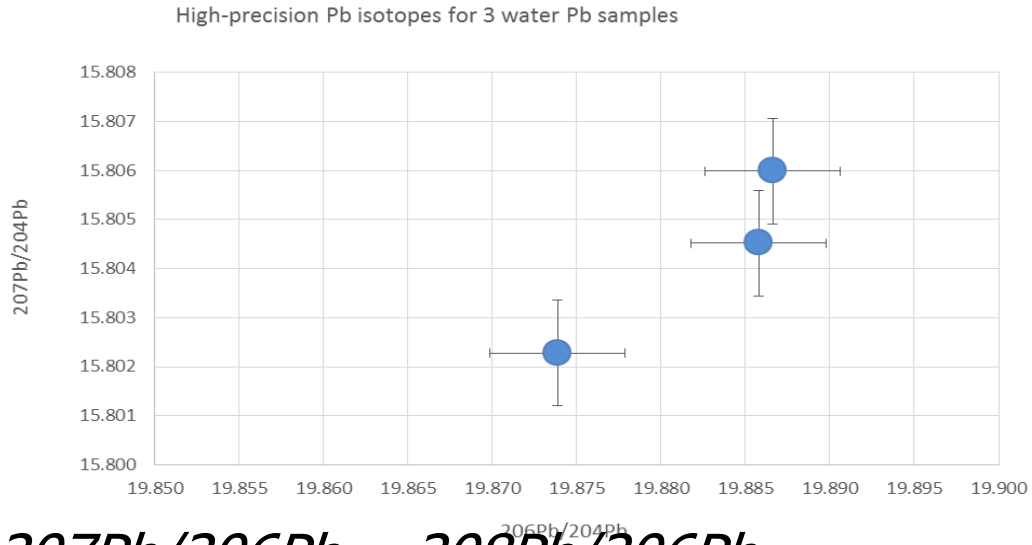
Four Isotopes of Lead

$^{238}U \rightarrow {}^{206}Pb$

$^{235}U \rightarrow {}^{207}Pb$

$^{232}Th \rightarrow {}^{208}Pb$

^{238}U non-radiogenic ^{204}Pb



We use several ratios for tracing Pb origin:

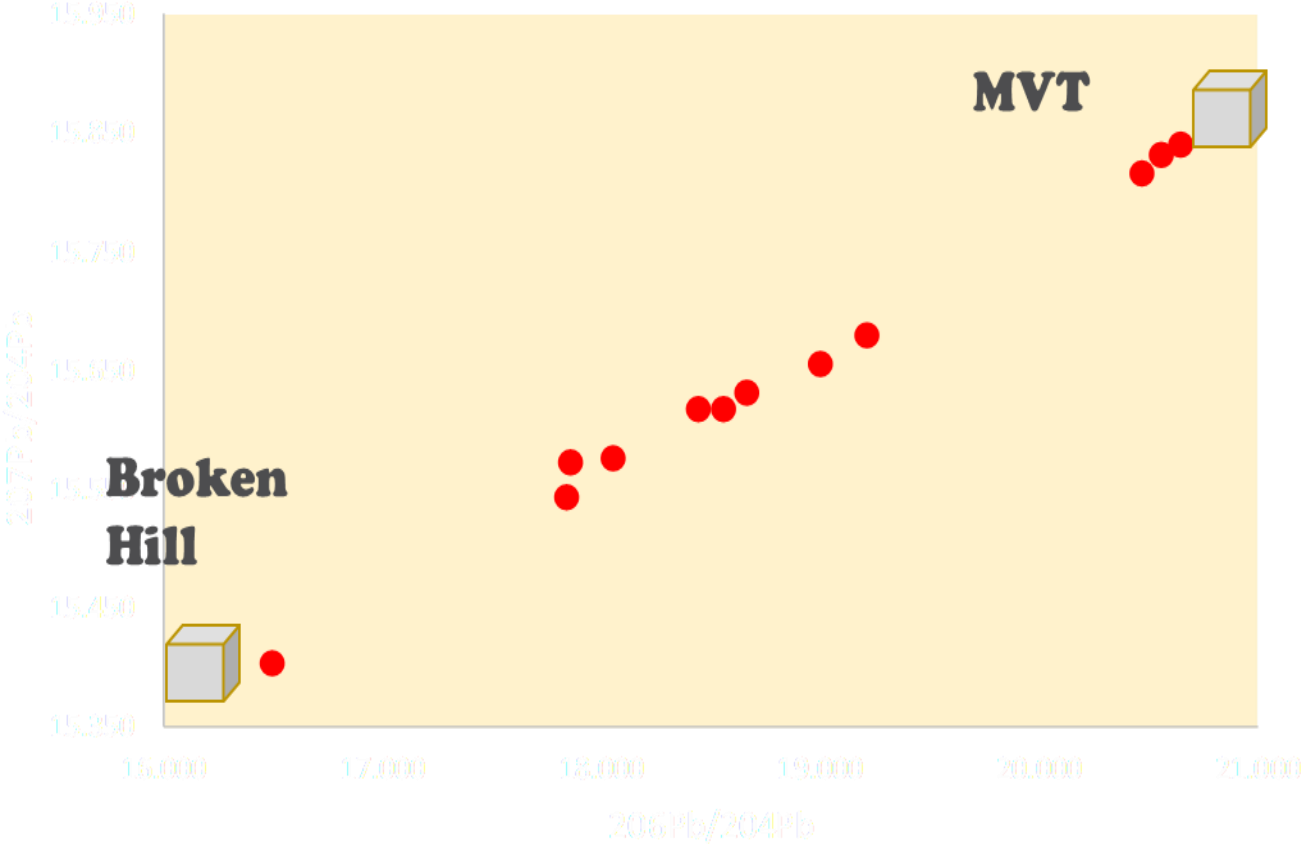
206Pb/204Pb *207Pb/204Pb* *208Pb/204Pb* *207Pb/206Pb* *208Pb/206Pb*

MC-ICP-MS is better suited than ICP-MS

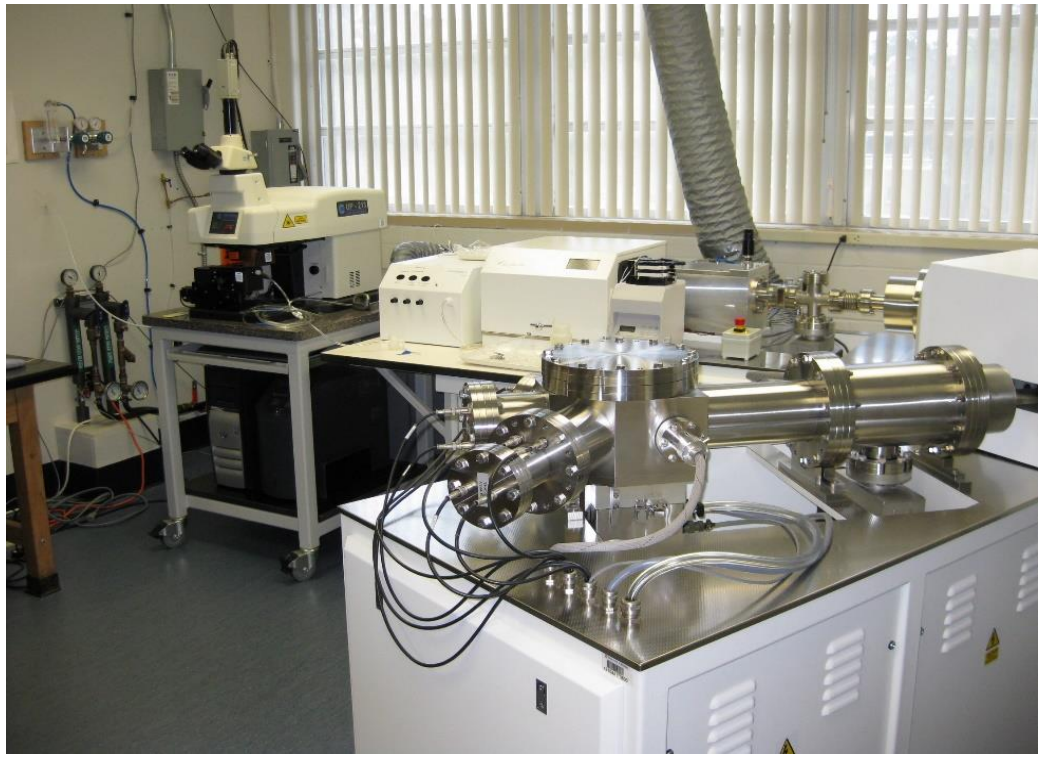
- Very low detection level-ng
- ICP-MS cannot detect 204 Pb and error bars are relatively high
- Error bars are very low-in the 3rd decimal point
- 204 Pb is critical to analysis due to its stability and low level

