

Institutional Controls for the Bunker Hill Superfund Site

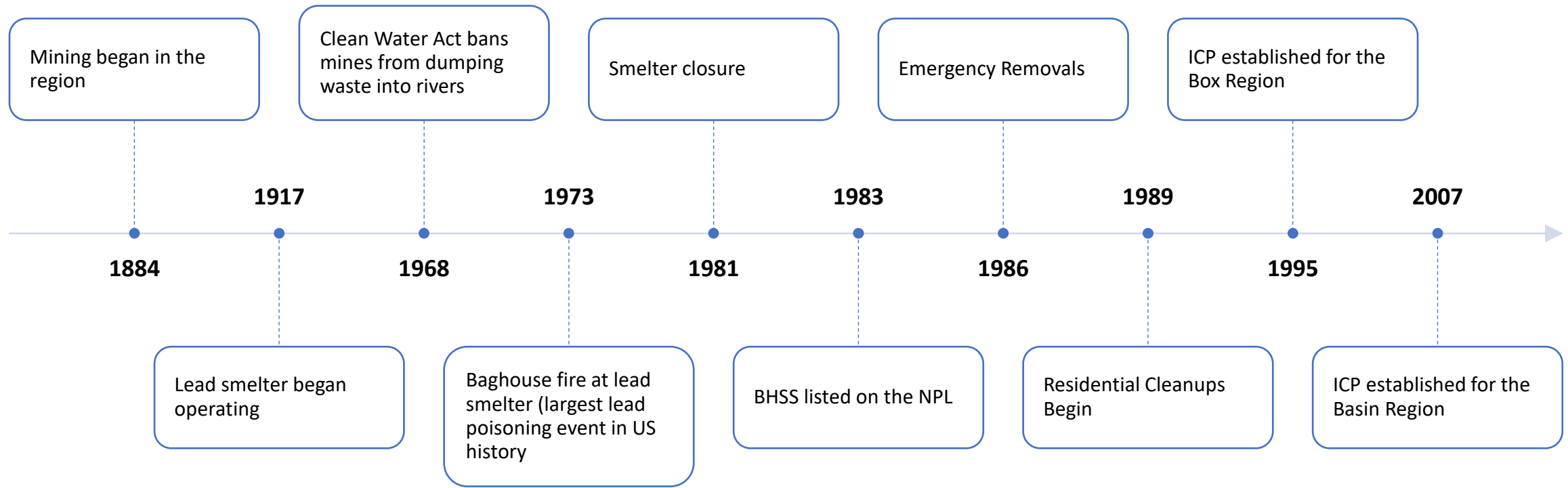
Mary Rehnborg

Panhandle Health District

Kellogg, Idaho



History





It Began with Mining

- Lead – Silver – Zinc –
- Arsenic – Cadmium -

History

- Early processing methods were inefficient, recovering only 20-50% of the metals from the ore.
- The leftover waste materials, known as “tailings” were then dumped directly into or adjacent to nearby creeks and streams.







Morning Mill

Copyright 1909 by
Barthold's Studio.



Bunker Hill Lead Smelter



- Smelting is the process of applying heat to an ore to extract the base metals.
- Smelter Emissions contained: Lead, Arsenic, Cadmium and Sulfur Dioxide

