



Rapid Response to the Norfolk Southern Chemical Spill and Chemical Fires in East Palestine, Ohio

Andrew Whelton, Ph.D., and more

awhelton@purdue.edu

www.PlumbingSafety.org

Funded by:





Rapid public health scientific support in response to disasters

2014 Chemical Spill (WV)

2017 Tubbs Fire (CA)

2018 Camp Fire (CA)

2020 Oregon Fires (OR)

2021 Chemical Spill (HI)

2021 Marshall Fire (CO)

2023 Chemical Spill/Fires (OH)

2023 Maui Fires (HI) and others...

Key Questions:

1. What chemicals should be looked for?
2. Where did/do the chemicals go?
3. How do you return infrastructure/homes to safe use?
4. What were/are the chemical exposures?

East Palestine, Ohio Chemical Spill and Chemical Fires

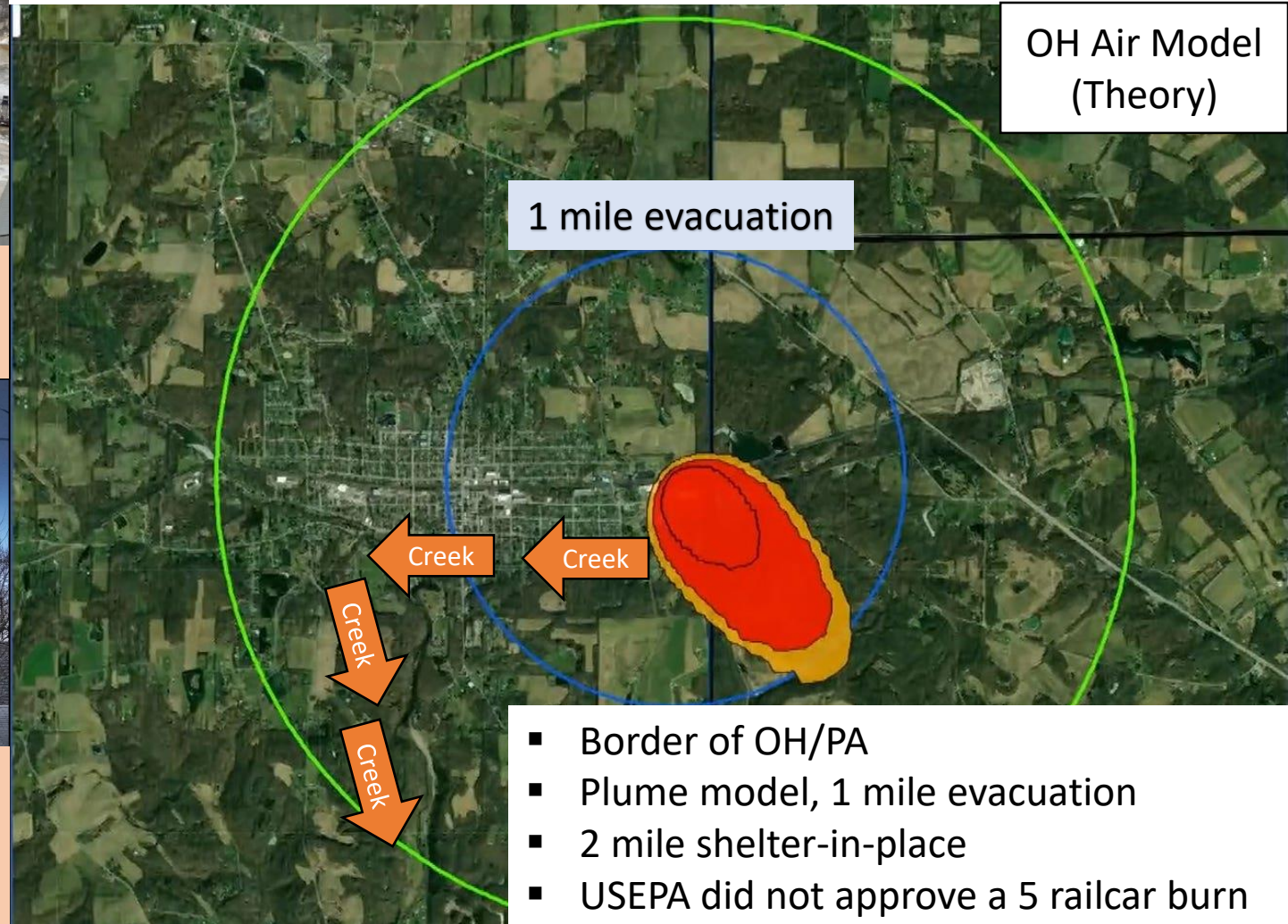
149 rail cars, 38 derailed
11 derailed were combustible liquids,
flammable liquids, and flammable gas.