Lead In the US is a Mixture Of Ores

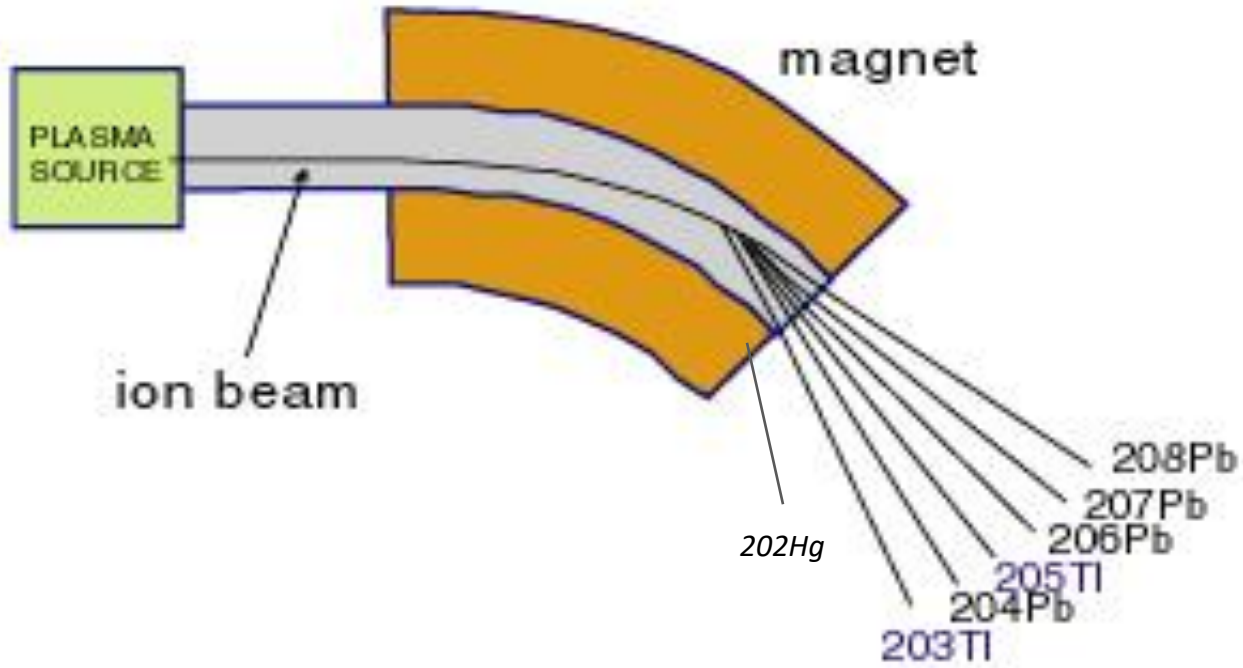
- Two primary sources of lead used in the US - Broken Hill in Australia & Mississippi Valley Type
- Lead in US is generally a mixture of the two
- Red dots are lead pipes analyzed in this work