Kellogg 4
Missoula 136

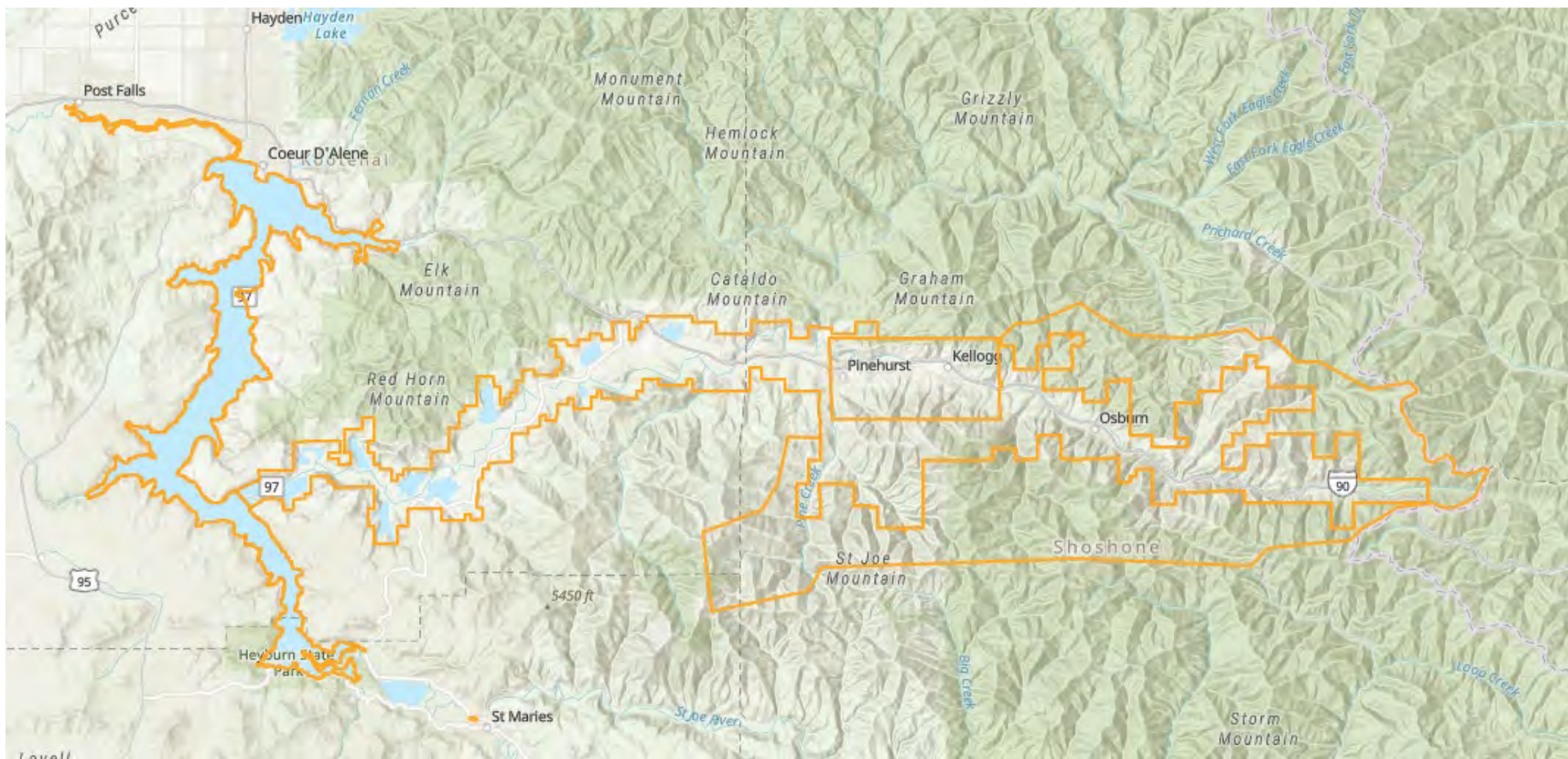




- 1917 – 1981 Smelter operated, directly & indirectly exposing the community to heavy metals. The emissions deposited heavy metal contamination onto the land, most heavily impacting a 21-square mile area surrounding the smelter