Feb 3:
wreck



Feb 6:
open
burn



OH Air Model
(Theory)

1 mile evacuation

Creek

Creek

Creek

Creek

Our six field investigations, February 23-June 10

Goal: To better understand the chemicals present and human exposure pathways.

Environment

1. Atmospheric modeling to understand the initial chemical fate and open burn.
2. Creek water sampling to identify chemicals released (i.e., TPH, PFAS, VOCs, SVOCs, metals)
3. Estimated chemical biodegradability in creeks.
4. Evaluated sorbent pad cleanup effectiveness.
5. Evaluated the impact of aeration on chemical emission from creeks.

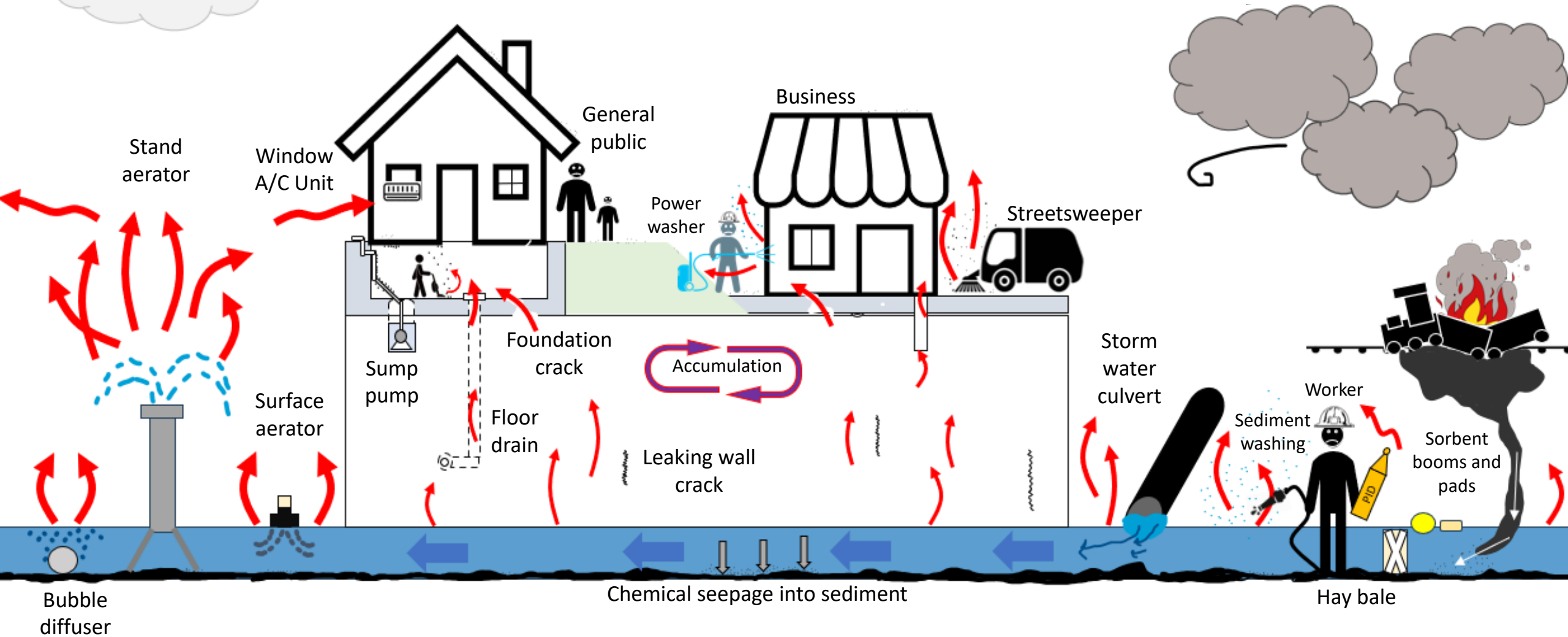
Buildings

1. Documented household and business owner experiences and reviewed test results.
2. Private drinking water well sampling.
3. Wipe sampled building exteriors and new vinyl siding.
4. Analyzed honey from nearby apiaries.



- 3 weeks after the derailment, the contamination was not “contained”; Agencies had not required NS to test for all chemicals spilled from the train.
- NS transferred contamination from the creeks into the air.
- Workers (contract, government), residents, and visitors became sick.
- NS air testing devices incapable of finding all indoor acute health threats, but approved by USEPA. Buildings contaminated for at least 4.5 months.
- NS issued indecipherable well water test result documents to households.
- Agencies sometimes told residents 1 thing, but publicly said another. Repeatedly failed to protect local and federal government workers.

There were multiple chemical exposure pathways immediately following the disaster and during cleanup operations.



Illness: CDC employees, US Sen. Vance Office, PA Sen. Mastriano, USEPA contractor, RR workers, East Palestine municipal employees, residents, me, and more...