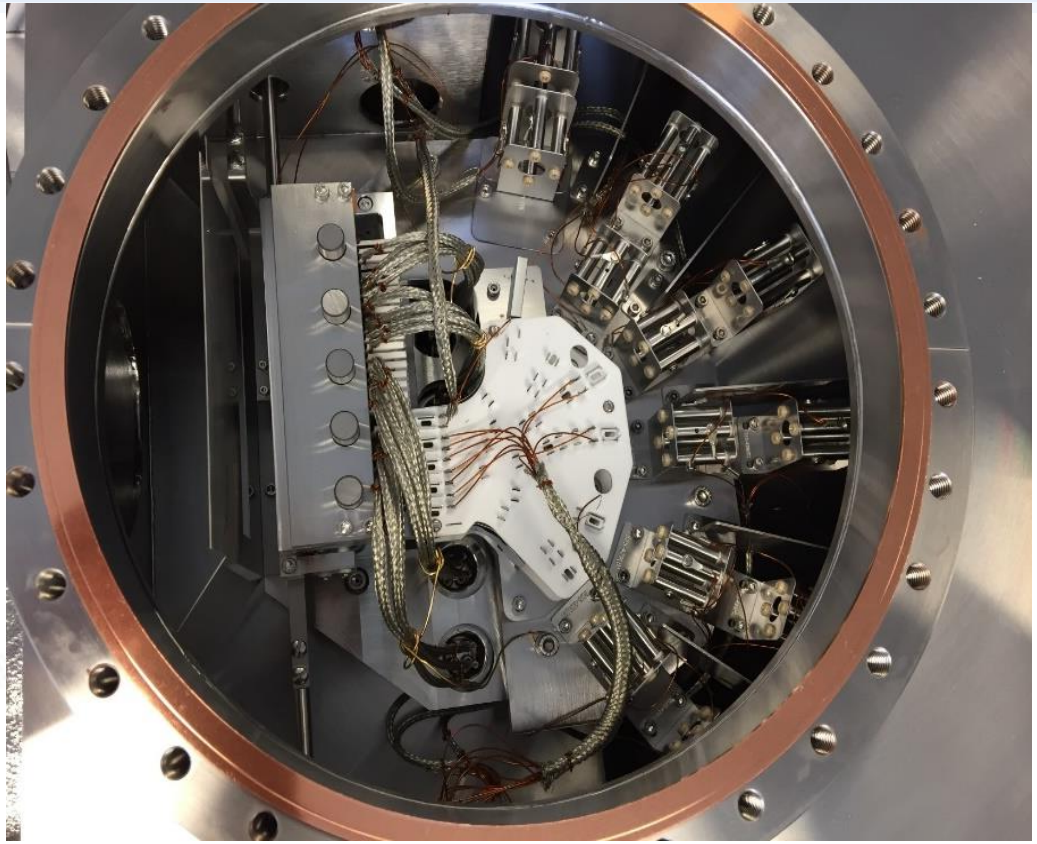


Magnetic Sector MC-ICP-MS:15 and 22 Detectors

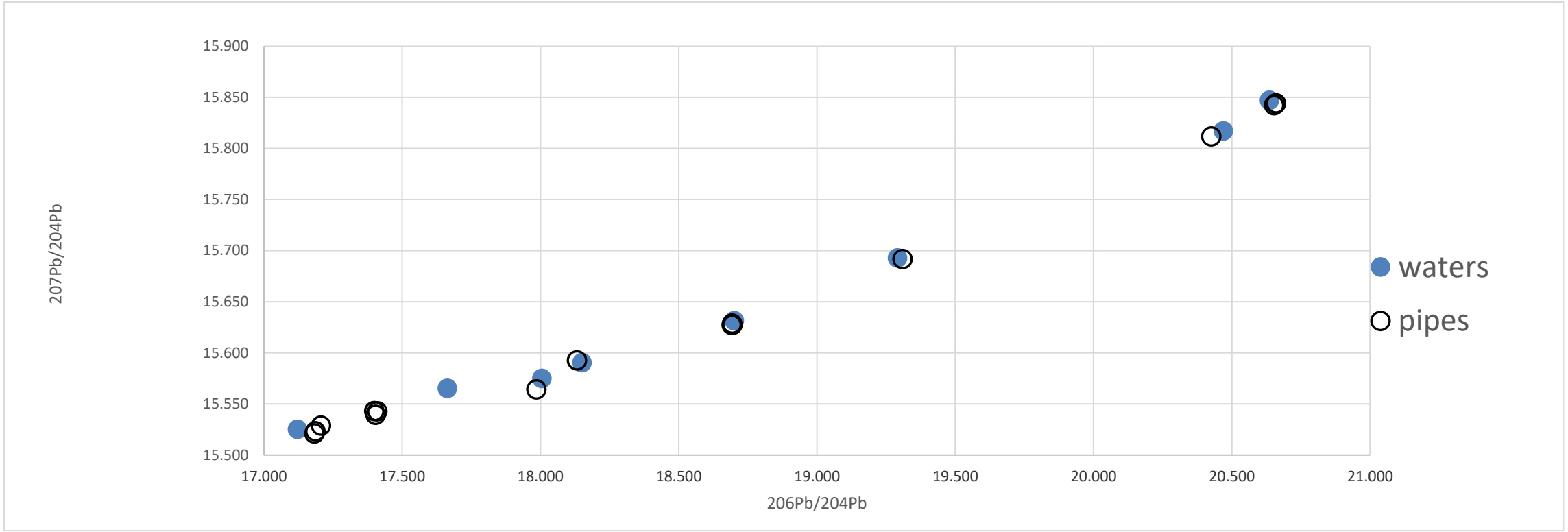


Magnet Separates the Isotopes for Individual Detectors to Read





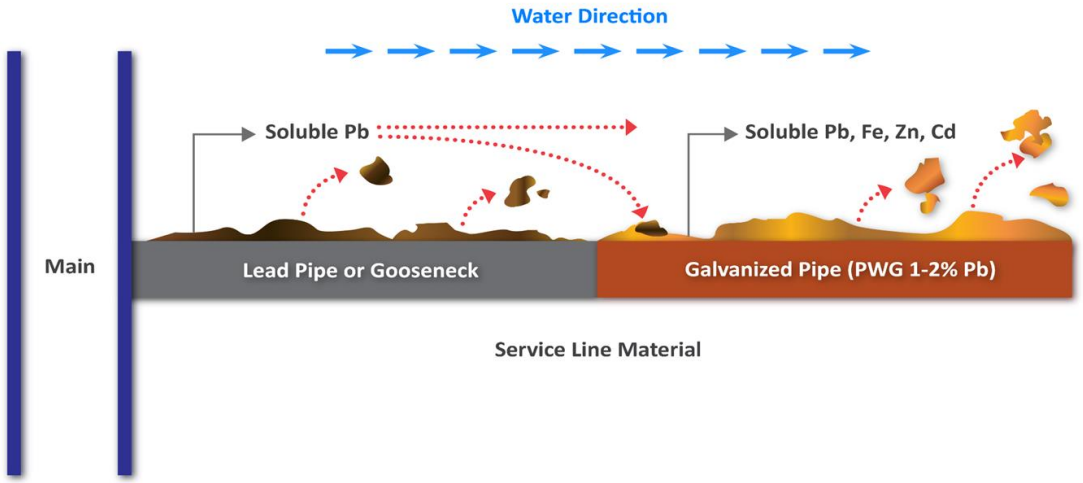
Background Work Completed Prior To Blood Testing:
Flint Lead Pipes used in a Rig Study with Water from the Pipes

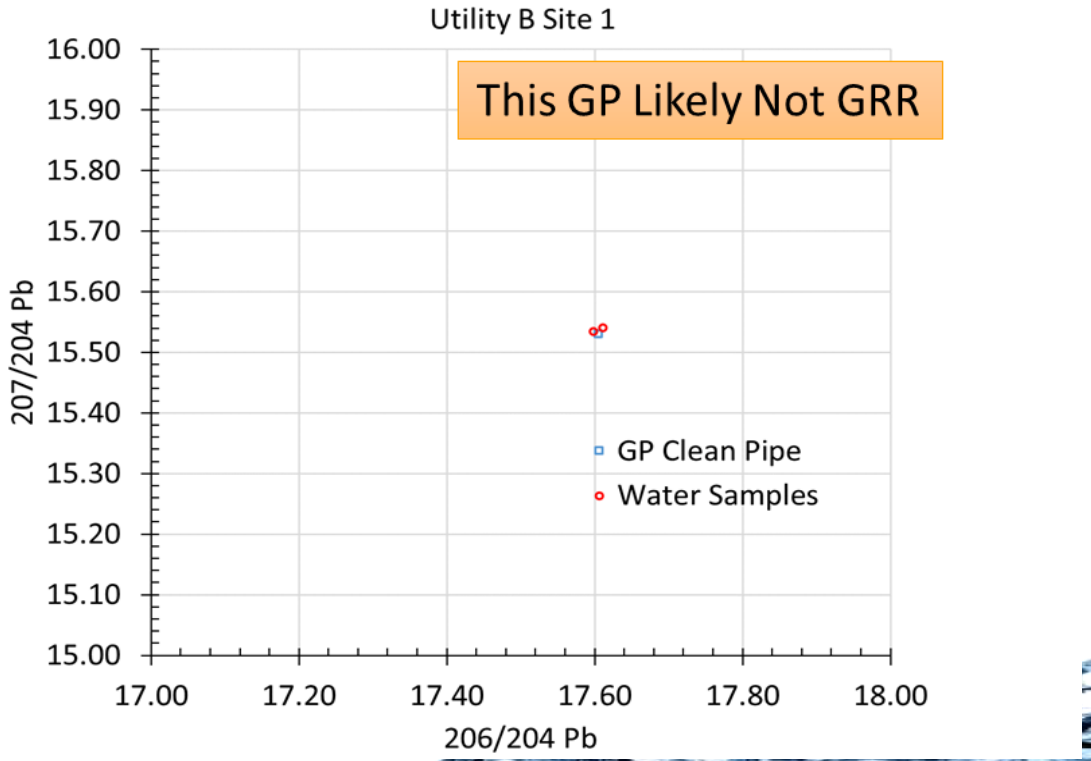


Initial proof of matching water and lead pipes

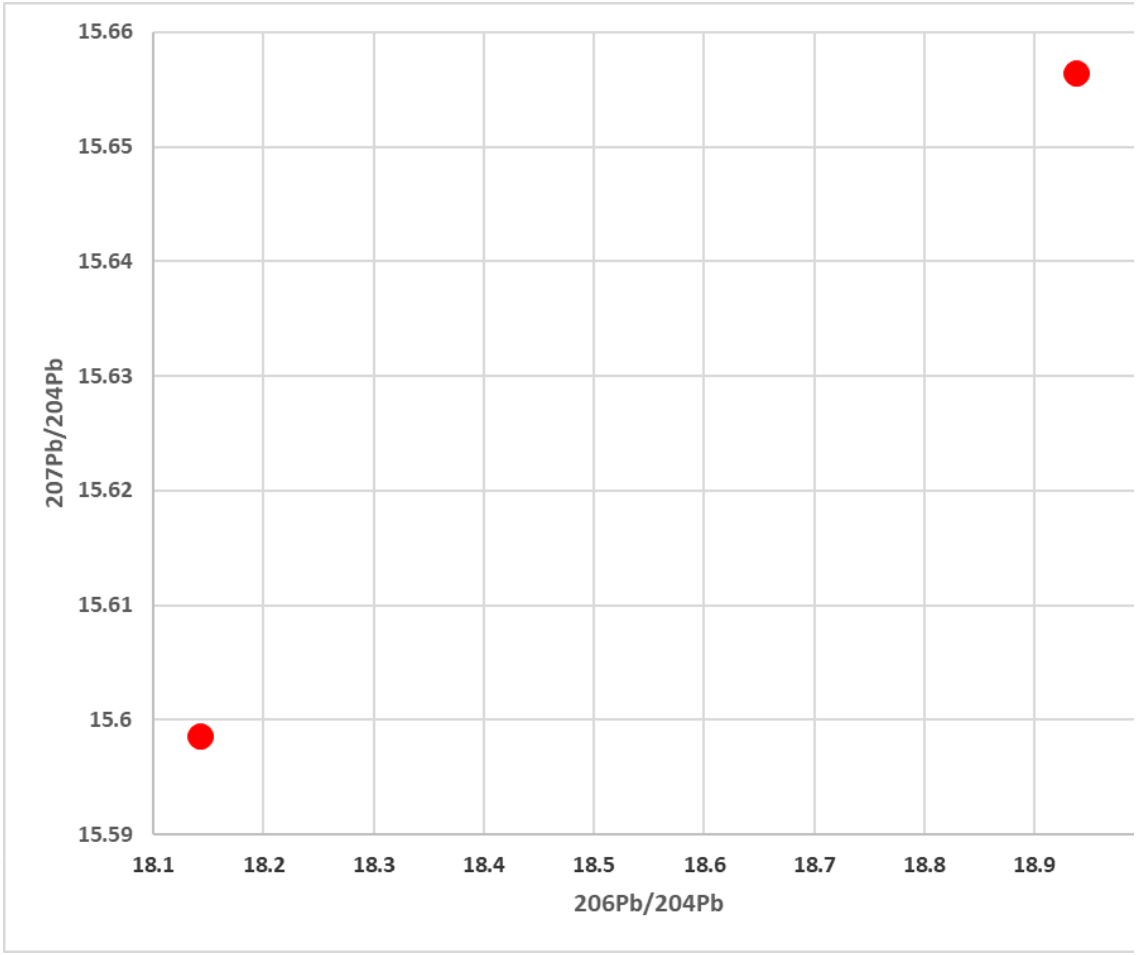
Related Work Completed by Our Team

- Using isotopes to determine if a galvanized line is GRR
- Finding the source of lead in CuLS pipe scale and in tap water