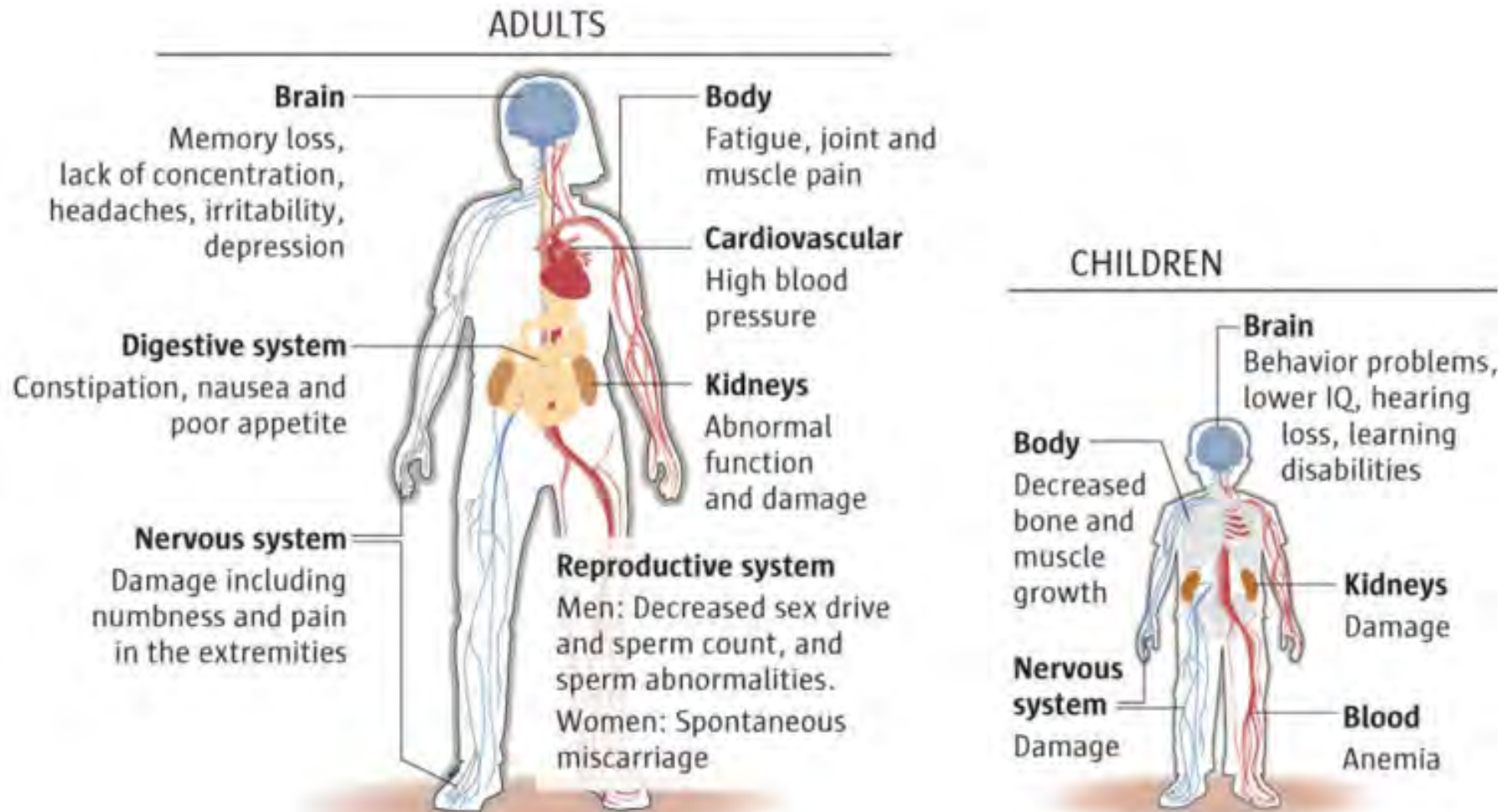


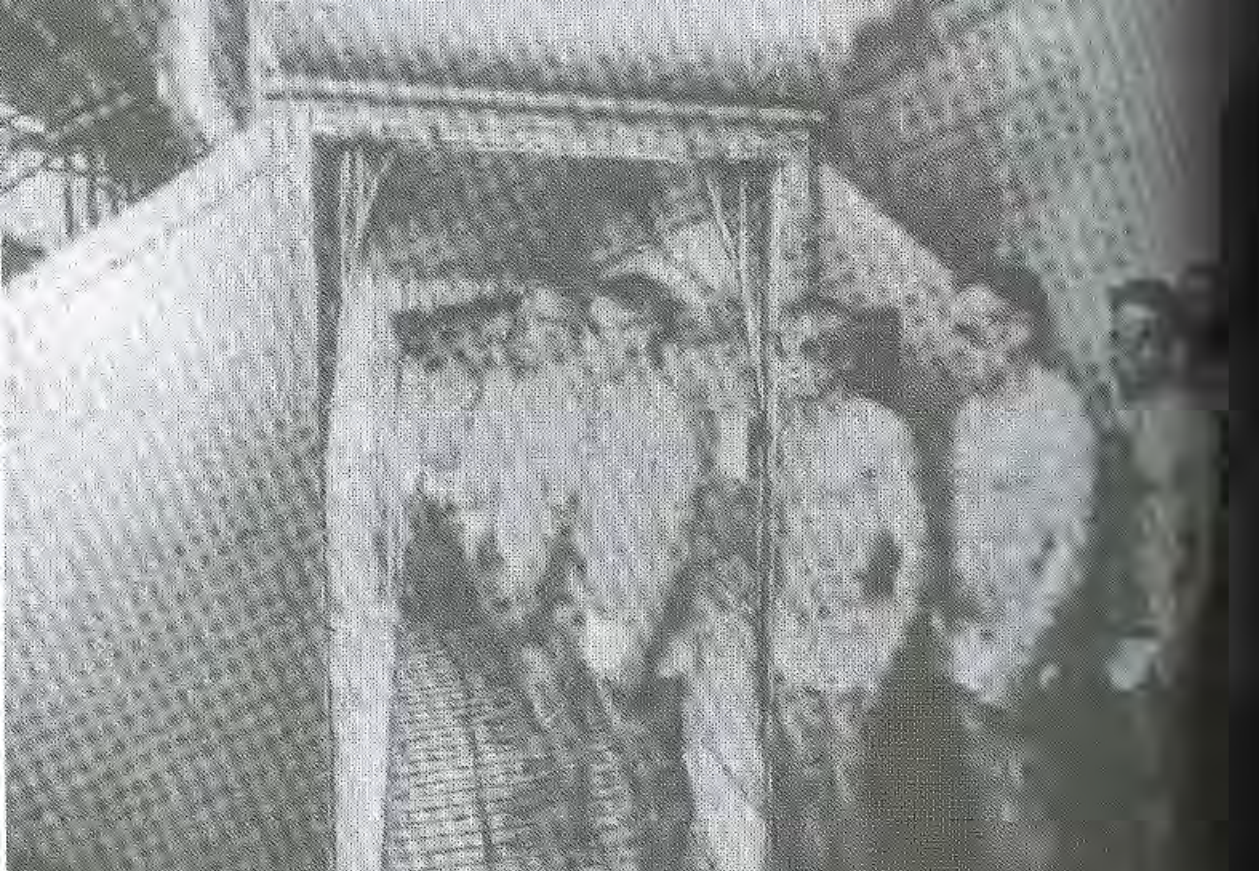
Contaminants spread by wind, water, air and by human activity created one of the largest superfund sites in the country



Health Effects

- Arsenic & Cadmium are known carcinogens
- Lead is classified as a probable carcinogen





- The Solarium (Sunrooms)
- Electrolytic Treatments (110-volt currents)
- Free Milk Program

Bag House Fire of 1973



FABRIC FILTER/BAGHOUSE



Worried parents question smelter's effect on children

Editor's note: Washington Post national desk reporter Bill Richards spent two weeks in the Inland Empire in August conducting interviews in Kellogg, Coeur d'Alene and Spokane for this story. It appeared in Oct. 7 editions of the Post. It subsequently moved on the Washington Post wire service to subscribing newspapers, including The Spokesman-Review.

By BILL RICHARDS
Washington Post

Idaho's rugged northern panhandle. The parents, though they lack hard medical evidence, have suspicions.

Lead is a highly toxic heavy metal whose effects on children have raised national concern in the last few years. Medical experts have determined that lead can cause nerve, brain and kidney damage and in high doses can kill.

In the absence of conclusive information, the Bunker Hill situation here is becoming a classic example of the

the parents are connected with their children's exposure to lead, or something else that may be the cause of the learning disabilities.

"It is a thoroughly human reaction to blame the pollution as the answer for every problem troubling anyone nearby," said Dr. Kathleen Kreiss, the CDC's acting director for special studies.

Parents, upset by their children's failure to show adequate progress in learning, may in

age to a child's nervous system. Other specialists have said damage occurs at even lower lead levels.

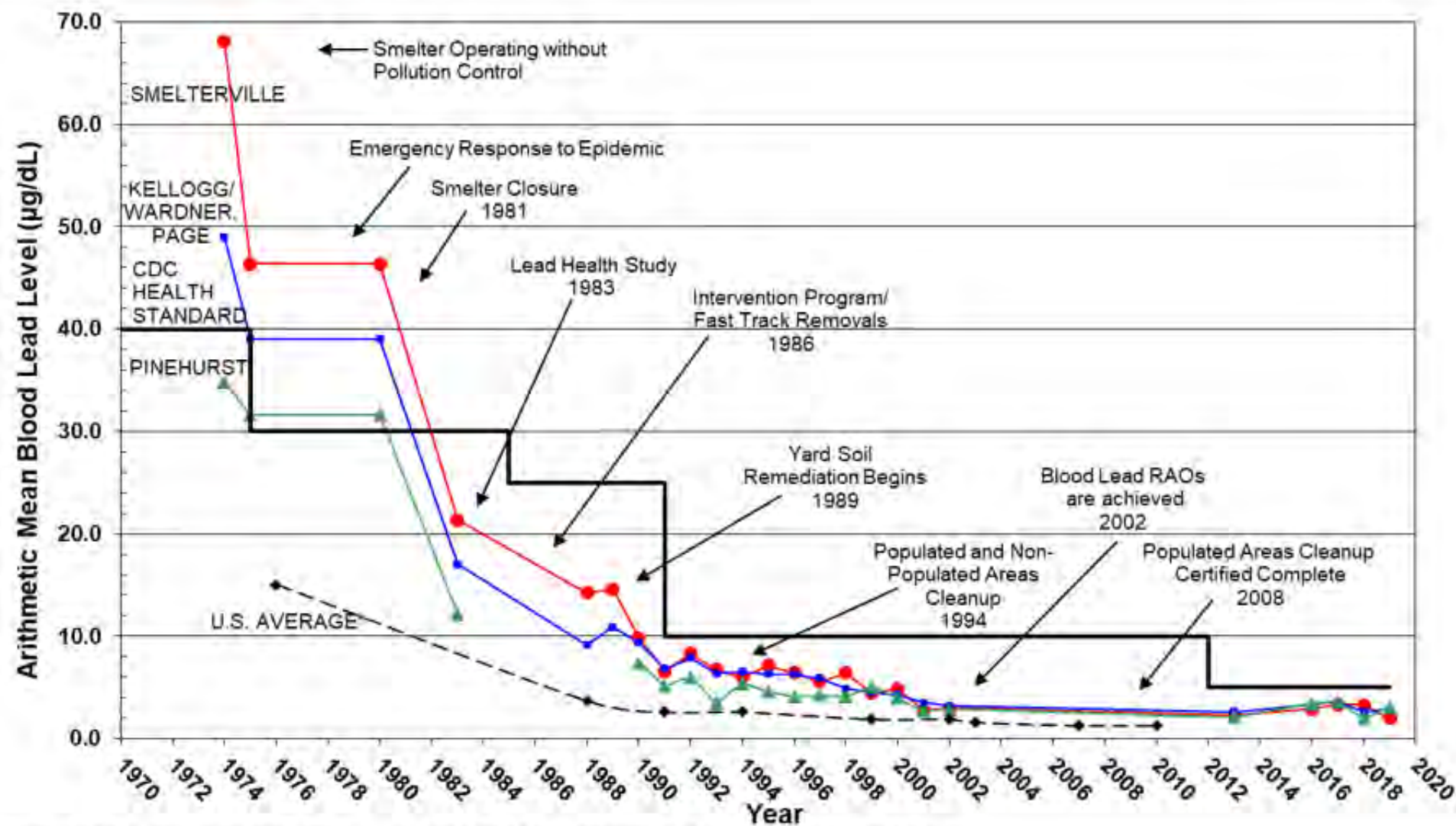
"We are getting to the point where we can show the effects of lead on children's brains at lower and lower levels," said Dr. Herbert Needleman, of Children's Hospital in Boston.