Evaluating Source of Lead in Blood



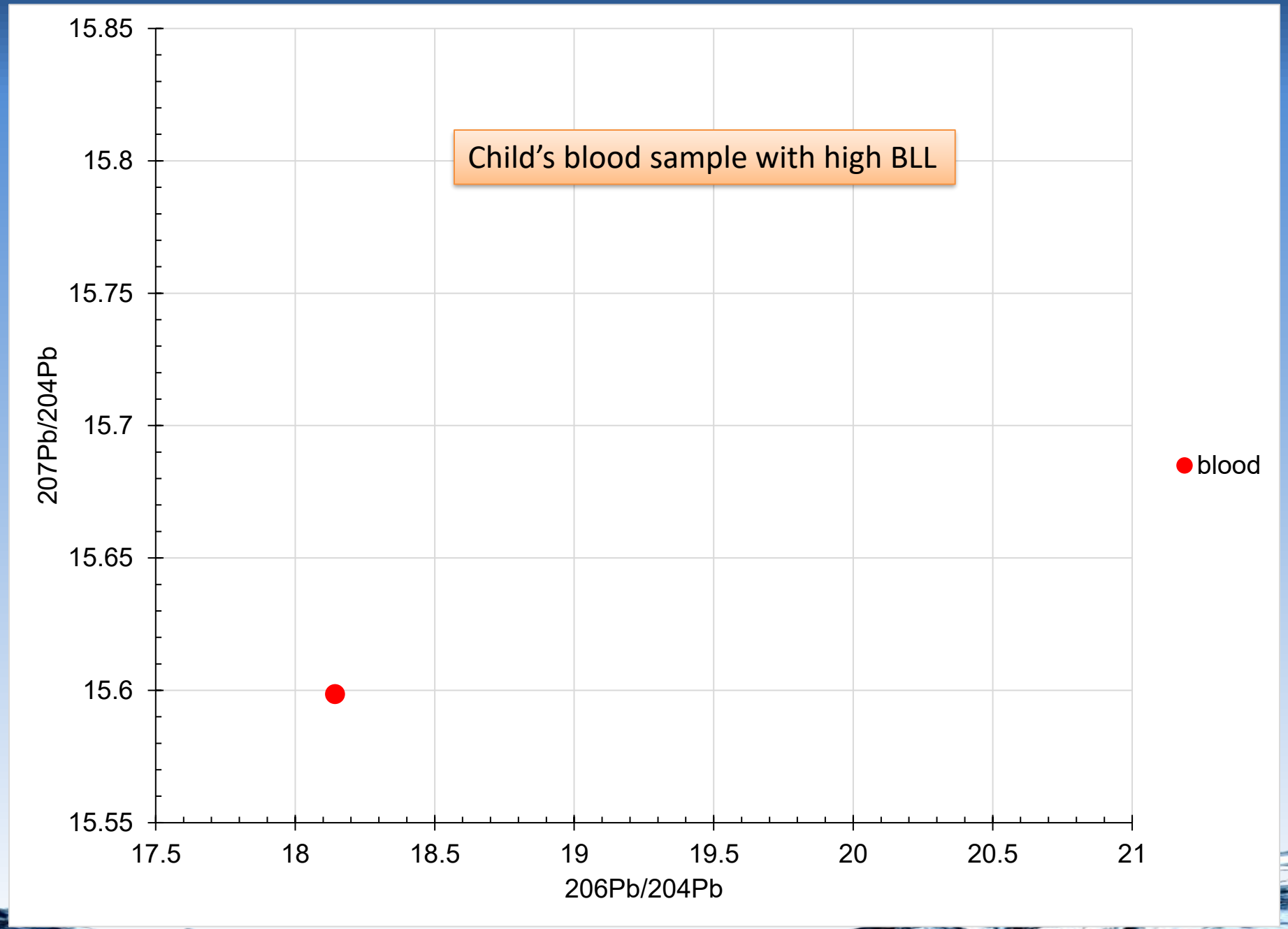
- Working with local health departments
- A blood sample is drawn
- Environmental samples collected
- All samples are analyzed for isotopes
- We provide feedback to the Health Department as to the lead source