Paul Whelan, a Seattle attorney representing two families whose nine children lived near the smelter, contends that doctors who performed neurologic

"If the study had been done properly the results would have shown a much more severe lead problem. I wish my name had never been associated with it," a federal official said.

ducted blood lead tests among some children living very close to the smelter. He said blood lead levels have dropped here

Dr. Philip Landrigan, the senior federal official assigned to the Shoshone study, now contends that it followed question-



*Ref.=(Mahaffey et al. 1982; Pirkle et al. 1994; Pirkle et al. 1998; Lofgren et al. 2000; CDC 2013)

Remediation

How we cleaned it up

Remove part of it

&

Replace part of it



Soils beneath are still contaminated



Why didn't we remove all the contamination?

- Contamination is to depth in some places
- Where would we put it all?
- Where would we get clean materials to replace it?
- How much money would that cost?
- How long would that take?



Why Institutional Controls?

- Due to the depth & nature of the issue, only partial removals could be completed at the site. Contaminants remain in many places such as under clean barriers, along the streams and rivers, beneath concrete buildings, etc.

What are Institutional Controls?

- The EPA defines ICs as “non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.”
- ICs for the Bunker Hill Superfund Site were established under Panhandle Health District and are managed out of our office in Kellogg



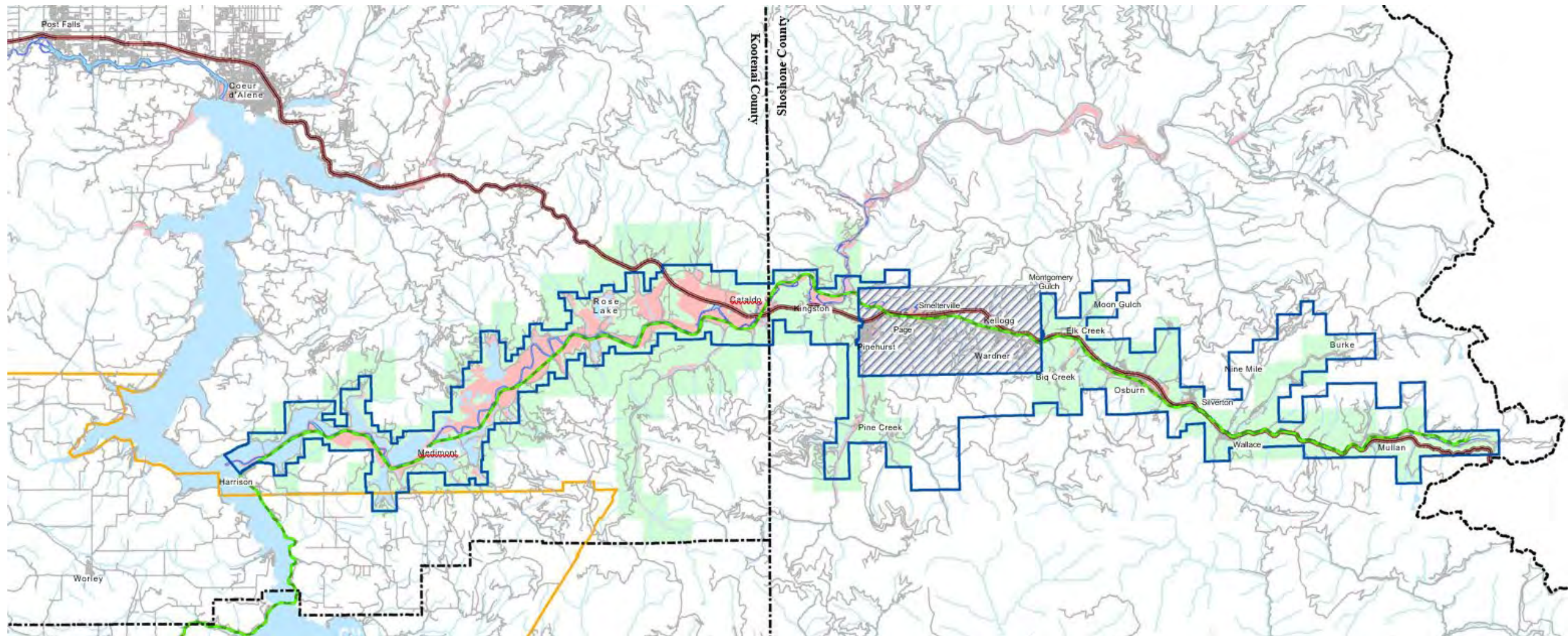
Public Health
Prevent. Promote. Protect.

Panhandle Health District

What does the ICP do?

- The ICP is a locally enforced set of rules and regulations designed to ensure the integrity of protective barriers placed over contaminants left throughout the BHSS
- Maintain records for all BHSS related information for properties in the site and provide disclosures on that information when requested (free)