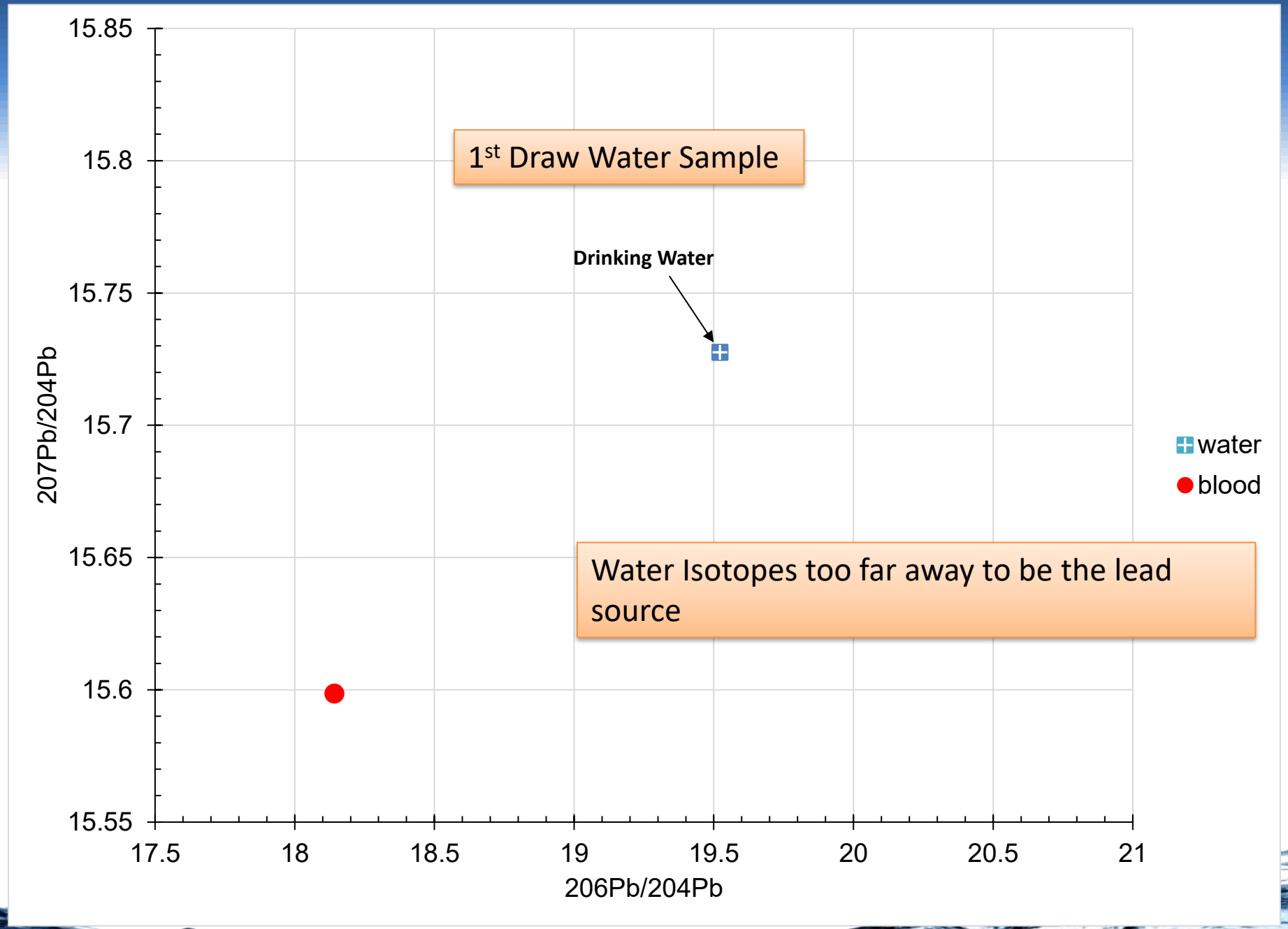
Study Approach

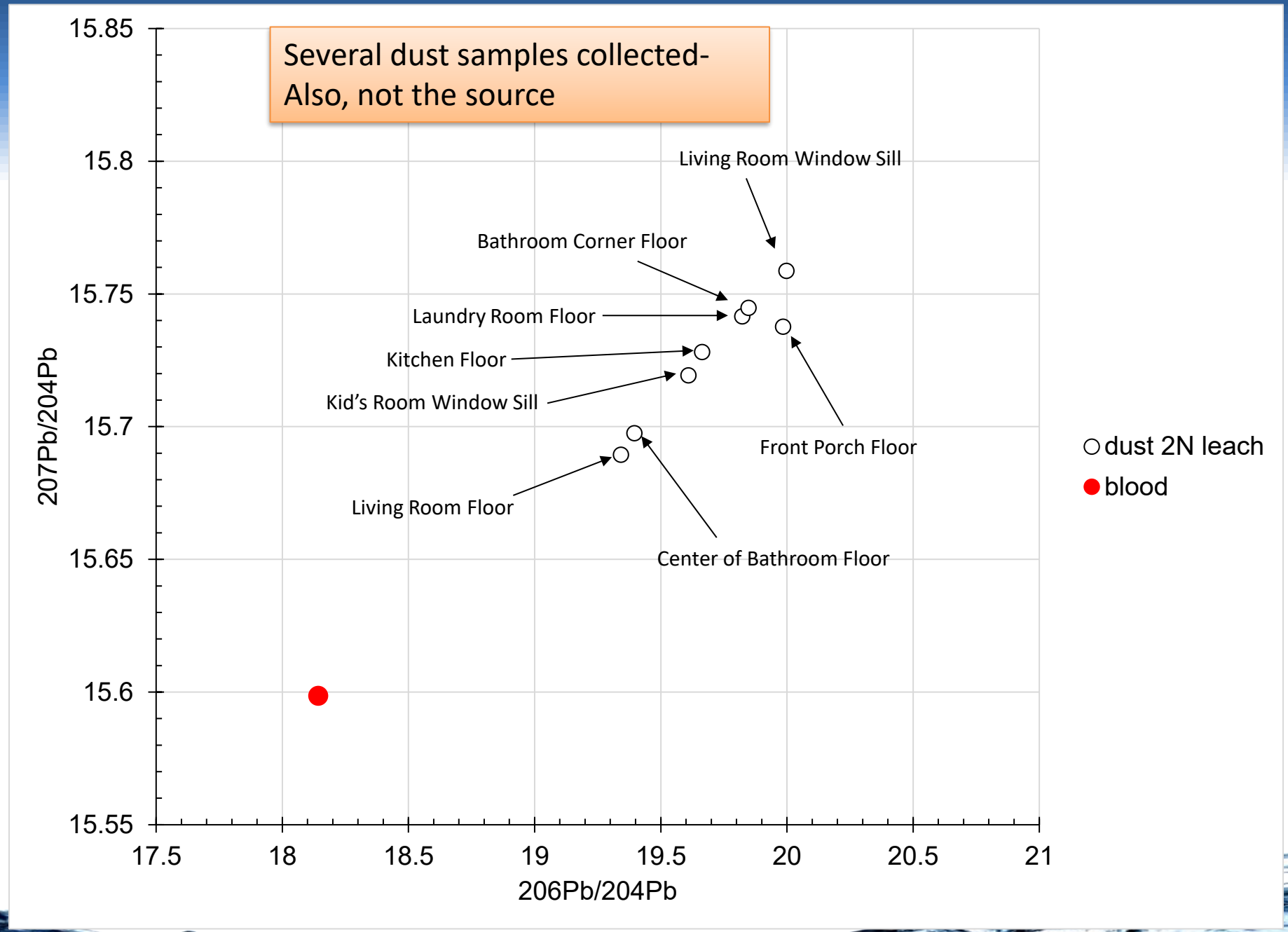
- Health department identifies children 0-6 years old with blood > 5 ug/dL
- Generally, homes will have lead service lines
- Environmental samples are collected by a lead risk assessor as applicable:
  - Water--first draw, 5th L , flush combinations
  - Lead paint
  - Lead dust
  - Soils
  - Any suspected toys, pottery, food

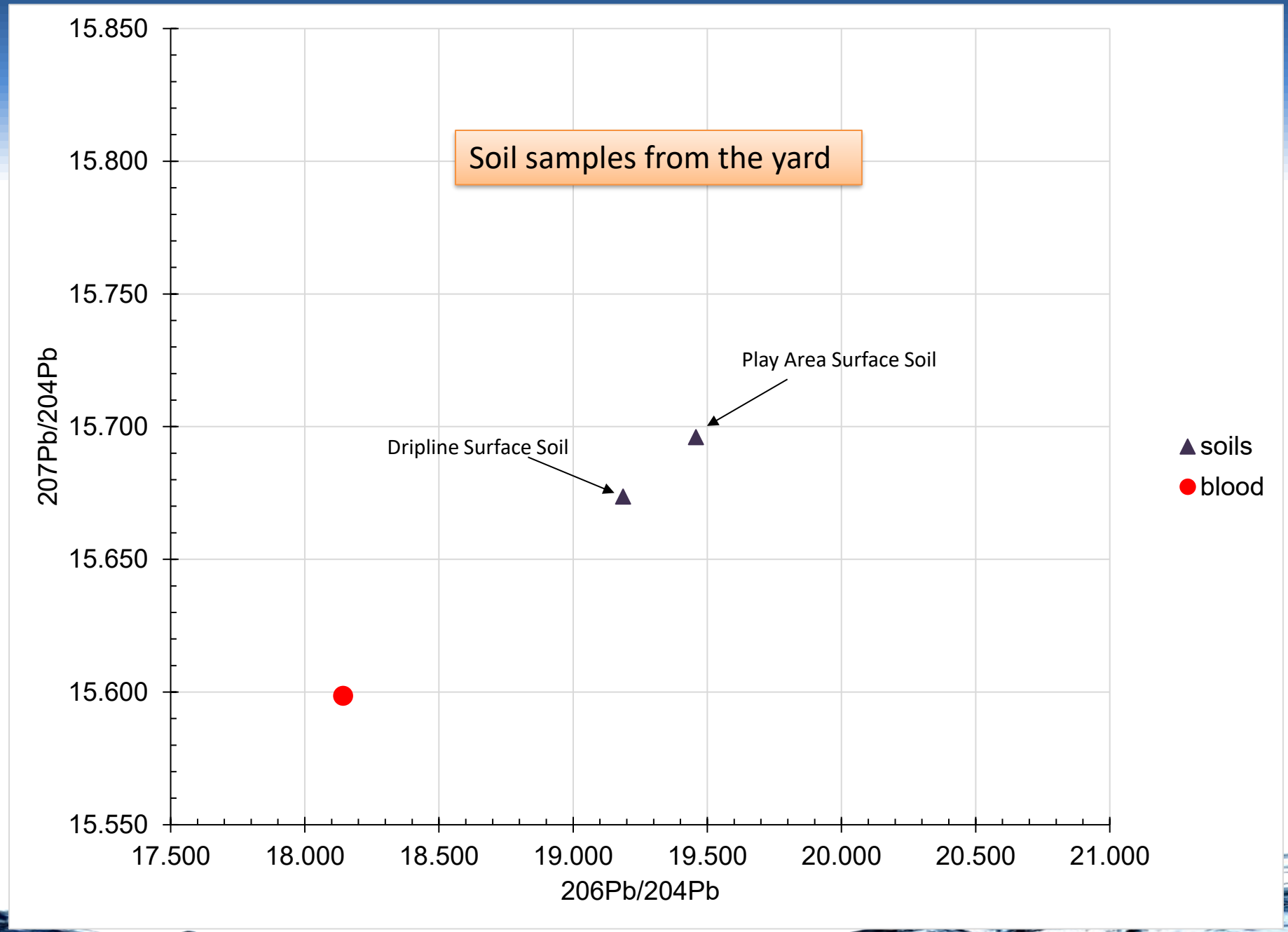
A child with high BLL in a home with LSL and known soil contamination and lead paint

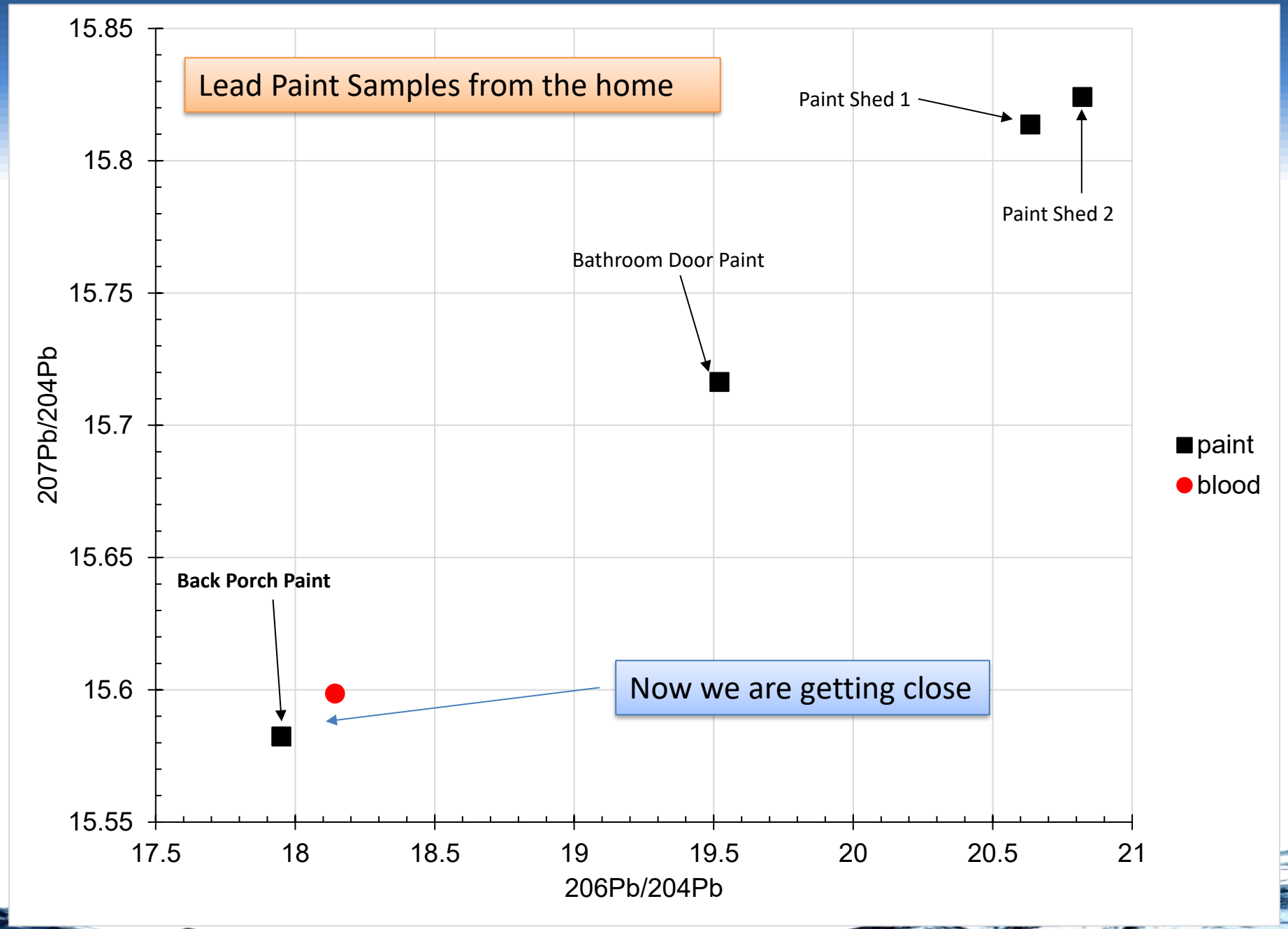
EXAMPLE 1


Child’s blood sample with high BLL
15.85
15.8
15.75
15.7
15.65
15.6
15.55
207Pb/204Pb
17.5
18
18.5
19
19.5
20
20.5
21
206Pb/204Pb
blood

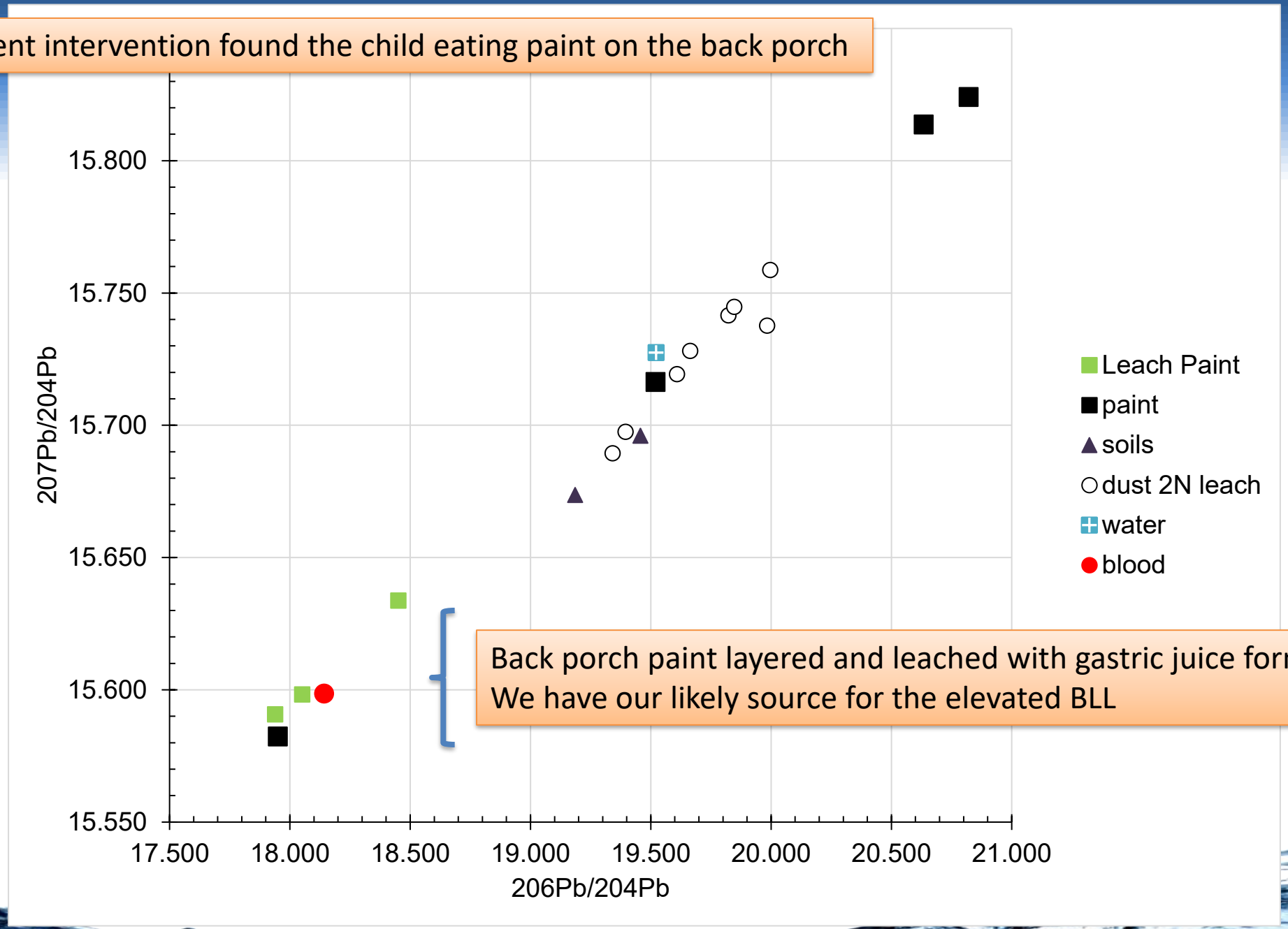

15.85
15.8
15.75
15.7
15.65
15.6
15.55
207Pb/204Pb
17.5
18
18.5
19
19.5
20
20.5
21
206Pb/204Pb
1st Draw Water Sample
Drinking Water
Water Isotopes too far away to be the lead source
water
blood


Several dust samples collected-
Also, not the source
Living Room Window Sill
Bathroom Corner Floor
Laundry Room Floor
Kitchen Floor
Kid's Room Window Sill
Front Porch Floor
Living Room Floor
Center of Bathroom Floor
dust 2N leach
blood
207Pb/204Pb
206Pb/204Pb
15.85
15.8
15.75
15.7
15.65
15.6
15.55
17.5
18
18.5
19
19.5
20
20.5
21


Soil samples from the yard
Play Area Surface Soil
Dripline Surface Soil
soils
blood
207Pb/204Pb
206Pb/204Pb
15.850
15.800
15.750
15.700
15.650
15.600
15.550
17.500
18.000
18.500
19.000
19.500
20.000
20.500
21.000