- Permit any excavation or dirt disturbance activities within the site (free)
- License contractors to work safely in and around contaminated materials
- Free disposal sites for contaminated materials
- Run a Lead Health Intervention Program that offers free year-round blood lead testing with follow ups and we also provide outreach & education to site residents

ICP Boundary – Including the Box & the Basin



Outreach/Education

CAUTION
High levels of lead, arsenic, and other heavy metals from past mining activities are found in the soil, sediments, and water at this location.

**Play Safe.
Protect Your Health.**

Pack in your water.
Don't use river water for drinking, cooking, or washing, even if it is filtered.

Wash before you eat.
Wash your hands with clean water or wipes before eating or drinking.

Eat on a clean surface.
Use a table or blanket, not bare ground.

Avoid dusty areas.
Dusty activities can increase your exposure risk.

Clean before you leave.
Remove dirt from clothes, toys, pets, cars, and equipment. Dirt tracked home may result in future lead exposure.

Follow fish advisories.
Follow fish consumption advisories, especially for pregnant women and children.



**Panhandle Health District**
Healthy People in Healthy Communities
Contact PHD at:
(208) 783-0707
or visit: deq.idaho.gov/playclean





Before and After

Before and After





Re-Contamination





It may look clean, but that doesn't mean it is


Protect Yourself


- Request environmental disclosures (allow 3 business days)
- Ensure potential buyers are aware
- Protect yourself and your families (Play Clean)



<https://panhandlehealthdistrict.org/institutional-controls-program/>

Panhandle Health District

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Institutional Controls Program

[2019 Blood Lead Screening Results](#)

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[Request Property Information](#)