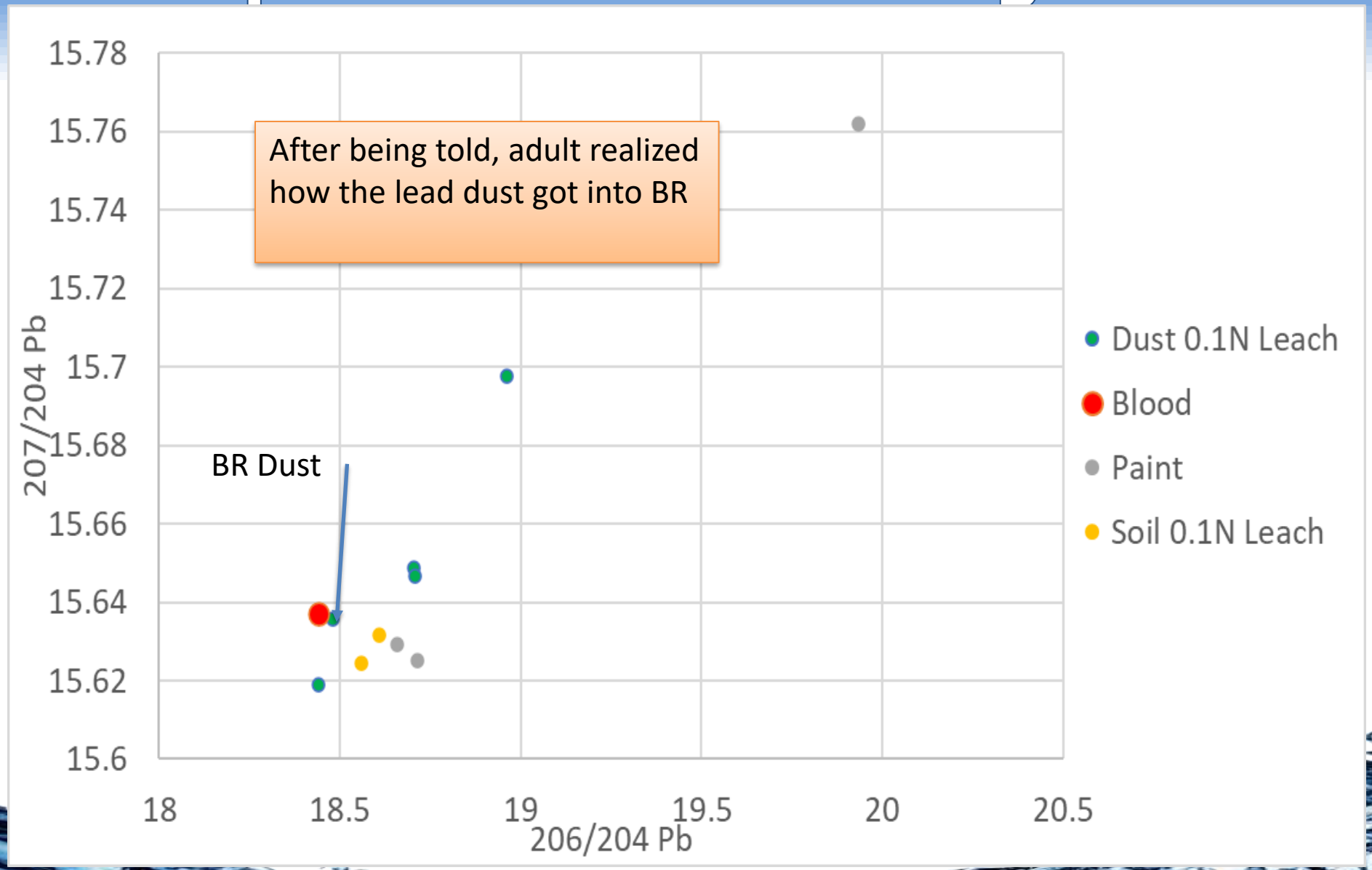

Lead Paint Samples from the home
Paint Shed 1
Paint Shed 2
Bathroom Door Paint
Back Porch Paint
Now we are getting close
paint
blood
207Pb/204Pb
206Pb/204Pb
15.85
15.8
15.75
15.7
15.65
15.6
15.55
17.5
18
18.5
19
19.5
20
20.5
21

Subsequent intervention found the child eating paint on the back porch



Back porch paint layered and leached with gastric juice formula
We have our likely source for the elevated BLL

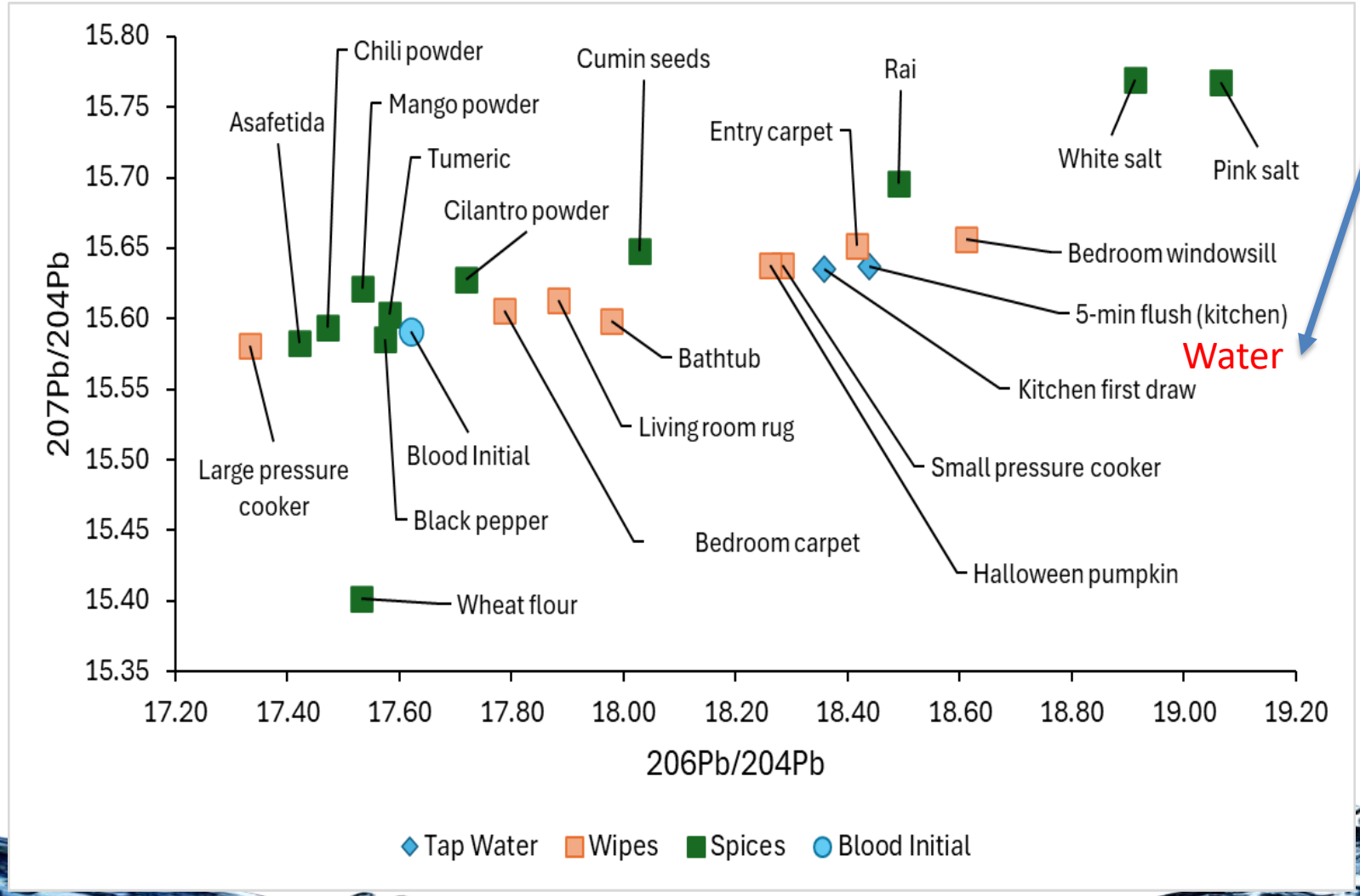
Example 2: Adult with High BLL



Example 3, 4, 5

- Data from Shaw et al. Wisconsin Dept Hearth
- Example 3: 15 mo old BLL=10 ug/dL
  - 7 mo after intervention BLL =4 ug/dL
- Example 4: 24 mo old BLL=14 ug/dL. House has LSL
  - 5 mo after intervention BLL=7 ug/dL
- Example 5: 19 mo old BLL=18 ug/dL. House had LSL
  - 2 mo after intervention BLL=9 ug/dL
  - Family moved and 2 mo after that BLL= 4 ug/dL

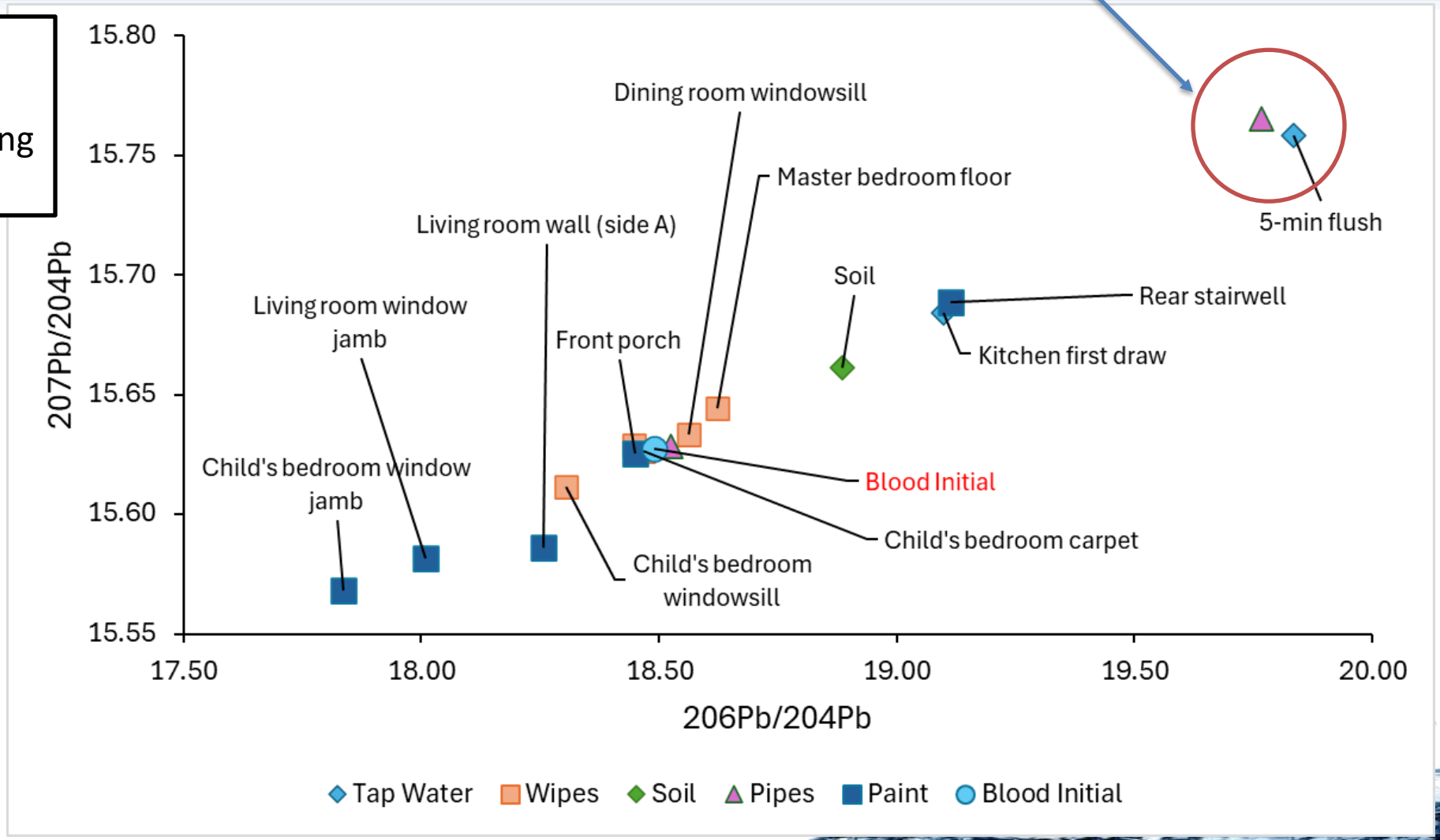
Example 3



- Tap water not the source
- Imported spices removed
- BLL 10 to 4

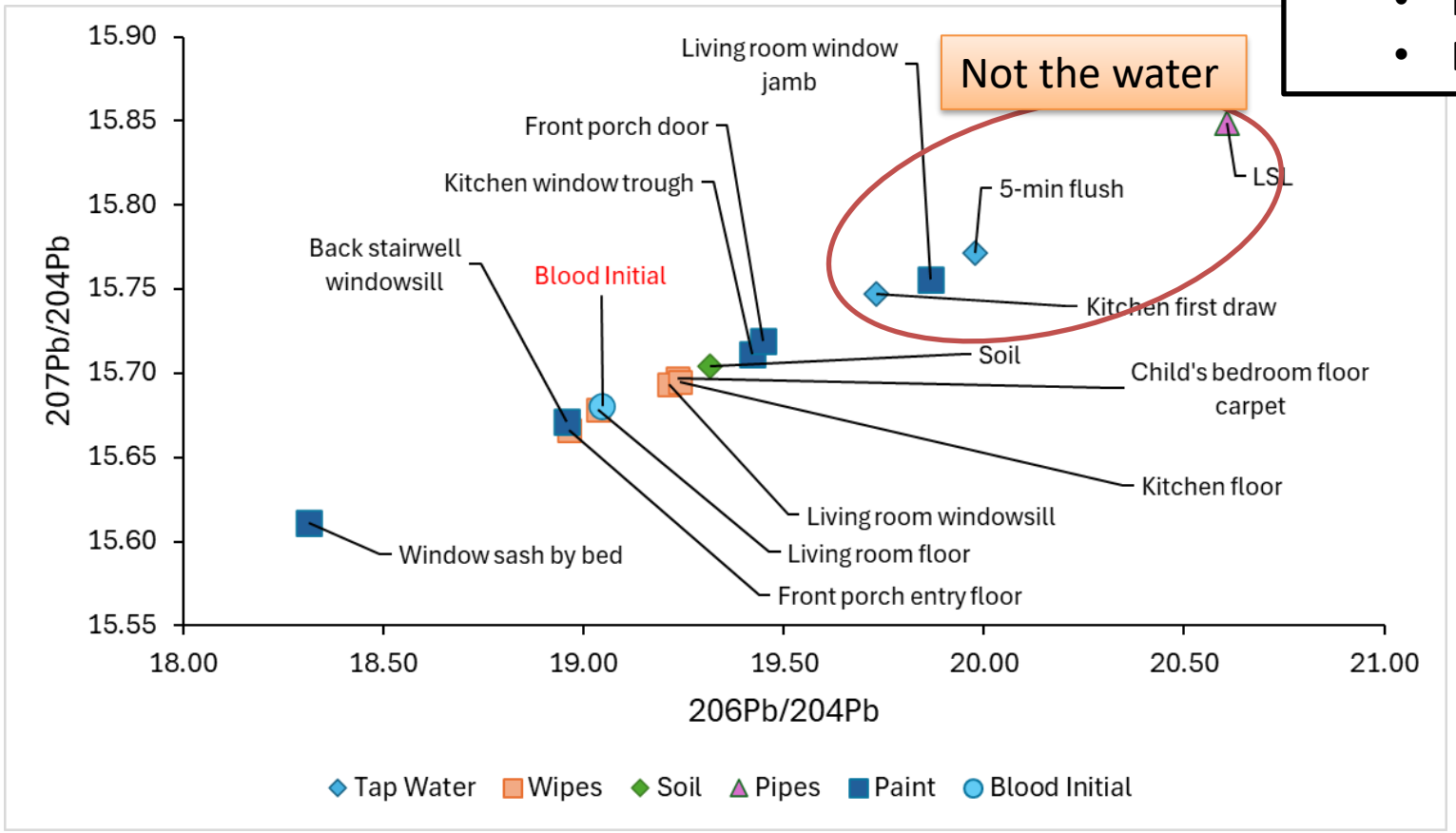
Example 4

- All samples close to blood were dust
  - Intervention was cleaning
  - BLL 14 to 7



Example 5

- All samples close to blood were dust
  - Intervention was cleaning
  - BLL 9 to 4



Findings

- The two sample sets have 8 home analyses
- The source of lead in the blood was never water (3 had LSLs)
- Sources included paint, dust, imported spices, foreign house objects, cosmetics (kajal)
- Some sources were easily eliminated as not the issue
- Follow up showed quick drop in BLL after intervention

Next Steps

- UF and Cornwell Research Group submitting funding request to NIH
- Will include broader national participation and include follow up isotope testing after intervention
- We will especially be looking for utilities with high WLLs to obtain participants
- Interested utilities please contact us